



May 25, 2017

Marci Todd
Acting State Director
Bureau of Land Management
1340 Financial Blvd
Reno, NV 89520

Via Facsimile and Overnight Mail: 775-861-6711

RE: Center for Biological Diversity et al. Protest of the June 2017 Competitive Oil and Gas Lease Sale, Battle Mountain District - DOI-BLM-NV-B020-2017-0002-EA

Dear Ms. Todd:

The Center for Biological Diversity, Great Basin Resource Watch, Progressive Alliance of Nevada, the Sierra Club, and Western Watersheds Project (collectively, “Protestors”) hereby file, this Protest of the Bureau of Land Management’s (“BLM”) planned June 12, 2017 Competitive Oil and Gas Lease Sale and Environmental Assessment DOI-BLM-NV-B020-2017-0002-EA, pursuant to 43 C.F.R. § 3120.1-3. We formally protest the inclusion of each of the 106 parcels, covering approximately 195,654 acres in the Battle Mountain District Office. The “specific serial numbers” of the parcels protested are:

NV-17-06-001	NV-17-06-020	NV-17-06-039
NV-17-06-002	NV-17-06-021	NV-17-06-040
NV-17-06-003	NV-17-06-022	NV-17-06-041
NV-17-06-004	NV-17-06-023	NV-17-06-042
NV-17-06-005	NV-17-06-024	NV-17-06-043
NV-17-06-006	NV-17-06-025	NV-17-06-044
NV-17-06-007	NV-17-06-026	NV-17-06-045
NV-17-06-008	NV-17-06-027	NV-17-06-047
NV-17-06-009	NV-17-06-028	NV-17-06-048
NV-17-06-010	NV-17-06-029	NV-17-06-049
NV-17-06-011	NV-17-06-030	NV-17-06-050
NV-17-06-012	NV-17-06-031	NV-17-06-051
NV-17-06-013	NV-17-06-032	NV-17-06-052
NV-17-06-014	NV-17-06-033	NV-17-06-053
NV-17-06-015	NV-17-06-034	NV-17-06-054
NV-17-06-016	NV-17-06-035	NV-17-06-055
NV-17-06-017	NV-17-06-036	NV-17-06-056
NV-17-06-018	NV-17-06-037	NV-17-06-057
NV-17-06-019	NV-17-06-038	NV-17-06-058

NV-17-06-059	NV-17-06-076	NV-17-06-093
NV-17-06-060	NV-17-06-077	NV-17-06-094
NV-17-06-061	NV-17-06-078	NV-17-06-095
NV-17-06-062	NV-17-06-079	NV-17-06-096
NV-17-06-063	NV-17-06-080	NV-17-06-097
NV-17-06-064	NV-17-06-081	NV-17-06-098
NV-17-06-065	NV-17-06-082	NV-17-06-099
NV-17-06-066	NV-17-06-083	NV-17-06-100
NV-17-06-067	NV-17-06-084	NV-17-06-101
NV-17-06-068	NV-17-06-085	NV-17-06-102
NV-17-06-069	NV-17-06-086	NV-17-06-103
NV-17-06-070	NV-17-06-087	NV-17-06-104
NV-17-06-071	NV-17-06-088	NV-17-06-105
NV-17-06-072	NV-17-06-089	NV-17-06-106
NV-17-06-073	NV-17-06-090	NV-17-06-107
NV-17-06-074	NV-17-06-091	
NV-17-06-075	NV-17-06-092	

PROTEST

I. Protesting Parties: Contact Information and Statement of Interests:

This Protest is filed on behalf of Protestors by their authorized representative:

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The Center for Biological Diversity is a non-profit environmental organization dedicated to the protection of native species and their habitats through science, policy, and environmental law. The Center also works to reduce greenhouse gas emissions to protect biological diversity, our environment, and public health. The Center has over 1.3 million members and on-line activists, including those living in Nevada who have visited these public lands in the Battle Mountain District management area for recreational, scientific, educational, and other pursuits and intend to continue to do so in the future, and are particularly interested in protecting the many native, imperiled, and sensitive species and their habitats that may be affected by the proposed oil and gas leasing.

Great Basin Resource Watch is a 501(c)(3) non-profit organization, founded in 1994 by a coalition of environmental, Native American and scientific community representatives. GBRW is a regional environmental justice organization dedicated to protecting the health and well being

of the land, air, water, wildlife, and human communities of the Great Basin from the adverse effects of resource extraction and use. GBRW's headquarters are in Reno, Nevada. GBRW informs communities about mining impacts through reports and educational materials. We review mine proposals, permits and expansions in Nevada and California, and recommends policy solutions to reduce toxic emissions, protect our water resources and preserve human and wildlife habitat.

The Progressive Leadership Alliance of Nevada was founded in 1994 to bring together diverse and potentially competing organizations into one cohesive force for social and environmental justice in Nevada. Since 1994, the organization has grown from 12 original founding member groups to a current membership of over 30 organizations.

The Sierra Club was founded in 1892 and is the nation's oldest grassroots environmental organization. The Sierra Club is incorporated in California, and has approximately 740,000 members nationwide and is dedicated to the protection and preservation of the environment. The Sierra Club's mission is to explore, enjoy and protect the wild places of the earth; to practice and promote the responsible use of the earth's ecosystems and resources; and to educate and enlist humanity to protect and restore the quality of the natural and human environments. The Sierra Club has a Toiyabe Chapter, including members in the areas of this lease sale. The Sierra Club has members that live in, work and use this area for recreation such as hiking, snowshoeing, cross-country skiing, climbing, backpacking, camping, fishing and wildlife viewing, as well as for business, scientific, spiritual, aesthetic and environmental purposes.

Western Watersheds Project is a non-profit organization with more than 5,000 members and supporters. Our mission is to protect and restore western watersheds and wildlife through education, public policy initiatives and legal advocacy. Western Watersheds Project and its staff and members use and enjoy the public lands and their wildlife, cultural and natural resources for health, recreational, scientific, spiritual, educational, aesthetic, and other purposes. Western Watersheds Project also has a direct interest in mineral development that occurs in areas with sensitive wildlife populations and important wildlife habitat.

The mailing addresses for individual protestors are as follows:

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II. Statement of Reasons as to Why the Proposed Lease Sale Is Unlawful:

BLM's Final Environmental Assessment ("EA") and proposed decision to lease the parcels listed above are substantively and procedurally flawed for numerous reasons, detailed below. We hereby incorporate by reference hereto our comments on the draft EA for the planned June 12, 2017 sale, as well as our previous comments and written protest on the 2016 Lease Sale including all documents referenced therein.¹ The principal flaws in BLM's analysis and proposed action are as follows:

1. BLM has completely failed to engage in any site-specific analysis of the foreseeable consequences of leasing for a number of important physical and biological resources, including surface and ground water, greater sage-grouse, mule deer, springsnails, and native fish.
2. BLM's EA fails to take a hard look at the potential impacts of its action on Nevada populations of the greater sage-grouse, a BLM sensitive species.

¹ See Center for Biological Diversity ("CBD"), Scoping Comments for the June 2016 Competitive Oil and Gas Lease Sale, Battle Mountain District (November 30, 2015); CBD, EA Comments for the June 2016 Competitive Oil and Gas Lease Sale, Battle Mountain District - DOI-BLM-NV-B000-2016-0002-EA (February 5, 2016); CBD Protest of the June 2016 Competitive Oil and Gas Lease Sale, Battle Mountain District - DOI-BLM-NV-B000-2016-0002-EA (April 14, 2016); CBD, EA Comments for the June 13, 2017 Competitive Oil and Gas Lease Sale, Battle Mountain District Office (February 3, 2017).

3. BLM's proposed action is arbitrary and capricious because the proposed speculative leasing of approximately 200,000 acres of Nevada public land, despite the lack of development interest or activity on hundreds of thousands of acres of pre-existing Nevada oil and gas leases, lacks any reasonable justification or relationship to a legitimate purpose or need.

4. BLM has never, under decades-old resource management plans, evaluated the site-specific impacts of large-scale oil and gas development, including hydrologic fracturing, on non-mineral resources within the Battle Mountain District, including listed and sensitive species, big game, surface and ground waters and springs, and soils and steep slopes. BLM's newly-added "Resource Protection Alternative" has never been publicly disclosed or analyzed, and arbitrarily assumes, without analysis or documentation, that additional stipulations will avoid all impacts from resulting oil and gas development.

5. BLM's EA and proposed FONSI, in violation of law, fail to comply with Section 7 of the Endangered Species Act, which requires that agencies insure that their actions will not jeopardize the continued existence of species listed under the Endangered Species Act. Despite the acknowledged presence of numerous listed species, BLM improperly attempts to postpone its consideration of oil and gas activities to the drilling stage.

6. BLM has both failed to consider the climate and greenhouse gas emission impacts of its oil and gas leasing decisions, and has arbitrarily rejected alternatives, including no leasing and no fracking alternatives, that would mitigate the adverse climate impacts of its actions.

A. BLM's EA Violates the National Environmental Policy Act ("NEPA") By Failing to Take a Hard Look at Foreseeable Indirect and Cumulative Impacts of the Proposed Action

NEPA requires agencies to undertake thorough, site-specific environmental analysis at the earliest possible time and prior to any "irretrievable commitment of resources" so that the action can be shaped to account for environmental values. Pennaco Energy, Inc. v. United States DOI, 377 F.3d 1147, 1160 (10th Cir. 2004). Oil and gas leasing is an irretrievable commitment of resources. S. Utah Wilderness All. v. Norton, 457 F. Supp. 2d 1253, 1256 (D. Utah 2006). Thus, NEPA establishes "action-forcing" procedures that require agencies to take a "hard look," at "all foreseeable impacts of leasing" before leasing can proceed. Center for Biological Diversity v. United States DOI, 623 F.3d 633, 642 (9th Cir. 2010); N.M. ex rel. Richardson v. BLM, 565 F.3d 683, 717 (10th Cir. 2009). Chief among these procedures is the preparation of an environmental impact statement ("EIS"). Id. BLM, however, did not prepare an EIS.

In order to determine whether a project's impacts may be "significant," an agency may first prepare an Environmental Assessment ("EA"). 40 C.F.R. §§ 1501.4, 1508.9. If the EA reveals that "the agency's action may have a significant effect upon the . . . environment, an EIS must be prepared." Nat'l Parks & Conservation Ass'n v. Babbitt, 241 F.3d 722, 730 (9th Cir. 2001) (internal quotations omitted). If the agency determines that no significant impacts are

possible, it must still *adequately* explain its decision by supplying a “convincing statement of reasons” why the action’s effects are insignificant. Blue Mountains Biodiversity Project v. Blackwood, 161 F.3d 1208, 1212 (9th Cir. 1998) (emphasis added). However, BLM’s EA and draft FONSI fail to provide any reasonable “convincing statement of reasons” for a finding of no significant impact. BLM moreover failed to include any analyses for site-specific impacts. BLM claims:

The sale of parcels and issuance of oil and gas leases is strictly an administrative action. The act of offering, selling, and issuing federal oil and gas leases does not produce impacts to water quality and surface water. On-the-ground impacts would not occur until a lessee applies for and receives approval to drill on the lease. The BLM cannot determine at the leasing stage whether or not a proposed parcel will actually be sold, or if it is sold and issued, whether or not the lease would be explored or developed. Consequently, the BLM cannot determine exactly where on a lease a well or wells may be drilled or what technology may be used to drill and produce wells, so the impacts listed below are derived from historical information and what might be proposed in the near future. Impacts of any future proposed exploration or development would be analyzed under additional site-specific, project-specific environmental analysis.²

BLM failed both of NEPA’s “twin aims”: not only did BLM fail to ensure that the agency takes a “hard look” at the environmental consequences of its proposed action, it also failed to make information on the environmental consequences available to the public, which may then offer its insight to assist the agency’s decision-making through the comment process. See, e.g., Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 349 (1989). NEPA’s procedural requirement is not merely a formality, but is there to allow the agencies and the public to understand the consequences of the proposed lease auction. Not only did BLM fail to provide an adequate environmental analysis of the foreseeable impacts of the proposed lease sale, but furthermore failed to provide the public adequate notice of either foreseeable environmental impacts, or the consequences of its newly-added “Additional Resource Protection Alternative”.

BLM’s deferral of site-specific analysis until the APD stage is unlawful under NEPA, its implementing regulations, and legal precedents. Courts have repeatedly rejected BLM’s claim that it is not required to conduct any site-specific environmental review until after the parcels are leased and a proposal is submitted by industry. See, e.g., Center for Biological Diversity & Sierra Club v. BLM, 937 F. Supp. 2d 1140, 1158 (N.D. Cal. 2013) (“... BLM asserts the now-familiar argument that there is no controversy because any degradation of the local environment from fracking should be discussed, if ever, when there is a site-specific proposal. But the Ninth Circuit has specifically disapproved of this as a reason for holding off on preparing an EIS.”); and Conner v. Burford, 848 F.2d 1441, 1450 (9th Cir. 1988) (“The government’s inability to fully ascertain the precise extent of the effects of mineral leasing ... is not, however, a justification for failing to estimate what those effects might be before irrevocably committing to the activity.”).

BLM is required under NEPA to perform and disclose an analysis of environmental impacts of the 106 parcels offered for lease *before* there are any “irreversible and irretrievable

² Revised EA at 42.

commitments of resources.” Center for Biological Diversity, 937 F. Supp. 2d at 1152 (citing Conner v. Burford, 848 F.2d 1441, 1446 (9th Cir. 1988) (“Our circuit has held that an EIS must be prepared *before* any irreversible and irretrievable commitment of resources.”) (emphasis added). “[N]on-NSO leases, even if subject to substantial government regulation, do constitute an ‘irretrievable commitment of resources.’ As a result, unless the lease reserves to the agencies an ‘*absolute right* to deny exploitation of those resources,’ the sale of [] non-NSO leases ... constitutes the go or no-go point where NEPA analysis becomes necessary.” Id. at 1152. In other words, the specific environmental effects of oil and gas leasing in the project area must be analyzed and disclosed now, at the leasing stage.

