

Western Watersheds Project * Defenders of Wildlife *
Natural Resources Defense Council *
Sierra Club * Center for Biological Diversity

November 23, 2020

Via Web Portal

David Bernhardt
U.S. Secretary of the Interior
c/o Protest Coordinator
U.S. Bureau of Land Management.
P.O. Box 261117
Lakewood, CO 80226

Subject: Protest of the Final Environmental Impact Statement and Resource Plan Amendments for the Wyoming Pipeline Corridor Initiative (BLM-WY-0000-2020-0001-RMP-EIS)

Dear Secretary Bernhardt:

Western Watersheds Project, Defenders of Wildlife, Natural Resources Defense Council, Sierra Club, and Center for Biological Diversity (Conservation Groups) hereby protest the Wyoming Pipeline Corridor Initiative's (WPCI's) Final Environmental Impact Statement (FEIS) (BLM-WY-0000-2020-0001-RMP-EIS) and proposed amendment of Resource Management Plans (RMPs) for the Buffalo, Casper, Cody, Kemmerer, Lander, Pinedale, Rawlins, Rock Springs, and Worland Field Offices. The Conservation Groups timely submitted comments and supplemental comments on the DEIS¹ and several of the groups also timely submitted scoping comments.² Each group has interests that will be affected and are proper parties to submit this protest.

This protest is being filed on behalf of

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¹ Exhibit A is the Conservation Groups' DEIS comment letter. It has 78 attachments (1-78). Exhibit B is the Conservation Groups' supplemental DEIS comment letter. It has four attachments (A-D).

² Exhibit C is the scoping comment letter submitted by Western Watersheds Project, Center for Biological Diversity, Defenders of Wildlife, and Sierra Club. It has 40 attachments (1-40), and they have numbered cover pages.

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Western Watersheds Project (WWP) is a non-profit organization with more than 12,000 members and supporters. Our mission is to protect and restore western watersheds and wildlife through education, public policy initiatives and legal advocacy. WWP and its staff and members, such as Jonathan Ratner, WWP's Wyoming Director, use and enjoy Wyoming's public lands and their wildlife, cultural and natural resources for health, recreational, scientific, spiritual, educational, aesthetic, and other purposes, including the public lands along the WPCI corridors. WWP has a long-standing interest in protecting surface waters, greater sage-grouse, pronghorn and other wildlife in Wyoming. WWP timely submitted scoping and DEIS comments on the WPCI proposal. WWP's members and staff will be affected by impacts to wildlife, habitat, and water caused by future development in these pipeline corridors, for which there will be a lessened National Environmental Policy Act (NEPA) process due to designating them as corridors now. As a result, WWP has an interest in the WPCI proposal, will be adversely impacted, and has the right to protest.

Founded in 1947, Defenders of Wildlife (Defenders) is a national conservation organization focused solely on conserving native wildlife and safeguarding biodiversity. Based in Washington, DC, the organization maintains field offices across the country, including a Rockies and Plains Regional Office, and represents more than 1.8 million members and supporters in the United States and around the world. Defenders is deeply involved in public lands management and wildlife conservation, including conservation and restoration of the sagebrush biome in the American West. The lands affected by the proposed Resource Management Plan amendments contain habitat for the greater sage-grouse and an array of other special status species. Defenders' staff and members visit and enjoy the public lands throughout Wyoming. Defenders submitted timely scoping comments and comments on the Draft Environmental Impact Statement for this project.

Natural Resources Defense Council (“NRDC”) is a non-profit environmental membership organization that uses law, science, and the support of members throughout the United States, including members who reside in Wyoming, to protect wildlife and wild places and to ensure a safe and healthy environment for all living things. NRDC has engaged in scientific analysis, public education, advocacy, and litigation on a wide range of environmental and health issues. NRDC has a longstanding and active interest in protection of the nation’s public lands and wildlife and addressing climate change by promoting clean energy and reducing America’s reliance on fossil fuels. It also works with federal agencies to enhance public participation in government decision making.

The Sierra Club is a nonprofit environmental organization with more than 3.6 million members and supporters throughout the United States, including nearly 5,000 who reside in Wyoming. Since 1892, Sierra Club has worked to help people enjoy, explore and protect the planet, while practicing and promoting responsible and sustainable use of the earth’s resources. Sierra Club Wyoming members and supporters regularly use public land in Wyoming in a variety of ways, including for camping, hiking, hunting, fishing, wildlife viewing, nature photography, bird watching, mountain biking, spiritual rejuvenation, and enjoyment of solitude. Maintaining the opportunity to enjoy these activities in a natural setting on public land is very important to our constituency, and our members will be adversely affected by future development in the pipeline corridors. Sierra Club has participated in public meetings on the Pipeline Corridor Initiative and submitted timely comments during scoping and on the DEIS, and is qualified to protest on behalf of our members.

The Center for Biological Diversity is a non-profit environmental organization with more than 81,000 members, and 1.7 million members and online activists nationwide who value wilderness, biodiversity, old growth forests, and the threatened and endangered species which occur on America’s spectacular public lands and waters. Center members and supporters use and enjoy BLM-managed public lands in Wyoming for recreation, photography, wildlife viewing, nature study, and spiritual renewal.

I. Secretary Bernhardt Is the Only Department of the Interior Official Who Can Properly Resolve Protests at This Time

Under normal circumstances, protests of proposed Resource Management Plans (RMPs) and RMP amendments are resolved by the Director of the Bureau of Land Management (BLM), in accordance with 43 C.F.R. §§ 1610.5-2 (a)(1), (a)(3), and (b).³ However, a federal court ruled on September 25, 2020 that William Perry Pendley illegally served as BLM Director for 424 days and was enjoined from exercising the authority of the BLM Director; Secretary Bernhardt was enjoined from unlawfully delegating the authority of the BLM Director.⁴ The court stated as follows:

³ See 43 C.F.R. § 1610.5-2 (a)(1) (“The protest shall be in writing and shall be filed with the Director [of the BLM].”); see also 43 C.F.R. § 1610.5-2 (a)(3) (“The Director [of the BLM] shall promptly render a decision on the protest.”); 43 C.F.R. §1610.5-2 (b) (“The decision of the Director [of the BLM] shall be the final decision of the Department of the Interior.”).

⁴ *Bullock v. Bureau of Land Mgmt.*, Case No. 4:20-cv-62-BMM, 2020 WL 5746836 (D. Mont. Sept. 25, 2020), attached hereto and incorporated herein as Exhibit D.

Unless the President uses the procedures of the FVRA [Federal Vacancies Reform Act] to temporarily fill the open position, the “office shall remain vacant,” and in the case of a sub-cabinet agency, “only the head of [the] Executive agency” can perform the functions or duties of the vacant office. *Id.* § 3348(b). Only the Secretary of the Interior can perform functions or duties of the BLM Director.⁵

At this time, the BLM still does not have a legitimate, legally authorized Director, nominated and confirmed pursuant to the Federal Vacancies Reform Act (FVRA); therefore, Secretary of the Interior David Bernhardt is the only official who is authorized to resolve this protest.

II. BLM’s FEIS Fails to Comply with NEPA, FLPMA, the APA and Implementing Regulations

At this time, the Department of the Interior (DOI) has not promulgated new agency NEPA regulations, and therefore BLM must still implement the existing DOI NEPA regulations that were in effect prior to the recent Council on Environmental Quality (CEQ) NEPA changes.⁶ Although new CEQ NEPA rules are now in effect, BLM should apply the rules as they existed at the time the Draft EIS was issued for public comment. CEQ’s new rules went into effect on September 14, 2020 [hereinafter, Final Rule]⁷ However, the Final Rule does not automatically apply to analyses completed prior to September 14, 2020, including the Draft EIS, issued for public comment on April 17, 2020. While an agency can apply the new rules to ongoing activities, BLM should not do so here for the following reasons: (1) the new rules are unlawful and reliance on them threatens the legality of BLM’s actions; (2) CEQ and Mary Neumayr, Chair of the CEQ, acted arbitrarily, capriciously, and contrary to NEPA, in violation of the APA, 5 U.S.C. § 706(2), by failing to prepare an EA or Environmental Impact Statement (“EIS”) on the Final Rule, and by failing to evaluate alternatives to, and the full direct, indirect, and cumulative impacts of, the Final Rule; (3) CEQ and Mary Neumayr acted arbitrarily, capriciously, and contrary to law by failing to analyze how the Final Rule and its implementation would affect the directive of Executive Order 12898 and CEQ’s longstanding policy and practice of fully analyzing the environmental justice impacts of its actions; (4) CEQ and Mary Neumayr violated NEPA and the APA by issuing regulations that are inconsistent with the statutory purpose and language of NEPA; and (5) CEQ and Mary Neumayr acted in excess of statutory authority by issuing the Final Rule. The CEQ Final Rule is now the subject of at least five

⁵ *Id.* at 32.

⁶ The Department of the Interior’s current NEPA regulations are Exhibit I: 43 CFR Part 46 Implementation of the National Environmental Policy Act (NEPA) of 1969; Final Rule. October 15, 2008. Federal Register, Vol. 73, No. 200, pp. 61292-61323. Available at <https://www.doi.gov/sites/doi.gov/files/uploads/Federal-Register-October-15-2008-NEPA.pdf>.

⁷ See, CEQ, Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act, 85 Fed. Reg. 43,304, 43339 (July 16, 2020) (codified at 40 C.F.R. § 1506.13).

lawsuits.⁸ Further the CEQ Final Rule does not affect FLPMA regulations governing BLM’s resource management plans.⁹

If BLM chooses to apply the Final Rule here, additional public comment would be necessary. If BLM chooses to revise the EIS in accordance with the Final Rule, such revised analysis would require a new public comment period. For example, the Final Rule changes the definition of “effects” to exclude “cumulative” and “indirect.” Changing the analysis to limit assessment of cumulative and indirect effects would substantially change the analysis, triggering the need to recirculate a revised draft for public comment. *See, e.g., Indigenous Environmental Network v. United States Department of State*, 347 F.Supp.3d 561, 581 (D. Mont. 2018) (citing 40 C.F.R. § 1504(a)) (“Under NEPA, a change in a proposed action is substantial, requiring preparation of a Supplemental Environmental Impact Statement (SEIS), if it presents a seriously different picture of the environmental impact. 42 U.S.C. § 4321, *et seq.*; 40 C.F.R. § 1502.9(c). NEPA requires a federal agency to solicit public comments on draft environmental impact statements and consider comments both individually and collectively.”).

A. The WPCI NEPA Process Has not Fulfilled BLM’s Public Involvement Obligations Under Current DOI NEPA Regulations and FLPMA

DOI’s current NEPA regulations require federal agencies to encourage and facilitate public involvement “to the fullest extent possible,” 40 C.F.R. § 1500.2, and identify public scrutiny as an “essential” part of the NEPA process, *id.* § 1500.1(b); *see also id.* § 1501.4(b) (Agencies must “involve . . . the public, to the extent practicable”); *id.* § 1506.6 (“Agencies shall: . . . (a) Make diligent efforts to involve the public in preparing and implementing their NEPA procedures”). They also provide that “NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken.” 40 C.F.R. § 1500.1(b). FLPMA section 309(e) similarly requires BLM to “give . . . the public adequate notice and an opportunity to comment upon . . . and to participate in . . . the management of[] the public lands.” 43 U.S.C. § 1739(e).

The State of Wyoming began working on the Wyoming Pipeline Corridor Initiative proposal about 11-12 years ago.¹⁰ It met with various stakeholders to site the 25 pipeline corridor segments, including federal, state, county, and (some) private landowners. DEIS at iv. Tribes were not included in these pipeline corridor siting meetings, nor did the state consider tribal treaty rights on off-reservation lands.¹¹

⁸ *See, e.g., Environmental Justice Health Alliance et al. v. CEQ* (S.D.N.Y.) (20-cv-6143), *Wild Virginia et al. v. CEQ* (W.D. VA.) (20-cv-00045), *Alaska Community Action on Toxics et al. v. CEQ* (N.D. CA.) (20-cv-05199), *State of California et al. v. CEQ* (N.D. CA.) (20-cv-06057), *Iowa Citizens for Community Improvement v. CEQ* (D.D.C.) (20-cv-2715).

⁹ FLPMA regulations that apply to BLM Resource Management Plans are available at <https://ecfr.federalregister.gov/current/title-43/subtitle-B/chapter-II/subchapter-B>.

¹⁰ Personal communications, Matt Fry (State of Wyoming’s WPCI Project Manager) and Kelly Fuller (Western Watersheds Project), June 17, 2020.

¹¹ *Id.*

BLM began scoping for the WPCI proposal on November 15, 2019 through a Notice of Intent published in the Federal Register.¹² The scoping comment period ended on December 27, 2019, having occurred during both the Thanksgiving and Christmas holidays, a time of year when many members of the public have much higher demands on their time and attention than usual and their ability to meaningfully participate in NEPA processes is lessened.

On February 25, 2020, the Director of the National Center for Immunization and Respiratory Diseases at the U.S. Centers for Disease Control warned the American public that COVID-19 was expected to begin spreading within U.S. communities and that the public should be prepared for “severe” disruptions of daily life.¹³ These disruptions did indeed occur beginning in March 2020 and spread across the United States in the form of state and local government protective measures, such as stay-at-home orders and mandatory business closures, during the WPCI DEIS public comment period, and continue today. Similarly, many of the 25 tribes to whom BLM sent WPCI consultation letters implemented their own protective measures to safeguard their people from COVID-19 before and during the WPCI DEIS public comment period, including stay-at-home orders, curfews, travel restrictions, tribal office and business closures, and others.¹⁴

The DEIS public comment period for the WPCI proposal began in April 17, 2020 and ended on July 16, 2020. FEIS at xi. On June 11, 2020, five conservation groups asked BLM to extend the public comment period for the WPCI proposal by 120 days, due to the diminished ability of the public to meaningfully participate in the DEIS public comment period as a result of the COVID-19 pandemic and civil unrest throughout Wyoming and the United States related to the killing of Floyd George by the Minneapolis police.¹⁵

BLM never responded to the Conservation Groups’ request and did not extend the WPCI DEIS public comment period. In contrast, BLM recently extended a public comment period for the Farmington-Mancos RMP Amendment during the COVID-19 pandemic by 120 days, due to concerns expressed by Native Americans in the Greater Chaco region.¹⁶ But BLM did not allow affected tribes and other members of the public in Wyoming the same opportunity to fully and meaningfully participate in the process of amending the Wyoming RMPs as it did in New Mexico. When we raised this issue in our DEIS comments, BLM replied, “The BLM, to the

¹² See Attachment 39 of WWP *et al.* WPCI scoping comments. Notice of Intent To Prepare Resource Management Plan Amendments for 9 BLM-Wyoming Resource Management Plans and an Associated Environmental Impact Statement. November 15, 2019. Federal Register, Vol. 84, No. 221 at 62553-62554. Available at https://eplanning.blm.gov/public_projects/lup/1502028/20008271/250009785/WPCI_FRN_NOI.pdf.

¹³ Attachment 10 of Conservation Groups’ DEIS comment letter. Megan Thielking and Helen Branswell. February 25, 2020. CDC expects ‘community spread’ of coronavirus, as top official warns disruptions could be ‘severe.’ StatNews. Available at <https://www.statnews.com/2020/02/25/cdc-expects-community-spread-of-coronavirus-as-top-official-warns-disruptions-could-be-severe/>.

¹⁴ See Attachment 11 of Conservation Groups’ DEIS comments (Tribal COVID-19 Restrictions).

¹⁵ See Attachment 1 of Conservation Groups’ DEIS comments (Request for extension of DEIS public comment), which we incorporate by reference.

