



CENTER for BIOLOGICAL DIVERSITY

Because life is good.

*working through science, law and creative media to secure a future for all species,
great or small, hovering on the brink of extinction.*

June 2, 2016

Via Fax (307-775-6203) and Federal Express

Mary Jo Rugwell, Acting State Director
Bureau of Land Management
Wyoming State Office
5353 Yellowstone Road
Cheyenne WY 82009

Dear Ms. Rugwell:

The Center for Biological Diversity (the "Center"), Friends of the Earth, Great Old Broads for Wilderness, and Sierra Club hereby file this Protest of the Bureau of Land Management's ("BLM") planned August 2, 2016 oil and gas lease sale of parcels in both the Wind River/Bighorn Basin and High Plains districts, and Environmental Assessments DOI-BLM-WY-R000-2016-0001-EA and WY-070-EA16-66, pursuant to 43 C.F.R. § 3120.1-3.

The EA for the Wind River/Bighorn Basin District ("WR/BBD") portion of the lease sale states that 50 parcels containing 66,642.82 acres located within the WR/BBD would be offered for lease. However, Attachment 1 to the EA identifies only 49 of these parcels. We formally protest the inclusion of all 50 parcels in the WR/BBD offered in the lease sale, including the one parcel the sale of which BLM has failed to give any notice, as well as each of the following 49 parcels that have been identified in the EA:

WY-1608-44	WY-1608-59	WY-1608-79
WY-1608-45	WY-1608-60	WY-1608-80
WY-1608-46	WY-1608-61	WY-1608-86
WY-1608-47	WY-1608-62	WY-1608-87
WY-1608-48	WY-1608-63	WY-1608-88
WY-1608-49	WY-1608-64	WY-1608-89
WY-1608-50	WY-1608-65	WY-1608-90
WY-1608-51	WY-1608-66	WY-1608-92
WY-1608-52	WY-1608-67	WY-1608-93
WY-1608-53	WY-1608-68	WY-1608-94
WY-1608-54	WY-1608-69	WY-1608-95
WY-1608-55	WY-1608-70	WY-1608-96
WY-1608-56	WY-1608-71	WY-1608-97
WY-1608-57	WY-1608-72	WY-1608-98
WY-1608-58	WY-1608-78	WY-1608-99

Alaska * Arizona * California * Florida * Minnesota * Nevada * New Mexico * New York * Oregon * Washington * Washington, DC

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WY-1608-100
WY-1608-101

WY-1608-102
WY-1608-104

The Center also formally protests the inclusion of each of the following 39 parcels, covering 22,495 Federal mineral acres and 2,271 Federal surface acres in the High Plains District ("HPD"):

WY-1608-001	WY-1608-014	WY-1608-029
WY-1608-002	WY-1608-015	WY-1608-030
WY-1608-003	WY-1608-016	WY-1608-031
WY-1608-004	WY-1608-018	WY-1608-032
WY-1608-005	WY-1608-019	WY-1608-033
WY-1608-006	WY-1608-020	WY-1608-034
WY-1608-007	WY-1608-021	WY-1608-035
WY-1608-008	WY-1608-022	WY-1608-036
WY-1608-009	WY-1608-023	WY-1608-037
WY-1608-010	WY-1608-024	WY-1608-038
WY-1608-011	WY-1608-025	WY-1608-040
WY-1608-012	WY-1608-026	WY-1608-041
WY-1608-013	WY-1608-028	WY-1608-042

PROTEST

I. Protesting Party: Contact Information and Interests:

This Protest is filed on behalf of the Center for Biological Diversity, Friends of the Earth, Great Old Broads for Wilderness, and Sierra Club, and their board and members by:

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The Center for Biological Diversity ("the Center") 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 million members and online activists, including those living in the Wind River / Bighorn Basin District and the High Plains District planning areas in Wyoming who have visited these public lands in these Districts 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.

Friends of the Earth is a 501(c)(3) organization with over 33,000 members and 496,000 activists nationwide. Friends of the Earth fights to create a more healthy and just world. Our current campaigns focus on promoting clean energy and solutions to climate change, ensuring the food we eat and products we use are safe and sustainable, and protecting marine ecosystems and the people who live and work near them.

Great Old Broads for Wilderness (Broads) is a national non-profit organization that engages and ignites the activism of elders to preserve and protect wilderness and wild lands. With more than 8,000 members and supporters, including in Wyoming, Broads gives voice to the millions of older Americans who want to protect their public lands as Wilderness for this and future generations. We believe climate change affects all life on Earth and puts at risk many of the values for which wilderness areas are designated. At the same time, the unbroken habitat and wildlife corridors provided by wild public lands give plant and animal species a fighting chance to adapt to changing conditions. Benefits provided by wild lands, such as water supply, flood mitigation, and biodiversity conservation will become increasingly essential in the future. Broads supports keeping fossil fuels in the ground. It is our only chance to keep global temperatures and the Earth's vital signs from reaching a tipping point.

The Sierra Club is a national nonprofit organization of approximately 625,000 members dedicated to exploring, enjoying, and protecting the wild places of the earth; to practicing and promoting the responsible use of the earth's ecosystems and resources; to educating and enlisting humanity to protect and restore the quality of the natural and human environment; and to using all lawful means to carry out these objectives. The Wyoming Chapter of the Sierra Club has approximately 930 members in the state of Wyoming, including members who live or recreate in the Wind River/Bighorn Basin District and the High Plains District. Sierra Club members use the public lands in Wyoming, including the lands and waters that would be affected by actions under the lease sale, for quiet recreation, scientific research, aesthetic pursuits, and spiritual renewal. These areas would be threatened by increased oil and gas development that could result from the proposed lease sale.

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

BLM's proposed decision to lease the parcels listed above is substantively and procedurally flawed for the reasons discussed in the Center's February 18, 2016 comment letters on the Environmental Assessments ("EAs") for the Wind River/Bighorn Basin District and High Plains District lease sales. This protest incorporates both of our February 18, 2016 letters by reference herein. The proposed lease sale is unlawful for the following additional reasons:

A. BLM Violates the National Environmental Policy Act ("NEPA")

We pointed out in our previous letters that BLM's preliminary EAs violate NEPA because BLM fails to take a "hard look" at foreseeable impacts; arbitrarily refuses to consider relevant issues; and capriciously declines to prepare an environmental impact statement ("EIS") despite the likelihood of significant impacts. BLM in turn claims that the EAs have adequately analyzed the issues raised in the Center's comments because existing Resource Management Plans (RMPs) have already evaluated impacts arising from "various" types of BLM authorized activities and BLM "anticipates" a finding of no "new" significant impacts.¹

i. It is Unlawful to Proceed with the Lease Sale without Undertaking a Site-Specific Environmental Assessment.

BLM argues in essence that NEPA requires no more than (1) an EIS at the RMPA stage and (2) a later EIS at the development stage.² As we have explained, this is the exact argument

¹ U.S. Bureau of Land Management, Environmental Assessment DOI-BLM-WY-R000-2016-0001-EA August 2016 Competitive Oil & Gas Lease Sale Wind River/Bighorn Basin District ("WR/BBD EA"), Attachment 2 at 22 and 38; U.S. Bureau of Land Management, Environmental Assessment WY-070-EA16-66 High Plains District Portion of the August 2016 Lease Sale ("HPD EA"), Appendix F at 11 and 48; see also, e.g., WR/BBD EA at 3-11 ("The LFO FEIS Section 4.1.3 analyzed adverse and beneficial impacts to soils from various types of BLM authorized activities and cumulative impacts from other activities... The Bighorn Basin FEIS Section 4.1.3 analyzed adverse and beneficial impacts to soils from a variety of of [sic] BLM authorized activities and cumulative impacts from other activities...") (emphasis added).

² HPD EA at 9 ("Filing an APD is the initial point at which a site-specific environmental appraisal can be undertaken... additional separate NEPA analysis will be required at the development stage to analyze project-specific impacts associated with exploration and development of the lease. That site-specific environmental documentation would address the site-specific analysis for each proposed well location. Additional conditions of

that was rejected by the Tenth Circuit in N.M. ex rel. Richardson v. BLM, 565 F.3d 683 (10th Cir. 2009). There, the intervenor Independent Petroleum Association of New Mexico ("IPANM") argued that NEPA requires no more than an EIS at the land use planning stage and an EIS when the lessee submits an APD. 565 F.3d at 716 ("In other words, the parties dispute how the environmental analysis of drilling in the plan area should be 'tiered' as planning progresses from the large scale to the small."). In that case, even though the EA tiered to prior analysis in the RMPA, the Tenth Circuit held that NEPA requires an analysis of the *site-specific* impacts of the lease *prior* to its issuance, and that BLM acted arbitrarily and capriciously by failing to conduct one. Id. at 719. BLM even acknowledges in the HPD EA, citing to the Tenth Circuit's decisions in Richardson, that "when site-specific impacts are reasonably foreseeable at the leasing stage, NEPA requires the analysis and disclosure of such reasonably foreseeable site-specific impacts."³

Despite the Tenth Circuit's ruling on the matter, BLM still refuses to perform *any* analysis of site-specific impacts until it receives an APD⁴ but does not provide any reason or basis for this refusal. BLM does not argue that such impacts are unidentifiable. An APD is not needed in order to identify soil types, surface and subsurface water resources, vegetation, wildlife resources, and sensitive species in the areas to be leased and how these will be impacted by oil and gas development; yet BLM refuses to include any of this information in the EAs. BLM could have and should have analyzed, for example, potential resource conflicts, necessary mitigation measures, and potential specific development scenarios. Courts, including the Tenth Circuit, have repeatedly rejected BLM's claim that it does not have to address mitigation measures or perform site-specific NEPA analyses until an APD is received. BLM is required to perform and disclose an analysis of environmental impacts *prior* to the issuance of the lease – the point at which "the irretrievable commitment of resources" occurs. See N.M. ex rel. Richardson v. BLM, 565 F.3d 683, 716 (10th Cir. 2009) (NEPA and the CEQ regulations provide that assessment of a given environmental impact must occur as soon as that impact is "reasonably foreseeable," citing 40 C.F.R. § 1502.22, and must take place before an "irretrievable commitment of resources" occurs, citing 42 U.S.C. § 4332(2)(C)(v)); see also Pennaco Energy, Inc. v. United States DOI, 377 F.3d 1147, 1160 (10th Cir. 2004) (Agencies are required to satisfy NEPA before committing themselves irretrievably to a given course of action, so that the action can be shaped to account for environmental values.). Because a lessee has certain, defined surface use rights, see, e.g., 43 C.F.R. § 3101.1-2 ("[a] lessee shall have the right to use so much of the leased lands as is necessary to explore for, drill for, mine, extract, remove, and dispose of all the leased resource in a leasehold . . ."), the point of irretrievable and irreversible commitment occurs at the point of lease issuance. S. Utah Wilderness All. v. Norton, 457 F. Supp. 2d 1253, 1256 (D. Utah 2006).

approval (mitigation) may be applied at that time."