Rather than perform the environmental review as required, BLM tiers to the environmental impact statements (EISs) for the 1997 Tonopah Resource Management Plan (“RMP”), the 1986 Shoshone Eureka RMP, and the 2015 Nevada and Northeastern California Greater Sage-Grouse Approved RMP Amendment (“GRSG RMPA”)³ and defers the site-specific analysis until after the parcels are leased.⁴ This is unlawful. BLM is required to analyze all foreseeable human health and safety risks, and seismic risks, posed by unconventional extraction techniques before leasing. BLM’s analyses on these issues are outdated and/or cursory at best. In a case called Center for Biological Diversity & Sierra Club v. BLM, 937 F. Supp. 2d 1140, 1152 (N.D. Cal. 2013), BLM also attempted to defer NEPA analysis of hydraulic fracturing (hereinafter referred to as “fracking”) on the parcels at issue until it received a site-specific proposal, because the exact scope and extent of drilling that would involve fracking was unknown. The district court held BLM’s “unreasonable lack of consideration of how fracking could impact development of the disputed parcels went on to unreasonably distort BLM’s assessment,” and explained:

“[T]he basic thrust” of NEPA is to require that agencies consider the range of possible environmental effects before resources are committed and the effects are fully known. “Reasonable forecasting and speculation is thus implicit in NEPA, and we must reject any attempt by agencies to shirk their responsibilities under NEPA by labeling any and all discussion of future environmental effects as ‘crystal ball inquiry.’”

Center for Biological Diversity, 937 F. Supp. 2d at 1157 (citing City of Davis v. Coleman, 521 F.2d 661, 676 (9th Cir. 1975)).

As we have pointed out, and as the courts have made clear time and again, NEPA requires that “assessment of all ‘reasonably foreseeable’ impacts must occur at the earliest practicable point, and must take place before an ‘irretrievable commitment of resources’ is made.” N.M. ex rel. Richardson v. BLM, 565 F.3d 683, 717-18 (10th Cir. 2009) (citing 42 U.S.C. § 4332(2)(C)(v)); compare with Center for Biological Diversity, 937 F. Supp. 2d at 1152 (N.D. Cal. 2013) (“Agencies are required to conduct this review at the ‘earliest possible time’ to allow for proper consideration of environmental values. . . A review should be prepared at a time when the decisionmakers ‘retain a maximum range of options.’”). In Richardson, BLM argued there also that it was not required to conduct any site-specific environmental reviews until the

³ Preliminary EA at 8-10.

⁴ *Id.*

issuance of an APD. The court looked to the Ninth and D.C. Circuits in concluding that “NEPA requires BLM to conduct site-specific analysis before the leasing stage.” Richardson, 565 F.3d at 688. Richardson then offered a two-part test to determine whether NEPA has been satisfied: First we must ask whether the lease constitutes an “irretrievable commitment of resources.” The Tenth Circuit, again citing to the Ninth and D.C. Circuits, concluded that issuing an oil and gas lease without an NSO stipulation constitutes such a commitment. Second, the agency must ask whether all “foreseeable impacts of leasing” have been taken into account before leasing can proceed. Id. Given the utter lack of any site-specific review of the present surface-occupancy-permitting parcels, for this lease sale, such impacts have not been taken into account.

BLM must take a hard look at the specific parcels that it is offering for oil and gas leasing, and the foreseeable impacts to the resources on these parcels. BLM insists, however, on postponing any such analysis until it has already signed over drilling rights and is unable to preclude all surface disturbing activities to prevent critical environmental impacts that may arise after a proper NEPA analysis. This is a violation of NEPA.

As the time for NEPA analysis was triggered by the proposal for the sale of the lease, BLM had to analyze whether its decision to open up over 195,000 acres of land to development activities such as fracking might have significant environmental impact. Center for Biological Diversity & Sierra Club v. BLM, 937 F. Supp. 2d 1140, 1153 (N.D. Cal. 2013). If BLM finds based on the EA that the proposed actions will not significantly affect the environment, BLM can issue a finding of No Significant Impact (“FONSI”) in lieu of the EIS. Id. However, BLM’s Final EA does not support any reasonable finding that the environmental effects of its major action are insignificant.

In a case called Center for Biological Diversity v. National Highway Traffic Safety Admin., 538 F.3d 1172 (9th Cir. 2008) the court took similar issues with the BLM’s failure to explain why it chose not to prepare an EIS:

Nowhere does the EA provide a ‘statement of reasons’ for a finding of no significant impact, much less a ‘convincing statement of reasons.’ For example, the EA discusses the amount of CO₂ emissions expected from the Rule, but does not discuss the potential impact of such emissions on climate change. In the “Affected Environment” section of the EA, NHTSA states that “[i]ncreasing concentrations of greenhouse gases are likely to accelerate the rate of climate change.” The agency notes that “[t]he transportation sector is a significant source of greenhouse gas (GHG) emissions, accounting for approximately 28 percent of all greenhouse gas emissions in the United States.” From this, NHTSA jumps to the conclusion that “[c]oupled with the effects resulting from the 2003 light truck rule, the effects resulting from the agency’s current action are expected to lessen the GHG impacts discussed above.”

Id. at 1223 (internal citations omitted).

Similar to the National Highway Traffic Safety Admin case, the Final EA at issue here does not provide any clear or convincing statement of reasons for a finding of no significant impact. The EA discusses generally and vaguely the amount of surface disturbance that may

result from leasing, the number of wells that might be drilled, the types of pollutants that may be emitted during development and production; but it does not discuss the potential impacts of any of these on the specific lands, waters, and species present within the areas proposed for leasing. BLM cannot simply jump to the conclusion that its stipulations and proposed mitigation measures will lessen the potential impacts to the level of insignificance.

In evaluating the significance of the impact of the proposed action, the agency must consider both the context of the action as well as the intensity. The several contexts in which the significance of an action must be analyzed includes: “society as a whole (human, national), the affected region, the affected interests, and the locality.” 40 C.F.R. § 1508.27. For site-specific actions, significance usually depends on the impact of the action on the locale, *id.*, but in light of the recent Paris Agreement, it also depends on the impact on the world as a whole. Thus, to determine the significance of the action, BLM needed to look at not only the environmental impacts on the area to be leased, but also the analysis of the cumulative effects of oil and gas leasing on climate change.

Intensity is determined by scrutinizing the ten factors described in 40 C.F.R. § 1508.27:

- (1) Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.
- (2) The degree to which the proposed action affects public health or safety.
- (3) Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.
- (4) The degree to which the effects on the quality of the human environment are likely to be highly controversial.
- (5) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.
- (6) The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.
- (7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.
- (8) The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of

Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

(9) The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

(10) Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

The presence of any *one* of these factors may be sufficient to require an EIS. *Id.* Several of these factors are implicated in this lease sale. The ones we highlight here in this comment letter are discussed in greater detail below. For one, there is a clear “controversy” regarding the nature of the drilling to occur on the leases and the potential impacts drilling would impose on air, water, soil, and wildlife resources among other things. A proposal is highly controversial when “substantial questions are raised as to whether a project... may cause significant degradation” of a resource. *Northwest Env'tl. Def. Ctr. v. Bonneville Power Admin.*, 117 F.3d 1520, 1536 (9th Cir. 1997). A substantial dispute may concern the “size, nature, or effect” of the action. *Blue Mts. Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1212 (9th Cir. 1998).

Furthermore, BLM’s estimates regarding surface disturbance is based on historic information from decades old RMPs which apparently do not take into account the recent sharp increase in leasing nominations and initial instances of fracking use in Nevada.⁵ BLM should have considered in its EA the increased industry interest in Nevada oil and gas, and the potential for drilling levels to increase, should oil prices rise or well stimulation techniques change the production potential of Nevada hydrocarbon-bearing formations.

“[T]o prevail on a claim that the agency violated its statutory duty to prepare an EIS, a plaintiff need not show that significant effects will in fact occur. It is enough for the plaintiff to raise substantial questions whether a project may have a significant effect on the environment.” *Ctr. for Biological Diversity & Sierra Club v. BLM*, 937 F. Supp. 2d 1140, 1154 (N.D. Cal. 2013). The significance of the impact of the proposed action depends on both the context of the action as well as the intensity. *Id.*

Numerous environmental harms may result from unconventional methods used by the industry to extract oil and gas, including hydraulic fracturing and horizontal drilling, as well as concerns relating to climate change. BLM has declined to look at these issues until it received an APD proposal from the industry. As we have already explained above, this is unlawful. The impact of fracking alone raises substantial questions on whether the proposed project may have significant effects on the environment.

⁵ See BLM Nevada, 2015 and 2016 Expressions of Interest, *available at* http://www.blm.gov/nv/st/en/prog/minerals/leasable_minerals/oil_gas/oil_and_gas_leasing.html; See also DeLong, Jeff, “Fracking Hits Home in Nevada,” *Reno Gazette-Journal* (April 15, 2014).

As discussed in our previous protest of the 2016 Lease Sale, BLM is required to prepare an Environmental Impact Statement (“EIS”) or at least take a hard look at site-specific impacts in its EA before coming to a decision as to whether an EIS is needed. Instead BLM continues to rely on “current resource and land use information and the management framework developed in the appropriate district or field office Resource Management Plans.”⁶ With the exception of last year’s amendments for greater sage-grouse management, however, these “current” RMPs, with which these stipulations are in accordance, date from 1986 and 1997 respectively.

As we pointed out before, with the exception of the September 2015 Nevada and Northeastern California Greater Sage-Grouse Record of Decision and Approved Resource Management Plan Amendment (“2015 GRSR RMP”) which covers only issues relating to greater sage-grouse, these RMPs have not been revised in decades and therefore do not address the emergence of new and significant information, including but not limited to that relating to the new and dangerous extraction methods of fracking and horizontal drilling, or the increased seismic risks from such extraction methods. Specifically, BLM’s reliance on the brief and extremely general “Hydraulic Fracturing White Paper” (Appendix E) fails to consider or analyze any of the site-specific impacts to springs, surface waters, shallow aquifers, or hydrologic and geological conditions specific to the lands and waters of the Battle Mountain District.

As BLM has not provided any environmental review of the parcels at issue or any site-specific analysis of the potential environmental impacts from the proposed action. As noted in the Center for Biological Diversity’s comments on BLM’s draft EA, BLM failed to take a hard look at the foreseeable impacts from the lease sale, oil and gas development, and the use of hydraulic fracking technologies. In particular, BLM failed to take a hard look at the potential impacts of the proposed action on water resources, air quality, climate change, human health and safety, seismicity, and sensitive species of plants and wildlife.

1. BLM does not Consider Potential Impacts to Water Resources in Proposed Sale Area

The Environmental Analysis inadequately analyzes potential impacts to water resources and the plant and wildlife communities that rely on them. In the Environmental Assessment, BLM acknowledges the diverse array of water features located within parcels proposed for leasing. This includes, but is not limited to, 34 springs and seeps, 3.9 miles of perennial streams, 674 acres of freshwater wetlands, and 13,044 acres of seasonally inundated playa. According to the EA, these are “the most productive and important ecosystems on the Battle Mountain District,” containing “the majority of the [area’s] biodiversity.”⁷ Additionally, the EA describes, without any meaningful analysis, what it terms “spring mounds” in the Big Smoky Valley, describing them as “extremely unusual and rare,” and acknowledging that little is known of the form or function of these water features.

a. The EA does not analyze impacts to water quantity

⁶ Revised EA at 1.

⁷ DOI-BLM-NV-B020-2017-0002-EA, §3.2.4, p.41.

Although the title of Section 3.2.4 of the EA is “Water (Surface and Ground) Quality and Quantity,” the matter of water quantity is never addressed. This is a critical deficiency in the EA’s analysis of impacts, as the proposed lease areas are in arid environments, receiving something on the order of 5-6 inches of precipitation annually, per data cited in the EA. As stated elsewhere in this protest, it is probable that any development of parcels proposed for lease in this sale would utilize hydraulic fracturing (HF). As such, it is incumbent upon BLM to analyze impacts to water quantity under the assumption that any development of the parcels would occur using HF.

An EPA study found that the volumes of water needed to successfully fracture rock to open up oil and gas resources vary widely: statewide median quantities utilized fell between 76,818 gallons (0.23 acre-feet) per well in California to 5,259,965 gallons (15.9 acre-feet) per well.⁸ Without citations, the EA’s own HF “white paper” puts forward ranges of 50,000 to 300,000 gallons (0.15 to 0.91 acre-feet) for shallow vertical wells, and 800,000 to 10,000,000 gallons (2.4 to 30.3 acre-feet) for deep tight sand gas horizontal or directionally drilled wells.

In addition to information about the quantities of water, an important piece of information in determining the impacts to water quantity is the number of anticipated wells. In this, the EA falls woefully short. The Reasonably Foreseeable Development (RFD) scenario is based exclusively on past development in Nevada, which has been miniscule compared to other Western States. It does not account for current or anticipated market trends, including the volatile price of oil. The RFD anticipates only 25 wells being developed in the Battle Mountain district. Should the price of oil spike, this number could dramatically increase, potentially numbering in the thousands of wells being developed across Nevada.

Given the variability in both estimates of water consumption per well and in the number of anticipated wells, there is great uncertainty in attempting to evaluate the impacts of the proposed lease sale on quantities of water. However, this does not relieve BLM from their legal obligation to evaluate such impacts. 40 CFR §1502.22 is known as the “uncertainty rule,” and indicates that agencies must include information on uncertain impacts if such information “is essential to a reasoned choice among alternatives, and the overall costs of obtaining it are not exorbitant.” And indeed, these requirements are important for “impacts which have catastrophic consequences, even if their probability of occurrence is low.”

The potential impacts to water quantity clearly meet this threshold. If hundreds or thousands of wells were developed, something that is not outside the realm of possibility should oil prices go back above \$100 per barrel, and if those wells each required the high-end estimate of 10,000,000 gallons (30.3 acre-feet) to fracture, total water withdrawals for fractured wells from this lease sale could reach into the billions of gallons (tens of thousands of acre-feet). Withdrawals on the level of tens of thousands of acre-feet have the potential to radically alter the hydrologic regime in the areas where such withdrawals are made. If the withdrawals are made

⁸ U.S. EPA. Hydraulic Fracturing for Oil and Gas: Impacts from the Hydraulic Fracturing Water Cycle on Drinking Water Resources in the United States (Final Report). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-16/236F, 2016.

from shallow alluvial aquifers, adjacent springs, wetlands, and other water features may dry up.⁹ If the withdrawals are made from the deeper regional aquifer, effects may be far reaching and drying could occur tens of miles away. Additionally, due to connections between local and regional aquifers, intensive pumping of alluvial aquifers may eventually impact regional aquifers.¹⁰

Therefore, BLM has neglected its duty under NEPA to analyze the impacts of withdrawals for HF on water resources and their dependent ecosystems. Further, an adequate “hard look” at such impacts would include a very broad area of analysis based on a detailed hydrologic characterization of the regional aquifers potentially affected. As will be detailed below, dozens of endemic, endangered, or threatened species rely on water features potentially affected by pumping. Thus there are significant ramifications from neglecting to analyze impacts to water quantity.

b. The EA does not adequately analyze impacts to wildlife that depend on water features

Water features such as springs, seeps, perennial creeks, wetlands, inundated playas, and spring mounds are critical to the existence of Nevada’s remarkable biodiversity. Dozens of species endemic to such water features have been discovered and described, and it is likely that there are many more which have yet to be discovered. In addition to endemic species, there are hundreds of other wildlife species which rely on water features to sustain life in such an arid environment.