¹⁶ Bureau of Land Management, Farmington RMP: Mancos-Gallup Amendment, DOI-BLM-NM-F010-2017-0128-RMP-EIS, <https://eplanning.blm.gov/epl-front-office/eplanning/planAndProjectSite.do?methodName=dispatchToPatternPage¤tPageId=98894> (last visited June 3, 2020).

greatest extent possible, is working on maintaining service to the American people and our stakeholders that is consistent with evolving guidance from the Center for Disease Control (CDC) and local health authorities.” FEIS at K-29. This is insufficient to justify BLM extending an RMP amendment public comment period during a global pandemic in New Mexico while arbitrarily refusing to extend the RMP amendment public comment period here, during the same global pandemic. As a result, BLM’s decision not to extend the public comment period for the WPCI DEIS and RMP amendments arbitrarily limited public involvement in the WPCI NEPA process.

Conservation Groups provided an example in our DEIS comments of the type of comment that was excluded by BLM not extending the WPCI public comment period. As we stated in our DEIS comments, BLM did not make certain documents referred to in the DEIS available until the last month of the public comment period and only after we requested that they do so. The BLM posted the vegetation and wildlife technical reports on June 18, 2020 and the special status species report on July 1, 2020, the latter only 15 days before the comment deadline. The public did not have adequate time to review and react to these documents during the DEIS comment period, especially the special status species report.

Furthermore, the public’s ability to fully participate in the WPCI DEIS public comment period was decreased by two ongoing national emergencies that occurred during the WPCI public comment period and have not yet ended.¹⁷ Wyoming’s communities and tribes faced significant difficulties in participating in the WPCI NEPA process, which at the DEIS stage was entirely virtual. Many residents of rural Wyoming have little access to adequate broadband internet, with average download speed of only 17 mpbs.¹⁸ According to a 2019 Federal Communications Commission Study, fewer than half of the housing units on U.S. tribal lands have access to 25/3 Mbps broadband internet service.¹⁹

When we raised this issue in our DEIS comments, BLM responded, “Call in information was also made available for the virtual public meetings and an internet connection was not required or necessary to participate in the public meetings. Attendance and participation in both types of meetings were comparable.” FEIS at K- 29. BLM’s statement ignores that fact that commenting on the DEIS requires being able to see the DEIS, which the public cannot do over the phone. The DEIS is 26.6 MB, a size that requires some form of broadband internet in order to

¹⁷ Conservation Groups’ WPCI DEIS comments explained how these two ongoing national emergencies made it more difficult for Wyoming community members and tribes to participate during the WPCI public comment period (Exhibit A at 2): “First, the COVID-19 pandemic has decreased the public’s ability to participate, due to additional demands on the public’s time and the lack of in-person comment opportunities for those who do not have access to broadband internet. Native American tribes have also been operating under many pandemic restrictions that have reduced their ability to comment or participate in government-to-government consultation. Second, the national unrest resulting from the killing of George Floyd by Minneapolis police earlier this year resulted in protests and vigils in many Wyoming cities and towns, including Casper, Cheyenne, Cody, Dubois, Jackson, Riverton, Lander, Laramie, Pinedale, Rock Springs, and Sheridan.”

¹⁸ See Exhibit K. Wyoming Business Council. Broadband Enhancement. Available at <https://www.wyomingbusiness.org/broadband>.

¹⁹ See Exhibit J. Federal Communications Commission. May 2019. Report on Broadband Deployment in Indian Country, Pursuant to the Repack Airwaves Yielding Better Access for Users of Modern Services Act of 2018. Available at <https://docs.fcc.gov/public/attachments/DOC-357269A1.pdf>.

download in a reasonable length of time. Members of the public with slow internet connections, costly satellite internet with low data caps, or dial-up internet had little access to the DEIS. Furthermore, many members of the public have no access to the internet at home. The FEIS presents no evidence that members of the public without access to the DEIS could view hard copies at BLM field offices or other places, nor that any places that may have had hard copies were open to the public during the public comment period. This is significant because locations that were closed during the public comment period due to the COVID-19 pandemic include the public rooms of Wyoming BLM field offices, which as of November 16, 2020 still remain closed to the public.²⁰ Moreover, the DEIS's Notice of Availability, Dear Reader letter, and press release listed no locations for the public to access the DEIS, except on the internet.²¹ Even worse, the press release stated, "Public comments can only be submitted through the BLM's WPCI ePlanning project webpage," thus making internet access a requirement for commenting on the DEIS. This does not fulfill BLM's obligation to "insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken." 40 C.F.R. § 1500.1(b). Nor does it fulfill BLM's obligation under FLPMA to "give . . . the public adequate notice and an opportunity to comment upon . . . and to participate in . . . the management of[] the public lands." 43 U.S.C. § 1739(e).

In addition, BLM's public outreach did not ensure that all private landowners who could be affected by the corridor designations due to the checkerboard nature of BLM and private lands in some areas of the state were notified of them and told of their opportunity to comment on the DEIS.²² Although BLM does not have the authority to designate pipeline corridors on private property, pipeline corridors that are designated adjacent to or near private lands increase the likelihood that pipelines would be proposed on those lands in the future. Pipeline developers have a strong incentive to site pipelines within the corridors in order to benefit from shortened NEPA analysis timelines due to some analysis already being completed and to be able to more easily site pipelines in designated sage-grouse habitat without violating MD LR 3 in the 2015 Wyoming Approved Resource Management Plan Amendments for Greater Sage-Grouse (2015

²⁰ See Exhibit E, BLM Wyoming COVID-19 web page. Accessed on November 16, 2020. Available at <https://www.blm.gov/alert/blm-wyoming-offices>.

²¹ Exhibit F at 21453. April 17, 2020. Bureau of Land Management. Notice of Availability of the Wyoming Pipeline Corridor Initiative Draft Environmental Impact Statement and Resource Management Plan Amendments for 9 BLM-Wyoming Resource Management Plans. Federal Register. Vol. 85, No. 75, pp. 21453-2145. Available at https://eplanning.blm.gov/public_projects/lup/1502028/20016463/250021928/WPCI_DEIS_FederalRegisterNotice.pdf. See also Exhibit G at 2. April 15, 2020. Dear Reader letter, WPCI proposal. Available at https://eplanning.blm.gov/public_projects/lup/1502028/20016412/250021875/WPCI_Web_Letter_Signed.pdf. See also Exhibit H, Bureau of Land Management WPCI press release ("BLM Wyoming Releases Draft Environmental Impact Statement for the Wyoming Pipeline Corridor Initiative"). April 17, 2020. Available at <https://www.blm.gov/press-release/blm-wyoming-releases-draft-environmental-impact-statement-wyoming-pipeline-corridor>. Please note, Exhibit F is an electronic document that cannot have pages added, so does not have a cover page.

²² Statement of Michael Valle, BLM Wyoming State Office, during the May 28, 2020 morning WPCI webinar. His statement was repeated in the FEIS. "Q-29: Have all landowners whose properties would be intersected by pipelines laid in the corridors due to checkerboard property ownership been notified of this proposal and invited to comment? A-29: Some private landowners attended the Thermopolis public scoping meetings and met with the WPCI state lead for this initiative. This proposal applies to BLM managed lands only but if a specific project is proposed that crosses private land the pipeline company or project proponent would have to deal with obtaining access on private lands." FEIS at 649/780 (Page 3-9 of FEIS Appendix C: Question and Answer Report).

Wyoming Grouse ARMPA). When we raised the issue of lack of private landowner notification in our DEIS comments, BLM replied, “The BLM published notices for public scoping and public comment periods in the Federal Register and issued media releases and emails that announced the scoping and public comment periods to the mailing list. The mailing list was developed from BLM’s mailing list, tribal contacts, and other cooperating agencies.” FEIS at K-29. Thus, rather than provide notification to private landowners whose land connected the BLM portions of the proposed pipeline corridors, BLM expected them to somehow know what had been published in the Federal Register or that a BLM press release had been published or to already be on a BLM mailing list. This is not a prudent or reasonable expectation.

BLM’s lack of outreach to private landowners is especially harmful because the State of Wyoming’s corridor siting process did not give equal consideration to all landowners who might be affected by the corridors. Earlier this year, the State of Wyoming’s project lead for the WPCI proposal told a WWP employee that during the multi-year siting process, the state’s outreach to private landowners consisted of talking to landowners who were suggested by county commissioners, not outreach to *all* potentially affected landowners.²³ That means landowners who were not suggested by county commissioners did not receive the same opportunity to have input into corridor siting that other landowners received. This is important because the FEIS shows that at least one segment of BLM’s preferred Alternative E was chosen to avoid issues with private land.²⁴ Since BLM is mandated to serve all Americans, not just those suggested by county commissioners, BLM should have remedied this flaw in the corridor siting process and notified all potentially affected private landowners of public comment opportunities during the WPCI NEPA process. BLM did not, but BLM could have done so. Private land ownership information is readily available in geographic information systems (GIS) format,²⁵ so BLM could have determined which landowners were potentially affected. BLM could also have required the WPCI proposal’s sponsor/proponent (the State of Wyoming) to do this outreach. BLM’s lack of outreach to potentially affected landowners does not fulfill the agency’s obligations under NEPA and its implementing regulations to encourage and facilitate public involvement and to “insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken.” 40 C.F.R. § 1500.1(b).

B. Reasonable Range of Alternatives

1. BLM Erred in Not Considering Reasonable Alternatives Proposed by the Public or Stating the Rationale for Dismissing Them

The BLM must, “objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their elimination.” 40

²³ Personal communications, Matt Fry (State of Wyoming) and Kelly Fuller (WWP), June 17, 2020.

²⁴ See description of Segment 21 at FEIS 2-9.

²⁵ In order to learn who they must contact if they want to cross privately owned land, hunters, anglers, and recreationists frequently access private land ownership information through software mapping apps that are built from publicly available land ownership information, for example onX Hunt and Gaia GPS (<https://www.onxmaps.com/hunt-app>) and (<https://www.gaiagps.com/>). Since the public is able to do this, BLM, which has the resources of the federal government behind it, could certainly have mapped landowners potentially affected by the WPCI corridors, and then notified those landowners of the WPCI proposal and public comment opportunities.

C.F.R. § 1502.14. Reasonable alternatives are those that substantially meet the agency's purpose and need. Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant. *See, e.g., Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 195-96 (D.C. Cir. 1991), *cert. denied*, 502 U.S. 994 (1991). Agencies are obligated to evaluate all reasonable alternatives or a range of reasonable alternatives in enough detail so that members of the public and decisionmakers can compare and contrast the environmental effects of the various alternatives. *New Mexico*, 565 F.3d at 708 (internal citation omitted).

On page FEIS Volume 1 at 2-2, the BLM lists four alternatives that it considered but opted not to evaluate. These include alternatives that:

- Only include corridors that do not have conflicts with existing uses or critical resource values. Examples of exiting uses or resources that would be potentially incompatible include active mine operations, wilderness areas, improved recreation sites, within RHMA and outside existing designated corridors, or authorized ROWs that are incompatible for collocation with a pipeline.
- Modify routes to include additions to avoid incompatible uses. Instead of eliminating corridors that intersect with existing uses or resource values, this alternative would re-route corridors to avoid incompatible uses or resources.
- Update corridors in all the RMPs for all types of linear ROW projects to create an updated corridor network.
- Change corridor widths allowing them to vary and big larger.

The BLM explains that these alternatives were dismissed because the alternatives analyzed in detail included pieces of the dismissed alternatives. FEIS, Volume 1, 2-2.

In the Conservation Groups' scoping²⁶ and DEIS comments, we submitted other alternatives for consideration. These included:

- An alternative that requires compensatory mitigation for damage to sage grouse habitat as proposed in scoping letter at 17-18;
- A reasonable range of alternatives with decreased GHG emissions, as proposed in DEIS comments at 66;
- An alternative that that analyzes the impacts of the possible net CO2 outcomes and discuss how the impacts of a net CO2 contributor outcome would be avoided, minimized, and mitigated as proposed in scoping letter at page 4 and DEIS letter at 67;
- An alternative that maximizes greater sage-grouse conservation by *i.e.*, siting pipeline corridors at least four miles distant from leks which are traditional sage-grouse display

²⁶ See scoping comment letter submitted on December 20, 2019 by Western Watersheds Project, Defenders of Wildlife, Center for Biological Diversity, Sierra Club Wyoming Chapter, and WildEarth Guardians, herein referred to as "scoping letter" and "scoping comments" (Attachment 16 of Conservation Groups' DEIS comments). Also see letter submitted in response to Draft EIS on July 16, 2020 by Western Watersheds Project, Defenders of Wildlife, Natural Resources Defense Council, Sierra Club, and Center for Biological Diversity, herein referred to as "DEIS letter" and "DEIS comments" (Exhibit A).

and breeding sites and the hub of nesting activity in surrounding habitat, and avoiding surface disturbance in priority habitat as proposed in scoping letter at 9-10.²⁷

In addition, in our DEIS comments, we asked BLM to evaluate Landscapes with Wilderness Characteristics (undeveloped areas that could qualify for wilderness designation) that would be crossed by pipeline corridor designation and subsequent development and to reroute pipeline corridors around them. There are numerous Landscapes with Wilderness Characteristics throughout the planning area, particularly in the southwestern part of the state. DEIS comments at 20. This constitutes another alternative.

We assert that the alternatives that we suggested are reasonable, meet the purpose and need, and are technically and economically feasible. The BLM erred in not disclosing and discussing these proposed alternatives in the DEIS and in not explaining why the alternatives were dismissed in violation of 40 C.F.R. § 1502.14.

2. The FEIS Does Not Provide Adequate Information Related to the Availability and Capacity of Current Rights-of-Way (ROWs) and Corridors to Transport Carbon Dioxide (CO₂) and Enhanced Oil Recovery (EOR) Products

We cannot tell from the information presented in the FEIS whether the current network of ROWs and designated ROW corridors is adequate for transporting CO₂ and EOR products. In the FEIS, BLM implies that the current network is inadequate -- *see, e.g.*, FEIS, Vol. 1 at 3-40 (“Current constraints impacting increased CO₂ flooding center around the limited network and capacity of CO₂ pipelines in Wyoming.”) -- but provides no supporting detail. In the absence of this information, we cannot evaluate whether Alternative A would meet the need proffered by the BLM in the Purpose and Need statement and we do not have enough information to adequately compare and contrast alternatives.²⁸

III. The DEIS Fails to Take a Hard Look at Impacts under NEPA and Its Implementing Regulations

As we stated in our DEIS comments, NEPA requires agencies to maintain a national “look before you leap” policy in regard to all major federal actions. Congress’ intent in establishing this objective was to avoid uninformed agency decisions that could have serious environmental consequences. Thus, NEPA’s mandate is that all federal agencies analyze the likely effects of their actions, as well as address the potential alternatives. “Agencies are to perform this hard look before committing themselves irretrievably to a given course of action so that the action can be shaped to account for environmental values. NEPA § 102(2)(c) requires the

²⁷ Note that all the action alternatives impact leks. The pipeline ROW configuration under Alternative D, which was designed to minimize impacts, is within 2 miles of 54 leks and within four miles of 211 leks. FEIS, Vol. I, 104. Similarly, the pipeline ROW configuration under Alternative C, the alternative composed of connecting segments only, is within 2 miles of 12 leks and within four miles of 20 leks. FEIS, Vol. I, 3-103. All action alternatives except Alternative C impact PHMAs. FEIS Vol II, M-19 to M-23.

²⁸ As discussed later in this letter, the 2015 Wyoming Sage Grouse Amendment requires the BLM to site future ROWs within or adjacent to existing ROWs where technically feasible. Hence it is critical for BLM to provide supplemental supporting information so that members of the public and decisionmakers can evaluate whether Alternative A can meet CO₂ transport needs.

agency to consider numerous factors [including] irreversible commitments of resources called for by the proposal.” *Sierra Club v. Hodel*, 848 F.2d 1068 (10th Cir. 1988) (rev’d on other grounds). NEPA provides procedural protections for resources at risk by requiring analysis of impacts before substantial decisions are made that set development in motion. See *Conservation Law Foundation v. Watt*, 560 F. Supp. 561, 581 (D. Mass. 1983), aff’d by *Massachusetts v. Watt*, 716 F. 2d 946 (1st Cir. 1983).