³ HPD EA at 34.

⁴ See e.g. HPD EA, Appendix F at 12 ("The August 2016 Competitive Oil and Gas Lease Sale is not a regulatory action, but rather an administrative action. There are no direct impacts to water depletion or sensitive species dependent on water through the administrative action of leasing. Indirect effects from leasing may occur to water if development were to occur. At the time of a site-specific application, such as an APD, surface and subsurface water resources, including special status species, will be identified, evaluated, and conditions of approval to mitigate adverse impacts to the water related resources may be imposed at that time.").

BLM seems to imply that because there are no direct impacts to resources through the "administrative action of leasing" it does not have to fulfill NEPA requirements before leasing. Yet BLM acknowledges that indirect impacts may occur from leasing if development were to occur,⁵ and further acknowledges that the Tenth Circuit has held that these impacts must be discussed in the EAs prior to leasing.⁶ Although BLM attempts to characterize leasing as mere administrative paperwork that cannot result in any impacts to the environment, NEPA and governing Tenth Circuit decisions have made clear that the test depends upon existing environmental circumstances, not upon "the formalities of agency procedures," and as such requires a "fact-specific inquiry." Richardson, 565 F.3d at 717. The "operative inquiry" is two-fold: First we must ask whether the lease constitutes an "irretrievable commitment of resources." The Tenth Circuit has concluded that issuing an oil and gas lease without an NSO stipulation constitutes such a commitment. Id. at 717 (citing to Pennaco Energy, 377 F.3d at 1160; and Sierra Club v. Peterson, 717 F.2d 1409, 1412-1414 (D.C. Cir. 1983)). Second, we must ask whether all "foreseeable impacts of leasing" have been taken into account before leasing can proceed. Id. Given BLM's decision not to provide any site-specific review of the parcels, these impacts have not been taken into account.

BLM's arbitrary deferral of site-specific analysis until the APD stage is unlawful under NEPA, its implementing regulations, and legal precedents.

ii. BLM's "Finding of No Significant Impacts" is Not Supported by Any Reasoned Explanations, and BLM is Required to Prepare an EIS.

We also pointed out in our previous letters that BLM is required to prepare an EIS for each of the WR/BBD and HPD portions of the lease sale. For proposed "major Federal actions significantly affecting the quality of the human environment," agencies must prepare an EIS in which they consider the environmental impact of the proposed action and compare this impact with that of "alternatives to the proposed action." See 42 U.S.C. § 4332(2)(C); Pennaco Energy, Inc. v. United States DOI, 377 F.3d 1147, 1150 (10th Cir. 2004). To determine whether an action will have a significant environmental impact, BLM can first prepare an environmental assessment ("EA"). 40 C.F.R. §§ 1501.4, 1508.9; Ohio Valley Envtl. Coal. v. Hurst, 604 F. Supp. 2d 860, 870 (S.D. W. Va. 2009) ("If the agency cannot readily determine whether an action will significantly affect the environment, then it must prepare an environmental assessment [] that discusses the proposed action, alternatives, and the environmental impacts of the proposed action and its alternatives."). If the EA reveals that the project will have a significant effect on the quality of the human environment, then BLM must prepare a detailed, written EIS. 42 U.S.C § 4332(2)(C).

BLM's decision not to prepare an EIS is not based on any evaluation and finding that the project will not have a significant effect on the quality of the human environment. BLM does not claim that the potential environmental effects from the proposed project are minimal or insignificant. In fact BLM cannot make any such determination because it did not analyze or look at these impacts at all. Instead, BLM argues that because the EAs incorporate by reference

⁵ See e.g. WR/BBD EA at 3-3; HPD EA, Appendix F at 12.

⁶ HPD EA at 34.

information contained in the RMPs, and that there are no "new" significant impacts that were not covered in the RMPs, BLM does not have to take any further look at the impacts that the proposed action might have on the environment.⁷

First, we disagree that the presently foreseeable impacts of oil and gas development on the specific parcels at issue were sufficiently analyzed in the broad-brush and highly generalized analyses contained in land use plans. The RMPs referenced by BLM in the WR/BBD EA, for example, analyzed impacts to surface water and groundwater from "various types of BLM authorized activities" and cumulative impacts "from other activities."⁸ These RMPs do not analyze the specific impacts that oil and gas development would have on the water resources in the specific parcels for lease. Each of the Center's comments on the preliminary EAs contains 63 pages detailing significant impacts that are likely to arise from *oil and gas development*, especially from unconventional extraction methods such as hydraulic fracturing (or "fracking"). These concerns raised by the Center were supported by hundreds of studies cited in the comments. Many of these issues and supporting studies were not considered in the RMPs (e.g., the impacts of hydraulic fracturing and horizontal drilling on air, water and soil resources and wildlife in the areas to be leased were not discussed in any of the RMPs or EAs; nor were the Center's concerns about the increased seismic risks that stem from such extraction methods analyzed; or the indirect impacts of greenhouse gas emissions from extraction, transport, and combustion of leasing federal fossil fuels on climate, public health, and wildlife resources). Furthermore, several issues were arbitrarily eliminated by BLM from further analyses in the EA – not because they were determined to be insignificant, but because BLM felt that it is not required to perform site-specific review of the proposed action at this stage since subsequent development of the lease would also require site-specific review.⁹ This is not proper grounds for BLM's "Finding of No Significant Impact" ("FONSI") or its consequent decision not to prepare an EIS.

Secondly we disagree with BLM's findings of no significant impacts. The FONSI ignores both the high degree of uncertainty and the substantial controversy regarding the effects that the proposed action will have on the quality of the environment. Preparation of an EIS is required where uncertainty may be resolved by further collection of data or where the collection of such data may prevent speculation on potential effects. Nat'l Parks & Conservation Ass'n v. Babbitt, 241 F.3d 722, 732 (9th Cir. 2001). In justifying its failure to provide any site-specific analyses, BLM raises so many uncertainties throughout both of the EAs¹⁰ that it seems incongruous for

⁷ See e.g. HPD EA, Appendix F at 2 ("[T]he EA tiers to and incorporates by reference the information and analysis contained in the EIS and RMP for the Casper and Newcastle field offices. Therefore, a new EIS for leasing is not necessary.")

⁸ WR/BBD EA at 3-11.

⁹ See e.g. WR/BBD EA at 3-3 – 3-10 (For example, BLM eliminated from further analysis significant impacts to air resources because existing land use plans have evaluated similar issues and because BLM believes there are no direct impacts to air quality or climate change through the "administrative action of leasing."); HPD EA at 11 (Eliminated numerous issues from further analysis because subsequent development of the lease would require an APD which would require more site-specific review.)

¹⁰ See e.g. WR/BBD EA at 3-1; and HPD EA at 40 ("[T]he amount of increased emissions cannot be quantified since it is unknown how many wells might be drilled, the types of equipment needed if a well were to be completed successfully . . . or what technologies may be employed by a given company for drilling any new wells. The degree of impact would also vary according to the characteristics of the geologic formations from which production would

BLM to conclude, based on the lack of data and analyses, that the proposed action would have no significant impacts on the environment. BLM has not collected any data on the specific parcels at issue, and instead relies only upon generalized data in the various RMPs. This is especially untenable in light of the growing body of scientific evidence showing the booming popularity of unconventional oil and gas extraction methods, such as hydraulic fracturing and horizontal drilling and the serious harms that these controversial practices pose to the human environment, public health and safety, and climate change. Given the high degree of uncertainty regarding the severity of the harms associated with this action, BLM is required to prepare an EIS. Id.

iii. BLM Failed to Take a Hard Look at any of the Potential Impacts of the Proposed Action Raised in our Previous Comment Letters on the Sale

Finally, BLM's EAs failed to take a "hard look" at any of the issues we have raised in our letters. 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, we incorporate by reference herein both of our comment letters on the Preliminary EAs, which discuss BLM's failure 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. We expand upon the following issues:

a. BLM Does Not Take a Hard Look at Impacts to Water Resources

The WR/BBD EA does not provide any information regarding the water resources on the parcels to be leased. Instead, it states:

At the time of a site-specific application, such as an APD, surface and subsurface water resources will be identified, evaluated, and conditions of approval to mitigate adverse impacts to the water related resources may be imposed at that time. Parcels offered for sale are subject to the stipulations shown in Attachment 1.¹¹

Attachment 1 to the WR/BBD EA identifies the various and seemingly arbitrary stipulations attached to each of 61 parcels (although BLM states that a total of 62 parcels were nominated). Some of these parcels have attached stipulations that prohibit surface disturbance within 500 ft of perennial surface waters, riparian-wetland areas and/or playas, and on slopes greater than 25 percent. However, BLM does not identify any such water resources in the areas offered for sale, or any potential impacts to these resources. There is no analysis or discussion as to the adequacy or efficacy of these mitigation measures in protecting all water resources in the area to the point of rendering any and all potential impacts minimal or insignificant. BLM does not provide any data or studies supporting its "finding of no significant impacts" with respect to these sources in these particular areas.

occur.")

¹¹ WR/BBD EA at 3-11.