BLM acknowledged the significance of potential impacts to water feature-dependent wildlife in the Draft EA. “Several parcels are largely or entirely composed of wetland-riparian areas and playas that many wildlife species depend on. Oil and gas development could cause disproportionate and, in some cases, potentially irreversible habitat loss to these dependent species even with stipulated protection measures and BMPs.”^{11,12}

Yet, despite the clear possibility of significant impacts to water features from the proposed action, the EA does not substantively evaluate potential impacts to wildlife which rely on those features. The following is a non-comprehensive list of wildlife who could be significantly impacted by the proposed action:

Springsnails

⁹ Deacon, J.E., A.E. Williams, C.D. Wilhams, and J.E. Williams. 2007. Fueling population growth in Las Vegas: How large-scale groundwater withdrawal could bum regional biodiversity. *Bioscience* 57(8): 688-698.

¹⁰ U.S. Geological Survey Circular 1139. “Ground Water and Surface Water: A Single Resource.” 1998.

¹¹ DOI-BLM-NV-B020-2017-0002-EA, DRAFT, §3.2.8, p.50.

¹² This statement was revised in the Final EA to read: “several parcels are largely or entirely composed of wetland-riparian areas and playas that many wildlife species depend on. Oil and gas development without proper engineering controls, BMPs, and mitigation could cause disproportionate and, in some cases, potentially irreversible habitat loss to these dependent species.” BLM did not provide a reason for changing the wording.

There are five species of springsnails which occur in the Railroad Valley: Big Warm Spring Pyrg (*Pyrgulopsis papillata*), Duckwater Pyrg (*P. aloba*), Duckwater Warm Springs Pyrg (*P. villacampae*), Lockes Pyrg (*Pyrgulopsis lockensis*), and the Southern Duckwater Pyrg (*P. anatina*). The Center for Biological Diversity petitioned the US Fish and Wildlife Service to protect these species under the Endangered Species Act in 2009. The Service declined to list these species, citing restoration of habitat and remaining unallocated groundwater in the basin as reasons.¹³

The Service used oversimplified reasoning in their determination. They simply subtracted the current usage from the perennial yield of the basin to come up with an amount of remaining unallocated groundwater. However, determining the potential for impacts to water features from groundwater pumping is not that simple. Groundwater can behave in paradoxical ways, and drawdown of aquifers can occur even if a basin is not overallocated. Groundwater pumping forms a wide “cone of depression” surrounding the point of diversion, reducing aquifer levels across the “area of influence,” meaning the areal extent of the cone.¹⁴ Thus while a basin may not be overallocated, any given pumping project can cause localized impacts across the area of influence.

Since the springsnails listed here occur in extremely isolated and singular habitats, generally just one spring, and since almost any impact to such springs would have the potential to wipe out these sensitive species, it is incumbent upon BLM to include an analysis of the potential impacts of groundwater withdrawals for HF in the Railroad Valley. This includes a detailed characterization of the aquifer and potential hydrologic connections between any area proposed for pumping and springs known to harbor springsnails.

Fish

The Great Basin is home to a wide array of fishes, many of which are endemic to specific habitats like springs. Like springsnails, these fishes are incredibly vulnerable to perturbations in their habitat. Thus it should come as no surprise that the majority of Nevada species protected under the Endangered Species Act are fishes.¹⁵ There are several fishes which have the potential to be directly or indirectly affected by the proposed action. BLM needs to analyze the impacts to these species.

The Railroad Valley springfish (*Crenichthys nevadae*) is federally listed as threatened, and occurs in just five or six springs in two localities in Railroad Valley. These springs were designated as critical habitat by Fish and Wildlife Service in 1986. Of particular concern with this fish is the Lockes Ranch spring complex, which lies just two miles from Parcel 106 and three miles from Parcel NVN77856. Groundwater pumping in such close proximity to the critical habitat of a threatened fish poses a dire threat to its continued occupancy of critical habitat. BLM needs to analyze the potential impacts of pumping in this area, and must do a Section 7 consultation with FWS. The Railroad Valley tui chub (*Siphateles bicolor ssp. 7*), a BLM

¹³ FR 76 (177) at 56614.

¹⁴ Basic Groundwater Hydrology. Heath, R.C. U.S. Geological Survey Water-Supply Paper 2220. 2004.

¹⁵ Nevada Natural Heritage Program, “At Risk Plant and Animal Tracking List, January 2017.”

sensitive species, also occurs in isolated springs in Railroad Valley, and analysis of impacts to it should be included.

The Big Smoky Valley is home to three fish species of concern: the Big Smoky Valley tui chub (*Siphateles bicolor ssp. 8*), the Big Smoky Valley speckled dace (*Rhinichthys osculus lariversi*), and the Charnock Springs tui chub (*Siphateles bicolor ssp. 10*) [also known as the Charnock Ranch tui chub]. All three are ranked “S1” by the Nevada Natural Heritage Program, meaning that they are “critically imperiled” within the state.¹⁶ All three species are known to occur in parcels 20 and 21, and the Big Smoky Valley tui chub is also known to occur on parcel 14. These species could be affected by the proposed action in two ways. First, there could be direct impacts from the construction and operation of fracked oil wells, including disturbance of waterways, disturbance of drainage patterns, and contamination of surface waters. Second, they could be affected by pumping in ways similar to those described above. For these reasons, it is essential that BLM analyze potential impacts to these rare endemic fish species.

The Fish Creek Springs tui chub (*Siphateles bicolor euchila*) is endemic to the spring source and outflow channels of Fish Creek Springs, located in the Fish Creek Valley south of Eureka. This fish was considered for listing by the Fish and Wildlife Service during the 1980s, but was not listed due a lack of immediate threats. Parcel 66 occurs directly adjacent to Fish Creek Springs. BLM must analyze the impacts of the proposed action on the Fish Creek Springs tui chub. In addition to the factors previously mentioned, there is one additional. In an APD filed for a proposed well in the Railroad Valley in 2016, the project proponent proposed utilizing surface flow from the adjacent Butterfield Spring for their drilling operations. This spring is home to the Railroad Valley tui chub. The proponent was to utilize up to 12,600 gallons of water every 24 hours, or some 8.75 gallons per minute, a substantial flow. The fish was protected by sealing the intake hose with ¼” grating. This is clearly an unacceptable set of circumstances for an endemic and BLM sensitive species. Given the very close proximity of Parcel 66 to Fish Creek Springs, it is entirely likely that an EOI was filed on this parcel with precisely the same arrangement in mind. Impacts from utilization and diversion of spring flow for pumping should be analyzed by BLM.

Birds

Numerous migratory birds utilize Nevada’s springs, riparian areas, and phreatophytic vegetation for habitat. Notably, the federally endangered southwestern willow flycatcher (*Empidonax traillii extimus*) and the federally threatened Yellow-billed cuckoo (*Coccyzus americanus*) both utilize phreatophytic and riparian vegetation in their migratory paths across Nevada. While their critical habitat and most occurrences have been in far southern Nevada, they have been documented to occur in the Great Basin as well.

Even small perturbations in groundwater levels can cause a loss of phreatophyte productivity, a reduction in phreatophyte cover, and ultimately a wholesale conversion to non-

¹⁶ Ibid.

phreatophytic upland vegetative communities.¹⁷ And in wetland areas, drawdown of the aquifer can result in decreased productivity and eventual type-conversion to shrubland. As such, BLM is obligated to examine the impacts of the proposed action to groundwater-dependent plant communities and the bird species which depend upon them for survival.

Amphibians

The Columbia spotted frog (*Rana luteiventris*) is a BLM sensitive species which is located within Parcel 14. While the Fish and Wildlife Service declined to list the frog in 2015, it is still protected under Nevada state law, and is the subject of multi-agency conservation agreements/strategies. In particular, Parcel 14 harbors the Toiyabe Subpopulation of the Great Basin Population of the Columbia spotted frog. This population is the most isolated and genetically distinct of all Columbia spotted frog subpopulations, residing only in the Toiyabe Range, the Reese River Valley to the west, and the Big Smoky Valley to the east.¹⁸ Two of the primary threats outlined in the Toiyabe Subpopulation Conservation Agreement/Strategy are water diversions and spring development, both of which are possible under the proposed action. BLM must analyze the potential impacts to the Columbia spotted frog, and outline how any proposed action is in accordance with the Conservation Agreement/Strategy. This includes conducting a Section 7 consultation with FWS, per Objective 5, Strategy 1, Action 3 of the Conservation Agreement/Strategy.

c. The Water Resources Stipulation (#NV-B-10-B-CSU) provides inadequate protection to critical water resources and the wildlife which depend on them.

Rather than deferring the tens of thousands of acres of proposed leases which have substantial conflict with water resources, BLM has elected to implement a new stipulation. Although we commend BLM's acknowledgment of its authority to consider and add lease stipulations at the leasing stage, the particular stipulation relied upon here would do little to protect water resources and the wildlife which depend on them.

Indeed, BLM seems to be mixing terms. While the ostensible point of the stipulation is to protect water resources, it provides only three mechanisms for protection: environmental review, engineering controls, and mitigation measures; and these only apply within 500 feet of wetland/riparian areas. Environmental review is simply that- an administrative action that provides no protection to resources in and of itself. Engineering controls and other mitigation measures do not actually provide protection for resources, but simply reduce the harm of the proposed action to the resources. These are very different, conceptually. With regard to groundwater pumping, a 500 foot buffer is not nearly enough. If a well requires millions of gallons of water to fracture, the cone of depression will extend well beyond such a buffer.

¹⁷ Cooper, D.J., Sanderson, J.S., Stannard, D.I., Groeneveld, D.P. "Effects of long-term water table drawdown on evapotranspiration and vegetation in an arid region phreatophyte community." 2006. *Journal of Hydrology* 325.

¹⁸ Conservation Agreement and Conservation Strategy, Columbia Spotted Frog, Toiyabe Great Basin Subpopulation. https://www.fws.gov/nevada/protected_species/amphibians/documents/csf/frog_toiyabenomaps.pdf

B. BLM Has Failed to Take a Hard Look at Impacts to Greater Sage-Grouse Populations and Habitat in the EA

1. BLM's Revised Environmental Assessment Does Not Adequately Consider and Mitigate Impacts to Greater Sage-Grouse

The greater sage-grouse is a BLM sensitive species. In September 2015, all BLM resource management plans for Nevada and Northeastern California, including Battle Mountain, were amended as part of an effort to secure adequate regulatory mechanisms to prevent the listing of the greater sage-grouse under the Endangered Species Act.¹⁹ Because oil and gas development and associated infrastructure has numerous well-documented adverse effects on GRSG survival, breeding, and behavior, these plan amendments prescribe management measures for BLM-permitted activities, including oil and gas leasing, within various categories (Sagebrush Focal Areas ("SFAs"), Priority Habitat Management Areas ("PHMAs"), General Habitat Management Areas ("GHMAs") and Other Habitat Management Areas ("OHMAs")) of sage-grouse habitat,²⁰ and prescribed stipulations for all new fluid mineral leases within those designated habitats.²¹

Given the significance of the potential impacts that oil and gas development could have on the species, proper investigation here is crucial. BLM is required under NEPA to collect data particular to the region affected by the leases.²² Summarizing general data about greater sage-grouse before dismissing the issue as insignificant does not provide the "hard look" that NEPA requires.²³ The Center for Biological Diversity pointed out in its previous February 3, 2017, comment letter 1) that the Preliminary EA (PEA) did not include site-specific analysis and 2) although it is possible that some lease parcels might contain topographic or other features that could allow for mitigation of adverse effects through particularized siting, BLM cannot reasonably make such a determination because the PEA does not take a look at any of these site-specific considerations. Therefore, the Center requested discussion of site-specific analysis based on information regarding greater-sage population and habitat in or surrounding the area to be leased that may be affected by oil and gas development on these parcels.²⁴ Such analysis has not occurred.

The Revised EA (REA) includes the general information that 1) greater sage-grouse are "likely to occupy" the Assessment Area;²⁵ 2) several parcels have "PHMA, GHMA, and OHMA

¹⁹ See BLM, Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendment (Sept. 2015) ("NV/NE CA RMPA").

²⁰ NV/NE CA RMPA at 2-29 to 2-30.

²¹ NV/NE CA RMPA Appendix G.

²² See Center for Biological Diversity, 937 F. Supp. 2d at 1159 (Preparation of an EIS "is mandated where uncertainty may be resolved by further collection of data, or where collection of such data may prevent speculation on potential effects.").

²³ *Id.* (Held BLM did not provide the "hard look" that NEPA requires because it "never collected any data particular to the region affected by the leases, instead opting to summarize general data.").

²⁴ See Center for Biological Diversity, Map of Greater Sage-Grouse Habitat within 3.1 Miles of Lease Sale Parcels (2017) (Attachment H).

²⁵ REA at 53.

habitat mapped under the GRSG Plan Amendment”;²⁶ and 3) nesting, brooding, and “nesting, brooding, summer, and winter habitat occurs not only in PHMA and GHMA, but also in many areas of OHMA.”²⁷ The REA’s discussion of the environmental effects of oil and gas development on sage-grouse that use these parcels is also generalized and not site specific.

The REA states:

Greater sage-grouse do not require open water for day-to-day survival if succulent vegetation is available; they use free water if it is available, however. Their distribution is seasonally limited by water in some areas. In summer, greater sage-grouse in desert regions often occur only near streams and springs, which also provide important brood rearing habitat. REA at 58.

In upland habitats, the cumulative impact to wildlife and associated wildlife resources from oil and gas exploration and production activities could be short-term and short-duration. For example, seasonal utilization by wildlife such as greater sage-grouse, mule deer, desert bighorn sheep, and migratory birds may be impacted. In general, these are expected to be minimal due to the relatively small area of disturbance in the RFD scenario timeframe, concurrent reclamation, and the development of site-specific mitigation and BMPs. Greater sage-grouse seasonal habitats are addressed by stipulations (Appendix B). REA at 104.

In general, animals capable of doing so would avoid and move away from the associated noise and activities; some mortality could occur among animals unable to move away; and there would be some loss of habitat. Based on the Battle Mountain District’s RFD scenario, oil and gas exploration and production activities would continue to be minimal with an expectation of no more than 25 wells being drilled disturbing a total of approximately 65-100 acres over the next ten years. A 100-acre total disturbed area would represent 0.05% of the 197,012 acres which make up the 106 lease parcels to be offered under the Proposed Action (195,732 acres), plus the reinstatement parcel (1280 acres). These activities are temporary in nature and wildlife would move back into the area after successful reclamation. REA at 57.