NEPA and its implementing regulations are our “basic national charter for the protection of the environment.” 40 C.F.R. § 1500.1. The primary purpose of NEPA is two-fold: (1) “[i]t ensures that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts,” and (2) “it . . . guarantees that the relevant information will be made available to the larger audience that may also play a role in both the decisionmaking process and the implementation of that decision.” *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989). Thus, while “NEPA itself does not mandate particular results, but simply prescribes the necessary process,” *id.* at 350, agency compliance with NEPA’s action-forcing statutory and regulatory mandates helps federal agencies ensure that they are adhering to NEPA’s noble purpose and policies. See 42 U.S.C. §§ 4321, 4331.

NEPA imposes “action-forcing procedures . . . requir[ing] that agencies take a ‘hard look’ at environmental consequences.” *Methow Valley Citizens Council*, 490 U.S. at 350 (citations omitted). These “environmental consequences” may be direct, indirect, or cumulative. 40 C.F.R. §§ 1502.16, 1508.7, 1508.8.

A. Greater Sage-Grouse

1. Greater Sage-Grouse Direct and Indirect Impacts

As we stated in our DEIS comments, the WPCI FEIS includes laundry lists of potential negative impacts to greater sage-grouse as a result of developing pipelines in the WPCI corridors (e.g., vegetation disturbance, habitat fragmentation, increased noise, lek abandonment, increased predation, etc.) but does not discuss what really matters: the extent to which those negative impacts could affect or harm statewide and local sage-grouse populations (abundance); sage-grouse distribution; sage-grouse genetic connectivity; sage-grouse migration; and sage-grouse redundancy, representation, and resilience. Nor does the FEIS or the Special Status Species Report prepared for the WPCI project identify which grouse populations are present in each corridor segment and discuss how well those grouse populations are doing. In the FEIS, BLM asserts that it is deferring full analysis of impacts to greater sage-grouse populations, seasonal habitats, or movement until future projects are proposed, claiming that it cannot do so now because there will be different types of projects. FEIS at K-34. This claim is incorrect, at least in regard to the impacts of developing pipelines. Although BLM may not know every single CO2 source or oil field that could be impacted by future pipeline development (a.k.a. different types of future projects), BLM has much experience in preparing NEPA analyses for pipelines and could analyze now the impacts of developing pipelines in the proposed corridors in regard to statewide and local sage-grouse populations (abundance); sage-grouse distribution; sage-grouse

genetic connectivity;²⁹ sage-grouse migration;³⁰ and sage-grouse redundancy, representation, and resilience,³¹ for the pipelines themselves. The width of the pipeline corridors is known: 300 feet wide for trunk corridors and 200 feet wide for lateral corridors. See FEIS at 2-3 to 2-5. Because the WPCI proposal is so large (the corridors reach across more than 1,100 miles of BLM land and building pipelines in them will also result in impacts to adjacent/connecting state and private land for a total of nearly 2,000 miles total), BLM's failure to analyze and disclose to the public how statewide and local sage-grouse populations; sage-grouse genetic connectivity; sage-grouse migration; and sage-grouse redundancy, representation, and resilience would be impacted by the development of pipelines in the various corridor alternatives will result in a significant underestimation of impacts.

In addition, BLM needs to analyze and disclose how greater sage-grouse population; genetic connectivity; migration; and redundancy, representation, and resilience will be affected for each proposed corridor segment because sage-grouse Priority Habitat Management Areas (PHMA) in the proposed corridor segments that are not currently designated as a corridor or are not adjacent to a road or existing utilities are protected under the 2015 Wyoming grouse ARMPA via siting restrictions. MD LR 3 states, "New pipelines through PHMAs will be allowed: (1) within an RMP corridor currently authorized for that use or designated through future RMP amendments; or (2) constructed in or adjacent to existing utilities (buried and above-ground) or roads. 2015 Wyoming grouse ARMPA at 61. Those areas of PHMA will lose that protection if they are designated as corridors. Some Wyoming sage-grouse populations are doing better than others, and BLM needs to analyze and disclose to the public the additional grouse information that it hasn't included in the FEIS in order to make a fully informed choice as it removes 2015 Wyoming Grouse ARMPA protection from some sage-grouse habitat by designating it as a corridor. Furthermore, BLM must complete a full analysis of impacts to greater sage-grouse of removing MD LR 3 protection from PHMA within the proposed corridors because the WPCI proposal was not included as a reasonably foreseeable development in the 2015 Wyoming ARMPA's cumulative effects analysis. See 2015 Wyoming Grouse ARMPA FEIS at 4-522 to 4-523. The absence of the WPCI proposal from the 2015 Wyoming grouse ARMPA is also

²⁹ U.S. Fish and Wildlife Service's 2015 greater sage-grouse decision states, "[C]onnectivity between core population areas has been identified as an important strategy to ensure long-term sage-grouse persistence." Exhibit L at 59874. U.S. Fish and Wildlife Service. October 2, 2015 12-Month Finding on a Petition to List Greater Sage-Grouse (*Centrocercus urophasianus*) as an Endangered or Threatened Species. Fed. Reg. Vol. 80, No. 191, pp. 59858-59942. Available at <https://www.govinfo.gov/content/pkg/FR-2015-10-02/pdf/2015-24292.pdf>. Please note, Exhibit L is an electronic document that cannot have pages added, so does not have a cover page.

³⁰ "Lengthy migrations between distinct seasonal ranges are one of the more distinctive characteristics of Greater Sage-Grouse. These migratory movements (often 20 km) and large annual home ranges (600 km²) help integrate Greater Sage-Grouse populations across vast landscapes of sagebrush (*Artemisia* spp.)-dominated habitats." Exhibit Z at 53. Connelly, J. W., C. A. Hagen, and M. A. Schroeder. 2011. Characteristics and dynamics of Greater Sage-Grouse populations. Pp. 53-67 in S. T. Knick and J. W. Connelly (editors). Greater Sage-Grouse: ecology and conservation of a landscape species and its habitats. Studies in Avian Biology (vol. 38), University of California Press, Berkeley, CA. The importance of migration to some sage-grouse populations is also discussed in the U.S. Fish and Wildlife Service's 2015 greater sage-grouse decision. See Exhibit L at 59861, 59866, and 59875. Please note, Exhibit L is an electronic document that cannot have pages added, so does not have a cover page.

³¹ The importance of the conservation principles of representation, redundancy, and resilience for greater sage-grouse habitat and population is explained in the 2013 U.S. Fish and Wildlife Service Conservation Objectives Team Report (COT Report) at 12, 13, 31, 32, 32, 36, and 37. The COT Report is Attachment 30 of WWP *et al.* scoping comments.

significant because the U.S. Fish and Wildlife Service's 2015 decision not to list greater sage-grouse under the Endangered Species Act relied in large part on BLM's RMPs (a.k.a. the 2015 grouse plans). See 12-Month Finding at 59858, 59874, 59875, 59876.³² Amending BLM RMPs to remove PHMA protection from new pipeline corridors conflicts with U.S. Fish and Wildlife Service's basis for its 2015 listing decision.

The WPCI FEIS's analysis of greater sage-grouse lek data is also insufficient for BLM to make an informed decision about the proposed WPCI corridors. The FEIS presents lek counts as 20-year averages of peak male counts by WPCI alternative, rather than showing the actual lek counts over those 20 years, much less 30 years of data, which would be a better basis of decision. FEIS Vol II at M-19 to M-23. This does not give BLM enough information to know whether 6-10-year lek count cycles are increasing, decreasing, or remaining stable over time, nor does it give BLM enough information to know whether grouse populations are healthy across all segments. BLM responded to our raising these issues in our DEIS comments by saying, "Peak counts are reported as a 20-year average, as that accounts for at least two cycles of population fluctuations and provides the necessary information to be able to compare the greater sage-grouse populations for each alternative." FEIS Vol. II at K-34. The problem with this is that it does not allow BLM to see whether the highs and lows for the population cycles are coming in higher or lower, and including only two population cycles is insufficient for understanding population trends for this imperiled species.

The lek chart by segment in the WPCI Special Status Species Report is also inadequate. It merely lists the number of occupied leks within PHMA within 0.6 miles of the proposed Right of Way and the number of occupied leks within GHMA within 0.25 miles of the Proposed Right of Way.³³ But no information is provided regarding the counts of males attending the leks, so BLM has no way of telling which leks are doing well and which are not. To give a hypothetical example, a segment with five leks with 25 males at each of them paints a very different picture of sage-grouse population health in that segment than five leks with only five males at each of them. Being able to compare sage-grouse population segment by segment is also very important because BLM's new, preferred Alternative E combines segments from Alternative B and Alternative D. But BLM selected segments from Alternatives B and D and combined them without considering basic greater sage-grouse population information, as is shown not only by the absence of this information from the WPCI Special Status Report but also by the absence of segment-by-segment grouse population information from the FEIS's grouse analysis sections. Indeed, the FEIS only presents average lek counts over a 20-year time period for entire alternatives (not by segment), and the FEIS's chart of why BLM selected each segment for its new, preferred Alternative E does not mention sage-grouse populations at all. See FEIS Vol II, M-19 to M-23 and FEIS Vol. I at 2-9.³⁴

³² *Ibid.*

³³ Exhibit FF at 28. SWCA Environmental Consultants. 2016. Special Status Species Report for the Wyoming Pipeline Corridor Initiative. Available at https://eplanning.blm.gov/public_projects/1502028/200341243/20020736/250026940/Special%20Status%20Species%20Report%20WPCI.pdf.

³⁴ The FEIS's lack of an adequate greater sage-grouse population baseline is of concern throughout the WPCI area, and perhaps most especially in the Buffalo Field Office planning area. In 2012, biologists at the University of Montana prepared a report for the Buffalo Field Office regarding the struggling population of greater sage-grouse

Also missing from the FEIS is true analysis of impacts to greater sage-grouse seasonal habitat (e.g., breeding, early brood-rearing, late brood-rearing, winter) and how that will in turn affect greater sage-grouse populations and sage-grouse redundancy, representation, and resilience. For example, as Conservation Groups pointed out to BLM in our DEIS comments, seasonal grouse habitat is not mapped in the FEIS or Special Status Species Report, nor are seasonal habitat acreages provided and discussed by segment or alternative in either the FEIS or Special Status Species Report.

All of the above missing greater sage-grouse information is necessary for BLM to have adequate baseline information before making its WPCI decision, as is required by NEPA. Without an adequate baseline of greater sage-grouse information, BLM cannot make properly informed decisions regarding pipeline corridor locations and whether to allow “streamlined” NEPA analysis that incorporates by reference this FEIS for future pipelines developed in these corridors.³⁵ “The designation of corridors would streamline environmental reviews of potential projects proposed within the corridors because NEPA documents could reference this analysis.” FEIS Vol. I at 1-2. Again, we note that by administratively establishing new pipeline corridors through designated sage-grouse habitat, BLM is removing an important 2015 Wyoming sage-grouse ARMPA protection from them, making it easier for future pipelines to be developed in that habitat: “New pipelines through PHMAs will be allowed: (1) within an RMP corridor currently authorized for that use **or designated through future RMP amendments**; or (2) constructed in or adjacent to existing utilities (buried and above-ground) or roads.” 2015 Wyoming sage-grouse ARMPA at 61, emphasis added. Thus, BLM needs to supplement its analysis of these impacts in this FEIS before it designates the new corridors and removes that protection.

In addition, impacts to greater sage-grouse stemming from future pipelines built in the WPCI corridors are not limited to the construction, operation and maintenance of those pipelines. Potential impacts to greater sage-grouse include those related to the production or mining of CO₂ for the pipelines, CO₂ flooding of existing oil fields and increased oil production in those existing oil fields. These additional impacts to greater sage-grouse are not disclosed or analyzed in the FEIS. In regard to the CO₂ production and future oil production locations linked by the pipelines, the FEIS must discuss which greater sage-grouse populations will be affected and how they will be affected, which leks will be affected and population trends at those leks over the last 30 years, how much PHMA and General Habitat Management Area (GHMA) will be affected and how much grouse seasonal habitat will be affected. BLM cannot make informed decisions about the WPCI proposal without this information. Again, we note that by administratively

there, which at the time of the report had already experienced an 82% population decline within the energy fields. Exhibit Y at 2. The report noted the heavy impacts of the area’s existing oil and gas development, potential future development, and the very real possibility that the vulnerable grouse population there could be functionally extirpated after a West Nile virus outbreak. Exhibit Y at 3. Yet BLM is considering approving new pipeline corridors in PHMA and other important grouse habitat in the Buffalo Field Office, without providing any evidence in the FEIS that BLM has obtained greater sage-grouse baseline population for the segments traversing that planning area. Exhibit Y. R.L. Taylor, *et al.* Viability analyses for conservation of sage-grouse populations: Buffalo Field Office, Wyoming. 2012. Available at https://www.eenews.net/assets/2012/03/28/document_gw_01.pdf.

³⁵ In the FEIS, BLM states, “The final EIS has been revised. Subsequent NEPA analysis would not tier to this document. Subsequent project proposals would undergo site-specific NEPA and could reference this document. FEIS at K-31.

establishing new pipeline corridors through designated sage-grouse habitat, BLM is removing an important 2015 Wyoming sage-grouse ARMPA protection from them, making it easier for future pipelines to be developed in that habitat: “New pipelines through PHMAs will be allowed: (1) within an RMP corridor currently authorized for that use **or designated through future RMP amendments**; or (2) constructed in or adjacent to existing utilities (buried and above-ground) or roads.” 2015 Wyoming sage-grouse ARMPA at 61, emphasis added. BLM needs to supplement its analysis of these impacts in this FEIS before it designates the new corridors and removes that protection.

2. The Cumulative Impacts Analysis Fails to Meet the BLM’s Burden to Take a Hard Look at Impacts to the Greater Sage-Grouse

NEPA requires that federal agencies take a hard look at issues and impacts that would result under each alternative in order to engage in reasoned decision-making. The BLM in this FEIS has failed to take a hard look at the cumulative impacts to greater sage-grouse and its habitat. The greater sage-grouse (*Centrocercus urophasianus*), a BLM sensitive species, is considered a bellwether of the health of the sagebrush steppe ecosystem and the estimated 350 species that depend on it.³⁶ In 2015, the federal and state governments established the greater sage-grouse Conservation Effort, designed to conserve habitat for this iconic bird and prevent its continued decline toward extinction.³⁷ The greater sage-grouse Conservation Effort resulted in the designation of PHMAs and Sagebrush Focal Areas (SFAs) and established lek buffers, among other things.

As discussed in our DEIS comments at 24-28, the BLM, in evaluating cumulative impacts, must not merely list ongoing and reasonably foreseeable projects without any supporting analysis and must actually analyze and disclose to the public the cumulative effects of those projects in sufficient detail to inform decision-making to comply with NEPA. The analysis must constitute more than listing generalities without supporting analyses. In this FEIS, the BLM presents minimal information on cumulative impacts to the greater sage-grouse and its habitats. Specifically, the BLM’s offering for cumulative impacts to the greater sage-grouse is limited to the following:

- Using USGS National Gap Analysis Program landcover data and Landfire 10-year historic disturbance data, the BLM concludes that in the last ten years 1.7 million acres of vegetation cover has been lost, primarily in shrubland, desert scrub, grassland and forest-woodland cover types.
- The total amount of disturbance to vegetation from reasonably foreseeable future actions is approximately 434,700 acres. See Table H-2. The disturbance would largely be in shrubland/desert scrub, and grassland systems, which comprise approximately 75% of all

³⁶ The U.S. Fish and Wildlife Service’s Wildlife in the Sagebrush Ecosystem webpage notes that sagebrush is home to more than 350 species of wildlife and provides links to more information about those species. Exhibit M, available at <https://www.fws.gov/sagebrush/wildlife/>. Exhibit N at 4 to 7 lists some of those 350+ wildlife species (American Lands Alliance, 2001, The Sagebrush Sea).

³⁷ See Exhibit O. Fact Sheet: BLM, USFS Greater Sage-Grouse Conservation Effort. 2015. Available at: <https://www.fs.usda.gov/sites/default/files/fact-sheet-greater-sage-grouse.pdf>.

vegetation cover in the state. These ecosystems are the habitats used by the Greater Sage grouse. Surface disturbance with the Proposed Action and alternatives would add an additional 7,263 to 57,457 acres to this total.