Instead, the WR/BBD EA merely references the general analyses contained in previously existing land use plans that looked at impacts to surface water and groundwater resources "from various types of BLM authorized activities and cumulative impacts . . . from other activities."¹² However, NEPA requires BLM take a look at all foreseeable impacts; including site-specific impacts that could result from the oil and gas lease sale before issuing said lease. The Center's comments on the draft WR/BBD EA included concerns about not only harms that are common to oil and gas operations in general, but also the particular damage that practices such as hydraulic fracturing and horizontal drilling would have on water resources in the areas to be leased, such as contamination and degradation of surface water and groundwater quality, loss of drilling fluids (which contain harmful chemicals), and reduction in natural flow of seeps, springs, and water wells. The analysis in the existing RMPs that BLM cites to in the WR/BBD EA only provide the most generalized information. For example, with respect to surface water quality, the LFO EIS Section 4.1.4 and BB RMP EIS Section 4.1.4 state:

Adverse impacts to water quality are those that result in a violation of state water quality standards or degrade a designated use. Management actions that permit surface-disturbing activities that contribute to offsite erosion and sediment delivery are considered adverse impacts. Beneficial impacts to surface water quality result from management actions that improve water quality or minimize, reduce, or prevent offsite erosion or the discharge of supplemental water that is of lower quality than the ambient water quality of the receiving water. For example, management actions that stabilize watershed projects no longer meeting resource objectives or that seed degraded portions of watersheds would result in beneficial impacts to surface water quality.¹³

With respect to surface water quantity, these same sections state:

Impacts to surface water quantity result from management actions that reduce or supplement streamflows, and can be either beneficial or adverse, depending on the quantity and the location of the withdrawal(s) and discharge(s).¹⁴

This does nothing to address the concerns that the public has raised with respect to impacts from oil and gas development on the specific water resources in the areas to be leased, and the further impacts that that could have on the specific wildlife resources and sensitive species present in these particular areas. BLM's apparent reason for refusing to take a look at these impacts is that "[t]he August 2016 Competitive Oil and Gas Lease Sale is not a regulatory action, but rather an administrative action. There are no direct impacts to water depletion or sensitive species dependent on water through the administrative action of leasing."¹⁵ Furthermore, BLM claims "[t]he possibility or nature of lease development operations cannot be

¹² WR/BBD EA at 3-11 and 3-12 (emphasis added).

¹³ BLM 2013, Lander Proposed Resource Management Plan and Final Environmental Impact Statement for the Lander Field Office Planning Area ("LFO RMP FEIS"); and BLM 2015, Bighorn Basin Proposed Management Plan and Final Environmental Impact Statement for the Worland and Cody Field Offices Planning Areas ("BB RMP FEIS").

¹⁴ *Id.*

¹⁵ WR/BBD EA, Attachment 2 at 40; see also HPD EA, Appendix F at 12.

reasonably determined at the leasing stage, nor can impacts realistically be analyzed in more detail at this time.”¹⁶

However, NEPA requires “reasonable forecasting,” which includes the consideration of “reasonably foreseeable future actions...even if they are not specific proposals” N. Plains Res. Council, Inc. v. Surface Transp. Bd., 668 F.3d 1067, 1079 (9th Cir. 2011) (citation omitted). Full development of the areas for lease is entirely foreseeable. It is also foreseeable that the leasing of these parcels will result in the commercial production of oil and gas. “Because speculation is . . . implicit in NEPA,” agencies may not “shirk their responsibilities under NEPA by labeling any and all discussion of future environmental effects as crystal ball inquiry.” Id.

It is possible for BLM to identify the water resources and sensitive species in the areas to be leased, and the impacts to such in the foreseeable event that full oil and gas development of the areas for lease occur. As we explained in our comment letter, some unconventional extraction techniques that have drastically grown in popularity in recent years require the use of tremendous amounts of freshwater. Studies we cited show that between 2 and 5.6 million gallons of water are required to frack each well; such high levels of water use are unsustainable and may lead to several kinds of harmful environmental impacts. Furthermore, we raised concerns about fracking fluid contamination, such as fracking “flowback” and the impacts that it could have on drinking water. Given the likelihood of severe impacts on both water resources in the area and the sensitive species that rely on those water resources, BLM must fully explore mitigation and avoidance options. The RMPs and the WR/BBD EA do not address mitigation for any of these concerns. Indeed, BLM’s response to our concerns was that “[t]he August 2016 Competitive Oil and Gas Lease Sale is not a regulatory action, but rather an administrative action. The act of leasing land for oil and gas development in itself does not cause hydraulic fracturing and/or horizontal drilling to occur.”¹⁷ As explained above, the law requires BLM to look at these concerns prior to leasing. Regardless of BLM’s mischaracterization of the proposed action as mere paperwork, the courts, including the Tenth Circuit, have held that assessment of a given environmental impact must occur as soon as that impact is “reasonably foreseeable.” Richardson, 565 F.3d at 719.

The HPD EA similarly fails to provide *any* site-specific analysis of the impacts that the proposed action would have on water resources. BLM provides no information about the surface water in the areas to be leased, other than the highly generalized and vague statement that:

Surface water hydrology within the area is typically determined by geology, soil characteristics, precipitation, and water erosion. Factors that affect surface water resources include livestock grazing management, private, commercial and industrial development, recreational use, drought, and vegetation control treatments.¹⁸

The HPD EA goes on to provide some information about “common [groundwater] aquifers encountered in the district” but does analyze any of the impacts that oil and gas

¹⁶ *Id.*

¹⁷ HPD EA, Appendix F at 3.

¹⁸ HPD EA at 29.

development would have on these. Instead, it refers to Appendix E, Hydraulic Fracturing White Paper, which includes only general information about the impacts that fracking could have on the entire state of Wyoming's water resources.¹⁹ It does not discuss the specific impacts of the proposed action on the areas to be leased, nor does it evaluate the significance of these impacts. This is a violation of NEPA, and BLM is required to properly assess the impacts the public has raised in its comments.

b. BLM Does Not Take a Hard Look at Impacts to Air Resources or Climate Change

The aforementioned problems apply to BLM's failure to analyze impacts to air quality. The WR/BBD EA also eliminated these impacts from analysis because the BLM "determined that recent analysis of [air resources and climate change] in the FEIS was thorough and adequate and that no new circumstances or data, which would require additional analysis, has been identified."²⁰ First, the FEISs referenced in the EAs do not adequately analyze the impacts of oil and gas development on air resources or climate change. None of the RMPs or EAs looked at all of the sources of greenhouse gas pollution that could result from leasing, much less quantify potential emissions. The "air resource impact analysis" in the Lander RMP/FEIS, for example, indicates that BLM compiled only "operational and production data" for each management action and activity. In limiting the analyses to only these actions, BLM ignores the large elephant in the room – the combustion of fossil fuels, the largest contributor of greenhouse gas emissions.²¹ These emissions can be quantified at the leasing stage, as demonstrated in BLM's 2010 Climate Change Supplementary Information Report for Montana, North Dakota, and South Dakota ("2015 SIR").²² BLM must prepare an EIS that calculates the amount of greenhouse gas emissions that will result on an annual basis from (1) each of the fossil fuels that can be developed within the planning area, (2) each of the well stimulation or other extraction methods that can be used, including, but not limited to, fracking, acidization, acid fracking, and gravel packing, and (3) cumulative greenhouse gas emissions expected over the long term (expressed in global warming potential of each greenhouse pollutant as well as CO₂ equivalent), including emissions throughout the entire fossil fuel lifecycle discussed above.

Second, new information pertaining to the harmful impacts of unconventional oil and gas extraction methods frequently arises and requires BLM's consideration when deciding whether or not there are any significant environmental impacts arising from oil and gas development in the areas proposed for lease sale. For example, and as discussed in greater detail below, none of the RMPs referenced in the EAs consider the recent Paris Agreement at the 2015 United Nations Framework Convention on Climate Change Conference of the Parties in which the U.S., alongside

¹⁹ HPD EA, Appendix E.

²⁰ WR/BBD EA, 3-2 and 3-3.

²¹ See U.S. Environmental Protection Agency, Source of Greenhouse Gas Emissions, <https://www3.epa.gov/climatechange/ghgemissions/sources.html> (accessed June 2, 2016)

²² See BLM's 2010 Climate Change Supplementary Information Report for Montana, North Dakota, and South Dakota ("SIR"); see also BLM 2015, Environmental Assessment DOI-BLM-UT-W020-2015-0004-EA August 2015 Oil and Gas Lease Sale for West Desert District Fillmore Field Office at 57-58; and *High Country Conservation Advocates v. United States Forest Serv.*, 52 F. Supp. 3d 1174, 1196 (D. Colo. 2014) (decision to forgo calculating mine's reasonably foreseeable GHG emissions was arbitrary "in light of the agencies' apparent ability to perform such calculations").

nearly 200 other parties, agreed to take action so as to avoid dangerous climate change.²³ These actions include "efforts to limit the temperature increase to 1.5°C above pre-industrial levels."²⁴ Data compiled by Carbon Brief Ltd, that was just released this year, shows that if the current rate of emissions continues, the 1.5C budget would be used up sometime in 2021, five years from now.²⁵ Other newly published data shows that phasing out federal leases for fossil fuel extraction could reduce global CO2 emissions by 100 million tonnes per year by 2030, and by greater amounts thereafter.²⁶

Any emissions source, no matter how small, contributes to the regional, national, and global pool of GHG emissions and therefore is potentially significant, such that BLM should fully explore mitigation and avoidance options for all sources. Instead of performing this minimum level of analysis, BLM refers to the RMPs which either discuss in highly general terms the oil and gas industry's relative contribution to statewide greenhouse emissions or does not discuss greenhouse emissions at all. This provides no practical understanding of the major sources of emissions from oil and gas development and whether they can be controlled.

c. BLM Does Not Take a Hard Look at the New and Dangerous Extraction Methods of Fracking and Horizontal Drilling, or the Increased Seismic Risks from such Extraction Methods

As we explained in great detail in our previous comment letters, extraction methods such as hydraulic fracturing and horizontal drilling bring with them all of the harms to water quality, air quality, the climate, species, and communities associated with traditional oil and gas development, but also bring increased risks in many areas, which BLM failed to analyze.

For example, the foreseeable impacts that the toxic chemicals used in fracking fluids or present in flowback or fracking waste would have on human health, water, air, soil, vegetation, and wildlife resources, including habitat for sensitive species, were not analyzed in any of the RMPs or EAs. BLM also did not look at the impacts that horizontal drilling would have on water depletion or contamination. The RMPs and EAs also do not mention or address other popular extraction methods that raise a host of similar concerns, such as multi-stage slickwater hydraulic fracturing.