The REA omits local or even regional sage-grouse population information and thus does not provide the public with the information necessary to assess the likely impacts of oil and gas leasing on GRSG in the lease area. This is disturbing because Garton et al. (2015) found that the estimated minimum number of GRSG males declined 33% from 2007 to 2013 in the Southern Great Basin population of GRSG and that this estimated decline “exemplifies the observed declines over the last 2 decades.” Garton et al. at 15-16.²⁸ Even if the public acquires recent Nevada GRSG population data on its own, it is still not possible to match that data to the lease parcels because the REA does not identify the parcels by Lek Names, Lek ID Numbers, or

²⁶ REA at 56.

²⁷ REA at 56.

²⁸ Garton, Edward O., et al. (2015) Greater Sage-Grouse Population Dynamics and Probability of Persistence: Final Report to Pew Charitable Trusts. Available at <http://www.pewtrusts.org/~media/assets/2015/04/garton-et-al-2015-greater-sagegrouse-population-dynamics-and-persistence-31815.pdf?la=en>.

even GRSG Population Management Units. Because of these limitations on the public's ability to assess current numbers and recent trends in the local GRSG population, it is all the more problematic that BLM did not include site-specific GRSG population and population trends in its REA.

The REA's analysis of impacts of oil and gas development limits itself to the acreage of habitat directly disturbed by the creation of roads and wellpads, and fails to account for displacement of sage grouse from adjacent habitats. Holloran (2005) found that sage grouse avoided habitats within 3.1 miles of active oil and gas drilling operations, and within 2 miles of roads or wellpads during the production phase of oil and gas extraction.²⁹ How many acres of habitat within 5.3 miles of a lek, the habitat where nesting occurs, occur on the leases in question? How many acres of identified sage-grouse winter range occurs on the leaseholds in question? The failure to consider the acreage of habitat lost due to abandonment of otherwise suitable habitats adjacent to roads and wellsites, and the failure to even quantify the amount of habitats critical to the life cycles of sage-grouse that occur on individual leases (much less evaluate the site-specific topography and how that might mitigate or exacerbate impacts of oil and gas development), constitute failures of NEPA's hard look requirements.

The REA's lack of site-specific analysis is also troubling because the BLM's approach to mitigating the effects of oil and gas development on GRSG is to attach stipulations to the leases. However, these stipulations are not absolute. Of the seven GRSG stipulations in the REA, six can have exceptions, four can be modified, and four can be waived entirely. REA at 144-150. As a result, these stipulations might or not actually be applied in the way they are described in the REA, and thus the mitigation that BLM suggests will occur might or might not actually take place.

This is not a hypothetical concern. A 2017 General Accountability Office report (GAO Report) found serious inconsistencies in BLM practice regarding exceptions to stipulations.³⁰ "The extent to which BLM approves requests for exceptions to environmentally related lease and permit requirements is unknown because BLM does not have comprehensive or consistent data on these requests. Additionally, BLM's processes for considering exception requests and documenting its decisions vary across its field offices." GAO Report at 11. Furthermore, the GAO Report found that the public is unlikely to have an opportunity to provide input to the BLM's decisions whether to grant exceptions. "BLM consistently involved the public when developing lease requirements and to some extent when developing permit requirements. However, BLM generally did not involve the public when considering an operator's request for an exception to a lease or permit requirement." GAO Report at 17. In fact, the public might not even be able to find out whether an exception was granted because "BLM does not currently

²⁹ Holloran. (2005) Greater Sage-Grouse (*Centrocercus urophasianus*) Population Response to Natural Gas Field Development in Western Wyoming. Available at <http://www.oilandgasbmps.org/docs/WY030-HolloranSageGrouseStudy.pdf>.

³⁰ The GAO Report appears to include exceptions, modifications, and waivers of lease stipulations in the single term "exception." See GAO. (2017) Oil and Gas Development: Improved Collection and Use of Data Could Enhance BLM's Ability to Assess and Mitigate Environmental Impacts. Available at <http://democrats-naturalresources.house.gov/imo/media/doc/GAO%20Report%20on%20BLM%20Waiving%20of%20Oil%20and%20Gas%20Lease%20Stipulations%20May%209%202017.pdf>.

require field offices to make the results of its exception decisions available to the public. Without access to this information, the public may not be able to provide substantive input into BLM's future land use planning processes." GAO Report at 35.

Furthermore, the BLM's stipulation-based mitigation approach is inadequate to protect sage-grouse because the stipulations in the REA do not protect all of the habitat where important GRSG life-cycle activities occur. The REA states, "Review of the available data indicates that nesting, brooding, summer, and winter habitat occurs not only in PHMA and GHMA, **but also in many areas of OHMA.**" REA at 56, emphasis added. However, the REA's winter habitat stipulation (NV-B-16-C-TL) applies only to winter habitat in GHMA, not to winter habitat in OHMA.³¹ See REA at 146.

In addition, the REA's brief descriptions of the potential impacts of oil and gas development on GRSG on the lease parcels do not address Standards of Rangeland Health and the cumulative effects of adding oil and gas development to grazing allotments, especially allotments that already fail to meet Standards for Rangeland Health.³² This is of concern because the REA states, "Twenty grazing allotments include all or portions of the parcels proposed for leasing." REA at 70. Of these 20 allotments, only one (Ruby Hill) met Standards for Rangeland health in data that BLM released to Public Employees for Environmental Responsibility (PEER) through the Freedom of Information Act.³³ Ten allotments did not meet the standards, and an additional nine allotments were determination incomplete or insufficient data.³⁴ In late 2016, the BLM performed its own assessment of this rangeland health data and categorized two allotments more severely than PEER did, as not meeting the standards rather than as incomplete determination.³⁵ According to the BLM's 2016 assessment, one allotment meets Standards of Rangeland Health, 12 do not meet standards, and seven are not categorized either way. See Attachment A. Thus, the BLM has asserted recently that more than half of the grazing allotments involved in this lease sale do not meet Standards of Rangeland Health. This should have been disclosed and discussed in the REA's cumulative effects analysis.

³¹ Winter habitat in PHMA is presumed to be covered by the PHMA NSO stipulation (NV-B-16-A-NSO), provided exception to it is not granted. See REA at 144.

³² Standards of Rangeland Health "are expressions of physical and biological conditions required for sustaining rangelands for multiple uses." Mojave-Southern Great Basin RAC at 1. These standards inform grazing guidelines and the BLM's rangeland management.

³³ PEER reconciled and mapped the data, which is current through 2012. The map is available at <https://mangomap.com/pdl/maps/24736/blm-rangeland-health-standards-evaluation-data-2012-#>. Explanations of the data and how they were reconciled are available at https://www.peer.org/assets/docs/blm/About_the_Data.pdf and https://www.peer.org/assets/docs/blm/PEER_Classification_System_for_BLM_Land_Health_Standards_Datasets.pdf.

³⁴ In Public Employees for Environmental Responsibility's analysis of the BLM's data, the allotments that did not meet standards for rangeland health were Smoky, Arambel, Black Point, Diamond Springs, Fish Creek Ranch, JD, Kingston, Lucky C, North Diamond, and Romano. The allotments for which the determination of whether they met standards for rangelands health was incomplete were Nyala, Flynn/Parman, Millett Ranch, Nielson, Roberts Mountain, Trail Canyon, and Wildcat Station. The allotments with insufficient information were Shannon Station and Three Mile Trail.

³⁵ The BLM provided this information to Western Watersheds Project in April 2017 in response to a FOIA request. The datasheet is Attachment A and the FOIA transmittal letter, which shows what was requested, is Attachment B.

2. The Proposed Lease Sale Does not Comply with the 2015 Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendment (Sage-Grouse ARMPA)

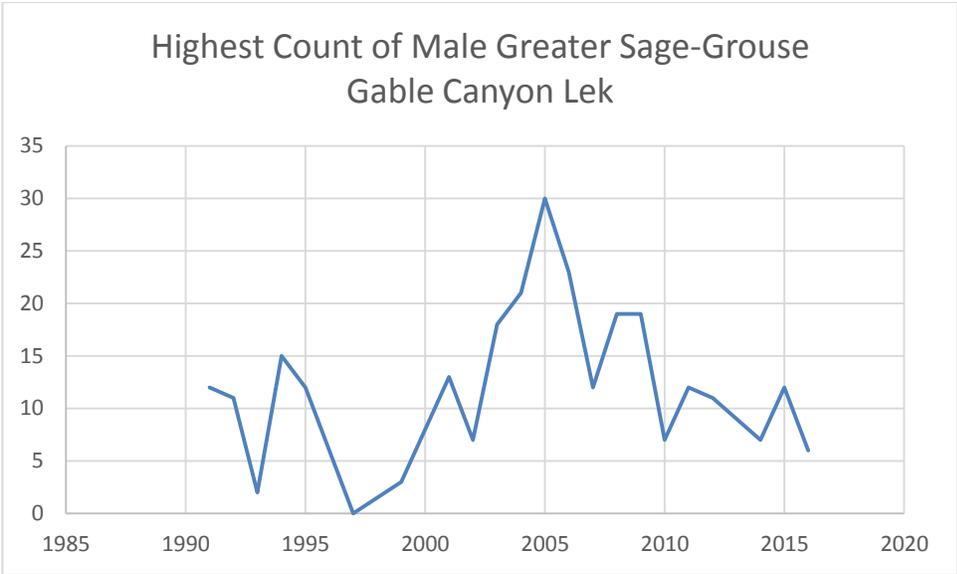
The REA's insistence that the Proposed Action complies with the 2015 Sage-Grouse ARMPA is incorrect. The Proposed Action does not comply with the 2015 Sage-Grouse ARMPA because BLM did not prioritize oil and gas development on sage-grouse non-habitat and habitat according to its own prior commitments. In fact the REA omits mention of the prioritization requirement altogether. Nevertheless, the Sage-Grouse ARMPA states, "Objective MR 1: Priority will be given to leasing and development of fluid mineral resources, including geothermal, outside of PHMAs and GHMAs. When analyzing leasing and authorizing development of fluid mineral resources, including geothermal, in PHMAs and GHMAs, that are subject to applicable stipulations for the conservation of GRSG, priority will be given to development in non-habitat areas first and then in the least suitable habitat for GRSG." ARMPA at 2-28. However, the REA states that the Proposed Action would offer sage-grouse habitat for leasing but offers no discussion of prioritization or evidence that it took place: "The Assessment Area includes several parcels having PHMA, GHMA and OHMA habitat mapped under the GRSG Plan Amendment as described under Regulatory Framework above. Review of the available data indicates that nesting, brooding, summer, and winter habitat occurs not only in PHMA and GHMA, but also in many areas of OHMA." EA at 56.

The Proposed Action's failure to prioritize GRSG non-habitat appears to result from a faulty decision that BLM made prior to publication of the Preliminary Environmental Assessment. In a November 2016 email, BLM requested input from NDOW about the proposed lease sale parcels. BLM flatly stated that no parcels would be removed from the lease sale for sage-grouse concerns: "We're instructed not to defer parcels based on sage-grouse concerns this year, but to apply the stipulations to PHMA, GHMA and OHMA from Appendix G (Fluid Minerals Stipulations) of the Approved Plan Amendment, as written." Attachment C, second email. In other words, BLM field office staff were instructed that when it came to sage-grouse, any parcels the industry nominated, industry could lease, despite the BLM's legal obligation to prioritize the leasing by non-habitat first and then by habitat quality and other characteristics after that.³⁶ Clearly, there was no prioritization process.

This lack of prioritization occurred despite direct requests from two expert wildlife agencies that wanted BLM to prioritize GRSG habitat and defer high-quality GRSG habitat. First, in its February 7, 2017 letter to BLM, the U.S. Fish and Wildlife Service (FWS) listed six lease parcels (34, 36, 37, 38, 39, 40) about which it had GRSG concerns, noting "Within 300 m of lek range/ *PHMA." FWS further encouraged BLM to "defer the higher priority habitats first" and stated, "[d]ue to the proximity of ESA-listed and sensitive species and their habitats to the proposed lease parcels, we request the above parcels, in addition to those parcels identified in the draft EA partial deferral alternative, be deferred as part of Alternative 2. Attachment D at 2-3.

³⁶ The Sage-Grouse ARMPA's requirement to prioritize GRSG non-habitat for leasing is not only stated in MR Objective 1, but it also appears in Table 1-6 (Key Components of the Nevada and Northeastern California GRSG ARMPA Addressing COT Report Threats). Sage-Grouse ARMPA at 1-10.

Second, Nevada Department of Wildlife (NDOW) also recommended some parcels be deferred because of sage-grouse concerns, even after BLM field office staff informed NDOW that BLM staff had been instructed not to defer for sage-grouse. In a December 8, 2016 email, NDOW recommended deferring parcels 38 and 39 “as the Gable Canyon lek is within 350 meters of both. Even with the major stipulations provided by the Land Use Plan Amendment for Sage-grouse, NDOW remains concerned about drilling activities in close proximity to leks.” Attachment E at 1.



The Gable Canyon lek chart above provides context for NDOW’s concerns. The chart shows a high count for GRSG males in 2015 (12) that is only 40% of the previous 10-year high count in 2005 (30) and only 80% of the 1994 high count (15). This decrease was not for want of survey effort in 2015. The dataset has counts for four different surveys in 2015 and only one survey each in 2005 and 1994.³⁷ Thus, NDOW’s concern about adding and gas development near this lek is understandable. Previous studies of oil and gas wells 1.9 to 4 miles from leks have demonstrated loss of breeding populations (Holloran 2005, Walker et al. 2007; Manier et al. 2014).

Besides not complying with the Sage-Grouse ARMPA, the Proposed Action’s lack of prioritization does not comply with the commitment to prioritization that BLM made in the Record of Decision and Approved Resource Management Plan Amendments for the Great Basin Region, Including the Greater Sage-Grouse Sub-Regions of Idaho and Southwestern Montana Nevada and Northeastern California, Oregon, Utah (Great Basin ROD). The Great Basin ROD explained why prioritization is necessary:

³⁷ We created this Gable Canyon lek observation chart from a dataset provided by NDOW in response to a Western Watersheds Project request. At the Gable Canyon lek, surveying effort increased over time. In more recent years that have multiple surveys (2010-2015), each year is represented in the chart by the survey with the highest count of GRSG males for that year. The NDOW dataset is Attachment G.