- Reasonably foreseeable habitat loss, alteration, and fragmentation could impact special-status species populations if they occur in areas of proposed development....long-term effects to special status species could occur if there is a slow recovery of habitat cover during revegetation reclamation of areas disturbed by reasonably foreseeable development.
- Additionally, the proponents of reasonably foreseeable development projects that are proposed would be required to consult with the USFWS as applicable to address impacts to federally listed wildlife species and be required to comply with BLM and USFS requirements to prevent impacts that would lead to ESA listing of BLM Sensitive and Forest Sensitive wildlife species.
- Project proponents would need to comply with BLM and USFS requirements to prevent impacts that would lead to ESA listing of BLM Sensitive Species and Forest Sensitive wildlife species.

FEIS, Volume I at 4-11 and FEIS, Volume II at H-3.

This limited analysis of the cumulative impacts to the greater sage-grouse does not constitute a hard look adequate to inform decision-making. It is deficient because it presents inaccurate and inadequate information about the magnitude and intensity of the impacts of past, present, and anticipated projects on greater sage-grouse and its habitat, in violation of NEPA.

a. The Cumulative Impact Analysis Is Flawed Because the Change Analysis Presented in Table H-1 Does Not Consider Land Activities That Result in Diminished (But Not Extinguished) Habitat Quality

Table H-1. Past and Present Vegetation Cover

Cover Type	Current Coverage		10-year Historic Coverage		Change	
	Acres	Percent	Acres	Percent	Acres	Percent
Shrubland, desert scrub, grassland	47,284,685	75%	48,225,683	75%	940,998	2%
Riparian-wetland	436,486	1%	436,486	1%	-	0%
Agricultural	2,770,529	4%	2,781,754	4%	11,225	0%
Forest-woodland	10,525,663	17%	11,356,218	18%	830,555	8%
Cliff, rock, scree	300,095	0%	300,128	0%	33	0%
Developed, disturbed	1,340,960	2%	1,344,300	2%	3,340	0%
TOTAL	62,658,418	100%	64,444,569	100%	1,786,151	3%

In the FEIS BLM presents Table H-1 as a reflection of past impacts to greater sage-grouse habitat. The FEIS explains that Table H-1 was generated using Landfire 10-year historic disturbance data which considers disturbances from fire, logging, mechanical removal of fuels,

insects and disease, weather and other sources.³⁸ The Landfire data set detects change in vegetative systems when the change is significant (e.g., removal of vegetation) and not necessarily when habitat value is reduced (but possibly not extinguished) as a result of specific activities or disturbances. Hence, the disturbance data will not register significant adverse changes to sage-grouse habitat quality from activities such as route construction and use, fences, and grazing, and the buffer effects of industrial developments (e.g., it is estimated that lekking is disrupted within a several mile buffer of energy infrastructure). See DEIS at 3-101. *Also see:* Manier et al. 2014 at 14.³⁹ Table H-1 thus captures acres where vegetation has been removed or significantly changed (e.g., fire) but underestimates acres where sage-grouse habitat quality has been reduced.⁴⁰

For instance, consider the grazing land health data published by the Public Employees for Environmental Responsibility (PEER) in 2014. PEER aggregated all available land health evaluations in 2012 and published a national map showing allotments with substandard conditions, allotments that had never been evaluated, and allotments meeting rangeland health standards. As Map 1 shows (see next page), grazing has resulted in substandard land health conditions across considerable amounts of BLM land in Wyoming, including on acres that overlap designated sage-grouse habitat. The substandard acres would not be detected by the Landfire change analysis yet reflect the impacts of past and ongoing grazing on greater sage-grouse habitat.

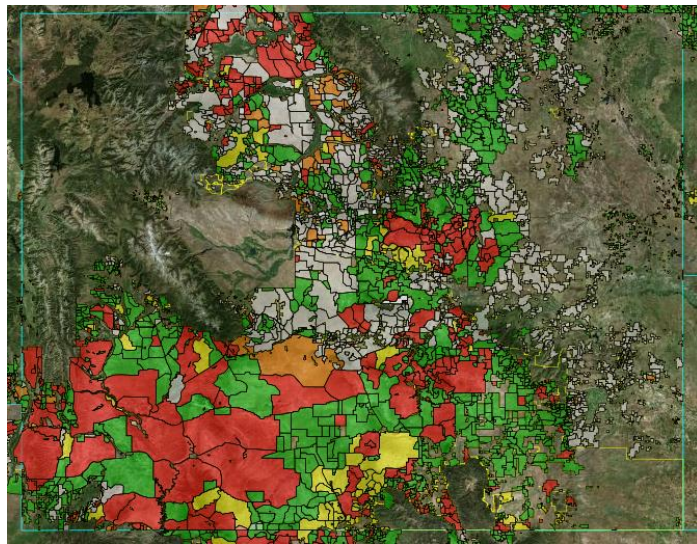
³⁸ See Exhibit DD. Helmbrecht and Blankenship 2016 at 17-25 for a description of the ten-year disturbance analysis. Helmbrecht, Donald J. and Kori Blankenship. 2016. Modifying LANDFIRE Geospatial Data for Local Applications. Note that fire and vegetation management events populate the data base. Available at: https://www.conservationgateway.org/ConservationPractices/FireLandscapes/LANDFIRE/Documents/ModifyingLFDataGuide_V1.pdf.

³⁹ Manier, D.J., Bowen, Z.H., Brooks, M.L., Casazza, M.L., Coates, P.S., Deibert, P.A., Hanser, S.E., and Johnson, D.H., 2014, Conservation buffer distance estimates for Greater Sage-Grouse—A review: U.S. Geological Survey Open-File Report 2014–1239, 14 p., <http://dx.doi.org/10.3133/ofr20141239>. Submitted as Attachment 28 of WWP *et al.* scoping comment letter.

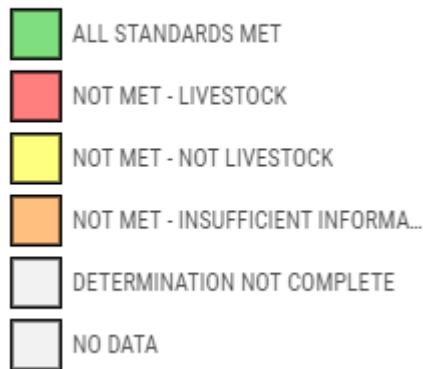
⁴⁰ BLM acknowledges on page H-2 of the FEIS that “Other past and present actions, such as agriculture, livestock grazing, and vegetation treatments also may affect resources considered in this EIS” but fails to quantify the impacts to greater sage-grouse habitat from these activities.

Map 1. a) Grazing allotments within Wyoming and their condition as of 2012. Source: Public Employees for Environmental Responsibility (PEER). See <https://www.peer.org/blm-grazing-data/>. b) Sage-grouse habitat in Wyoming.

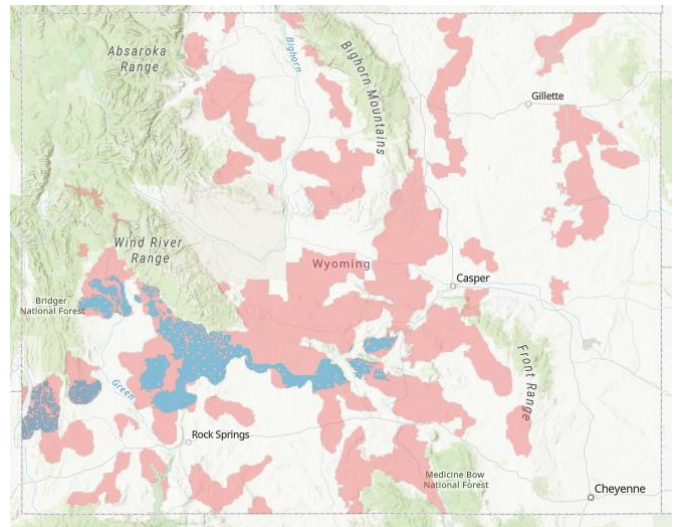
Map 1a.



Land Health Status



Map 1b.

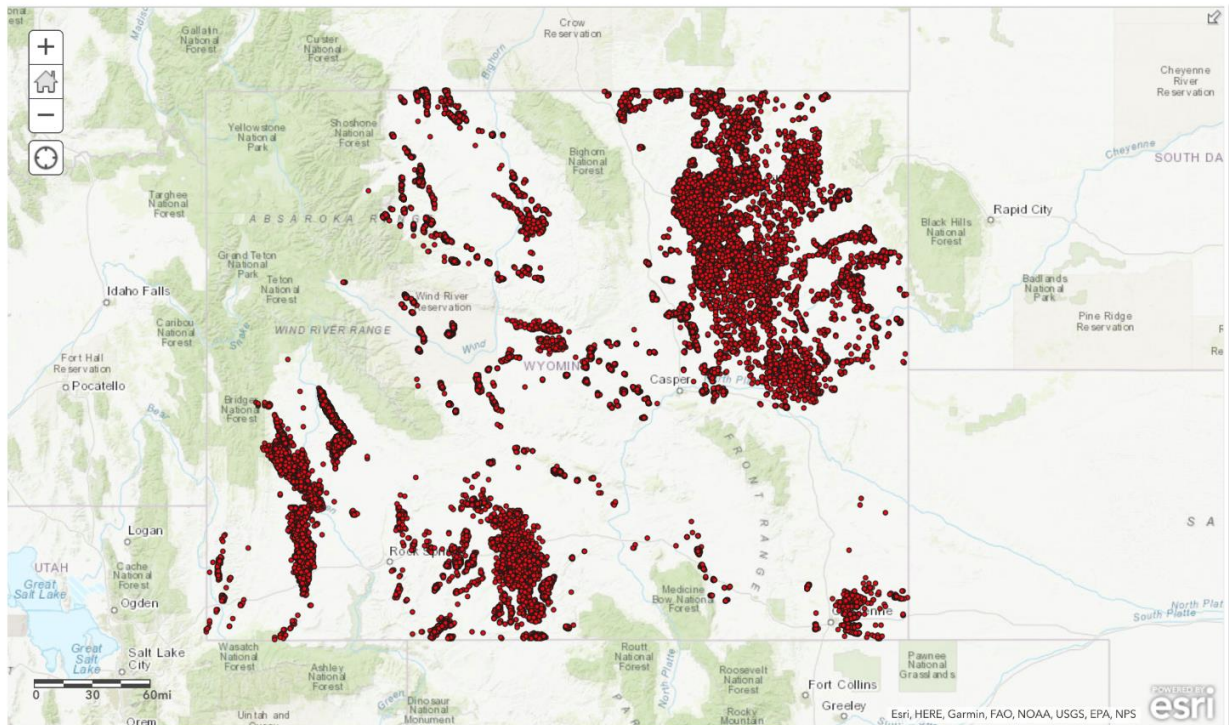


PHMAs are depicted by pink and Sagebrush Focal Areas are depicted in blue. Source: Wyoming Game and Fish Department.

Similarly, consider the habitat that has been impacted by existing oil and gas infrastructure. As BLM points out in its FEIS, research has shown that greater sage-grouse are less successful within a several mile buffer of energy infrastructure. See FEIS at 3-101. Also see: Manier et al. 2014 at 14. Map 2 shows all the active oil and gas wells in Wyoming.

Map 2. Active oil and gas wells in Wyoming. Source: Wyoming Oil and Gas Conservation Commission. Metadata at

https://services.arcgis.com/VfpeCk3ouKVuEwug/arcgis/rest/services/Wyoming_Oil_and_Gas_Map_V3_WFL1/FeatureServer.



There are 21.5 million acres contained within a four-mile buffer around active wells. 5.2 million acres overlap PHMAs and 0.42 million acres overlap SFAs. Even if the vegetation within the buffer has not been removed or substantially altered by the energy infrastructure, the habitat quality within the buffer zones is substantially diminished.

Hence, it is inappropriate for the BLM to rely on the change analysis as a complete representation of past impacts to greater sage-grouse habitat. Doing so ignores the significant impacts that result from reductions in habitat quality from activities and infrastructure that do not entirely remove or significantly modify vegetation but still have significant documented effects to the greater sage-grouse. Table H-1 considerably underestimates the adverse effects of past land use activities on greater sage-grouse and its habitat.

b. The Cumulative Impact Analysis Is Flawed Because the BLM Inappropriately Uses Vegetation Removal as the Surrogate for Habitat Degradation in Its Evaluation of Cumulative Impacts from Current and Reasonably Foreseeable Projects

The BLM in evaluating cumulative impacts to wildlife from past, present, and reasonably foreseeable projects uses vegetation removal from surface-disturbing activities as a surrogate for impact:

The cumulative impacts of past and present actions on wildlife habitat in the planning area are represented by the description of the existing affected environment. Appendix H provides information about historical and current vegetation coverage across the State of Wyoming. As shown in Table H-1, a loss of approximately 1.7-million acres (3%) of vegetation cover has occurred over the last 10 years, primarily in shrubland, desert scrub, grassland and forest-woodland cover types. **Reasonably foreseeable future actions with potential to impact vegetation and subsequently wildlife habitat include all reasonably foreseeable future actions that would remove habitat through surface-disturbing activities (see Appendix H).** The total amount of disturbance associated with these developments is approximately 434,700 acres. Surface disturbance with the Proposed Action and alternatives would add an additional 7,263 to 57,457 acres to this total. Disturbance would largely be in shrubland/desert scrub, grassland, which comprise approximately 75% of all vegetation cover in the state.

FEIS at 4-11 (emphasis added). While we agree that vegetation loss is an important metric for habitat degradation, it is not the only factor that should be considered, especially in the case of the sage-grouse where studies have demonstrated that fences, human presence (and associated garbage and noise), infrastructure, rangeland condition, and water availability all affect sage-grouse populations and viability. See DEIS at 3-101. In addition, numerous studies have demonstrated that grazing adversely affects sage-grouse by reducing grass and forb cover, degrading mesic and riparian areas, requiring fencing, and introducing exotic grasses that facilitate wildfire. 75 Fed. Reg. 13910. Grazing may not devegetate an area entirely, but it certainly can diminish habitat quality for the sage-grouse.

By taking this approach, the BLM underestimates the cumulative impact to the greater sage-grouse from reasonably foreseeable activities. The BLM must consider vegetation loss when evaluating cumulative impacts to sage-grouse habitat but it must also consider habitat degradation resulting from energy development, infrastructure, grazing, recreation, and other activities that diminish habitat quality on acres where vegetation is not removed. The BLM erred in not evaluating the effect of factors that diminish habitat quality in its assessment of cumulative impacts to the sage-grouse.

c. The Cumulative Impact Analysis Is Flawed Because It Does Not Take a Hard Look at the Cumulative Effects to Essential Habitat Elements for the Greater Sage-Grouse and to Designated Sage-Grouse Habitat Areas

The BLM in the cumulative impact analysis does not analyze the impacts to essential habitat elements for the greater sage-grouse. These include leks (mating areas), wintering areas

(Dzialak et al. 2013),⁴¹ connectivity habitat, and brooding and rearing habitat (Stiver et al. 2015).⁴² 75 Fed. Reg. 13910. Absent this information, the FEIS does not provide sufficient information to understand the magnitude and intensity of the cumulative impact to the sage-grouse and its habitat. Further, this information is critical given recent population declines and concern that the species is in serious trouble.⁴³ While it is important to know how many acres have been and will be directly disturbed by past, current and anticipated projects, it is essential to know where those acres are and if they overlap or affect essential habitat features. (For example, if too many leks are disturbed and rendered unsuitable, sage-grouse will not breed successfully.) The future of the species depends on maintaining adequate amounts and distribution of essential habitat features (Stiver et al. 2015). The BLM erred in not disclosing and analyzing this critical information.