BLM also fails to analyze the potential impacts of increased earthquake risks in the parcels offered for lease sale. We pointed out in our previous letters the link between the increased earthquake activity (including several of the largest earthquakes in the U.S. midcontinent in recent years) and the underground injection processes involved in unconventional oil and gas development. We cited to various studies showing that in regions of

²³ United Nations Framework Convention on Climate Change, Adoption of the Paris Agreement, Proposal by the President, Draft decision -/CP.21 (2015) ("Paris Agreement") at Art. 2.

²⁴ *Id.*

²⁵ See CarbonBrief, Carbon Countdown: How Many Years of Current Emissions Would Use up the IPCC's Carbon Budgets for Different Levels of Warming, <http://www.carbonbrief.org/analysis-only-five-years-left-before-one-point-five-c-budget-is-blown> (accessed May 20, 2016).

²⁶ Erickson, Peter and Michael Lazarus, How Would Phasing Out U.S. Federal Leases for Fossil Fuel Extraction Affect CO₂ Emissions and 2°C Goals? 1, 31-32, Stockholm Environment Institute Working Paper 2016-02 (May 2016).

the central and eastern United States where unconventional oil and gas development has proliferated in recent years, earthquake activity has increased dramatically.²⁷ Much of the fracking wastewater is a byproduct of oil and gas production and is routinely disposed of by injection into wells specifically designed and approved for this purpose. The injected fluids push stable faults past their tipping points, and thereby induce earthquakes.²⁸ In 2015, a study published in *Science* found that the unprecedented increase in earthquakes in the U.S. mid-continent that began in 2009 has been caused by the instability caused by fluid injection wells associated with fracking waste disposal.²⁹ The proliferation of unconventional oil and gas development, which entails increases in extraction and injection, will increase earthquake risk in Wyoming.

Given the significant impacts that unconventional extraction methods such as fracking and horizontal drilling would pose to the environment, BLM is required under NEPA to prepare an EIS. However, BLM ignored the majority of concerns we raised regarding these dangerous extraction methods. BLM's only response to our concerns was that:

The August 2016 Competitive Oil and Gas Lease Sale is not a regulatory action, but rather an administrative action. The act of leasing land for oil and gas development in itself does not cause hydraulic fracturing and/or horizontal drilling to occur. Issuance of an oil and gas lease does not authorize operations on the lease. The possibility or nature of lease development operations cannot be reasonably determined at the leasing stage, nor can impacts realistically be analyzed in more detail at this time. If a lease is issued and development proposed, additional permits will be submitted to the BLM and analyzed in a sitespecific NEPA document, which will address resource concerns. The State of Wyoming regulates hydraulic fracturing under Wyoming Oil and Gas Regulation, Chapter 3, Section 45.³⁰

We have already explained why BLM's assertion that leasing by itself does not cause hydraulic fracturing or horizontal drilling to occur is not grounds for declining to analyze foreseeable impacts, nor is it a proper basis for a FONSI. We have also already explained why BLM is incorrect that the nature of lease development operations cannot be reasonably determined at this stage. The use of extraction methods such as hydraulic fracturing within the area is both readily foreseeable and already occurring with significant environment environmental consequences. Indeed, the HPD EA, Appendix E Hydraulic Fracturing White Paper acknowledges that:

[Hydraulic Fracturing ("HF")] has gained interest recently as hydrocarbons previously trapped in low permeability tight sand and shale formations are now technically and economically recoverable. As a result, oil and gas production has increased significantly

²⁷ *Id*

²⁸ Lamont-Doherty Earth Observatory, Distant Quakes Trigger Tremors at U.S. Waste-Injection Sites, Says Study, Columbia University (July 11, 2013), <https://www.ldeo.columbia.edu/news-events/distant-quakes-trigger-tremors-us-waste-injection-sites-says-study> (accessed May 20, 2016).

²⁹ Weingarten, M. et al., High-rate injection is associated with the increase in U.S. mid-continent seismicity, 348 *Science* 6241:1336 (2015).

³⁰ HPD EA, Appendix F at 3.

in the United States. The state of Wyoming classifies all gas production zones as Class 5 groundwater zones; this means these zones can be highly impacted by oil and gas activities and are exempt from regulation under the Clean Water Act. . . Prior to the development of hydrocarbon-bearing tight gas and shale formations, domestic production of conventional resources had been declining. In response to this decline, the federal government in the 1970's through 1992, passed tax credits to encourage the development of unconventional resources. It was during this time that the HF process was further advanced to include the high-pressure multi-stage frac [sic] jobs used today.³¹

However, merely acknowledging the general impacts of fracking on the entire state of Wyoming is not sufficient to meet NEPA requirements for the proposed lease sale. BLM is required to analyze the impacts to the specific resources present on the parcels at issue from the use of extraction methods likely to occur in the commercial development of these parcels, including but not limited to fracking. There is no reason why BLM cannot identify and discuss these resource issues now, before issuing the leases.

d. BLM Does Not Take a Hard Look at Impacts to Sensitive Species

The EA fails in three major respects to disclose or analyze indirect and cumulative impacts of leasing on sensitive species, particularly greater sage-grouse (or "GRSG"). It tiers to and relies on RMP decisions for management of Wyoming greater sage-grouse habitat that fail to follow the best available science regarding measures necessary to ensure the survival and recovery of the species. The proposed leasing action, moreover, violates the Federal Land Policy Management Act ("FLPMA") by failing to conform to a key management prescription of those plans – the obligation to "prioritize the leasing and development of fluid mineral resources outside GRSG habitat." Furthermore, because the proposed leases are not in conformance with the 2015 RMP amendments and undermine significant assumptions of their accompanying FEISs (i.e., that new oil and gas development will tend to occur outside of greater sage-grouse habitat), the EA cannot tier to or rely on those EISs.

The 2015 Wyoming RMP Amendments, including those applicable to the areas of the Field Offices proposed for lease in this sale, do not conform to the best available science or the recommendations of BLM's own experts regarding necessary measures to protect sage-grouse habitats and prevent population declines. We hereby incorporate by reference the June 27, 2015 protest of the Wyoming FEISs submitted by WildEarth Guardians, Prairie Hills Audubon Society, Western Watersheds Project, the Center for Biological Diversity, and the Sierra Club.³² As set forth in detail in that document, the Wyoming and Bighorn Basin RMP Amendments do not conform to the agency's own expert determinations regarding management measures necessary to conserve greater sage-grouse populations in the face of oil and gas development.³³

³¹ HPD EA, Appendix E Hydraulic Fracturing White Paper at 1.

³² WildEarth Guardians et al., Protest of BLM Buffalo Resource Management Plan Final Environmental Impact Statement (June 27, 2015); WildEarth Guardians et al., Protest of BLM Wyoming Resource Management Plans Final Environmental Impact Statement (June 27, 2015).

³³ See *id.* at 29-31, 45-54.

Peer-reviewed literature establishes that sage-grouse populations are negatively affected whenever oil and gas sites exceed 1 site per square mile within sage-grouse habitat or are within 4 miles of a lek. In the eastern portion of sage-grouse range, where BLM, the Forest Service, and U.S. Fish and Wildlife Service acknowledge the species is most threatened by oil and gas development, the Wyoming, Bighorn Basin, and Lander sage-grouse RMP revisions provide fewer protections than in other places where little potential for such development exists. The RMP provisions for sage-grouse habitat in Wyoming are contrary to the best available science, and fail to ensure conservation of sage-grouse populations and habitats in numerous respects including: (1) their failure to close priority habitats to future fluid mineral extraction; (2) failure to apply strong protections to existing fluid mineral leases; (3) inadequate lek buffers; and (4) failure to protect priority habitats from surface disturbance. Because the RMPs are inadequate to prevent sage-grouse population decline and extirpation due to oil and gas disturbance, the WR/BB EA is arbitrary and capricious in its conclusory assertion that the proposed alternative "allow[s] mineral development to occur while protecting sage-grouse habitats."³⁴ Because, as set forth below, RMP provisions are inadequate to protect or restore sage-grouse populations, particularly in "general habitat," BLM must take a site-specific look at the specific effects of leasing on local grouse populations, and cannot rely on the RMP revisions and accompanying EISs.

On December 21, 2011, BLM released its National Technical Team's "Report on National Greater Sage-grouse Conservation Measures" ("NTT Report"). The NTT Report explained that the "primary potential risks to sage-grouse from energy and mineral development" are: 1) direct disturbance, displacement, or mortality of grouse; 2) direct loss of habitat, or loss of effective habitat through fragmentation and reduced habitat patch size and quality; and 3) cumulative landscape-level impacts.³⁵ The NTT Report extensively discussed the scientific literature on the impacts of energy development on sage-grouse,³⁶ and concluded that

There is strong evidence from the literature to support that surface-disturbing energy or mineral development within priority sage-grouse habitats is not consistent with the goal to maintain or increase populations or distribution. . . . Breeding populations are severely reduced at well pad densities commonly permitted. Magnitude of losses varies from one field to another, but findings suggest that impacts are universally negative and typically severe.³⁷

The NTT Report found that BLM's existing 0.25 mile "No Surface Occupancy" ("NSO") buffers around leks, as proposed for general habitat in Wyoming, and its seasonal timing stipulations applying to 0.6 mile buffers around leks, are inadequate to protect sage-grouse, stating that "protecting even 75 to >80% of nesting hens would require a 4-mile radius buffer. . . . Even a 4-mile NSO buffer would not be large enough to offset all the impacts" of energy development.³⁸ The NTT Report concluded that "the conservation strategy most likely to meet

³⁴ WR/BB EA at 3-16.

³⁵ NTT Report at 18.

³⁶ *Id.* at 19-21.

³⁷ *Id.* at 19 (citations omitted).

³⁸ *Id.* at 21.

the objective of maintaining or increasing sage-grouse distribution and abundance is to exclude energy development and other large-scale disturbance from priority habitats.”³⁹

The NTT Report unequivocally recommended that sage-grouse priority habitats be closed to future fluid minerals leasing, future coal leasing, locatable minerals claims, and other forms of mining. Closure of these lands to future leasing and other forms of mineral entry helps prevent industrial impacts to important sage grouse habitats. Yet none of the Wyoming RMPs close priority habitats to fluid minerals leasing. Instead, the Wyoming, Bighorn Basin, and Lander RMPs all rely on limited No Surface Occupancy (“NSO”) stipulations, Required Design Features (“RDFs”), Conditions of Approval (“COAs”), and other limitations to restrict development in sage-grouse habitats.