In addition to allocations that limit disturbance in PHMAs and GHMAs, the ARMPAs prioritize oil and gas leasing and development outside of identified PHMAs and GHMAs to further limit future surface disturbance and to encourage new development in areas that would not conflict with GRSG. This objective is intended to guide development to lower conflict areas and, as such, protect important habitat and reduce the time and cost associated with oil and gas leasing development. It would do this by avoiding sensitive areas, reducing the complexity of environmental review and analysis of potential impacts on sensitive species, and decreasing the need for compensatory mitigation.

Great Basin ROD at 1-23.

Furthermore, the Proposed Action does not follow the guidance that BLM developed to guide implementation of the Objective (IM 2016-143, Implementation of Greater Sage-Grouse Resource Management Plan Revisions or Amendments — Oil & Gas Leasing and Development Sequential Prioritization). BLM's IM 2016-143 sets out the methods by which BLM will prioritize leasing in and around Greater Sage Grouse habitat. The IM directs the agency to prioritize leasing in the following order:

1. Lands outside of GHMAs and PHMAs: BLM State Offices will first consider leasing EOIs for lands outside of PHMAs and GHMAs. These lands should be the first priority for leasing in any given lease sale.
2. Lands within GHMAs: BLM State Offices will consider EOIs for lands within the GHMAs, after considering lands outside of both GHMAs and PHMAs. When considering the GHMA lands for leasing, the BLM State Office will ensure that a decision to lease those lands would conform to the conservation objectives and provisions in the GRSG Plans (e.g., Stipulations).
3. Lands within PHMAs: BLM state offices will consider EOIs for lands within PHMAs after lands outside of GHMAs and PHMAs have been considered, and EOIs for lands within GHMA have been considered. When considering the PHMA lands for leasing, the BLM State Offices will ensure that a decision to lease those lands would conform to the conservation objectives and provisions in the GRSG Plans (e.g., Stipulations) including special consideration of any identified SFAs.

IM 2016-143 also identifies additional prioritization factors that BLM must consider. They are as follows:

Parcels immediately adjacent or proximate to existing oil and gas leases and development operations or other land use development should be more appropriate for consideration before parcels that are not near existing operations. This is the most important factor to consider, as the objective is to minimize disturbance footprints and preserve the integrity of habitat for conservation.

Parcels that are within existing Federal oil and gas units should be more appropriate for consideration than parcels not within existing Federal oil and gas units.

Parcels in areas with higher potential for development (for example, considering the oil and gas potential maps developed by the BLM for the GRSG Plans) are more appropriate for consideration than parcels with lower potential for development. The Authorized Officer may conclude that an area has "higher potential" based on all pertinent information, and is not limited to the Reasonable Foreseeable Development (RFD) potential maps from Plans analysis.

Parcels in areas of lower-value sage-grouse habitat or further away from important life-history habitat features (for example, distance from any active sage-grouse leks) are more appropriate for consideration than parcels in higher-value habitat or closer to important life-history habitat features (i.e. lek, nesting, winter range areas). At the time the leasing priority is determined, when leasing within GHMA or PHMA is considered, BLM should consider, first, areas determined to be non-sage-grouse habitat and then consider areas of lower value habitat.

Parcels within areas having completed field-development Environmental Impact Statements or Master Leasing Plans that allow for adequate site-specific mitigation and are in conformance with the objectives and provisions in the GRSG Plans may be more appropriate for consideration than parcels that have not been evaluated by the BLM in this manner.

Parcels within areas where law or regulation indicates that offering the lands for leasing is in the government's interest (such as in instances where there is drainage of Federal minerals, 43 CFR § 3162.2-2, or trespass drilling on unleased lands) will generally be considered more appropriate for leasing, but lease terms will include all appropriate conservation objectives and provisions from the GRSG Plans.

The REA fails to follow IM 2016-143's guidance in a number of ways. The IM clearly states that land outside of PHMA or GHMA will be considered first by the State Office, followed by GHMA, and finally PHMA. Although the Proposed Action would lease PHMA, GHMA and OHMA, the REA does not describe how it prioritized sage-grouse habitat or even acknowledge that prioritization is required under the Sage-Grouse ARMPA and Great Basin ROD. Second, the need for prioritization is validated by USFWS's and NDOW's requests that some parcels with sage-grouse habitat be deferred and others be managed as PHMA.³⁸ Third, the IM states that the "most important factor to consider" is proximity to existing oil and gas development, yet the REA does not discuss the locations of already developed wells or other oil and gas infrastructure in relation to the proposed lease parcels – if any. Fourth, the IM describes parcels within a Federal oil and gas unit or with higher development potential as more appropriate for development than those that are not. However, the REA does not state the parcels are within a Federal oil and gas unit, and other than one parcel located in Railroad Valley, the REA describes

³⁸ See Attachment E at 1, "Recommend managing as PHMA for sage-grouse. These parcels [58, 59 & 62] contain much of the remaining native habitat on Table Mountain." See also Attachment F at 1-2: "Managing this parcel [58] as sage-grouse PHMA is recommended. Like parcels 59 and 62 that were identified as PHMA, Parcel 58 contains much of the remaining native habitat on Table Mountain. While the USGS habitat model classifies the area as non-habitat, the actual, primary vegetation type is low sage. Further, our telemetry data shows sage-grouse using this area."

the potential for oil and gas exploration and production as low to moderate. EA at 20, 88, 224. Fifth, the IM states, “[p]arcel[s] in areas of lower-value sage-grouse habitat or further away from important life-history habitat features (for example, distance from any active sage-grouse leks) are more appropriate for consideration than parcels in higher-value habitat or closer to important life-history habitat features (i.e. lek, nesting, winter range areas).” As the REA and the comments from USFWS and NDOW make clear, multiple proposed lease sale parcels are located in higher-value sage-grouse habitat, but there is no evidence in the REA that BLM prioritized according to this factor.

Finally, it is puzzling that BLM did not prioritize sage-grouse habitat for this lease sale when it had already assigned priorities related to GRSG to the 20 grazing allotments that contain all or portions of the proposed lease parcels. In November 2016, in response to its legal obligation under the Sage-Grouse ARMPA, BLM assigned a priority to each of these 20 allotments, based on BLM’s assessment of their value to sage-grouse. First priority was assigned to the allotments BLM determined were highest value for sage-grouse and thus needed to have their grazing permits processed first. The allotments BLM determined were lowest value to sage-grouse were assigned processing priority four, with processing priorities two and three ranked in between. Of the 20 allotments that contain all or portions of parcels proposed for this lease sale, 2 were assigned priority one (JD, Smoky), 1 was assigned priority two (Roberts Mountain), 7 were assigned priority three (Black Point, Millett Ranch, Neilson, North Diamond, Nyala, Romano, Three-Mile) and 10 were assigned priority four (Arambel, Diamond Springs, Fish Creek Ranch, Flynn/Parman, Kingston, Lucky C, Ruby Hill, Shannon Station, Trail Canyon, Wildcat Canyon). *See* Attachment A and Attachment B. At the very least, these 2016 grazing permit prioritizations related to GRSG habitat should have been disclosed and discussed in the REA.

3. The EA Fails to Take a Hard Look at Foreseeable Significant Impacts to Mule Deer, Pronghorn, and Desert Bighorn Sheep Habitat and Populations

The Revised EA acknowledges that more than 52 parcels in the Big Smoky Valley and Mt. Lewis field office area will affect crucial winter range and migration corridors for mule deer:

Parcels 1 and 2 overlap crucial mule deer winter range as identified in the Tonopah RMP. The Shoshone-Eureka RMP does not delineate mule deer or pronghorn seasonal use areas, but NDOW identified muledeer crucial winter range, pronghorn crucial winter range, and/or mule deer movement corridors on more than 50 additional parcels in the Mt. Lewis Field Office area. The most recent published NDOW data set for these seasonal habitats is the 2014 NDOW Corporate Data Set (see lists in Appendix C.2).

Revised EA at 54. BLM’s analysis of impacts, however, is utterly absent, limited to the following conclusory statements:

Distribution of water is one of the most limiting factors for pronghorn and mule deer. Any adverse effects to these important springs and wetland areas could

influence populations of pronghorn and mule deer. Noise and human activities associated with oil and gas exploration or development without proper seasonal controls or other mitigation could also disturb or displace mule deer and pronghorn from crucial winter range or migration corridors, potentially limiting population numbers.

Revised EA at 58. The new Resource Protection Alternative would address these impacts through timing stipulations:

As compared to the Partial Deferral Alternative, this alternative would not offer as much protection from future exploration or development that could influence herd distribution and movement patterns, because all parcels would be available for lease sale immediately. However, Timing Limitation (TL) stipulations would be placed on parcels having crucial mule deer and pronghorn seasonal habitats. This would result in reduced disturbance from November through April, providing some benefit to wild horses because that period of time overlaps with foaling season, which starts by about March 1 (burros do not have defined foaling seasons). Several parcels subject to the TL stipulations intersect HMAs: parcels 42, 43, 44, 45, 48, 49, 67, 90 and 91, Fish Creek HMA; parcels 50 and 51, Whistler Mountain HMA; parcel 87, slightly intersecting Diamond HMA.

Revised EA at 69. Yet the EA contains no analysis or quantification whatsoever of how potential development will impact mule deer seasonal habitat use, migration corridor connectivity, or population levels. Moreover, the Nevada Division of Wildlife raised concerns with these parcels and recommended deferrals of parcels 42-43, 44-46, 47-49, 52-56, 61, 66, 67, 73 90-97, 104, and 105 due to mule deer crucial seasonal ranges.³⁹ BLM has apparently rejected that recommendation and instead relied on timing stipulations of proven ineffectiveness.

BLM's conclusory and unsupported assertions ignore significant new and additional research showing adverse effects to mule deer migrations and population from energy development, including in Colorado's Piceance Basin. It further fails to justify BLM's refusal to engage in actual site-specific assessment of effects on particular deer subpopulations, winter use areas, and/or migration corridors. Merely describing the "the *category* of impacts anticipated from oil and gas development" fails to meet NEPA's hard look requirement when it is reasonable for BLM to do more. *See New Mexico*, 565 F.3d at 707 (emphasis original). "NEPA does not permit an agency to remain oblivious to differing environmental impacts, or hide these from the public, simply because it understands the general type of impact likely to occur. Such a state of affairs would be anathema to NEPA's 'twin aims' of informed agency decisionmaking and public access to information." *Id.*

Research shows that residential and energy development has reduced all ungulates across the West. The low-elevation valleys and mountain foothills, once important habitat for ungulates,

³⁹ See Attachment E at 1.

are filled with cities and towns.⁴⁰ The same is true particularly on winter ranges.⁴¹ For example, between 1980 and 2010, western Colorado saw a 37% increase in residential land-use in mule deer habitat, primarily on their winter range.⁴² The resulting lack of high-quality winter range is limiting robust mule deer population growth.⁴³

A dearth of high-quality, long-term, and controlled studies makes it difficult to evaluate with precision the role of oil and gas development in mule deer habitat and population decline.⁴⁴ Clearly, mule deer demonstrate avoidance of roads and oil and gas infrastructure, with as-yet inadequately-understood consequences for migration, energy budgets, adult and fawn survival, and population.⁴⁵

Some of the best available long-term, controlled studies evaluate mule deer population density before and after oil and gas development in the Sublette mule deer herd near Pinedale, Wyoming.⁴⁶ The Sublette mule deer study compared mule deer density in control and development zones, and found mule deer densities declined 30% in the development area, as opposed to 10% in the control area.⁴⁷ Sawyer and Strickland found that “the observed decline of mule deer in the treatment area was likely due to gas development, rather than drought or other environmental factors that have affected the entire Sublette Herd unit.”⁴⁸

The Sublette example is particularly important when considering energy development’s effects on mule deer populations, their winter range, and their migration patterns in sagebrush habitats of the west. For example, even in its relatively early stages compared to Wyoming, the most recent spatial analysis of already-occurring effects on mule deer in western Colorado finds energy development has the second-largest effect on deer recruitment, exceeded only by residential development.⁴⁹

Most recently, Hall Sawyer and colleagues published their conclusions from seventeen years of telemetry data on mule deer exposed to energy development in the gas fields of Wyoming, and found that, despite the using of timing stipulations and other, more aggressive, mitigation measures, development of oil and gas infrastructure within seasonal habitat and migration corridors has massive and long-term adverse effects on mule deer population levels:

⁴⁰ Polfus, J. L., and P. R. Krausman. 2012. Impacts of residential development on ungulates in the Rocky Mountain West. *Wildlife Society Bulletin* 36:647-657.

⁴¹ Johnson, H.E., et al. 2016. Increases in residential and energy development are associated with reductions in recruitment for a large ungulate. *Global Change Biology*, doi: 10.1111/gcb.13385 (“Johnson et al. 2016”).

⁴² Johnson et al. 2016.

⁴³ Bergman, E. J., et al. 2015. Density dependence in mule deer: a review of evidence. *Wildlife Biology* 21:18-29; Johnson et al. 2016.

⁴⁴ Hebblewhite, Mark. 2011. *Effects of Energy Development on Ungulates*. Energy Development and Wildlife Conservation in Western North America 71-94. Island Press, Washington D.C.

⁴⁵ Hebblewhite 2011; Sawyer, H., et al. 2013. A framework for understanding semi-permeable barrier effects on migratory ungulates. *Journal of Applied Ecology* 2013:50, doi:10.1111/1365-2664.12013; Lendrum, P.E. et al. 2012. Habitat selection by mule deer during migration: effects of landscape structure and natural-gas development. *Ecosphere* 3(9):82.

⁴⁶ Sawyer, H., R. Nielson, and D. Strickland. 2009. *Sublette Mule Deer Study (Phase II): Final Report 2007*. Western Ecosystems Technology, Inc. Cheyenne, Wyoming, USA.

⁴⁷ *Id.*

⁴⁸ *Id.*

⁴⁹ Johnson et al. 2016.