Similarly, the BLM in the cumulative impact analysis must analyze and quantify the impacts from past, ongoing, and anticipated projects and activities on designated habitat areas. These include the PHMAs, SFAs, and GHMAs. Absent this information, neither decisionmakers nor members of the public can evaluate the impact of the proposed project in the context of other projects and activities on the most important habitat areas for the greater sage-grouse's continued survival.

BLM may be inappropriately tempted to respond that the Required Design Features will prevent undue impacts to the sage-grouse and hence nullify the need to analyze effects to specific habitat features or elements. While the required design features may reduce impacts, they certainly do not prevent impacts and hence cannot be used to shield against a more detailed and comprehensive cumulative impact analysis.

BLM erred in not taking a hard look at the cumulative impacts to key habitat features and designated habitat areas and must supplement its FEIS to correct the deficiencies described herein.

B. The BLM Failed to Take a Hard Look at the Impact of the Proposed Corridor to the Seedskadee National Wildlife Refuge

Based on the GIS Data provided by the BLM on its e-Planning webpage, the preferred alternative would site a corridor on BLM lands such that if constructed a pipeline would cross the edge of the Seedskadee National Wildlife Refuge (NWR), a true treasure of this nation and home to imperiled wildlife and migratory birds. We raised the issue in our DEIS letter at 23.⁴⁴ (See Map 3 later in this section.) In its response to comments, the BLM stated that the “there is no specific pipeline project proposed to cross the Seedskadee National Wildlife Refuge and,

⁴¹ Exhibit BB. Matthew R. Dzialak, Stephen L. Webb, Seth M. Harju, Chad V. Olson, Jeffrey B. Winstead, Larry D. Hayden-Wing. 2013. Greater Sage-Grouse and Severe Winter Conditions: Identifying Habitat for Conservation, Rangeland Ecology & Management, Volume 66, Issue 1, 2013, Pages 10-18.

⁴² Exhibit EE. Stiver, S.J., E.T. Rinkes, D.E. Naugle, R.D. Makela, D.A. Nance, and J.W. Karl, eds. 2015. Sage-Grouse Habitat Assessment Framework: A Multiscale Assessment Tool. Technical Reference 6710-1. Bureau of Land Management and Western Association of Fish and Wildlife Agencies, Denver, Colorado.

⁴³ See Exhibit CC. Holloran et al. 2016 (letter from Sage Grouse Scientists to BLM dated April 6, 2020).

⁴⁴ We mistakenly stated in our letter that the BLM proposed a pipeline through Seedskadee NWR when we should have more precisely said that the BLM proposed a pipeline corridor that appears to cross the NWR.

therefore, there are no impacts to disclose for this area. The decision currently before the BLM is to designate corridors and BLM only has jurisdiction and will only designate corridors on BLM-administered lands.” FEIS at K-36. The BLM thus failed to respond to the comment that we raised that the proposed pipeline corridor appears to cross the NWR (even if the ROW being designated in the RMP is on BLM land only).

Even if BLM does not intend to designate a pipeline corridor inside the boundaries of the refuge, but instead intends to designate the corridor right up to the boundaries of the refuge, any future pipeline built in the Alternative E corridor would have to traverse the refuge in order to use the designated corridor on BLM land adjacent to it. (See Map 3.) Building a pipeline inside the refuge would require U.S. Fish and Wildlife Service review, and the refuge’s Comprehensive Conservation Plan (CCP) states, “The Service policy on rights-of-way is not oriented toward analyzing cost-effectiveness or social impacts, but to minimize impacts on wildlife.” Seedskadee NWR CCP at 39.⁴⁵ The refuge’s CCP further states:

The principal purpose of Seedskadee NWR is to provide for the conservation, maintenance, and management of wildlife resources and its habitat including the development and improvement of such wildlife resources. Additionally, the Refuge is charged to protect the scenery, cultural resources, and other natural resources and provide for public use and enjoyment of compatible wildlife-dependent activities.

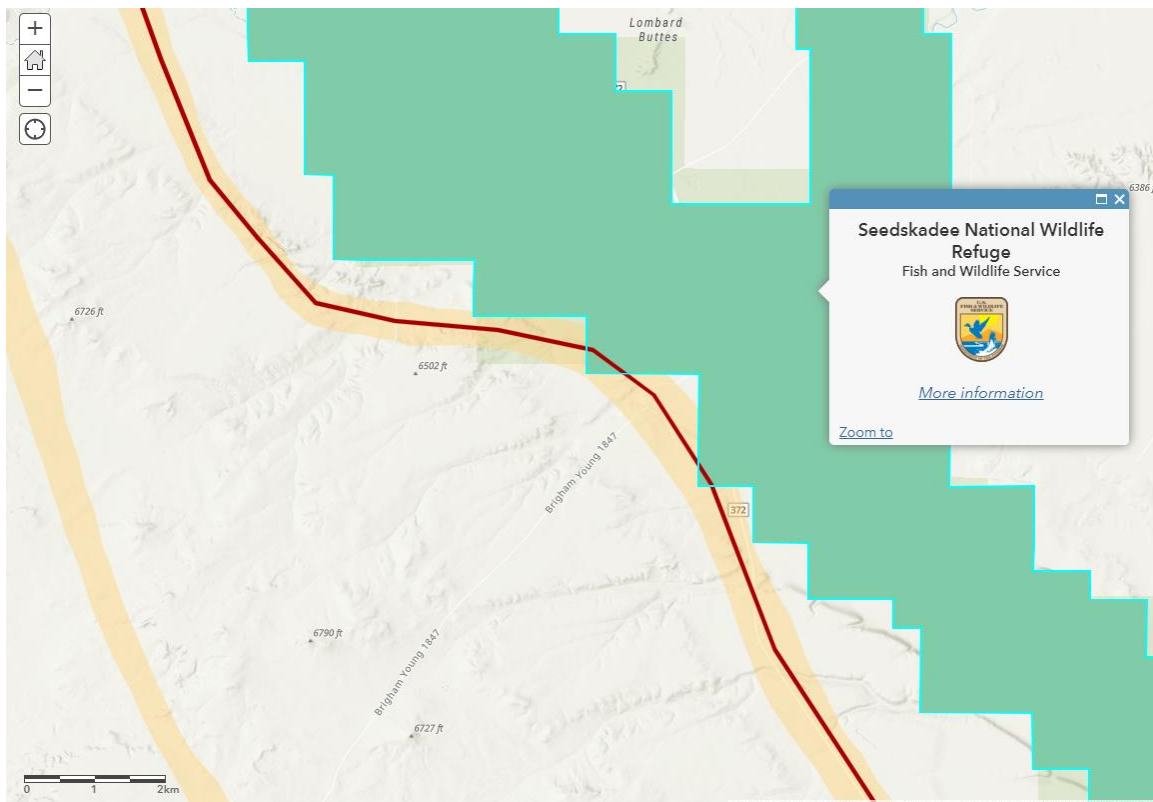
Seedskadee NWR CCP at 1. The refuge’s CCP thus raises strong questions as to whether any pipeline traversing the refuge could be approved, thus making a BLM pipeline corridor that cannot be used without traversing the refuge highly impractical.

In addition, although it may be true that the BLM in this decision is approving pipeline corridors on BLM administered lands, it still has a duty to analyze the impacts of that action on affected places and resources – in this case, the NWR. If an entity applies to construct the segment of pipeline in Alternative E as depicted in Map 3 (next page), the pipeline will clearly impact the NWR and the wildlife it is designated to protect.⁴⁶ The BLM has thus failed to take a hard look at the impacts of its proposed action.

⁴⁵ Exhibit AA. U.S. Fish and Wildlife Service. 2002. Seedskadee National Wildlife Refuge Comprehensive Conservation Plan. Available at https://www.fws.gov/mountain-prairie/refuges/refugesUpdate/completedPlanPDFs_M-S/sdk_2002_ccpfinal_all.pdf.

⁴⁶ Even if the pipeline ROW corridor is not proposed to overlap the NWR (that is, if the overlap is a mapping error), the BLM still has to analyze impacts to the NWR and its resources from an adjacent pipeline corridor.

Map 3. This map shows a pipeline corridor segment in Alternative E that traverses the Seedskaadee National Wildlife Refuge.



C. Wildlife: Big Game Seasonal Habitats

BLM should not select the agency's preferred Alternative E or any other action alternative in the FEIS due to inadequate analysis of impacts to big game seasonal habitats and failure to provide adequate information to allow the public to engage in a substantive manner.

1. Failure to Acknowledge and Analyze Declining Ungulate Population Trends and Potential Impacts of Corridors Overlaying Migration Corridors

In the FEIS, BLM did not recognize current declining population trends in mule deer and moose, nor did BLM include substantive analysis of the potential impacts, immediate and cumulative, to ungulate population stability that could result from disruptions in the ability of wildlife to occupy seasonal habitats, especially migration corridors.

According to Wyoming Game and Fish Department annual population assessments, mule deer numbers statewide have declined by more than 30% since their peak in 1991, with even steeper declines in southwestern Wyoming. Since the mid-1990s, moose numbers have dropped a staggering 65%, with some of the blame laid at the feet of habitat alteration or loss. The BLM must acknowledge these current declining population trends and include a robust analysis of impacts resulting from any further loss of habitat, not just physical loss or alteration of habitat but also including loss of ability to use habitat (i.e., wildlife displacement) from pipeline corridor development to ungulate population stability.

The BLM's change to wording in the FEIS in response to our earlier comments on the DEIS at 18 asking for correction of this shortcoming (FEIS, Appendix K p. K-35) in no way addresses this failure. In the revised text, BLM simply notes whether ungulate species are at, above or below herd objectives of the Wyoming Game and Fish Department, which reveals nothing meaningful about population trends over time.

According to the Wildlife Resources Technical Report (WRTR) (West 216b⁴⁷) prepared for the Wyoming Pipeline Authority, the WPCI's proposed corridors cross several important migration corridors: "The corridor crosses 6 moose migrations routes, 41 mule deer migration routes, 3 bighorn sheep migration routes, and 103 pronghorn migration routes." WRTR at 18.

The BLM must explicitly recognize the importance of ungulates unhindered movement through migration corridors twice per year and analyze the impact that disruption of their ability to move across the landscape could have on population trends.

2. Failure to Acknowledge or Analyze Impacts to Migration Stopover Areas

The BLM failed to acknowledge the essential value of migration corridor stopover areas to maintain healthy ungulate populations, nor did the agency include substantive analysis of potential impacts, immediate and cumulative, that pipeline corridor development within migration corridors and especially in critical stopover areas could have on ungulate survival and population stability.

The WRTR points out that energy and mineral development can cause ungulates to speed up through areas of disturbance and result in decreased use of stopovers. Stopover areas are vitally important for the long-term health of mule deer populations using the Sublette corridor and are where animals spend 95% of their time during migration.⁴⁸

3. Failure to Provide Adequate Information to the Public to Allow Meaningful Evaluation of Action Alternatives

The BLM failed to provide adequate information to allow meaningful evaluation by the interested public of potential impacts of the different action alternatives related to big game seasonal habitats. Even though we specifically asked the BLM to provide this additional information in previous comments (DEIS comments at 19), the BLM failed to provide adequate maps of migration corridors for mule deer, pronghorn, moose, elk, or bighorn sheep in the FEIS. The BLM did not provide maps of stopover areas along migration corridors or identify their locations in any way. The BLM did not reveal where proposed corridors under each alternative would overlay migration corridors and stopover areas. Without this information, neither

⁴⁷ Exhibit P. Western Ecosystems Technology, Inc. (WEST). 2016a. Vegetation Resources Technical Report for Wyoming Pipeline Corridor Initiative Area. Prepared for the Wyoming Pipeline Authority. Available at https://eplanning.blm.gov/public_projects/1502028/200341243/20019821/250026025/WPCI_Vegetation-02-2016-final.pdf.

⁴⁸ See Sawyer, H. & Kauffman, M. J. (2011) Stopover ecology of a migratory ungulate. *Journal of Animal Ecology*, 80, 1078–1087. Submitted to BLM by Conservation Groups as Attachment 8 of our DEIS comments. See also Sawyer, H., M. J. Kauffman, A. D. Middleton, T. A. Morrison, R. M. Nielson, and T. B. Wyckoff. 2013. A framework for understanding semi-permeable barrier effects on migratory ungulates. *Journal of Applied Ecology* 50:68-78. Submitted to BLM by Conservation Groups as Attachment 9 of our DEIS comments.

decisionmakers nor the public can evaluate the locations of these important resource conflict areas and are therefore unable to arrive at an informed opinion and provide meaningful comment. The BLM's response to our earlier request for this information was inadequate and disappointing (FEIS, Appendix K p. K-35). The depiction of sensitive resources is incomplete (completely lacking, as we have noted, stopover areas and migration corridors), and to expect the general public to have the technical knowledge and ability to access and evaluate GIS shapefiles is neither realistic nor reasonable. In addition, by providing information about stopover areas and migration corridors as GIS shapefiles rather than as the maps we requested in our DEIS comments, BLM has not fulfilled its obligation under current DOI NEPA regulations to “insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken.” 40 C.F.R. § 1500.1(b).

The WRTR, which was only made available to the public during the DEIS comment period for 28 days and then only after we requested it, offers coarse grained, statewide maps showing some ungulate seasonal habitats (summer, winter, crucial winter and migration corridors for mule deer and elk) overlaid with corridors proposed under Alternative B, the State of Wyoming's proposed action. But these maps contain so little detail as to be essentially meaningless to the reader. In online documents, maps for pronghorn antelope, bighorn sheep, and moose are completely blank (Appendix B: Big Game Habitat Maps, Figures b-6, 7, 8, 9, 10, 11)⁴⁹. The FEIS itself offers no maps showing the location of these critical habitat areas and no information about where proposed corridors in the three other alternatives intersect summer, winter, crucial winter, natal, migration, or stopover habitats. This failure to provide information is especially significant because BLM did not select Alternative B, but instead selected an alternative new to the FEIS (Alternative E), which combines portions of Alternatives B and D. It's also worth noting that the WRTR, produced in 2016, is quite out of date and missing a great deal of more recent research information.

Appendix D, Table 3 at 41 describes proposed construction timing restrictions under Alternative B, the state's proposed action, for crucial winter range for elk, mule deer, and pronghorn. There is no mention of any restrictions in parturition areas or migration corridors. The FEIS must identify timing restrictions and other important impact avoidance or minimization strategies in these important seasonal habitats. There is no mention of migration corridors or stopover areas, which also must be identified for timing restrictions and other impact avoidance or minimization strategies. Appendix I under Appendix B (p. 118) notes that the BLM may grant exceptions to seasonal stipulations, at their discretion. This exception provision should be stricken, as it essentially makes seasonal stipulations meaningless. Migration corridors are even not mentioned in the section of Appendix D on wildlife resources (FEIS, Appendix D at 117-119). This information should be added.

As described in Appendix E, wildlife mitigation guidelines already included the Casper, Kemmerer, and Rawlins resource management plans include timing restrictions on big game winter habitat and birthing areas, but none of them include migration corridors or stopover areas (FEIS, Appendix E at. E-13, E-31, E-71). These resource management plans all contain identical

⁴⁹ Exhibit P. Western Ecosystems Technology, Inc. (WEST). 2016a. Vegetation Resources Technical Report for Wyoming Pipeline Corridor Initiative Area. Prepared for the Wyoming Pipeline Authority. Available at https://eplanning.blm.gov/public_projects/1502028/200341243/20019821/250026025/WPCI_Vegetation-02-2016-final.pdf.

or similar language stating that exemptions, waivers, or modification of timing restrictions may be approved in any given year, at the discretion of the agency. These exemption provisions make seasonal restrictions meaningless and should be amended out of the resource management plans.

D. Special Designated Areas

The BLM should not select the preferred Alternative E or any other action alternative in the FEIS due to unacceptable impacts to special designation areas and failure to identify Lands with Wilderness Characteristics (LWCs) and analyze potential impacts to them.

1. Unacceptable Impacts to Special Designation Areas

The FEIS identified two types of special designations for impact consideration: Areas of Critical Environmental Concern (ACECs) and Wilderness Study Areas (WSAs). ACECs are managed to protect the relevant and important values associated with each individual unit. WSAs must be managed to protect their wilderness characteristics and values as long as they are designated as WSAs.