Relying on NSO stipulations, rather than withdrawal or closure, to protect priority habitats also significantly reduces sage-grouse habitat effectiveness because it gives lessees an incentive to locate well sites directly adjacent to the borders of PHMAs. The disturbance from the well sites will affect sage-grouse habitats within the priority areas and effectively reduce the size of the habitat protected. Recognizing this, some Plans include lek buffers that could partially alleviate the effect (e.g., Miles City ARMP at 2-9, Billings ARMP at 2-21) – but, significantly, none of the Wyoming plans governing these proposed leases. The Wyoming plans, where sage-grouse are most imperiled by oil and gas development, do not even require NSO stipulations throughout priority habitats. Instead, future leases will allow surface-disturbing drilling in PHMAs, except within 0.6 mile of active sage-grouse leks. They will allow drilling throughout GHMAs, except within 0.25 miles of active sage-grouse leks. These minimal buffers are demonstrably insufficient to prevent population declines.

The NTT Report recommended that BLM “not allow new surface occupancy on federal leases within priority habitats,” including winter concentration areas.⁴⁰ The NTT Report further recommended that “[w]hen permitting APDs [applications for permit to drill] on existing leases that are not yet developed, the proposed surface disturbance cannot exceed 3% for that area.”⁴¹ But the Wyoming plan amendment RODs arbitrarily rejected these recommendations, and instead stated throughout the plans that BLM will “work with” industry in the hopes of gaining voluntary agreement to reduce impacts on sage-grouse, as follows:

Where a proposed fluid mineral development project on an existing lease could adversely affect Greater Sage-Grouse populations or habitat, the BLM will work with the lessees, operators, or other project proponents to avoid, reduce and mitigate adverse impacts to the extent compatible with lessees’ rights to drill and produce fluid mineral resources. The BLM will work with the lessee, operator, or project proponent in developing an application for permit to drill (APD) for the lease to avoid and minimize impacts to sage-grouse or its habitat and will ensure

³⁹ *Id.*

⁴⁰ NTT Report at 23.

⁴¹ *Id.*

that the best information about the Greater Sage-Grouse and its habitat informs and helps to guide development of such federal leases.⁴²

Demonstrating that better standards are possible and practicable, plans in other states commit to applying a variety of protective measures to existing fluid mineral leases, including Conditions of Approval, disturbance caps, site density limits, lek buffers, and Required Design Features.⁴³ While also often inadequate and subject to vague and ill-defined loopholes, e.g., Utah ARMPA at 2-27 (“If it is determined that this restriction renders the recovery of fluid minerals infeasible or uneconomic . . . apply other measures”), these specific conservation measures demonstrate that the absence of any mandatory direction in the Wyoming Plans was arbitrary and unwarranted.

“Buffers” around sage-grouse lek areas and their surrounding nesting habitats are used to define areas of potential adverse impacts from human activities, particularly energy and infrastructure development. The NTT Report determined that “[e]ven a 4-mile NSO buffer would not be large enough to offset all the impacts” of energy development.⁴⁴ Another recent study reviewed existing studies concerning lek buffers, and recommended an “interpreted range” of lek buffers of 3.1 to 5 miles for surface disturbance and energy facilities.⁴⁵ Yet the study cautioned that “for some populations, the minimum distance inferred here (5 km [3.1 mi]) from leks may be insufficient to protect nesting and other seasonal habitats.”⁴⁶

The science is consistent that even a 3.1 mile lek buffer would not be adequate to protect sage-grouse. Buffering a lek by 3.1 miles protects less than half the nesting habitat of buffering the lek by 5 miles, as Manier *et al.* (2014) recommended. The application of this inappropriately small lek buffer in even the most restrictive federal plans leaves more than half of the important nesting habitat unprotected. The Wyoming lek buffers are even worse for sage-grouse. The Wyoming plans apply a 0.6-mile buffer around occupied leks in PHMA and a 0.25-mile buffer around occupied leks in GHMA for future leases, along with timing limitations in larger areas for certain activities.

No scientific study ever has recommended that a 0.6-mile buffer around leks is adequate to prevent major population losses of sage grouse, and indeed this buffer distance falls far outside the range of buffer distances reported in the NTT Report and the Manier *et al.* (2014) literature review. The NTT Report specifically pointed out the inadequacy of these lek buffers:

Past BLM conservation measures have focused on 0.25 mile No Surface Occupancy (NSO) buffers around leks, and timing stipulations applied to 0.6 mile buffers around leks to protect both breeding and nesting activities. Given impacts of large scale disturbances described above that occur across seasons and impact

⁴² Wyoming ARMP FEIS at 2-13.

⁴³ See, e.g., Nevada and Northeastern California ARMPA at 2-30; Utah ARMPA at 2-27; Miles City ARMP at 2-9; Northwest Colorado ARMPA at 2-16.

⁴⁴ NTT Report at 21 and 225.

⁴⁵ Manier, et al., Conservation buffer distance estimates for Greater Sage-Grouse—A review: U.S. Geological Survey Open-File Report 2014-1239, <http://dx.doi.org/10.3133/ofr20141239> (“Manier *et al.* (2014)”).

⁴⁶ *Id.* at 2.

all demographic groups, applying NSO or other buffers around leks at any distance is unlikely to be effective. Even if this approach were to be continued, it should be noted that requiring even 75 to >80% of nesting hens would require a 4 mile radius buffer (Table 4.7).

The response of breeding and nesting sage-grouse to disturbance, noise, and human infrastructure does not vary across state boundaries. None of the Wyoming ARMP EISs and RODs have adopted lek buffers adequate for sage-grouse persistence or recovery; and accordingly, all are arbitrary and capricious and fail to apply the best available science.

Moreover, even under the BLM's own amended RMPs, the proposed action is directly in conflict with a core provision of the 2015 sage-grouse RMP amendments. All the Rocky Mountain Region RMPs – significantly, including Wyoming and Bighorn Basin – are subject to the following measures for both priority and general habitat management areas:

Priority Objective—In addition to allocations that limit disturbance in PHMAs and GHMAs, the ARMPs and ARMPAs prioritize oil and gas leasing and development outside of identified PHMAs and GHMAs. This is to further limit future disturbance and 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 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.

The lease sale EA explicitly acknowledges that its greater sage-grouse conservation plans and strategy "direct the BLM to prioritize oil and gas leasing and development in a manner that minimizes resource conflicts in order to protect important habitat and reduce development time and costs."⁴⁹

The BLM is subject to clear direction in the RMP amendments that its sage-grouse RMP plans and conservation strategy rely not only on stipulations within designated habitats (stipulations acknowledged as insufficient, in Wyoming to result in a net conservation gain for general habitat, see 2015 RMPA ROD at 1-30 to 1-31) but also on a larger strategy of prioritizing development outside of all sage-grouse habitats.⁵⁰ Despite its acknowledgement of the prioritization requirement by deferring 280 acres, however, the BLM's proposed action would lease 50 parcels comprising 66,642.82 acres that fall 97% within greater sage-grouse habitat.⁵¹ It is simply impossible to understand how offering leases entirely within sage-grouse habitat is consistent with the RMP requirement to prioritize leasing outside such habitat, and the

⁴⁷ NTT Report at 20-21.

⁴⁸ 2015 Rocky Mountain RMP ROD at 1-25.

⁴⁹ See, e.g., WR/BB EA at 1-2.

⁵⁰ See, e.g., BLM, Buffalo Proposed RMP/Final EIS at 59; BLM, Casper, Kemmerer, Newcastle, Pinedale, Rawlins and Rock Springs Field Offices, Approved RMP Amendment for Greater Sage Grouse at 19.

⁵¹ WRBB EA at 3-15.

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EA provides no rationale whatsoever for this decision. In particular, the EA fails offer any explanation as to why approximately 9,600 acres are deferred as "consistent" with the prioritization requirement but the remaining 64,785.23 acres of sage-grouse habitat (97% of the total lease sale) are not.

An apparent BLM policy of leasing almost entirely within sage-grouse habitat is not only inconsistent with the RMPs and FLPMA's consistency requirement, it also undermines a fundamental assumption of the RMP Amendment EISs – as well as the Fish and Wildlife Service's "not warranted" determination for the greater sage-grouse. That assumption is that the measures adopted in the RMP Amendments will tend to result in oil and gas development tending to occur outside of greater sage-grouse habitat.⁵² Proposing a lease sale for 97% sage-grouse habitat (including 1,857.59 acres of Priority Habitat Management Area) shortly following the finalization of the sage-grouse RMPs strongly undermines that assumption. It further undermines the assumption in the Fish and Wildlife Service's "Not Warranted" finding for the greater sage-grouse that federal and state implementation of the "Wyoming Plan" for fluid minerals will continue the 2012-15 of reduced drilling within core areas.⁵³ If BLM is not actually going to give meaningful content to its plan direction to prioritize leasing outside of sage-grouse habitats, it cannot rely on FEISs, such as the BB RMP FEIS, that assume the effectiveness of that plan direction.

B. BLM Must End All New Fossil Fuel Leasing and Hydraulic Fracturing.

The following discussion updates the Center's previous request for no new leasing and fracking in the WR/BBD and HPD, in light of new information that has arisen since the EA comment period.

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 cease 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.

⁵² See, e.g., Bighorn Basin PRMP/FEIS at 2-14, 4-91 ("Subject to valid existing rights, the BLM would prioritize leasing and authorizing development of fluid mineral resources in greater sage-grouse habitat areas in the following order: 1) outside of PHMAs and GHMAs, 2) non-habitat areas inside of PHMAs and GHMAs, and 3) least suitable habitat areas inside of PHMAs and GHMAs.").

⁵³ See U.S. Fish and Wildlife Service, 12-Month Finding on a Petition to List Greater Sage-Grouse, 80 Fed. Reg. 59,858, 59,883 (Oct. 2, 2015).