Mule deer consistently avoided energy infrastructure through the 15-year period of development and used habitats that were an average of 913 m further from well pads compared with predevelopment patterns of habitat use. Even during the last 3 years of study, when most wells were in production and reclamation efforts underway, mule deer remained >1 km away from well pads. The magnitude of avoidance behavior, however, was mediated by winter severity, where aversion to well pads decreased as winter severity increased. Mule deer abundance declined by 36% during the development period, despite aggressive onsite mitigation efforts (e.g. directional drilling and liquid gathering systems) and a 45% reduction in deer harvest. Our results indicate behavioral effects of energy development on mule deer are long term and may affect population abundance by displacing animals and thereby functionally reducing the amount of available habitat.⁵⁰

Although the precise connections between energy development and population-level effects are still imperfectly understood, it is demonstrated that oil and gas development affects mule deer habitat use and migration patterns by causing site avoidance, particularly in daytime,⁵¹ and creating “semi-permeable” barriers to migration routes.⁵² CPW is currently engaged in multiple research efforts to evaluate energy development effects on migration, deer response to energy development, and fawn survival in developed and undeveloped areas.⁵³ Those studies have thus far documented how individual deer alter their migration speed and timing in response to development.⁵⁴ A 2015 Wildlife Research Report published by CPW found that, during an active drilling phase in the Piceance Basin, deer behavior was compromised by 25% (at nighttime) and by 50% (during day time) in critical mule deer winter range.⁵⁵

In addition, it is well-documented that human development causes direct habitat loss and fragmentation through the construction of infrastructure, and indirect habitat loss through deer avoidance of infrastructure and related activities; these consequences likely reduce the carrying capacity of the landscape.⁵⁶ A recent study shows that oil and gas development causes significant habitat loss in the Piceance Basin of Colorado: Energy development drove considerable alterations to deer habitat selection patterns, with the most substantial impacts manifested as avoidance of well pads with active drilling to a distance of at least 800 m. Deer displayed more nuanced responses to other

⁵⁰ Sawyer, Hall et al., Mule Deer and Energy Development—Long-term trends of habituation and abundance, *Global Change Biology* 2017:1-9, available at <http://onlinelibrary.wiley.com/doi/10.1111/gcb.13711/epdf>.

⁵¹ Lendrum 2012.

⁵² Sawyer et al 2013.

⁵³ Anderson, C. R. 2015. Population Performance of Piceance Basin Mule Deer in Response to Natural Gas Resource Extraction and Mitigation Efforts to Address Human Activity and Habitat Degradation. in C. D. o. P. a. Wildlife, editor., Colorado (“Anderson 2015”); Anderson, C.R. 2016.; Anderson, C.R. and Bishop, C.J. 2014. Migration Patterns of Adult Female Mule Deer in Response to Energy Development. *Transactions of the 79th North American Wildlife and Natural Resources Conference* 47-50; Lendrum, P.E., et al. 2013. Migrating Mule Deer: Effects of Anthropogenically Altered Landscapes. *PlosOne*, 8:5:e64548.

⁵⁴ Lendrum 2012; Lendrum et al. 2013.

⁵⁵ Anderson 2015.

⁵⁶ Johnson et al. 2016.

infrastructure, avoiding pads with active production and roads to a greater degree during the day than night. In aggregate, these responses equate to alteration of behavior by human development in over 50% of the critical winter range in our study area during the day and over 25% at night.⁵⁷

Additionally, mule deer may suffer higher mortality rates in developed landscapes because of increased vehicle collisions and accidents (i.e., entrapment in fences); moreover, increased road densities expose mule deer to more hunters, poachers and predatory domestic pets.⁵⁸

Mule deer also need migration corridors that are protected from human development. An ongoing mule deer study by members of the Wyoming Migration Initiative has found that mule deer migration patterns are altered by human development – herds will move faster, stop less to feed, and detour around developed portions of their route.⁵⁹ Moreover, herds that can't migrate in search of the most nutritious grasses just end up smaller in number, plain and simple.⁶⁰ As a result, Wyoming Game and Fish Department is working to further protect migration routes in the state, for instance, no more than four oil and gas well pads allowed in a migration corridor and no development allowed in corridors narrower than a quarter mile.

Despite the substantial evidence and concern regarding development effects on mule deer migration and behavior, the EA fails to provide any disclosure or analysis whatsoever of migration routes that may be affected by development on the proposed leases. Importantly, none of the proposed lease parcel stipulations for protecting big game habitat, however, limit the density of development or obstruction of migration routes, but only limit timing. Thus, BLM cannot assume that the added stipulations in the new preferred alternative will eliminate impacts to mule deer behavior, distribution, survival and population.

Finally, the BLM should take into account new information indicating that sagebrush—which wintering mule deer are highly dependent on—is nearly impossible to restore, such that fragmentation of sagebrush communities from oil and gas development is likely to be permanent and reclamation ineffective. Recent studies show that sagebrush communities, such as those found within the areas to be leased, are nearly impossible to restore. Drilling sites have not been restored to pre-drilling conditions even after having 20 or 50 years to recover.⁶¹ A recent study found that 50 years or more would be required to recover sagebrush on disturbed sites, and that restoring heterogeneous soil conditions

⁵⁷ Northrup, J. M. et al. Quantifying spatial habitat loss from hydrocarbon development through assessing habitat selection patterns of mule deer, *Global Change Biology* (Aug. 2015), available at <http://onlinelibrary.wiley.com/doi/10.1111/gcb.13037/epdf>.

⁵⁸ Johnson et al. 2016.

⁵⁹ Sawyer 2013.

⁶⁰ Edwards, M., Mule Deer Struggling To “Surf The Green Wave” Of Migration (Nov. 20, 2015) available at <http://wyomingpublicmedia.org/post/mule-deer-struggling-surf-green-wave-migration>.

⁶¹ Lester, Liza, Sagebrush Ecosystem Recovery Hobbled By Loss Of Soil Complexity At Development Sites, *Ecological Society of America* (Jan. 26, 2015), available at <http://www.esa.org/esa/sagebrush-ecosystem-recovery-hobbled-by-loss-of-soil-complexity-at-development-sites/>.

with patchy nutrient conditions, was necessary for recovery of large sagebrush and ecosystem resiliency.⁶² There is no evidence, however, that any measures required by the RMP-EISs here ensure attainment of these conditions. Thus, oil and gas development could have more significant effects on mule deer and other big game than previously anticipated in the RMP-EISs, but those impacts have not been analyzed in the EA. *See* IM 2010-117 (directing site-specific analysis of whether “[t]he topographic, soils, and hydrologic properties of the surface will not allow successful final landform restoration and revegetation in conformance with the standards found in Chapter 6 of the Gold Book, as revised”).

B. BLM’s Proposed Decision and FONSI Are Arbitrary and Capricious Because they Bear No Reasonable Relationship to a Legitimate Purpose or Need

BLM identifies the “purpose and need” for its action as follows:

Oil and gas leasing is necessary to provide oil and gas companies with new areas to explore and potentially develop. Leasing is authorized under the Mineral Leasing Act of 1920, as amended and modified by subsequent legislation, and regulations found at 43 CFR part 3100. Oil and gas leasing is recognized as an acceptable use of the public lands under FLPMA. BLM authority for leasing public mineral estate for the development of energy resources, including oil and gas, is described in 43 CFR 3160.0-3.

Revised EA at 8. The mere fact that oil and gas is an “acceptable” use of the public lands, however, does not mean that BLM is obligated to lease two hundred thousand acres of Nevada public lands, much of it bearing significant non-mineral resources values, in the absence of any significant existing production or interest in the area or reasonable basis to believe the leasing is necessary. Oil and gas companies already have massive areas of public land at their disposal to “explore and potentially develop” in Nevada, but have shown very little interest in actually doing so. In June 2016, BLM offered some 74,662 acres for lease in the Battle Mountain district, and only 3764 acres received bids at all, mostly for bids of \$2-4 per acre.⁶³ Another 13,353 acres have since sold noncompetitively at the minimum price of \$1.50/acre.⁶⁴ As the EA acknowledges, actual development activity within the area has been negligible, and the BLM has previously greatly overestimated the industry’s interest in drilling in the Mount Lewis Field Office area in particular:

The majority of the nominated lease sale parcels are located in the MLFO area: 96 parcels totaling approximately 179,331 acres, or 92% of the total nominated acreage.

⁶² *Id.*; Minnick, Tamara J., Plant–soil feedbacks and the partial recovery of soil spatial patterns on abandoned well pads in a sagebrush shrubland. *Ecological Applications*, 25(1), 2015, pp. 3–10, available at <http://onlinelibrary.wiley.com/doi/10.1890/13-1698.1/full>.

⁶³ https://edit.blm.gov/sites/blm.gov/files/uploads/NV_OG_BMDO_Sale_Competitive_Results_20160614.pdf

⁶⁴ https://edit.blm.gov/sites/blm.gov/files/uploads/NV_OG_BMDO_Sale_NonCompetitive_Results_20160614.pdf

According to the 2006 EA for Oil and Gas Leasing and the 2008 EA for Oil and Gas Leasing within the Western Portion of the Shoshone-Eureka Assessment Area, the overall potential for oil and gas exploration and development in this area has been previously determined to be low to moderate. The western portion of the Assessment Area was considered to have a lower potential when compared to that of the eastern portion. The eastern portion of the Shoshone-Eureka Assessment Area was considered to have moderate potential because it is located on a strike between Pine Valley and Railroad Valley, the two major production areas in the State; and the geologic setting is similar to those areas. The RFDs for these EAs estimated a total surface disturbance associated with oil and gas exploration/production of approximately 680 acres for the entire MLFO Assessment Area, which constitutes 4.5 million acres.

Compared to actual acres of disturbance associated with oil and gas exploration/production within the MLFO during the projected period described below, those RFDs overestimated the amount of surface disturbance. While oil and gas interest has increased over the last 25 years in the MLFO area, very few exploratory wells have been drilled; an average of less than one exploration well was drilled per year between the years of 1980 and 2003. Exploration interest since this time has focused on the eastern portion of the MLFO, specifically in Eureka County, which is consistent with the geologic potential of the area. Since 2003, there have only been four exploration wells authorized in the MLFO. The last of these was drilled in 2013. All four wells have since been plugged. The potential for oil and gas exploration and production in the MLFO can also be considered low. Conservatively, over the next ten years, based on previous and anticipated activity and interest, about 5 exploration wells and 15-25 acres of surface disturbance associated with oil and gas exploration/production activity could be expected to occur in the MLFO, again estimating 3.3 acres disturbance per well (16.5 acres) and allowing for a range of variation

Revised EA at 20. Moreover, the EA acknowledges, that given the additional lands already available and the low levels of current activity, the economic effects of either the proposed action or the partial deferral alternative are likely to be identical, and “the impacts described above would occur on other leased parcels in the Battle Mountain District.” Revised EA at 92. In light of the large areas already under lease or available for noncompetitive lease in Nevada, coupled with the low level of current drilling interest and BLM’s acknowledgment of essentially identical economic activity with or without issuance of these leases, BLM’s ostensible “purpose and need” offers no reasonable justification for why the BLM should be offering hundreds of thousands of acres for speculative oil and gas acquisition. Indeed, BLM’s apparent urgency in leasing, even prior to revision of the 1986 and 1997 RMPs, would appear to be against the public interest in encouraging competitive bidding and maximizing return, given that prior leases offered (and still available) in the area have generally failed to garner any competitive bids.

C. BLM’s Final EA Violates NEPA By Recommending Adoption of a New Alternative Not Previously Disclosed Or Considered

In the Draft EA, BLM recommended a “Partial Deferral Alternative” for approximately half of the affected area, based on the fact that the relevant Resource Management Plans has last been evaluated in 1986 and 1997, and failed to consider numerous significant developments (including hydraulic fracturing and potential effects on ground and surface waters):

The Tonopah and Shoshone-Eureka RMPs, approved in 1986 and 1997 respectively, are scheduled to be replaced with a single updated RMP for the Battle Mountain District which would allow management to reflect the changing needs of the planning area. The process of developing the updated RMP was begun in 2010 and temporarily suspended while the GRSG Plan Amendment (see Section 1.3) was under development, to ensure that the RMP would be consistent with the extensive management direction it provides. The Battle Mountain District anticipates resuming the RMP update in 2017.

Draft EA at 12. The Revised EA instead adopts as proposed alternative an “Additional Resource Protection Alternative”: “Instead of deferring some parcels and parts of parcels from lease sale pending a future RMP update, new stipulations would be created and applied immediately to the same parcels (entire parcels) via this EA process. Additional parcels with important wildlife habitats would also have appropriate stipulations applied (Appendix C.2).” Revised EA at 2.

The last-minute addition, and presumptive adoption, of the “Additional Resource Protection Alternative,” violates NEPA for two primary reasons. First, by adding an entirely new alternative at the last minute without and opportunity for public comment or agency decisionmaker consideration of such comment, it violates NEPA’s requirement to involve the public at the earliest possible opportunity. Second, as discussed in greater detail above, the Revised EA contains no substantive or site-specific analysis of the degree to which the added stipulations will or will not actually be effective at reducing adverse impacts to the resources in question, including ground and surface waters, steep slopes, and mule deer habitat.

D. BLM Has Failed to Consider Impacts to Endangered and Threatened Species and to Insure that Its Action Will Not Jeopardize their Continued Existence

BLM’s Revised EA acknowledges the presence in the Battle Mountain district of numerous listed (endangered, threatened, and candidate) species that may be affected by the proposed action, including:

Ash Meadows Milk-Vetch (*Astragalus phoenix*); Spring-loving Centaury (*Centarium namophilum*); Ash Meadow Sunray (*Encelioopsis nudicaulis var. corrugate*); Ash Meadows Gumplant (*Grindelia fraxinipratensis*); Ash Meadows Ivesia (*Ivesia kingii var. eremica*); Ash Meadow Blazingstar (*Mentzelia leucophylla*); Armagosa Niterwort (*Nitrophila mohavensis*); Whitebark Pine (*Pinus albicaulis*); Ash Meadow Naucorid (*Ambryus amargosus*); Yellow-billed cuckoo (*Coccyzus americanus*); Yuma clapper rail (*Rallus longirostris yumanensis*); Desert Tortoise (*Gopherus agassizii*); Sierra Nevada Yellow-legged Frog (*Rana sierra*); White River Springfish (*Crenichthys baileyi baileyi*); Hiko White River Springfish (*Crenichthys baileyi grandis*); Railroad Valley Springfish (*Crenichthys nevadae*); Devils Hole Pupfish (*Cyprinodon diabolis*); Ash Meadows Amargosa Pupfish (*Cyprinodon nevadadensis mionectes*); Warm Springs Pupfish (*Cyprinodon nevadadensis pectoralis*); White River Spinedace (*Lepidomeda albivallis*); Lahontan Cutthroat Trout (*Oncorhynchus clarkii henshawi*); Ash Meadow Speckled

Dace (*Rhinichthys osculus nevadadensis*); and North American Wolverine (*Gulo gulo luscus*).⁶⁵ The EA and proposed FONSI, however, illegally forego any consideration or analysis of the effects of oil and gas drilling and development on these affected species by deferring those required analyses to the permitting stage. BLM acknowledges in the Revised EA numerous adverse impacts, particularly from effects to water and wetlands, but illegally assumes that those impacts can and will be mitigated at a later stage:

Fish species of conservation concern could be seriously impacted by any impact to water quality or quantity in the springs they occupy. Big Smoky Valley tui chub and speckled dace would be especially vulnerable as they occupy habitat on proposed lease parcels.

Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*), an ESA-listed Threatened species, occurs in Pete Hanson Creek which terminates in Parcel 37. Although upstream habitat is not usually connected by perennial flow with Parcel 37, USFWS expressed concern that the fish could potentially move into the parcel via intermittent stream channels that fill during high flow events. On March 27 2017, the BLM wildlife biologist and surface water hydrologist conducted a site visit to Pete Hansen Creek's lower reaches on Parcel 37. They confirmed that the stream channel on the parcel carries only intermittent water flows; and concluded that this reach of Pete Hanson Creek is not capable of providing suitable habitat for Lahontan cutthroat trout, even in the event of unusually heavy flow that could convey the trout from its normal habitat which is several miles upstream. The channel geomorphology is poorly-incised, and surrounded by a broad, flat floodplain composed of fine-grained materials. In moderate floods, the floodwaters would spread across the floodplain as a shallow sheet, creating a poor environment for Lahontan cutthroat trout. For larger floods, the flow in the floodplain may be deep enough to convey the trout, but the fine-grained sediment would be brought into suspension and degrade water quality. However, if exploration and development are proposed on the parcel, wetlands resources on and near the parcel would be provided with appropriate protection at that time.

Amphibian species of concern within Big Smoky Valley include Columbia spotted frog, western toad, chorus frog, and Great Basin spadefoot. These frogs remain close to vital ephemeral aquatic habitats since they provide excellent mating, breeding, and hibernation grounds. Seeps and springs found in Big Smoky Valley provide essential habitat for these species and impacts to these water sources could impact local population levels of these frogs.

Revised EA at 57-58. Furthermore, the Fish and Wildlife Service has specifically identified as the proposed leasing area as affecting a potential metapopulation for Lahontan cutthroat trout, and expressly requested consultation under Section 7:

⁶⁵ Revised EA, Appendix D.

The proposed project is located within a potential metapopulation for LCT, and as such, the area may be necessary for the species' recovery. The Humboldt Geographic Management Unit (GMU) team has been formed to facilitate the restoration and recovery of LCT populations in this area. Although a self-sustaining population of LCT may not currently be present in the project area, under the ESA, completed projects should not preclude future recovery and survival of this species. We recommend that projects be reviewed for all direct and indirect impacts that they may have on riparian and aquatic habitats as they relate to LCT, and that the BLM consult with the Service accordingly under Section 7 of the ESA.

FWS Comments at 3.⁶⁶ BLM has apparently declined to do so.

BLM's refusal to consult with the Fish and Wildlife Service regarding impacts to listed species including the Lahontan cutthroat trout prior to leasing violates Section 7 of the Endangered Species Act. The EA reveals the presence of numerous threatened, endangered, and sensitive species and their critical habitat within the areas proposed for leasing, but fails to provide any meaningful information regarding potential effects. BLM must not only evaluate the indirect and cumulative effects on special status species under NEPA, it must also (a) consult with the Fish and Wildlife Service under Section 7 regarding the effects of oil and gas development and water use on listed species and critical habitat, and (b) evaluate the effects on sensitive species under its own sensitive species policy.

Congress enacted the Endangered Species Act (ESA) in 1973 to provide for the conservation of endangered and threatened fish, wildlife, plants and their natural habitats. 16 U.S.C. § 1531, 1532. The ESA imposes substantive and procedural obligations on all federal agencies with regard to listed and proposed species and their critical habitats. *See id.* §§ 1536(a)(1), (a)(2) and (a)(4) and § 1538(a); 50 C.F.R. § 402. Under section 7 of the ESA, federal agencies must "insure that any action authorized, funded, or carried out by such agency ... is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined ... to be critical." 16 U.S.C. § 1536(a)(2).

The definition of agency "action" is broad and includes "all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies," including programmatic actions. 50 C.F.R. § 402.02. Likewise, the "action area" includes "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." *Id.*

The duties in ESA section 7 are only fulfilled by an agency's satisfaction of the consultation requirements that are set forth in the implementing regulations for section 7 of the ESA, and only after the agency lawfully complies with these requirements may an action that "may affect" a protected species go forward. *Pac. Rivers Council v. Thomas*, 30 F.3d 1050, 1055-57 (9th Cir. 1994). The action agency must initially prepare a biological assessment (BA)

⁶⁶ Attachment D at 3.

to “evaluate the potential effects of the proposed action” on listed species. 50 C.F.R. § 402.12. If the action agency concludes that the proposed action is “not likely to adversely affect” a listed species that occurs in the action area, the Service must concur in writing with this determination. *Id.* §§ 402.13(a) and 402.14(b). If the Service concurs in this determination, then formal consultation is not required. *Id.* § 402.13(a). If the Service’s concurrence in a “not likely to adversely affect” finding is inconsistent with the best available data, however, any such concurrence must be set aside. *See id.* § 402.14(g)(8); 5 U.S.C. § 706(2). If the action agency concludes that an action is “likely to adversely affect” listed species or critical habitat, it must enter into “formal consultation” with the Service. 50 C.F.R. §§ 402.12(k), 402.14(a). The threshold for triggering the formal consultation requirement is “very low”; indeed, “any possible effect ... triggers formal consultation requirements.”⁶⁷

Formal consultation commences with the action agency’s written request for consultation and concludes with the Service’s issuance of a “biological opinion.” 50 C.F.R. § 402.02. The biological opinion states the Service’s opinion as to whether the effects of the action are “likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat.” *Id.* § 402.14(g)(4).⁶⁸ When conducting formal consultation, the Service and the action agency must evaluate the “effects of the action,” including all direct and indirect effects of the proposed action, plus the effects of actions that are interrelated or interdependent, added to all existing environmental conditions – that is, the “environmental baseline.” *Id.* §§ 402.14 and 402.02. The environmental baseline includes the past and present impacts of all Federal, state, and private actions and other human activities in the action area....”*Id.* The effects of the action must be considered together with “cumulative effects,” which are “those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation.” *Id.*

If the Service concludes in a biological opinion that jeopardy is likely to occur, it must prescribe “reasonable and prudent alternatives” to avoid jeopardy. *Id.* § 402.14(h)(3). If the Service concludes that a project is not likely to jeopardize listed species, it must nevertheless provide an incidental take statement (ITS) with the biological opinion, specifying the amount or extent of take that is incidental to the action (but which would otherwise be prohibited under Section 9 of the ESA), “reasonable and prudent measures” (RPMs) necessary or appropriate to minimize such take, and the “terms and conditions” that must be complied with by the action agency to implement any reasonable and prudent measures. 16 U.S.C. § 1536(b)(4); 50 C.F.R. § 402.14(i).

The ESA requires federal agencies to use the best scientific and commercial data available when consulting about whether federal actions will jeopardize listed species. *See* 16 U.S.C. § 1536(a)(2). Accordingly, an action agency must “provide the Service with the best scientific and commercial data available or which can be obtained during the consultation for an adequate review of the effects that an action may have upon listed species of critical habitat.” 50

⁶⁷ *See* Interagency Cooperation Under the Endangered Species Act, 51 Fed. Reg. 19,926 (June 3 1996).

⁶⁸ To “jeopardize the continued existence of” means “to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species.” *Id.* § 402.02.

C.F.R. § 402.14(d). Likewise, “[i]n formulating its biological opinion...the Service will use the best scientific and commercial data available.” *Id.* § 402.14(g)(8). However, if the action agency failed “to discuss information that would undercut the opinion’s conclusions,” the biological opinion is legally flawed, and the ITS will not insulate the agency from ESA Section 9 liability. *See Ctr. for Biological Diversity v. BLM*, 698 F.3d 1101, 1127-28 (9th Cir. 2012).

Section 7(d) of the ESA provides that once a federal agency initiates consultation on an action under the ESA, the agency, as well as any applicant for a federal permit, “shall not make any irreversible or irretrievable commitment of resources with respect to the agency action which has the effect of foreclosing the formulation or implementation of any reasonable and prudent alternative measures which would not violate subsection (a)(2) of this section.” 16 U.S.C. § 1536(d). The purpose of section 7(d) is to maintain the environmental status quo pending the completion of consultation. Section 7(d) prohibitions remain in effect throughout the consultation period and until the federal agency has satisfied its obligations under section 7(a)(2) that the action will not result in jeopardy to listed species or adverse modification of critical habitat.

BLM must use the existing available data to identify which sensitive species that are of critical concern with regards to the lands included in, or in immediate proximity to, the proposed sale parcels. BLM’s EIS must disclose any potential direct, indirect or cumulative impacts to such species, including the lahontan cutthroat trout.

In addition, BLM must consult with the Service regarding the impacts of the lease sale on affected listed species, in compliance with its section 7 obligations under the ESA. To the extent that BLM relies on its section 7 programmatic consultations for the several management plans governing the lease sale, that reliance is not proper for any of the listed species affected by BLM’s action. The potential for fracking and horizontal drilling and its associated impacts within the planning area constitutes “new information reveal[ing] effects of the [RMPs] that may affect listed species or critical habitat in a manner or to an extent not previously considered [in the prior section 7 programmatic consultations].” 50 CFR § 402.16(b). BLM must therefore reinitiate consultation on all of the planning documents for these areas. In any case, it must formally consult over the lease sale’s potential adverse effects on listed species and consider the full scope of fracking and other drilling activities that could affect these species.

F. BLM Has Failed to Consider Climate Impacts or Analyze Reasonable Alternatives to Mitigate Those Impacts

As discussed in the Center’s previous comment letters, as well as comments on the preliminary EA, BLM argues that it is required by law to “required by law to consider leasing of areas that have been nominated for lease if leasing is in conformance with the applicable BLM land use plan, in this case the Tonopah RMP (Tonopah Field Office), approved in 1997, or the Shoshone Eureka RMP (Mt. Lewis Field Office), approved in 1986.”⁶⁹ However, as BLM states and we agree, “[i]f there are known resource conflicts that cannot be addressed using a stipulation, then the parcel may be deferred until the known resource conflict is resolved.” In this

⁶⁹ EA at 8.

case, BLM has already demonstrated and exercised its authority to ban leasing by permanently removing from future lease sales several parcels due to resource conflicts.⁷⁰ In our comment letter we raised several more conflicts that require these parcels be deferred until such conflicts are resolved.

For one, and as we have already explained, climate change is a problem of global proportions resulting from the cumulative greenhouse gas emissions of countless individual sources. A comprehensive look at the impacts of fossil fuel extraction, and especially fracking, across all of the planning areas affected by the leases in updated RMPs is absolutely necessary. BLM has *never* thoroughly considered the cumulative climate change impacts of *all* potential fossil fuel extraction and fracking (1) within each of the planning areas, (2) across the state, and (3) across all public lands. Proceeding with new leasing proposals *ad hoc* in the absence of a comprehensive plan that addresses climate change and fracking is premature and risks irreversible damage before the agency and public have had the opportunity to weigh the full costs of oil and gas and other fossil fuel extraction and consider necessary limits on such activities. Therefore BLM must defer all new leasing at least until the issue is adequately analyzed in a programmatic review of all U.S. fossil fuel leasing, or at least within amended RMPs. BLM's argument, in response to our comments, that a permanent cessation of leasing would require RMP amendment beyond the scope of the leasing decision ignores the established principle that agencies are obligated to consider all reasonable alternatives. Considering a no-leasing alternative would allow the agency to preserve the status quo and avoid irretrievable commitment of resources until such time as it can consider the regional and national impacts of fossil fuel leasing and undertake appropriate land use plan amendments or other actions.

i. Federal Fossil Fuel Leasing and Production Contributes Significantly to Adverse Impacts of Climate Change

Expansion of fossil fuel production will substantially increase the volume of greenhouse gases emitted into the atmosphere and jeopardize the environment and the health and well being of future generations. BLM's mandate to ensure "harmonious and coordinated management of the various resources *without permanent impairment of the productivity of the land and the quality of the environment*" requires BLM to limit the climate change effects of its actions.⁷¹ Keeping all unleased fossil fuels in the ground and banning fracking and other unconventional well stimulation methods would lock away millions of tons of greenhouse gas pollution and limit the destructive effects of these practices. Specifically, BLM's consideration of large-scale leasing in previously undeveloped areas of Nevada threatens to significantly increase oil and gas reserves and resulting emissions, but BLM has improperly evaded meaningful consideration of those impacts.

BLM must consider an alternative ending new public lands fossil fuel leasing and fracking is in the interest of meeting the U.S.'s greenhouse gas reduction commitments. On December 12, 2015, 197 nation-state and supra-national organization parties meeting in Paris at

⁷⁰ EA at 14.

⁷¹ See 43 U.S.C. §§ 1701(a)(7), 1702(c), 1712(c)(1), 1732(a) (emphasis added); see also *id.* § 1732(b) (directing Secretary to take any action to "prevent unnecessary or undue degradation" of the public lands).

the 2015 United Nations Framework Convention on Climate Change Conference of the Parties consented to an agreement (Paris Agreement) committing its parties to take action so as to avoid dangerous climate change.⁷² The Paris Agreement commits the United States to critical goals—both binding and aspirational—that mandate bold action on the United States’ domestic policy to rapidly reduce greenhouse gas emissions.⁷³

The United States and other parties to the Paris Agreement recognized “the need for an effective and progressive response to the urgent threat of climate change on the basis of the best available scientific knowledge.”⁷⁴ The Paris Agreement articulates the practical steps necessary to obtain its goals: parties including the United States have to “reach global peaking of greenhouse gas emissions *as soon as possible* . . . and to *undertake rapid reductions* thereafter in accordance *with best available science*,”⁷⁵ imperatively commanding that developed countries specifically “should continue taking the lead by undertaking economy-wide absolute emission reduction targets”⁷⁶ and that such actions reflect the “highest possible ambition.”⁷⁷

The Paris Agreement codifies the international consensus that climate change is an “urgent threat” of global concern,⁷⁸ and commits all signatories to achieving a set of global goals. Importantly, the Paris Agreement commits all signatories to an articulated target to hold the long-term global average temperature “to *well below 2°C* above pre-industrial levels and to *pursue efforts to limit the temperature increase to 1.5°C* above pre-industrial levels”⁷⁹ (emphasis added).

In light of the severe threats posed by even limited global warming, the Paris Agreement established the international goal of limiting global warming to 1.5°C above pre-industrial levels in order to “prevent dangerous anthropogenic interference with the climate system,” as set forth in the UNFCCC, a treaty which the United States has ratified and to which it is bound.⁸⁰ The Paris consensus on a 1.5°C warming goal reflects the findings of the IPCC and numerous scientific studies that indicate that 2°C warming would exceed thresholds for severe, extremely dangerous, and potentially irreversible impacts.⁸¹ Those impacts include increased global food and water insecurity, the inundation of coastal regions and small island nations by sea level rise

⁷² U.N. Framework Convention on Climate Change, Paris Agreement (“Paris Agreement”), Art. 2.