Given the unique purposes served by ACECs and WSAs and given their relatively small sizes and rarity on the landscape, the BLM should not designate any corridors that would impact any ACEC or WSA. The BLM has not presented any compelling information that would support a conclusion that the project must be configured to impact any special designation areas to meet its stated purpose and need. In fact, Alternative C clearly demonstrates that this is not the case. Alternative C would impact no ACECs and 2,591 acres of the Cedar Mountain WSA, compared to the agency's preferred Alternative E that would impact 6.9 acres of the Greater Sand Dunes ACEC and 3,037 acres of the Cedar Mountain WSA. This clearly demonstrates that viable project designs can be achieved that do not impact special designation areas, and the FEIS offers no compelling reason why doing so would cause the project fail to meet the agency's identified purpose and need. Any impact to designated WSAs would diminish their wilderness values and affect the likelihood of their future consideration as designated wilderness. These small pockets (the largest one is just over 20,000 acres) of undeveloped, wilderness quality landscapes are important to residents of Wyoming as places of natural refuge in the high desert, and some serve as important wildlife security areas without motorized access.

2. Failure to Identify Lands with Wilderness Characteristics and Analyze Impacts

Despite requests made in prior comments, the FEIS failed to include an evaluation of LWCs that would be affected by pipeline corridor designation and subsequent development. LWCs are undeveloped areas of wilderness quality that could qualify for wilderness designation. While they are not required to be managed to protect their wilderness characteristics, the BLM still has an obligation under NEPA to disclose how many LWC acres will be affected by the proposal and where those acres are located. We object to the fact that the BLM did not do this, nor did they propose a corridor configuration that would route pipelines around LWCs to ensure that these special undeveloped landscapes are not degraded by development so they no longer qualify as potential wilderness. There are numerous LWCs throughout the planning region, particularly in the southwestern part of the state, for which impact analyses must be conducted.

E. The FEIS Presents Inaccurate Data Related to Pipeline Corridor Segment Configuration and Lengths

The FEIS provides the following information related to pipeline corridor segment configuration and lengths. Red and pink cells were calculated by us using information provided in the FEIS. Blue cells reprint information provided in the FEIS text, Volume I, chapter II. Red cells show where we calculated the miles of proposed corridors that are neither within 0.5 mile of an existing pipeline ROW or within an existing corridor (total miles of proposed corridor on BLM lands minus the sum of the miles of proposed corridors within 0.5 miles and within existing corridors). As the chart shows, the resulting number is negative which is not possible.⁵⁰ Absent accurate information related to pipeline corridor segment lengths and locations (i.e., parallel and proximal to existing pipeline ROWs), we cannot fully understand the environmental impacts of the various alternatives and compare and contrast them.

Segment	Alternative B: Proposed Action	Alternative C: Resource Conflict Avoidance and Maximize Use of Existing Corridors	Alternative D: Resource Conflict Minimization	Alternative E: Preferred
Total miles (calculated from chart at FEIS Vol. 1, 2-7 to 8)	1,956	239	1,868	1,977
Total miles (as stated in text of FEIS Vol. 1, 2-1 to 2-5)	1,958	237	1,860	1,970
Total miles crossing BLM land (FEIS, Vol. 1, 2-2 to 2-5)	1,104	151	968	1,111
% of corridors located in existing designated BLM utility corridors (FEIS Vol. 1, 2-2)	64%	0%	82%	73%
Miles located in existing designated BLM utility corridors (calculated from data in row above*total miles crossing BLM lands)	707	0	794	811
Miles of corridors within .5 mile of existing pipeline ROW (FEIS Vol. 2, 2-1 to 2-5)	n/a -most	179	230	595
New corridor miles>0.5 miles from existing corridors or pipeline ROWs	n/a	(28)	(56)	(295)

We also note that there is a slight discrepancy between the total miles reported in the FEIS text and the total miles calculated from summing the segment lengths provided in the chart at 2-7 to 2-8.

⁵⁰ We tried calculating the miles of proposed corridors > .5 miles from an existing corridor using the total miles of proposed pipelines (i.e., on BLM administered lands and other jurisdictions) and we still ended up with -61 miles of proposed pipeline >0.5 miles from an existing ROW corridor under Alternative E.

IV. The WPCI FEIS and Proposed RMP Amendments Do Not Conform to the 2015 Wyoming ARMPA and Therefore Violate FLPMA

The FEIS contains a new alternative (E) that was not in the DEIS, which BLM has selected as its preferred alternative. FEIS at 2-9.⁵¹ According to the FEIS, Alternative E crosses 21,516.9 acres of sage-grouse PHMA and 36,162.9 acres of GHMA (57,679.8 acres designated grouse habitat total). FEIS at ix. That is more designated grouse habitat than any other action alternative.⁵² Alternative E is also within two-mile and four-mile buffer distances of very nearly the same number of leks as the Proposed Action and more than two of the action alternatives.⁵³ For BLM to select the new, preferred Alternative E, it must conform to the provisions of the 2015 Wyoming Grouse ARMPA, including the following:

Protect PHMAs and GHMAs from anthropogenic disturbance that will reduce distribution or abundance of GRSG.

Management Objective 13, 2015 Wyoming Grouse ARMPA at 24.

Specific to management for GRSG, all RMPs are amended as follows:

PHMAs will be managed as right-of-way (ROW) avoidance areas for new ROW or Special Use Authorization (SUA) permits (Map 2-7).

Within PHMAs where new ROWs/SUAs are necessary, new ROWs/SUAs will be located within designated RMP corridors or adjacent to existing ROWs/SUAs where technically feasible. Subject to valid existing rights including non-federal land inholdings, required new ROWs/SUAs will be located adjacent to existing ROWs/SUAs or where it best minimizes sage-grouse impacts. Consider the likelihood of development of not-yet-constructed surface-disturbing activities, as defined in Table 2 of the Monitoring Framework (Appendix D) under valid existing rights.

MD LR 1, 2015 Wyoming Grouse ARMPA at 60.

Specific to management for GRSG, all RMPs are amended as follows:

Within GHMAs where new ROWs/SUAs are necessary, new ROWs/SUAs will be co-located within existing ROWs/SUAs where technically feasible.

Appropriate sage-grouse seasonal timing constraints will be applied.

MD LR2, 2015 Wyoming Grouse ARMPA at 60.

⁵¹ In the DEIS, Alternative D was BLM's preferred alternative. DEIS at 2-4.

⁵² According to the FEIS, Alternative B (Proposed Action) crosses 22,558 acres of sage-grouse PHMA and 34,898.8 acres of PHMA (57,456.8 acres designated grouse habitat total). Alternative C crosses 0 acres of PHMA and 7,053.4 acres of GHMA (7,053.4 acres designated grouse habitat total). Alternative D crosses 16,954.8 acres of PHMA and 37,823.5 acres of GHMA (54,778.3 acres designated grouse habitat total). FEIS at ix.

⁵³ See FEIS at 3-102, 3-103, 3-104, and 3-106.

In addition, the 2015 Wyoming Grouse ARMPA retained certain provisions of the Casper, Pinedale, and Rawlins RMPs, respectively:

- “Future corridor adjustments and new corridor designations will be made only when facility placement within an existing designated corridor is incompatible, unfeasible, or impractical and when the environmental consequences can be adequately mitigated.” 2015 Wyoming Grouse ARMPA at 62.
- “Utility facilities will be restricted to existing routes and designated corridors where practicable, including environmental and socioeconomic considerations. Corridor routes include U.S. Highways 189 and 191 and State Highways 189, 191, 350, 351, 352, 353, and 354. New corridors may be established as oil and gas fields are developed.” 2015 Wyoming Grouse ARMPA at 62.
- “Each utility ROW will be located adjacent to existing facilities, when possible. Areas with important or sensitive resource values will be avoided.” 2015 Wyoming Grouse ARMPA at 63.

Designating the WPCI corridors through tens of thousands of acres of PHMA and GHMA and subsequent future development of pipelines in them would lead to reductions in the abundance or distribution of greater sage-grouse, given the many impacts to grouse and its habitat that would result. Thus, the designation of the WPCI corridors is incompatible with avoiding future anthropogenic disturbance in PHMA and GHMA per Management Objective 13. Nor does the WPCI proposal’s Alternative E satisfy the ARMPA’s MD LR 1, MD LR 2, or the retained provisions from the Casper, Pinedale and Rawlins RMPs.

In addition, the WPCI FEIS states, “The BLM does not anticipate that the decision resulting from this analysis will affect the ROD and approved RMP amendments for the Rocky Mountain Region Greater Sage-Grouse Conservation Strategy (BLM 2015c).” FEIS at 1-3. This is questionable due to the large amount of designated grouse habitat that the corridors will cross and because the WPCI proposal was not included as a reasonably foreseeable development in the FEIS for the 2015 Wyoming Grouse ARMPA and thus not included in the ARMPA’s cumulative effects analysis. See Wyoming Grouse ARMPA FEIS at 4-522 to 4-523.

BLM must ensure that the WPCI FEIS and RMP amendments conform to the 2015 Wyoming RMP because FLPMA’s implementing regulations require such conformity: “All future resource management authorizations and actions, and subsequent more detailed or specific planning, shall conform to the plan components of the approved resource management plan.” 43 C.F.R. § 1610.6-3(a).

V. The FEIS’s Greenhouse Gas and Climate Change Analysis is Deficient and Must be Supplemented

A. Climate Change Impacts are Already Occurring and Must Be Analyzed and Disclosed with Greenhouse Gas Emissions

A large and growing body of scientific research demonstrates, with ever increasing confidence, that climate change is occurring and is caused by emissions of greenhouse gases (GHGs) from human activities, primarily the use of fossil fuels. The 2018 Intergovernmental

Panel on Climate Change (IPCC) Special Report on Global Warming of 1.5°C found that human activities are estimated to have caused approximately 1.0°C of global warming above pre-industrial levels, and that warming is likely to reach 1.5°C between 2030 and 2052 if it continues to increase at the current rate.⁵⁴ The IPCC also found that “[i]mpacts on natural and human systems from global warming have already been observed.”⁵⁵ Additional warming will likely lead to further impacts according to the IPCC, including:

- Warming of extreme temperatures in many regions. The number of hot days is projected to increase in most land regions;⁵⁶
- Increases in frequency, intensity, and/or amount of heavy precipitation in several regions;⁵⁷
- Increase in intensity or frequency of droughts in some regions;⁵⁸
- Rise in global mean sea level, which could potentially expose millions of people to related risks including increased saltwater intrusion, flooding and damage to infrastructure;⁵⁹
- Impacts on biodiversity and ecosystems, including species loss and extinction associated with forest fires, the spread of invasive species, transformation of ecosystems from one type to another, loss of geographic range, and other climate related changes;⁶⁰
- Increases in ocean temperature as well as associated increases in ocean acidity and decreases in ocean oxygen levels, and resultant risks to marine biodiversity, fisheries, and ecosystems, and their functions and services to humans;⁶¹
- Shifting the ranges of many marine species to higher latitudes, increasing the amount of damage to many ecosystems; loss of coastal resources and reduced productivity of fisheries and aquaculture; irreversible loss of many marine and coastal ecosystems;⁶²
- Ocean acidification-driven impacts to the growth, development, calcification, survival, and thus abundance of a broad range of species;⁶³

⁵⁴2018 Intergovernmental Panel on Climate Change, *Summary for Policymakers, in* Global Warming of 1.5°C: An IPCC Special Report on the Impacts of Global Warming of 1.5°C Above Pre-industrial Levels and Related Global Greenhouse Gas Emission Pathways, in the Context of Strengthening the Global Response to the Threat of Climate Change, Sustainable Development, and Efforts to Eradicate Poverty 6 (Valérie Masson-Delmotte et al. eds., 2018), available at: https://www.ipcc.ch/site/assets/uploads/sites/2/2018/07/SR15_SPM_version_stand_alone_LR.pdf [hereinafter, *Summary of IPCC 1.5°C Report*], submitted as Attachment 17 of Conservation Groups’ DEIS comments.

⁵⁵ *Id.* at 7.

⁵⁶ *Id.* at 9.

⁵⁷ *Id.*

⁵⁸ *Id.*

⁵⁹ *Id.* at 10.

⁶⁰ *Id.*

⁶¹ *Id.*

⁶² *Id.*

⁶³ *Id.* at 11.

- Risks to fisheries and aquaculture via impacts on the physiology, survivorship, habitat, reproduction, disease incidence, and risk of invasive species;⁶⁴
- Disproportionately higher risk of adverse consequences to certain populations, including disadvantaged and vulnerable populations, some indigenous peoples, and local communities dependent on agricultural or coastal livelihoods. Poverty and disadvantage are expected to increase in some populations as global warming increases;⁶⁵
- Negative consequences for human health including heat-related morbidity and mortality, ozone-related mortality, amplified impacts of heatwaves in cities resulting from urban heat islands, and increased risks from some vector-borne diseases, such as malaria and dengue fever, including potential shifts in their geographic range;⁶⁶
- Net reductions in yields of maize, rice, wheat, and potentially other cereal crops, particularly in sub-Saharan Africa, Southeast Asia, and Central and South America, and in the CO₂-dependent nutritional quality of rice and wheat;⁶⁷ and
- Potential adverse impacts to livestock, depending on the extent of changes in feed quality, spread of diseases, and water resource availability.⁶⁸

The 2018 United States Fourth National Climate Assessment (hereinafter, “NCA4”) found, “that the evidence of human-caused climate change is overwhelming and continues to strengthen, that the impacts of climate change are intensifying across the country, and that climate-related threats to Americans’ physical, social, and economic well-being are rising.”⁶⁹ Like the IPCC, the authors of NCA4 found that impacts are already occurring, concluding that “[t]he impacts of global climate change are already being felt in the United States and are projected to intensify in the future—but the severity of future impacts will depend largely on actions taken to reduce greenhouse gas emissions and to adapt to the changes that will occur.”⁷⁰ NCA4 found that:

- More frequent and intense extreme weather and climate-related events, as well as changes in average climate conditions, are expected to continue to damage infrastructure, ecosystems, and social systems that provide essential benefits to communities.⁷¹

⁶⁴ *Id.*

⁶⁵ *Id.*

⁶⁶ *Id.*

⁶⁷ *Id.*

⁶⁸ *Id.*

⁶⁹ U.S. Global Change Research Program, *Fourth National Climate Assessment: Volume II Impacts, Risks, and Adaptation in the United States* 36 (David Reidmiller et al. eds. 2018), available at: https://nca2018.globalchange.gov/downloads/NCA4_2018_FullReport.pdf (emphasis omitted) [hereinafter, *NCA4*], submitted as Attachment 18 of Conservation Groups’ DEIS comments.

⁷⁰ *Id.* at 34.

⁷¹ U.S. Global Change Research Program, *Summary Findings* 25, available at: https://nca2018.globalchange.gov/downloads/NCA4_Ch01_Summary-Findings.pdf, submitted as Attachment 19 of Conservation Groups’ DEIS comments.