The Mineral Leasing Act ("MLA"), as amended, permits but does not require the Secretary of Interior to make public lands available for competitive leasing of fluid minerals, subject to the requirements of other applicable laws, including NEPA and the Federal Land Policy and Management Act.⁵⁴ FLPMA, in turn, provides that BLM public lands "shall" be managed "for multiple use and sustained yield." 43 U.S.C. § 1732(a). FLPMA further mandates that the Secretary of Interior "shall" take any action necessary to prevent "unnecessary or undue degradation" of public lands. 43 U.S.C. § 1732(b). FLPMA's definition of "multiple use" calls for "harmonious and coordinated management of the various resources without permanent *impairment* of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output." See 43 U.S.C. § 1702(c) (emphasis added). Significantly, the Tenth Circuit has explicitly held that FLPMA's multiple use management does *not* require that mineral development be allowed on every piece of public land:

The Act does not mandate that every use be accommodated on every piece of land; rather, delicate balancing is required. See *Norton v. S. Utah Wilderness Alliance*, 542 U.S. 55, 58, 124 S. Ct. 2373, 159 L. Ed. 2d 137 (2004). "Multiple use' requires management of the public lands and their numerous natural resources so that they can be used for economic, recreational, and scientific purposes without the infliction of permanent damage." *Pub. Lands Council v. Babbitt*, 167 F.3d 1287, 1290 (10th Cir. 1999) (citing 43 U.S.C. § 1702(c)); see also *Norton*, 542 U.S. at 58.

It is past doubt that the principle of multiple use does not require BLM to prioritize development over other uses. As we have reasoned in the past, "[i]f all the competing demands reflected in FLPMA were focused on one particular piece of public land, in many instances only one set of demands could be satisfied. A parcel of land cannot both be preserved in its natural character and mined." *Rocky Mtn. Oil & Gas Ass'n v. Watt*, 696 F.2d 734, 738 n.4 (10th Cir. 1982) (quoting *Utah v. Andrus*, 486 F. Supp. 995, 1003 (D. Utah 1979)); see also 43 U.S.C. § 1701(a)(8) (stating, as a goal of FLPMA, the necessity to "preserve and protect certain public lands in their natural condition"); *Pub. Lands Council*, 167 F.3d at 1299 (10th Cir. 1999) (citing § 1701(a)(8)). Accordingly, BLM's obligation to manage for multiple use does not mean that development *must* be allowed on the Otero Mesa. Development is a *possible* use, which BLM must weigh against other possible uses—including conservation to protect environmental values, which are best assessed through the NEPA process. Thus, an alternative that closes the Mesa to development does not necessarily violate the principle of multiple use, and the multiple use provision of FLPMA is not a sufficient reason to exclude more protective alternatives from consideration.

New Mexico ex rel. Richardson v. BLM, 565 F.3d 683, 710 (10th Cir. 2009).

⁵⁴ See 30 U.S.C. § 226; *Udall v. Tallman*, 380 U.S. 1 (1965).

BLM's fiscal year 2015 statistics show over 32 million acres of onshore federal minerals are already leased for oil and gas development.⁵⁵ Nearly twenty million acres out of that total sat idle as of FY 2015, simply stockpiled for speculation. Neither the MLA nor FLPMA require that the entirety of the federal estate be leased for mineral development. In light of the incompatibility of new fossil fuel investment and infrastructure with mitigating climate change, and BLM's statutory duties to avoid permanent impairment to the quality of the environment, BLM not only can but should adopt a no new leasing alternative.

i. BLM Must Limit Greenhouse Gas Emissions By Keeping Federal Fossil Fuels In the Ground

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.⁵⁶ 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.

A ban on new fossil fuel leasing and fracking is necessary to meet the U.S.'s greenhouse gas reduction commitments. On December 12, 2015, 197 nation-state and supra-national organization parties meeting in Paris at 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.⁵⁷ As the Paris Agreement opens for signature in April 2016⁵⁸ and the United States is expected to sign the treaty⁵⁹ as a legally binding instrument through executive agreement,⁶⁰ 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.⁶¹

⁵⁵ BLM Oil and Gas Statistics for Fiscal Years 1988-2015, available at http://www.blm.gov/style/medialib/blm/wo/MINERALS_REALTY_AND_RESOURCE_PROTECTION/_energy/oil_gas_statistics/data_sets.Par.69959.File.dat/summary.pdf

⁵⁶ 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).

⁵⁷ United Nations Framework Convention on Climate Change, Adoption of the Paris Agreement, Proposal by the President, Draft decision -/CP.21 (2015) ("Paris Agreement") at Art. 2.

⁵⁸ Paris Agreement, Art. 20(1).

⁵⁹ For purposes of this Petition, the term "treaty" refers to its international law definition, whereby a treaty is "an international law agreement concluded between states in written form and governed by international law" pursuant to article 2(a) of the Vienna Convention on the Law of Treaties, 1155 U.N.T.S. 331, 8 I.L.M. 679 (Jan. 27, 1980).

⁶⁰ See U.S. Department of State, Background Briefing on the Paris Climate Agreement, (Dec. 12, 2015), <http://www.state.gov/r/pa/prs/ps/2015/12/250592.htm>.

⁶¹ 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.

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.”⁶² 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*,”⁶³ imperatively commanding that developed countries specifically “should continue taking the lead by undertaking economy-wide absolute emission reduction targets”⁶⁴ and that such actions reflect the “highest possible ambition.”⁶⁵

The Paris Agreement codifies the international consensus that climate change is an “urgent threat” of global concern,⁶⁶ 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”⁶⁷ (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.⁶⁸ 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.⁶⁹ Those impacts include increased global food and water insecurity, the inundation of coastal regions and small island nations by sea level rise 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.⁷⁰ As

⁶² *Id.*, Recitals.

⁶³ *Id.*, Art. 4(1).

⁶⁴ *Id.*, Art. 4(4).

⁶⁵ *Id.*, Art. 4(3).

⁶⁶ *Id.*, Recitals.

⁶⁷ *Id.*, Art. 2.

⁶⁸ See U.N. Framework Convention on Climate Change, Cancun Agreement (2011), available at <http://cancun.unfccc.int/> (last visited Jan 7, 2015); United Nations Framework Convention on Climate Change, Copenhagen Accord (2009), 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 U.S. Congress, Ratification of Treaty Document titled The United Nations Framework Convention on Climate Change, adopted May 9, 1992 available at <https://www.congress.gov/treaty-document/102nd-congress/38>.

⁶⁹ See Paris Agreement, Art. 2(1)(a); U; United Nations 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); Intergovernmental Panel on Climate Change, 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.)] (“IPCC AR5 Synthesis Report”) at 65 & Box 2.4.

⁷⁰ 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

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.”⁷¹ 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, extracting and burning all proven fossil fuel reserves would release enough CO₂ to exceed this limit many times over.⁷² This is before accounting for unproven resources, such as would be targeted under any new BLM leasing.

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.⁷³ Given more than 100 GtCO₂ have been emitted since 2011,⁷⁴ the remaining portion of the budget under this scenario is well below 900 GtCO₂. To have an 80% probability of staying below the 2°C target, the budget from 2000 is 890 GtCO₂, with less than 430 GtCO₂ remaining.⁷⁵

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

Academy of Sciences of the United States of America 4133 (2009); Veron, J. E. N. *et al.*, The Coral Reef Crisis: The Critical Importance of <350 ppm CO₂, 58 *Marine Pollution Bulletin* 1428, (2009); Warren, R. J. *et al.*, Increasing Impacts of Climate Change Upon Ecosystems with Increasing Global Mean Temperature Rise, 106 *Climatic Change* 141 (2011); Hare, W. W. *et al.*, Climate Hotspots: Key Vulnerable Regions, Climate Change and Limits to Warming, 11 *Regional Environmental Change* 1 (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; Schaeffer, M. *et al.*, Adequacy and Feasibility of the 1.5°C Long-Term Global Limit, *Climate Analytics* (2013).

⁷¹ 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 (2011).

⁷² Cmons, Marlene, Keep It In the Ground 6, *Sierra Club et al.* (Jan. 25, 2016).

⁷³ 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 (2013) at 27; IPCC AR5 Synthesis Report.

⁷⁴ From 2012-2014, 107 GtCO₂ was emitted (see Annual Global Carbon Emissions at <http://co2now.org/Current-CO2/CO2-Now/global-carbon-emissions.html> (accessed May 20, 2016)).

⁷⁵ Carbon Tracker Initiative, Unburnable Carbon Are the world’s financial markets carrying a carbon bubble? <http://www.carbontracker.org/wp-content/uploads/2014/09/Unburnable-Carbon-Full-rev2-1.pdf> (accessed May 20, 2016); Meinshausen, M. *et al.*, Greenhouse gas emission targets for limiting global warming to 2 degrees Celsius, 458 *Nature* 1158, 1159 (2009).

2011 onward,⁷⁶ 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,⁷⁷ of which less than 300 GtCO₂ remained at the start of 2015.⁷⁸ 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 GtCO₂,⁷⁹ 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.⁸⁰

According to a recent report by EcoShift Consulting commissioned by the Center and Friends of the Earth, unleased (and thus unproven and 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 resources that otherwise would not be available, increasing the potential for future greenhouse gas emissions. In recognition of established climate science, and global carbon budgeting, BLM must consider a ban on fracking and a ban on new leasing.

Beginning the phase-out of public fossil fuel production by ceasing new onshore leases would have a significant effect on U.S. contributions to greenhouse gas emissions, allowing us to meet targets under the Paris Agreement. The first systematic quantitative assessment of the emissions consequences of a cessation of federal leasing (both onshore and offshore) found that:

⁷⁶ IPCC AR5 Synthesis Report at 64 & Table 2.2.

⁷⁷ *Id.*

⁷⁸ See CarbonBrief, Carbon Countdown: How Many Years of Current Emissions Would Use up the IPCC's Carbon Budgets for Different Levels of Warming, <http://www.carbonbrief.org/analysis-only-five-years-left-before-one-point-five-c-budget-is-blown> (accessed May 20, 2016).

⁷⁹ See Global Carbon Emissions, <http://co2now.org/Current-CO2/CO2-Now/global-carbon-emissions.html>

⁸⁰ 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. Rogelj, Joeri *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.