⁷³ Although not every provision in the Paris Agreement is legally binding or enforceable, the U.S. and all parties are committed to perform the treaty commitments in good faith under the international legal principle of *pacta sunt servanda* (“agreements must be kept”). Vienna Convention on the Law of Treaties, Art. 26.

⁷⁴ *Id.*, Recitals.

⁷⁵ *Id.*, Art. 4(1).

⁷⁶ *Id.*, Art. 4(4).

⁷⁷ *Id.*, Art. 4(3).

⁷⁸ *Id.*, Recitals.

⁷⁹ *Id.*, Art. 2.

⁸⁰ See U.N. Framework Convention on Climate Change, Cancun Agreement. Available at <http://cancun.unfccc.int/> (last visited Jan 7, 2015); United Nations Framework Convention on Climate Change, Copenhagen Accord. Available at http://unfccc.int/meetings/copenhagen_dec_2009/items/5262.php (last accessed Jan 7, 2015). The United States Senate ratified the UNFCCC on October 7, 1992. See <https://www.congress.gov/treaty-document/102nd-congress/38>.

⁸¹ See Paris Agreement, Art. 2(1)(a); U; U.N. Framework Convention on Climate Change, Subsidiary Body for Scientific and Technical Advice, Report on the structured expert dialogue on the 2013-15 review, No. FCCC/SB/2015/INF.1 at 15-16 (June 2015); IPCC AR5 Synthesis Report at 65 & Box 2.4.

and increasing storm surge, complete loss of Arctic summer sea ice, irreversible melting of the Greenland ice sheet, increased extinction risk for at least 20-30% of species on Earth, dieback of the Amazon rainforest, and “rapid and terminal” declines of coral reefs worldwide.⁸² As scientists noted, the impacts associated with 2°C temperature rise have been “revised upwards, sufficiently so that 2°C now more appropriately represents the threshold between ‘dangerous’ and ‘extremely dangerous’ climate change.”⁸³ Consequently, a target of 1.5 °C or less temperature rise is now seen as essential to avoid dangerous climate change and has largely supplanted the 2°C target that had been the focus of most climate literature until recently.

Immediate and aggressive greenhouse gas emissions reductions are necessary to keep warming below a 1.5° or 2°C rise above pre-industrial levels. Put simply, there is only a finite amount of CO₂ that can be released into the atmosphere without rendering the goal of meeting the 1.5°C target virtually impossible. A slightly larger amount could be burned before meeting a 2°C became an impossibility. Globally, fossil fuel reserves, if all were extracted and burned, would release enough CO₂ to exceed this limit several times over.⁸⁴

The question of what amount of fossil fuels can be extracted and burned without negating a realistic chance of meeting a 1.5 or 2°C target is relatively easy to answer, even if the answer is framed in probabilities and ranges. The IPCC Fifth Assessment Report and other expert assessments have established global carbon budgets, or the total amount of remaining carbon that can be burned while maintain some probability of staying below a given temperature target. According to the IPCC, total cumulative anthropogenic emissions of CO₂ must remain below about 1,000 gigatonnes (GtCO₂) from 2011 onward for a 66% probability of limiting warming to 2°C above pre-industrial levels.⁸⁵ Given more than 100 GtCO₂ have been emitted since 2011,⁸⁶ the remaining portion of the budget under this scenario is well below 900 GtCO₂. To have an

⁸² See Jones, C. et al, Committed Terrestrial Ecosystem Changes due to Climate Change, 2 Nature Geoscience 484, 484–487 (2009); Smith, J. B. *et al.*, Assessing Dangerous Climate Change Through an Update of the Intergovernmental Panel on Climate Change (IPCC) ‘Reasons for Concern’, 106 Proceedings of the National Academy of Sciences of the United States of America 4133, 4133–37 (2009); Veron, J. E. N. *et al.*, The Coral Reef Crisis: The Critical Importance of <350 ppm CO₂, 58 Marine Pollution Bulletin 1428, 1428–36, (2009); Warren, R. J. *et al.*, Increasing Impacts of Climate Change Upon Ecosystems with Increasing Global Mean Temperature Rise, 106 Climatic Change 141–77 (2011); Hare, W. W. *et al.*, Climate Hotspots: Key Vulnerable Regions, Climate Change and Limits to Warming, 11 Regional Environmental Change 1, 1–13 (2011); Frieler, K. M. *et al.*, Limiting Global Warming to 2°C is Unlikely to Save Most Coral Reefs, Nature Climate Change, Published Online (2013) doi: 10.1038/NCLIMATE1674; M. Schaeffer *et al.*, Adequacy and Feasibility of the 1.5°C Long-Term Global Limit, Climate Analytics (2013).

⁸³ Anderson, K. and A. Bows, Beyond ‘Dangerous’ Climate Change: Emission Scenarios for a New World, 369 Philosophical Transactions, Series A, Mathematical, Physical, and Engineering Sciences 20, 20–44 (2011).

⁸⁴ Cmons, M., Keep It In the Ground 6 (Sierra Club *et al.*, Jan. 25, 2016).

⁸⁵ IPCC, 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change; Summary for Policymakers at 27; IPCC, 2014: Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change at 64 & Table 2.2 [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)] at 63-64 & Table 2.2 (“IPCC AR5 Synthesis Report”).

⁸⁶ From 2012-2014, 107 GtCO₂ was emitted (*see* Annual Global Carbon Emissions at <http://co2now.org/Current-CO2/CO2-Now/global-carbon-emissions.html>).

80% probability of staying below the 2°C target, the budget from 2000 is 890 GtCO₂, with less than 430 GtCO₂ remaining.⁸⁷

To have even a 50% probability of achieving the Paris Agreement goal of limiting warming to 1.5°C above pre-industrial levels equates to a carbon budget of 550-600 GtCO₂ from 2011 onward,⁸⁸ of which more than 100 GtCO₂ has already been emitted. To achieve a 66% probability of limiting warming to 1.5°C requires adherence to a more stringent carbon budget of only 400 GtCO₂ from 2011 onward,⁸⁹ of which less than 300 GtCO₂ remained at the start of 2015. An 80% probability budget for 1.5°C would have far less than 300 GtCO₂ remaining. Given that global CO₂ emissions in 2014 alone totaled 36 GtCO₂,⁹⁰ humanity is rapidly consuming the remaining burnable carbon budget needed to have even a 50/50 chance of meeting the 1.5°C temperature goal.⁹¹

According to a recent report by EcoShift Consulting commissioned by the Center and Friends of the Earth, unleased (and thus unburnable) federal fossil fuels represent a significant source of potential greenhouse gas emissions:

- Potential GHG emissions of federal fossil fuels (leased and unleased) if developed would release up to 492 gigatons (Gt) (one gigaton equals 1 billion tons) of carbon dioxide equivalent pollution (CO₂e); representing 46 percent to 50 percent of potential emissions from all remaining U.S. fossil fuels.
- Of that amount, up to 450 Gt CO₂e have not yet been leased to private industry for extraction;
- Releasing those 450 Gt CO₂e (the equivalent annual pollution of more than 118,000 coal-fired power plants) would be greater than any proposed U.S. share of global carbon limits that would keep emissions below scientifically advised levels.

Fracking has also opened up vast reserves that otherwise would not be available, increasing the potential greenhouse gas emissions that can be released into the atmosphere. BLM

⁸⁷ Carbon Tracker Initiative, Unburnable Carbon – Are the world’s financial markets carrying a carbon bubble? available at <http://www.carbontracker.org/wp-content/uploads/2014/09/Unburnable-Carbon-Full-rev2-1.pdf>; Meinshausen, M. *et al.*, Greenhouse gas emission targets for limiting global warming to 2 degrees Celsius, 458 Nature 1158, 1159 (2009).

⁸⁸ Intergovernmental Panel on Climate Change, Climate Change 2014: Synthesis Report, Summary for Policy Makers IPCC Fifth Assessment Synthesis Report, 18 (2014), available at http://ar5-syr.ipcc.ch/ipcc/resources/pdf/IPCC_SynthesisReport.pdf.

⁸⁹ *Id.*

⁹⁰ See Global Carbon Emissions, <http://co2now.org/Current-CO2/CO2-Now/global-carbon-emissions.html>

⁹¹ In addition to limits on the *amount* of fossil fuels that can be utilized, emissions pathways compatible with a 1.5 or 2°C target also have a significant temporal element. Leading studies make clear that to reach a reasonable likelihood of stopping warming at 1.5° or even 2°C, global CO₂ emissions must be phased out by mid-century and likely as early as 2040-2045. See, e.g. Joeri Rogelj *et al.*, Energy system transformations for limiting end-of-century warming to below 1.5°C, 5 Nature Climate Change 519, 522 (2015). United States focused studies indicate that we must phase out fossil fuel CO₂ emissions even earlier—between 2025 and 2040—for a reasonable chance of staying below 2°C. See, e.g. Climate Action Tracker, <http://climateactiontracker.org/countries/usa>. Issuing new legal entitlements to explore for and extract federal fossil fuels for decades to come is wholly incompatible with such a transition.

must consider a ban on this dangerous practice and a ban on new leasing to prevent the worst effects of climate change.

Based on our review and analysis of the BLM's proposed lease sale parcels, recoverable oil and gas volumes in BLM's EPCA Phase III inventory, and life-cycle greenhouse gas emissions models developed by EcoShift consulting, the proposed lease sale would make available for extraction and combustion the equivalent of approximately 419,983 tons CO₂.⁹² Despite the availability of this BLM data, the EA makes no effort whatsoever to calculate the full climate impacts of leasing⁹³ – impacts that must include not just on-site emissions from development, but the full life-cycle emissions of processing, transporting, and ultimately burning the oil. Because the lease sale is the final decision-making point at which BLM can avoid irretrievably conveying a right to extract oil and gas, it is impermissible to consider only the effects of 20 exploratory wells. Instead, BLM must consider and quantify now, prior to lease issuance, the full GHG impacts of irrevocable commitment to lease issuance.

ii. BLM Must Consider A Ban on New Oil and Gas Leasing and Fracking in a Programmatic Review and Halt All New Leasing and Fracking in the Meantime.

Development of unleased oil and gas resources will fuel climate disruption and undercut the needed transition to a clean energy economy. As BLM has not yet had a chance to consider no leasing and no-fracking alternatives as part of any of its RMP planning processes or a comprehensive review of its federal oil and gas leasing program, BLM should suspend new leasing until it properly considers this alternative in updated RMPs or a programmatic EIS for the entire leasing program. BLM demonstrably has tools available to consider the climate consequences of its leasing programs, and alternatives available to mitigate those consequences, at either a regional or national scale.⁹⁴

BLM would be remiss to continue leasing when it has never stepped back and taken a hard look at this problem at the programmatic scale. Before allowing more oil and gas extraction in the planning area, BLM must: (1) comprehensively analyze the total greenhouse gas emissions which result from past, present, and potential future fossil fuel leasing and all other activities across all BLM lands and within the various planning areas at issue here, (2) consider their cumulative significance in the context of global climate change, carbon budgets, and other greenhouse gas pollution sources outside BLM lands and the planning area, and (3) formulate measures that avoid or limit their climate change effects. By continuing leasing and allowing

⁹² Oil and gas volume estimates were generated in a geographic information system by clipping technically recoverable oil and gas volumes in the Bureau of Land Management's EPCA Phase III spatial data with lease parcel boundaries provided by Bureau of Land Management. Potential lifecycle greenhouse gas emissions for resultant oil and gas volumes were generated using a carbon calculator and lifecycle greenhouse gas emissions models developed by EcoShift consulting. Methods for those models are described in the report. *See* Dustin Mulvaney et al., *The Potential Greenhouse Gas Emissions of U.S. Federal Fossil Fuels* (Aug. 2015), available at <http://www.ecoshiftconsulting.com/wp-content/uploads/Potential-Greenhouse-Gas-Emissions-U-S-Federal-Fossil-Fuels.pdf>.

⁹³ *See* Revised EA at 32-34.

⁹⁴ *See, e.g.*, BLM Montana, North Dakota and South Dakota, *Climate Change Supplementary Information Report* (updated Oct. 2010) (conducting GHG inventory for BLM leasing in Montana, North Dakota and South Dakota).

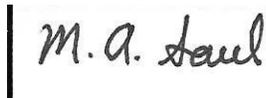
new fracking in the absence of any overall plan addressing climate change BLM is effectively burying its head in the sand.

BLM claims that in order to halt all leasing, it would have to amend the “current” RMPs through a public process which is beyond the scope of the EA. The Shoshone-Eureka RMP is 30 years old – it should have expired and been replaced with an amended RMP many years ago. The 1997 Tonopah RMP, which states that it “will guide management for the next 10-20 years,” is similarly due for a replacement. Nevertheless, BLM is only required to “consider” leasing of areas that have been nominated for lease. As BLM explained in its EA, “[i]f there are known resource conflicts that cannot be addressed using a stipulation, then the parcel may be deferred until the known resource conflict is resolved.”

III. Conclusion

The expansion of fossil fuel leasing into vast areas of previously-unleased Nevada public lands serves no legitimate public purpose, but threatens both the waters and native wildlife of the area and the climate at large. Unconventional oil and gas development not only fuels the climate crisis but entails significant public health risks and harms to the environment. Accordingly, BLM should cancel the lease auction, or else prepare an EIS that thoroughly analyzes the effects of the proposed lease auction, as compared to the alternative of no new fossil fuel leasing and no fracking or other unconventional well stimulation methods within the Battle Mountain planning area.

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List of Attachments (Submitted on CD)

- A. BLM Nevada, Rangeland Health Assessment List of Priority Permits 2017 (Excel Spreadsheet)
- B. FOIA Transmittal Letter from BLM to Western Watersheds Project, April 6, 2017
- C. Email From Brad Hardenbrook to Joy Fatooh, Dec. 2, 2016
- D. U.S. Fish and Wildlife Service, Comments on June 2017 Competitive Oil and Gas Lease Sale, Feb. 7, 2017
- E. Email from Brad Hardenbrook to Joy Fatooh, Dec. 8, 2016
- F. Nevada Division of Wildlife Comments, Feb. 2, 2017
- G. Nevada Division of Wildlife, Greater Sage-Grouse Lek Sites (Excel Spreadsheet).
- H. Center for Biological Diversity, Map of Greater Sage-Grouse Habitat within 3.1 Miles of Lease Sale Parcels (2017)

Additional References Cited Submitted on CD