- People who are already vulnerable, including lower-income and other marginalized communities, have lower capacity to prepare for and cope with extreme weather and climate-related events and are expected to experience greater impacts.⁷²
- Regional economies and industries that depend on natural resources and favorable climate conditions, such as agriculture, tourism, and fisheries, are vulnerable to the growing impacts of climate change.⁷³
- Rising temperatures are projected to reduce the efficiency of power generation while increasing energy demands, resulting in higher electricity costs.⁷⁴
- With continued growth in emissions at historic rates, annual losses in some economic sectors are projected to reach hundreds of billions of dollars by the end of the century—more than the current gross domestic product (GDP) of many U.S. states.⁷⁵
- Rising air and water temperatures and changes in precipitation are intensifying droughts, increasing heavy downpours, reducing snowpack, and causing declines in surface water quality, with varying impacts across regions. Future warming will add to the stress on water supplies and adversely impact the availability of water in parts of the United States.⁷⁶
- Groundwater depletion is exacerbating drought risk in many parts of the United States, particularly in the Southwest and Southern Great Plains.⁷⁷
- Rising air and water temperatures and more intense extreme events are expected to increase exposure to waterborne and foodborne diseases, affecting food and water safety.⁷⁸
- With continued warming, cold-related deaths are projected to decrease and heat-related deaths are projected to increase; in most regions, increases in heat-related deaths are expected to outpace reductions in cold-related deaths.⁷⁹
- Climate change is also projected to alter the geographic range and distribution of disease-carrying insects and pests, exposing more people to ticks that carry Lyme disease and mosquitoes that transmit viruses such as Zika, West Nile, and dengue, with varying impacts across regions.⁸⁰
- Many Indigenous peoples are reliant on natural resources for their economic, cultural, and physical well-being and are often uniquely affected by climate change. The impacts of climate change on water, land, coastal areas, and other natural resources, as well as infrastructure and related services, are expected to increasingly disrupt Indigenous

⁷² *Id.*

⁷³ *Id.*

⁷⁴ *Id.*

⁷⁵ *Id.* at 26.

⁷⁶ *Id.* at 27.

⁷⁷ *Id.*

⁷⁸ *Id.*

⁷⁹ *Id.* at 28.

⁸⁰ *Id.*

peoples' livelihoods and economies, including agriculture and agroforestry, fishing, recreation, and tourism.⁸¹

- Increasing wildfire frequency, changes in insect and disease outbreaks, and other stressors are expected to decrease the ability of U.S. forests to support economic activity, recreation, and subsistence activities.⁸²
- Climate change has already had observable impacts on biodiversity, ecosystems, and the benefits they provide to society, including the migration of native species to new areas and the spread of invasive species. Such changes are projected to continue, and without substantial and sustained reductions in global greenhouse gas emissions, extinctions and transformative impacts on some ecosystems cannot be avoided in the long term.⁸³
- While some regions (such as the Northern Great Plains) may see conditions conducive to expanded or alternative crop productivity over the next few decades, overall, yields from major U.S. crops are expected to decline as a consequence of increases in temperatures and possibly changes in water availability, soil erosion, and disease and pest outbreaks.⁸⁴
- Climate change and extreme weather events are expected to increasingly disrupt our Nation's energy and transportation systems, threatening more frequent and longer-lasting power outages, fuel shortages, and service disruptions, with cascading impacts on other critical sectors.⁸⁵
- The continued increase in the frequency and extent of high-tide flooding due to sea level rise threatens America's trillion-dollar coastal property market and public infrastructure, with cascading impacts to the larger economy. Expected increases in the severity and frequency of heavy precipitation events will affect inland infrastructure in every region, including access to roads, the viability of bridges, and the safety of pipelines.⁸⁶
- Rising water temperatures, ocean acidification, retreating arctic sea ice, sea level rise, high-tide flooding, coastal erosion, higher storm surge, and heavier precipitation events threaten our oceans and coasts. These effects are projected to continue, putting ocean and marine species at risk, decreasing the productivity of certain fisheries, and threatening communities that rely on marine ecosystems for livelihoods and recreation.⁸⁷

Greenhouse gas emissions from fossil fuel combustion, deforestation, and other causes have already resulted in 1.1°C of warming above preindustrial levels, which has radically altered our climate. The impacts of a changing climate are already bringing catastrophic damage to communities around the world, leading to loss of life, livelihoods, ecosystems, homes, and other infrastructure we depend on. Already as a result of changes in temperature, precipitation, and sea level rise, we are seeing extreme weather events unfold around the world. Recent research

⁸¹ *Id.*

⁸² *Id.* at 29.

⁸³ *Id.*

⁸⁴ *Id.*

⁸⁵ *Id.* at 30.

⁸⁶ *Id.*

⁸⁷ *Id.* at 31.

confirms that these events are getting more frequent and severe.⁸⁸ A definitive report from the IPCC (2018) found that the world will face severe climate impacts even with 1.5°C temperature rise. Without increased ambition in countries' climate commitments and climate actions, we can anticipate at least 3°C of warming by the end of the century, which could lead to an almost unrecognizable planet. The world's most vulnerable people will be most disproportionately impacted (IPCC 2019a), compounding other global challenges and our ability to meet societal goals.⁸⁹

The COVID-19 crisis has led to an unprecedented decline in GHG emissions over the past half year. By early April of 2020 global daily CO₂ emissions had declined by 17 percent compared with average 2019 emissions. However, only two months later, by mid-June 2020, as governments and businesses started to reopen, emissions had already returned to 5 percent below 2019 levels. The choices governments and investors make in the coming months as they plan to rebuild their economies will dictate our emissions trajectory for decades to come. And experience has shown that emissions reductions caused by economic downturns are only temporary.⁹⁰

When federal agencies consider the impacts of projects or regulations on GHG emissions and climate change, they must acknowledge the role of fossil fuels and other sources in driving climate changes, as recognized by both the IPCC and National Climate Assessment, respectively:

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).⁹¹

Many lines of evidence demonstrate that human activities, especially emissions of greenhouse gases from fossil fuel combustion, deforestation, and land-use change, are primarily responsible for the climate changes observed in the industrial era, especially over the last six decades.⁹²

Research shows that fossil fuels produced from U.S. federal lands are already a significant source of GHG emissions: “[t]ogether, coal, oil, and natural gas produced on federal lands account for approximately 25 percent of the total fossil fuels produced annually in the

⁸⁸ Katie Lebling, et al., World Resources Institute, *State of Climate Action: Assessing Progress toward 2030 and 2050* at 16 (November 2020), available at: <https://www.wri.org/publication/state-climate-action-assessing-progress-toward-2030-and-2050> (attached hereto and incorporated herein as Exhibit Q).

⁸⁹ *Id.*

⁹⁰ *Id.*

⁹¹ 2014 Intergovernmental Panel on Climate Change, *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* 46 (Rajendra K. Pachauri et al. eds. 2015), available at: https://archive.ipcc.ch/pdf/assessment-report/ar5/syr/SYR_AR5_FINAL_full_wcover.pdf (emphasis omitted) [hereinafter, AR5], submitted as Attachment 20 of Conservation Groups' DEIS comments.

⁹² NCA4 at 76.

United States.”⁹³ Coal produced on federal lands accounted for about 40 percent of U.S. total coal production; crude oil and natural gas produced from federal lands account for about 25 percent of U.S. production.⁹⁴

A 2018 analysis from the U.S. Geological Survey (USGS) found that, “[n]ationwide emissions from [fossil] fuels extracted from Federal lands in 2014 were 1,279.0 MMT CO₂ Eq. [million metric tons of carbon dioxide equivalent] for CO₂ [carbon dioxide], 47.6 MMT CO₂ Eq. for CH₄ [methane], and 5.5 MMT CO₂ Eq. for N₂O [nitrous oxide] On average, Federal lands fuels emissions . . . accounted for 23.7 percent of national CO₂ emissions, 7.3 percent for CH₄, and 1.5 percent for N₂O” over the ten years included in this estimate.⁹⁵

The Department of the Interior’s Bureau of Land Management (BLM) acknowledges that the energy sector accounts for 84 percent (5,424.8 CO₂e) of GHG emissions in the United States⁹⁶ and fossil fuel combustion is the largest source of energy-related GHG emissions.⁹⁷ BLM states that U.S. energy related emissions increased 1.5 percent from 1990 to 2017, which were largely from fossil fuel combustion, non-energy use of fuels, and petroleum systems.⁹⁸ Here, BLM acknowledges that outside of coal development, oil and gas development is the single largest contributor to total air pollutant emissions in Wyoming. It also states that Wyoming’s per capita emission rate is more than four times greater than the national average of 25 MMT CO₂e/year and the reasons for the higher per capita intensity in Wyoming are varied but include the state’s strong fossil fuel production industry.⁹⁹ Thus, BLM must analyze and disclose to the public how its decisions contribute to the GHG emissions from fossil fuel development and their contributions to the global climate crisis.

⁹³ Jayni Foley Hein, *Federal Lands and Fossil Fuels: Maximizing Social Welfare in Federal Energy Leasing*, 42 Harv. Envtl. L. Rev. 1, 9 (2018), available at: https://policyintegrity.org/files/publications/federal_land_energy_leasing.pdf, submitted as Attachment 21 of Conservation Groups’ DEIS comments (citing U.S. Energy Info. Admin., *Sales of Fossil Fuels Produced from Federal and Indian Lands, FY 2003 through FY 2014* 9 (2015), available at: <https://perma.cc/AG74-3H3U>, submitted as Attachment 22 of Conservation Groups’ DEIS comments.

⁹⁴ *Id.* n.26 (citing Office of Policy Analysis, U.S. Dep’t of the Interior, *U.S. Department of the Interior Economic Report FY 2015* 1 (2016), available at: https://www.doi.gov/sites/doi.gov/files/uploads/fy2015_doi_econ_report_2016-06-20.pdf, submitted as Attachment 23 of Conservation Groups’ DEIS comments.

⁹⁵ Matthew D. Merrill et al., *Federal Lands Greenhouse Gas Emissions and Sequestration in the United States: Estimates for 2005-14: U.S. Geological Survey Scientific Investigations Report 2018-5131* 6 (2018), available at: <https://pubs.usgs.gov/sir/2018/5131/sir20185131.pdf> [hereinafter, *USGS 2018 Report*], submitted as Attachment 24 of Conservation Groups’ DEIS comments.

⁹⁶ See Erik Vernon, Bureau of Land Management, Utah Office, Specialist Report – Greenhouse Gas Analysis for BLM Utah Oil and Gas Leasing at 4 (2019) [hereinafter, *Utah GHG Emissions Report*], available at: https://eplanning.blm.gov/epl-front-office/projects/nepa/121035/20000240/250000291/2019_BLM_Utah_OG_Leasing_Specialist_Report_on_GHG_revised.pdf, submitted as Attachment 25 of Conservation Groups’ DEIS comments.

⁹⁷ See *id.* at 5.

⁹⁸ *Id.*

⁹⁹ FEIS Vol. II at K-44.

Federal lands are also a critical carbon sink. The USGS found that in 2014, federal lands of the conterminous United States stored an estimated 83,600 MMT CO₂ Eq., in soils (63 percent), live vegetation (26 percent), and dead organic matter (10 percent).¹⁰⁰ In addition, the USGS estimated that Federal lands “sequestered an average of 195 MMT CO₂ Eq./yr between 2005 and 2014, offsetting approximately 15 percent of the CO₂ emissions resulting from the extraction of fossil fuels on Federal lands and their end-use combustion.”¹⁰¹ Unlike in other NEPA analyses,¹⁰² BLM completely fails to analyze the impacts of its decisions on carbon sequestration, and offers no rationale for this omission.¹⁰³ BLM must analyze and disclose how its decisions and resulting fossil fuel development could lead to the elimination or degradation of these crucial carbon sinks, resulting loss of carbon storage, and related climate change impacts, including a consideration of the time lag between leasing and any reclamation and the significance of the loss of carbon sinks on GHG emissions and climate change during that time period.

B. BLM Fails to Analyze and Disclose the Impacts Associated with Enhanced Oil Recovery

BLM states that “[t]he initiative’s objective is to stimulate economic development by connecting oil fields that are favorable candidates for enhanced oil recovery (EOR). Current data and literature suggest that there are more than 90 potential fields suitable for CO₂ flooding with recoverable reserves in excess of 1.5 billion barrels.”¹⁰⁴ BLM also states: “[b]y their very nature, EOR projects can store large quantities of CO₂, and because CO₂ used during EOR is a purchased commodity, it is recycled continuously in the reservoir rather than vented to the atmosphere. EOR projects can add value by maximizing oil recovery from existing, previously disturbed fields, while at the same time while *possibly* offering a bridge to a reduced carbon emissions future.”¹⁰⁵ However, BLM offers no scientific or technical support for its assertion that this particular EOR project would offer a bridge to a reduced carbon emissions future. BLM acknowledges that “[a]lthough approximately 20% of CO₂ in EOR currently comes from natural gas processing plants, the majority comes from natural underground sources and does not represent a net reduction in CO₂ emissions. However, carbon capture and storage offer the *potential* to alter this situation (DOE 2010).”¹⁰⁶ In its response to our prior comments on this

¹⁰⁰ USGS 2018 Report at 12-13.

¹⁰¹ *Id.* at 1.

¹⁰² See, e.g., BLM, March 2020 Competitive Oil and Gas Lease Sale, DOI-BLM-UT-0000-2020-0001-OTHER NEPA-EA at 34 (Jan. 2020), available at: https://eplanning.blm.gov/public_projects/nepa/1501633/20014478/250019569/2020-01-23-Mar20-DOI-BLM-UT-0000-2020-0001_Other-NEPA-EA-30dayProtestPeriod_FINAL.pdf, attached hereto and incorporated herein as Exhibit R.

¹⁰³ BLM merely states in its response to comments that the carbon sequestration discussion is “noted.” FEIS Vol. II at K-44.

¹⁰⁴ FEIS Vol. I at 1-1.

¹⁰⁵ *Id.* (emphasis added).

¹⁰⁶ *Id.* (emphasis added).

point, BLM merely states that “text and sources have been added for clarification.”¹⁰⁷ However, only one decade old source has been added and BLM fails to provide any specific analysis regarding the CO2 emissions reduction potential associated with this particular proposal.

This is important because current scientific literature assessing the GHG impacts of EOR finds mixed results, not the purely positive impact asserted by BLM in the FEIS. It is currently unclear whether EOR is a net CO2 contributor or whether it is net carbon negative, and the available research studies are difficult to compare because the GHG emission scenarios are set up differently within them.¹⁰⁸ While there are arguments for EOR as a way to reduce the carbon intensity of oil and sequester substantial amounts of carbon, there is also a compelling case against it, namely that there should be less oil and gas production, not more.¹⁰⁹ The carbon intensity of oil is only reduced if the carbon dioxide used is from anthropogenic sources or captured from the atmosphere.

First, less than 15 percent of the CO2 used in today’s U.S. EOR operations (as of 2010) is pulled from “anthropogenic” sources like gas processing and hydrocarbon conversions. Over 85 percent comes from “terrestrial” sources, a few big natural CO2 reservoirs under the Earth’s surface.¹¹⁰ The majority of EOR projects have used naturally occurring CO2, and absent a large increase in oil prices or some other kind of strong, reliable financial incentive, this seems likely to continue.¹¹¹ Ideally, all EOR operations would draw exclusively on anthropogenic CO2, and they would all sequester the maximum amount possible. That might make them carbon negative on a lifecycle basis. Even short of that, they could lower the lifecycle emissions of the oil and gas produced.¹¹²

Here, it is unclear whether the CO2 used in the proposed EOR operations would be derived from anthropogenic or terrestrial sources. BLM merely states that both types are available: “Naturally occurring sources of CO2 are found in the western portion of the state in numerous hydrocarbon reservoirs and can be produced in quantities sufficient to support EOR. Two of these reservoirs currently serve as the source CO2 for ongoing EOR projects. Additionally, human-made sources of CO2, mainly power plants, can be used for EOR projects.”¹¹³ BLM acknowledges that “[t]he use of naturally occurring sources of CO2 versus human-made sources of CO2 for EOR can result in different lifecycle carbon emissions.”¹¹⁴ Yet

¹⁰⁷ FEIS Vol. II at K-44.

¹⁰⁸ See Núñez-López V and Moskal E, *Potential of CO2-EOR for Near-Term Decarbonization 2* (2019). Front. Clim. 1:5. doi: 10.3389/fclim.2019.00005, <https://www.frontiersin.org/articles/10.3389/fclim.2019.00005/full>, submitted as Attachment 26 of Conservation Groups’ DEIS comments.

¹⁰⁹ David Roberts, *Could squeezing more oil out of the ground help fight climate change?*, Vox, December 6, 2019, <https://www.vox.com/energy-and-environment/2019/10/2/20838646/climate-change-carbon-capture-enhanced-oil-recovery-eor>, submitted as Attachment 27 of Conservation Groups’ DEIS comments.