[U]nder such a policy, U.S. coal production would steadily decline, moving closer to a pathway consistent with a global 2°C temperature limit. Oil and gas extraction would drop as well, but more gradually, as federal lands and waters represent a smaller fraction of national production, and these resources take longer to develop. Phasing out federal leases for fossil fuel extraction could reduce global CO₂ emissions by 100 million tonnes per year by 2030, and by greater amounts thereafter.⁸¹

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 not only worsen climate disruption, it will 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.⁸² The Lander RMP/FEIS's analysis of greenhouse gas emissions, for example, is limited to "emissions from oil and gas exploration, production, and transportation." Lander RMP/FEIS at 598. This analysis fails completely to account for the primary and intended indirect consequence of oil and gas leasing and production – the actual combustion of fossil fuels.

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

A programmatic review and moratorium on new leasing would be consistent with the Secretary of Interior's recent order to conduct a comprehensive, programmatic EIS (PEIS) on its

⁸¹ Erickson, Peter and Michael Lazarus, *How Would Phasing Out U.S. Federal Leases for Fossil Fuel Extraction Affect CO₂ Emissions and 2°C Goals?* 1, 31-32, Stockholm Environment Institute Working Paper 2016-02 (May 2016).

⁸² See, e.g., U.S. Bureau of Land Management 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); U.S. Bureau of Land Management, *Proposed Rule: Waste Prevention, Production Subject to Royalties, and Resource Conservation*, 81 Fed. Reg. 6615 (Feb. 8, 2016) (proposing BLM-wide rule for prevention of methane waste).

coal leasing program, in light of the need to take into account the program's impacts on climate change, among other issues, and "the lack of any recent analysis of the Federal coal program as a whole."⁸³ Specifically, the Secretary directed that the PEIS "should examine how best to assess the climate impacts of continued Federal coal production and combustion and how to address those impacts in the management of the program to meet both the Nation's energy needs and its climate goals, as well as how best to protect the public lands from climate change impacts."⁸⁴

The Secretary also ordered a moratorium on new coal leasing while such a review is being conducted. The Secretary reasoned:

Lease sales and lease modifications result in lease terms of 20 years and for so long thereafter as coal is produced in commercial quantities. Continuing to conduct lease sales or approve lease modifications during this programmatic review risks locking in for decades the future development of large quantities of coal under current rates and terms that the PEIS may ultimately determine to be less than optimal. This risk is why, during the previous two programmatic reviews, the Department halted most lease sales with limited exceptions.... Considering these factors and given the extensive recoverable reserves of Federal coal currently under lease, I have decided that a similar policy is warranted here. A pause on leasing, with limited exceptions, will allow future leasing decisions to benefit from the recommendations that result from the PEIS while minimizing any economic hardship during that review.⁸⁵

The Secretary's reasoning is also apt here. A programmatic review assessing the climate change effects of public fossil fuels is long overdue. And there is no shortage of oil and gas supply that would preclude a moratorium while such a review is conducted, as evidenced by very low natural oil and gas prices. More importantly, BLM should not "risk[] locking in for decades the future development of large quantities of [fossil fuels] under current... terms that a [programmatic review] may ultimately determine to be less than optimal."⁸⁶ BLM should cancel the sale and halt all new leasing and fracking until a programmatic review is completed.

C. BLM Must Study the Greenhouse Gas Impacts of New Leasing

As explained in the Center's comment on the PEA, social cost of carbon analysis is an appropriate tool for analyzing the cumulative impacts of greenhouse gas emissions, which the EAs failed to perform. The effects of cumulative greenhouse gas emissions will have far-reaching impacts on natural and social systems, but the EAs fail to provide any meaningful analysis of the proposed action's contribution to these effects.

i. The Effects of Cumulative GHG Emissions Will Inflict Extraordinary Harm to Natural Systems and Communities

⁸³ See Secretary of Interior, Order No. 3338, § 4 (Jan. 15, 2016).

⁸⁴ *Id.* § 4(c).

⁸⁵ *Id.* § 5.

⁸⁶ *Id.*

The Paris Agreement codified the international consensus that the climate crisis is an urgent threat to human societies and the planet, with the parties recognizing that:

Climate change represents an *urgent and potentially irreversible threat to human societies and the planet* and thus requires the widest possible cooperation by all countries, and their participation in an effective and appropriate international response, with a view to accelerating the reduction of global greenhouse gas emissions (emphasis added).⁸⁷

Numerous authoritative scientific assessments have established that climate change is causing grave harms to human society and natural systems, and these threats are becoming increasingly dangerous. The Intergovernmental Panel on Climate Change (IPCC), in its 2014 Fifth Assessment Report, stated that: "Warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, sea level has risen, and the concentrations of greenhouse gases have increased" and that "[r]ecent climate changes have had widespread impacts on human and natural systems."⁸⁸

The 2014 Third National Climate Assessment, prepared by a panel of non-governmental experts and reviewed by the National Academy of Sciences and multiple federal agencies similarly stated that "[t]hat the planet has warmed is 'unequivocal,' and is corroborated through multiple lines of evidence, as is the conclusion that the causes are very likely human in origin"⁸⁹ and "[i]mpacts related to climate change are already evident in many regions and are expected to become increasingly disruptive across the nation throughout this century and beyond."⁹⁰ The United States National Research Council similarly concluded that: "[c]limate change is occurring, is caused largely by human activities, and poses significant risks for—and in many cases is already affecting—a broad range of human and natural systems."⁹¹

The IPCC and National Climate Assessment further decisively recognize the dominant role of fossil fuels in driving climate change:

While scientists continue to refine projections of the future, observations unequivocally show that climate is changing and that the warming of the past 50 years is primarily due to human-induced emissions of heat-trapping gases. These emissions come mainly from burning coal, oil, and gas, with additional

⁸⁷ Paris Agreement, Decision, Recitals.

⁸⁸ IPCC AR5 Synthesis Report at 2.

⁸⁹ Melillo, Jerry M., Terese (T.C.) Richmond, and Gary W. Yohe, Eds., *Climate Change Impacts in the United States: The Third National Climate Assessment* (U.S. Global Change Research Program), doi:10.7930/J0Z31WJ2 (2014) ("Third National Climate Assessment") at 61 (quoting IPCC, *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, S. Solomon, D. Qin, M. Manning, Z. Chen, M. Marquis, K. B. Averyt, M. Tignor, and H. L. Miller, Eds., Cambridge University Press (2007).

⁹⁰ Third National Climate Assessment at 10.

⁹¹ National Research Council, *Advancing the Science of Climate Change* (2010), available at www.nap.edu. ("Advancing the Science of Climate Change") at 2.

contributions from forest clearing and some agricultural practices.⁹²

CO₂ emissions from fossil fuel combustion and industrial processes contributed about 78% to the total GHG emission increase between 1970 and 2010, with a contribution of similar percentage over the 2000–2010 period (*high confidence*).⁹³

These impacts ultimately emanating from the extraction and combustion of fossil fuels are harming the United States in myriad ways, with the impacts certain to worsen over the coming decades absent deep reductions in domestic and global GHG emissions. EPA recognized these threats in its 2009 Final Endangerment Finding under Clean Air Act Section 202(a), concluding that greenhouse gases from fossil fuel combustion endanger public health and welfare: “the body of scientific evidence compellingly supports [the] finding” that “greenhouse gases in the atmosphere may reasonably be anticipated both to endanger public health and to endanger public welfare.”⁹⁴ In finding that climate change endangers public health and welfare, EPA has acknowledged the overwhelming evidence of the documented and projected effects of climate change upon the nation:

Effects on air quality: “The evidence concerning adverse air quality impacts provides strong and clear support for an endangerment finding. Increases in ambient ozone are expected to occur over broad areas of the country, and they are expected to increase serious adverse health effects in large population areas that are and may continue to be in nonattainment. The evaluation of the potential risks associated with increases in ozone in attainment areas also supports such a finding.”⁹⁵

Effects on health from increased temperatures: “The impact on mortality and morbidity associated with increases in average temperatures, which increase the likelihood of heat waves, also provides support for a public health endangerment finding.”⁹⁶

Increased chance of extreme weather events: “The evidence concerning how human induced climate change may alter extreme weather events also clearly supports a finding of endangerment, given the serious adverse impacts that can result from such events and the increase in risk, even if small, of the occurrence and intensity of events such as hurricanes and floods. Additionally, public health is expected to be adversely affected by an increase in the severity of coastal storm events due to rising sea levels.”⁹⁷

Impacts to water resources: “Water resources across large areas of the country are at serious risk from climate change, with effects on water supplies, water quality, and adverse

⁹² Third National Climate Assessment at 2.

⁹³ IPCC AR5 Synthesis Report at 46.

⁹⁴ U.S. Environmental Protection Agency, Endangerment and Cause or Contribute Findings for Greenhouse Gas Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. at 66,497 (Dec 15, 2009) (“Final Endangerment Finding”).

⁹⁵ *Id.*

⁹⁶ *Id.*

⁹⁷ *Id.* at 66,497-98.

effects from extreme events such as floods and droughts. Even areas of the country where an increase in water flow is projected could face water resource problems from the supply and water quality problems associated with temperature increases and precipitation variability, as well as the increased risk of serious adverse effects from extreme events, such as floods and drought. The severity of risks and impacts is likely to increase over time with accumulating greenhouse gas concentrations and associated temperature increases."⁹⁸

Impacts from sea level rise: "The most serious potential adverse effects are the increased risk of storm surge and flooding in coastal areas from sea level rise and more intense storms. Observed sea level rise is already increasing the risk of storm surge and flooding in some coastal areas. The conclusion in the assessment literature that there is the potential for hurricanes to become more intense (and even some evidence that Atlantic hurricanes have already become more intense) reinforces the judgment that coastal communities are now endangered by human-induced climate change, and may face substantially greater risk in the future. Even if there is a low probability of raising the destructive power of hurricanes, this threat is enough to support a finding that coastal communities are endangered by greenhouse gas air pollution. In addition, coastal areas face other adverse impacts from sea level rise such as land loss due to inundation, erosion, wetland submergence, and habitat loss. The increased risk associated with these adverse impacts also endangers public welfare, with an increasing risk of greater adverse impacts in the future."⁹⁹

Impacts to energy, infrastructure, and settlements: "Changes in extreme weather events threaten energy, transportation, and water resource infrastructure. Vulnerabilities of industry, infrastructure, and settlements to climate change are generally greater in high-risk locations, particularly coastal and riverine areas, and areas whose economies are closely linked with climate-sensitive resources. Climate change will likely interact with and possibly exacerbate ongoing environmental change and environmental pressures in settlements, particularly in Alaska where indigenous communities are facing major environmental and cultural impacts on their historic lifestyles."¹⁰⁰

Impacts to wildlife: "Over the 21st century, changes in climate will cause some species to shift north and to higher elevations and fundamentally rearrange U.S. ecosystems. Differential capacities for range shifts and constraints from development, habitat fragmentation, invasive species, and broken ecological connections will likely alter ecosystem structure, function, and services, leading to predominantly negative consequences for biodiversity and the provision of ecosystem goods and services."¹⁰¹

In addition to these acknowledged impacts on public health and welfare more generally, climate change is causing and will continue to cause serious impacts on natural resources that the Department of Interior is specifically charged with safeguarding.¹⁰²

⁹⁸ *Id.* at 66,498.

⁹⁹ *Id.*

¹⁰⁰ *Id.*

¹⁰¹ *Id.*; see also Third National Climate Assessment at 195-219.

¹⁰² See Federal Land Policy and Management Act of 1976, 43 U.S.C. §§ 1701(a)(8), 1712(c)(1); Multiple-Use Sustained Yield Act of 1960, 16 U.S.C. § 528; National Environmental Policy Act of 1969, 42 U.S.C. §§ 4331-

Impacts to Public Lands: Climate change is causing and will continue to cause specific impacts to public lands ecosystem services. Although public lands provide a variety of difficult-to-quantify public benefits, one recent Forest Service attempt at quantification estimates the public land ecosystem services at risk from climate change at between \$14.5 and \$36.1 billion annually.¹⁰³ In addition to the general loss of ecosystem services, irreplaceable species and aesthetic and recreational treasures are at risk of permanent destruction. High temperatures are causing loss of glaciers in Glacier National Park; the Park's glaciers are expected to disappear entirely by 2030, with ensuing warming of stream temperatures and adverse effects to aquatic ecosystems.¹⁰⁴ With effects of warming more pronounced at higher latitudes, tundra ecosystems on Alaska public lands face serious declines, with potentially serious additional climate feedbacks from melting permafrost.¹⁰⁵ In Florida, the Everglades face severe ecosystem disruption from already-occurring saltwater incursion.¹⁰⁶ Sea level rise will further damage freshwater ecosystems and the endangered species that rely on them.

Impacts to Biodiversity and Ecosystems: Across the United States ecosystems and biodiversity, including those on public lands, are directly under siege from climate change—leading to the loss of iconic species and landscapes, negative effects on food chains, disrupted migrations, and the degradation of whole ecosystems.¹⁰⁷ Specifically, scientific evidence shows that climate change is already causing changes in distribution, phenology, physiology, genetics, species interactions, ecosystem services, demographic rates, and population viability: many animals and plants are moving poleward and upward in elevation, shifting their timing of breeding and migration, and experiencing population declines and extirpations.¹⁰⁸ Because climate change is occurring at an unprecedented pace with multiple synergistic impacts, climate change is predicted to result in catastrophic species losses during this century. For example, the IPCC concluded that 20% to 30% of plant and animal species will face an increased risk of extinction if global average temperature rise exceeds 1.5°C to 2.5°C relative to 1980-1999, with an increased risk of extinction for up to 70% of species worldwide if global average temperature exceeds 3.5°C relative to 1980-1999.¹⁰⁹

4332.

¹⁰³ Esposito, Valerie et al., *Climate Change and Ecosystem Services: The Contribution and Impacts on Federal Public Lands in the United States*, USDA Forest Service Proceedings RMRS-P-64 at 155-164 (2011).

¹⁰⁴ U.S. Environmental Protection Agency, *Climate Change and Public Lands* (1999).

¹⁰⁵ See National Climate Assessment at 48; MacDougall, A. H., et al., Significant contribution to climate warming from the permafrost carbon feedback, 5 *Nature Geoscience* 719-721 (2012), doi:10.1038/ngeo1573.

¹⁰⁶ See National Climate Assessment at 592; Foti, Romano et al., Signs of critical transition in the Everglades wetlands in response to climate and anthropogenic changes, 110 *Proceedings of the National Academy of Sciences* 6296-6300, (2013), doi:10.1073/pnas.1302558110.

¹⁰⁷ National Climate Assessment at 13.

¹⁰⁸ See Parmesan, C. and G. Yohe, A globally coherent fingerprint of climate change impacts across natural systems, 421 *Nature* 37-42 (2003); Root, T. et al., Fingerprints of global warming on wild animals and plants, 421 *Nature* 57-60 (2003); Chen, I. et al., Rapid range shifts of species associated with high levels of climate warming, 333 *Science* 1024-1026 (2011).

¹⁰⁹ IPCC, 2007: Synthesis Report: An Assessment of the Intergovernmental Panel on Climate Change. Other studies have predicted similarly severe losses. 15%-37% of the world's plants and animals committed to extinction by 2050 under a mid-level emissions scenario, see Thomas et al., Extinction risk from climate change, 427 *Nature* 145-8 (2004)); the potential extinction of 10% to 14% of species by 2100 if climate change continues unabated, see Maclean, I. M. D. and R. J. Wilson, Recent ecological responses to climate change support predictions of high

In sum, climate change, driven primarily by the combustion of fossil fuels, poses a severe and immediate threat to the health, welfare, ecosystems and economy of the United States. These impacts are felt across the nation, including upon the public lands the Secretary of the Interior is charged with safeguarding. A rapid and deep reduction of emissions generated from fossil fuels is essential if such threats are to be minimized and their impacts mitigated.

ii. The EA Ignores the Social Cost of Carbon Tool to Analyze the Cumulative Contribution of Increased Oil and Gas Development on Climate Change

BLM claims that because estimating the social cost of carbon ("SCC") is challenging, and because it was developed to support agencies in responding to EO 13514, rather than for making land management decisions, BLM does not have to analyze SCC.¹¹⁰ As explained in the Center's comment on the PEA, although cost-benefit analysis is not necessarily the ideal or exclusive method for assessing contributions to an adverse effect as enormous as climate change, BLM does have tools available to provide one approximation of external costs and has previously performed a "social cost of carbon" analysis in prior environmental reviews.¹¹¹ Such tools do not have to be developed for land use decisions in order to be utilized.

Further, other analytical tools exist to evaluate the cost of methane emissions.¹¹² EPA has peer reviewed and employed such a tool in its "Regulatory Impact Analysis of the Proposed Emission Standards for New and Modified Sources in the Oil and Natural Gas Sector."¹¹³

extinction risk, 108 Proceedings of the National Academy of Sciences of the United States of America 12337-12342 (2011); and the loss of more than half of the present climatic range for 58% of plants and 35% of animals by the 2080s under the current emissions pathway, in a sample of 48,786 species, see Warren, R. J. et al., Increasing Impacts of Climate Change Upon Ecosystems with Increasing Global Mean Temperature Rise, 106 Climatic Change 141-77 (2011).

¹¹⁰ HPD EA, Appendix E at 23.

¹¹¹ See *High Country Conserv'n Advocates v. United States Forest Serv.*, 2014 U.S. Dist. Lexis 87820 (D. Colo. 2014) (invalidating environmental assessment ["EA"] for improperly omitting social cost of carbon analysis, where BLM had included it in preliminary analysis); Taylor, P., "BLM crafting guidance on social cost of carbon -- internal memo," Greenwire, E&ENews (April 15, 2015); U.S. Bureau of Land Management, Internal Memo from Assistant Director of Resources and Planning Ed Roberson titled Addressing Climate Change Under NEPA (2015). ("Roberson Internal Memo"), April 2015, available at http://www.eenews.net/assets/2015/04/15/document_gw_01.pdf (noting "some BLM field offices have included estimates of the [social cost of carbon] in project-level NEPA documents") (accessed May 20, 2016); see also Council on Environmental Quality, Revised Draft Guidance for Greenhouse Gas Emissions and Climate Change Impacts, p. 18, available at www.whitehouse.gov/administration/eop/ceq/initiatives/nepa/ghg-guidance (accessed Jul 29, 2015) (quantitative analysis required if GHGs > 25k tons/yr).

¹¹² See Marten A.L., et al., Incremental CH₄ and N₂O mitigation benefits consistent with the US Government's SC-CO₂ estimates, 15 Climate Policy (2):272-298 (2015, print publication) "Incremental CH₄ and N₂O mitigation benefits consistent with the US Government's SC-CO₂ estimates," Climate Policy 15(2):272-298, abstract available at <http://www.tandfonline.com/doi/abs/10.1080/14693062.2014.912981>.

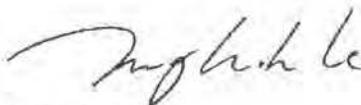
¹¹³ See U.S. Environmental Protection Agency, Social Cost of Carbon, <http://www3.epa.gov/climatechange/EPAactivities/economics/scr.html> (accessed May 20, 2016) (noting application of social cost of methane supported by peer review); U.S. Environmental Protection Agency, Regulatory Impact Analysis of the Proposed Emission Standards for New and Modified Sources in the Oil and Natural Gas Sector, Ch.

Leasing and development of unconventional wells could exact extraordinary financial costs to communities and future generations, setting aside the immeasurable loss of irreplaceable, natural values that can never be recovered. BLM can and must provide an accounting of these potential harms and costs in its environmental review. The EAs and BLM's response to comments fail to adequately respond to our comments on this issue.

III. Conclusion

Oil and gas development, including unconventional development, not only fuels the climate crisis but creates significant public health risks and harms to the environment. Accordingly, BLM should end all new leasing on BLM lands. Should BLM proceed with the lease sale, it must thoroughly analyze the alternatives of no new leasing (or no action), and no fracking or other unconventional well stimulation methods in an EIS. Thank you for your consideration of these comments. We look forward to reviewing a legally adequate EIS for this proposed oil and gas leasing action.

Sincerely,



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4 (August 2015) available at http://www3.epa.gov/airquality/oilandgas/pdfs/og_prop_ria_081815.pdf.