¹¹⁰ *Id.*

¹¹¹ See Attachment 26 of Conservation Groups’ DEIS comments.

¹¹² See Attachment 27 of Conservation Groups’ DEIS comments.

¹¹³ FEIS Vol. I at 2-2.

¹¹⁴ *Id.*

BLM fails to provide the supporting analysis that NEPA requires for informed decisionmaking, instead asserting that: “BLM is unable to disclose whether the CO2 in future potential EOR projects would be derived from anthropogenic or terrestrial sources because no specific projects have been proposed at this time. Site specific NEPA would be conducted for future EOR projects within the proposed corridors. This site-specific NEPA would disclose where the CO2 in the EOR project would come from.”¹¹⁵ Therefore, BLM fails to disclose the climate benefits, if any, of both sources in support of its claims that this project will “possibly offer[ing] a bridge to a reduced carbon emissions future.”¹¹⁶

Second, while some projects use CO2 captured from anthropogenic sources for EOR – it is important to track who claims credit for the avoided CO2 emissions. A credit associated with storing CO2 underground can only be counted once – either it can reduce the emissions from the original source when it was captured, or it can reduce the emissions from oil production. It cannot do both.¹¹⁷ Therefore to produce “carbon-negative oil” – that is for CO2-EOR actually to reduce the stock of CO2 in the atmosphere – EOR projects would need to inject CO2 that has either come from the combustion or conversion of biomass or has been captured directly from the air.¹¹⁸ BLM fails to provide any additional analysis in response to our prior comments, instead responding as follows:

This EIS analyzes a planning decision to designate proposed corridors on BLM lands. Site-specific NEPA would be conducted for future EOR projects within the proposed corridors. Whether the EOR project would be net carbon negative or a CO2 contributor would be discussed at this project-specific level because project details would be available to analyze emissions.¹¹⁹

Third, ensuring the integrity of CO2 storage is also important for validating the emissions reductions. There are steps operators must take to ensure and demonstrate the permanency of CO2 storage, including: identifying sites with suitable geology that traps CO2; avoiding abandoned wells that could create a conduit for CO2 to reach the surface (or ensuring that these are plugged); and introducing monitoring and field surveillance to detect potential leakage. These measures reduce the risk of the injected CO2 migrating back to the surface and adding to the atmospheric concentration of CO2.¹²⁰ It is unclear from a reading of the DEIS whether BLM plans to require any of these measures. While BLM acknowledges that there could be some future leakage from the reservoir or during production operations, it asserts that “it cannot be

¹¹⁵ FEIS Vol. II at K-44.

¹¹⁶ FEIS Vol. I at 1-1 (emphasis added).

¹¹⁷ Christophe McGlade, *Can CO2-EOR really provide carbon-negative oil?* (2019), <https://www.iea.org/commentaries/can-co2-eor-really-provide-carbon-negative-oil>, submitted as Attachment 28 of Conservation Groups’ DEIS comments.

¹¹⁸ *Id.*

¹¹⁹ FEIS Vol. II at K-44.

¹²⁰ Christophe McGlade, *Can CO2-EOR really provide carbon-negative oil?* (2019), <https://www.iea.org/commentaries/can-co2-eor-really-provide-carbon-negative-oil>, submitted as Attachment 28 of Conservation Groups’ DEIS comments.

reasonably estimated at this time.”¹²¹ BLM responds similarly, again stating that “these types of measures would be implemented at the project specific level, through project-specific NEPA analysis.”¹²²

Another factor to consider in determining whether a proposed EOR is net carbon negative or a net CO₂ contributor is the age of the project. Research suggests that EOR projects are initially net carbon negative for their first few years but then become net CO₂ contributors if they continue.¹²³ The commercial time horizon for a CO₂-EOR flood (a few years to decades) is shorter than the time horizon of interest for achieving effective sequestration of CO₂ from the atmosphere (centuries, or longer). CO₂-EOR thus lacks the long-term outlook of a sequestration operation specifically designed for the purpose. The focus of CO₂-EOR is the operational phase and not the post-closure phase. Migration of CO₂ out of pattern, out of authorized zones, or to the atmosphere is possible after injection and production cease. Standard cement plugs that are used in the field to decommission wells have not been designed to withstand the presence of CO₂ in the long term and could prove to be leakage pathways long after the operator has walked away from a field.¹²⁴ Again, BLM fails to provide any analysis in response to these comments, instead asserting that “[s]ite-specific NEPA would be conducted for future EOR projects within the proposed corridors. Whether the EOR project would be net carbon negative or a CO₂ contributor would be discussed at this project-specific level because project details would be available to analyze emissions.”¹²⁵

Further, even after tertiary recovery, conventional oil fields are expected to still contain an average of 35 to 50 percent of the original oil in place.¹²⁶ If oil companies develop advanced EOR techniques, operators may choose to reenter CO₂-EOR fields at a future date to recover these reserves. It is possible that such operations could necessitate removing CO₂ from the field (“blowing down” the field), in which case the operator would need to ensure that the CO₂ is not released to the atmosphere if it has already received credit for being sequestered.¹²⁷ BLM merely responds that “[t]his would be evaluated at the project specific level.”¹²⁸

¹²¹ FEIS Vol. I at 3-8.

¹²² FEIS Vol. II at K-44.

¹²³ See Attachment 26 of Conservation Groups’ DEIS comments.

¹²⁴ Briana Mordick and George Peridas, NRDC, *Strengthening the Regulation of Enhanced Oil Recovery to Align it with the Objections of Geologic Carbon Dioxide Sequestration* 40 (2017), <https://www.nrdc.org/sites/default/files/regulation-eor-carbon-dioxide-sequestration-report.pdf>, submitted as Attachment 29 of Conservation Groups’ DEIS comments.

¹²⁵ FEIS Vol. II at K-45.

¹²⁶ See Attachment 29 of Conservation Groups’ DEIS comments at 40 (citing Melzer, L.S., “Principles of CO₂ Flooding: New Technologies and New Targets for Energy Security and the Environment,” testimony before the U.S. Senate Committee on Energy and Natural Resources, Hearing on Oil and Gas Technologies, 2011, http://www.energy.senate.gov/public/index.cfm/files/serve?File_id=da480a80-fbfa-d8cd-1564-0789a904ce7c), submitted as Attachment 30 of Conservation Groups’ DEIS comments.

¹²⁷ *Id.*

¹²⁸ FEIS Vol. II at K-45.

In the FEIS, BLM provides more questions than answers and provides no support for its claims that the proposed EOR projects would offer a bridge to a reduced carbon emissions future. While heavily relying on unsupported claims regarding the purported climate benefits of this project, it simultaneously fails to provide any supporting analysis. Instead, BLM summarily concludes without support that “emissions of GHGs and production from EOR under the alternatives are not expected to differ significantly because the types of potential EOR projects proposed in the corridors would likely be similar for each alternative. These emissions would be analyzed at the project level with site-specific NEPA.”¹²⁹

Throughout the FEIS and response to our DEIS comments, BLM repeatedly defers the foregoing analysis and instead states that no specific projects have been proposed at this time and that further analysis will take place sometime in the unknown future with site-specific NEPA.¹³⁰ But this approach fails to provide the analysis that NEPA requires for informed decisionmaking. Agencies are not entitled to simply throw up their hands and ascribe any effort of analysis to “a crystal ball inquiry.” *WildEarth Guardians v. Zinke*, No. 1:16-cv-1724-RC, 2019 WL 1273181 at *15 (D.D.C. Mar. 19, 2019) (citing *Scientists’ Inst. for Pub. Info. v. Atomic Energy Comm’n*, 481 F.2d 1079, 1092 (D.C. Cir. 1973)); see also *Sierra Club v. FERC*, 867 F.3d 1357, 1374 (D.C. Cir. 2017) (“We understand that emissions estimates would be largely influenced by assumptions rather than direct parameters about the project, but some educated assumptions are inevitable in the NEPA process.”) (citing *Scientists’ Inst. for Pub. Info.*, 481 F.2d at 1092). Revisions to resource management plans (RMPs) are fundamental to the public land use decision-making process. An RMP lays the foundation upon which all mineral resource management decisions are made. 43 U.S.C. § 1712(a). The intent of NEPA is for agencies to study the impact of their actions on the environment before the action is taken. See *Conner*, 848 F.2d at 1452 (NEPA requires that agencies prepare an EIS before there is “any irreversible and irretrievable commitment of resources”). See also *Upper Pecos Ass’n v. Stans*, 500 F.2d 17 (10th Cir. 1974) (concluding that “consideration of environmental factors should come in the early stages of program and project formulation”). The failure to do this analysis at the planning stage forecloses BLM’s ability to meaningfully consider a reasonable range of alternatives and other available uses of this land.

First, BLM misleadingly implies that this corridor will lead to EOR projects that reduce emissions, without supporting analysis. This approach is arbitrary. Without this analysis, it is impossible for decisionmakers and the public to weigh a reasonable range of alternatives, including no action. These corridors would not be needed at this time if there are no EOR projects proposed to reduce emissions and would foreclose BLM’s ability to consider other uses for this land. Two cases are instructive. In *Western Organization of Resource Councils v. BLM*, the court invalidated BLM’s EISs for the Buffalo and Miles City resource management plans because the agency failed to consider a reasonable alternative that reduced the amount of coal made available under the plans. 2018 WL 1475470 at *9 (D. Mont. March 26, 2018). The court found that “BLM’s failure to consider any alternative that would decrease the amount of extractable coal available for leasing rendered inadequate the Buffalo EIS and Miles City EIS in violation of NEPA.” *Id.* at *9. The court explained, “BLM cannot acknowledge that climate

¹²⁹ *Id.*

¹³⁰ *Id.*

change concerns defined, in part, the scope of the RMP revision while simultaneously foreclosing consideration of alternatives that would reduce the amount of available coal based upon deference to an earlier coal screening that failed to consider climate change.” *Id.* at *17. In *Wilderness Workshop v. U.S. Bureau of Land Management*, the court held that BLM failed to analyze reasonable alternatives by omitting any option that would meaningfully limit leasing and development within the planning area. 342 F. Supp. 3d 1145, 1167 (D. Colo. 2018). The court held that a reasonable alternative would be for BLM to consider what else may be done with the low and medium potential lands if they were not held open for leasing. *Id.* at 1166-67 (internal citations omitted). The court held that an alternative that closes low and medium potential lands when BLM admits there is an exceedingly small chance of them being leased would be “‘significantly distinguishable’ because it would allow BLM to consider other uses for that land.” *Id.* at 1167.

Second, all of the foregoing analysis should be disclosed at the planning stage rather than waiting until the project-level permitting stage, in order to comply with NEPA’s mandate for agencies to integrate the NEPA process in their planning activities “at the earliest possible time.” 40 C.F.R. § 1501.2. Analysis may be deferred only when it is impossible to prepare it until a later stage. *See id.*; *see also N. Alaska Envtl. Ctr. v. Kempthorne*, 457 F.3d 969, 977 (9th Cir. 2006). Thus, it would be error not to consider, at the earliest stage feasible. *See, e.g., W. Org. of Res. Councils v. U.S. Bureau of Land Mgmt.*, CV16-21-GF-BMM, 2018 WL 1475470, at *13 (D. Mont. Mar. 26, 2018); *Diné Citizens Against Ruining Our Env’t v. Bernhardt (Diné CARE)*, 923 F.3d 831, 853 (10th Cir. 2019).

Because so much uncertainty exists as to whether the CO2 pipelines proposed would be net CO2 contributors or net CO2 negative, BLM must fully analyze and disclose to the public the impacts of the possible net CO2 outcomes for each alternative and specifically describe how the impacts of a net CO2 contributor outcome would be minimized, avoided, and mitigated. For example, one mitigation possibility that could be explored is habitat restoration of damaged public lands and management restrictions on the restoration lands, so that carbon can be sequestered in the long term. The failure to provide the foregoing analysis at the planning stage forecloses BLM’s ability to meaningfully consider a reasonable range of alternatives and other available uses of this land.

C. BLM Must Analyze and Disclose the True Magnitude of GHG Pollution Using the Best Available Science

When preparing NEPA documents, federal agencies are required to use high-quality information and accurate scientific analysis, and to ensure the professional and scientific integrity of the discussions and analyses therein.¹³¹ Therefore, BLM must not understate the climate impact of GHG emissions by using outdated or inaccurate estimates of global warming potential (GWP), which is a measure of the amount of warming caused over a designated period by the emission of one ton of a particular greenhouse gas relative to one ton of carbon dioxide.¹³²

¹³¹40 C.F.R. §§ 1500.1(b), 1502.24; *Custer Cty. Action Ass’n v. Garvey*, 256 F.3d 1024, 1034 (10th Cir. 2001) (requiring agencies to use “the best available scientific information” pursuant to NEPA) (footnote omitted).

¹³² *See Utah GHG Emissions Report* at 3; Gunnar Nyhre & Drew Shindell et al., *Anthropogenic and Natural Radiative Forcing in IPCC, Climate Change 2013: The Physical Science Basis, Contribution of Working Group 1 to*

GWPs are calculated for multiple time frames, commonly 20 years, 100 years, and 500 years, because the amount of warming a particular GHG causes differs when calculated for different time periods. For example, the GWPs for methane estimate how many tons of carbon dioxide emissions produce the same amount of global warming as a single ton of methane (36 tons over a 100-year period, 87 tons over a 20-year period).¹³³ Using GWPs to calculate equivalent emissions is important because some GHGs, such as methane, are much more potent than carbon dioxide, and/or have much greater climate impacts in the near-term than the long-term.¹³⁴ Under NEPA, “both short- and long-term effects” are relevant. 40 C.F.R. § 1508.27(a). Thus, BLM must analyze and disclose the global warming potential of GHG emissions of the WPCI project over both the short-term (20-year GWP) and long-term (100-year GWP).

BLM, however, often fails to discuss the 20-year GWP for shorter-lived GHGs, such as methane, that has a disproportionately large climate-changing impact in the near term. For such a pollutant, it is arbitrary and capricious to consider only the 100-year GWP.¹³⁵ NEPA requires a “full and fair discussion of significant environmental impacts.” 40 C.F.R. § 1502.1. The environmental information made available to the public “must be of high quality.” 40 C.F.R. § 1500.1(b). “Accurate scientific analysis” proves “essential to implementing NEPA.” *Id.* NEPA requires an agency to ensure “scientific integrity” in its analyses. 40 C.F.R. § 1502.24. Thus, BLM must provide a “full and fair discussion” of the methane pollution resulting from its actions, as required by NEPA. *See id.* § 1502.1.

Here, BLM mentions the 100-year GWP, but not the 20-year GWP.¹³⁶ In order to disclose and assess both the long- and short-term impacts of its decisions as required by NEPA, BLM must analyze and disclose the warming potential of GHG emissions using both the IPCC’s current 20-year and 100-year GWPs for fossil methane.¹³⁷ Applying the current GWPs for GHGs for both the 20- and 100- year periods could substantially change agencies’ assumptions regarding the GHG pollution’s impacts of a project or a regulatory change. A district court recently agreed with commenters on this point, finding that BLM violated NEPA where it failed to justify its use of global warming potentials GWPs based on a 100-year time horizon rather than the 20-year time horizon of the resource management plans (RMPs). *W. Org. of Res. Councils v. U.S. Bureau of Land Mgmt.*, CV16-21-GF-BMM, 2018 WL 1475470, at *18 (D. Mont. Mar. 26, 2018).

In its response to our DEIS comments, BLM arbitrarily refuses to provide the foregoing analysis of both the long- and short-term impacts of its decisions as required by NEPA, instead asserting:

the Fifth Assessment Report of the Intergovernmental Panel on Climate Change 710-712 (2013), available at: http://www.climatechange2013.org/images/report/WG1AR5_Chapter08_FINAL.pdf [hereinafter, *IPCC Physical Science Basis*], submitted as Attachment 31 of Conservation Groups’ DEIS comments.

¹³³ *See IPCC Physical Science Basis* at 714.

¹³⁴ *Id.*

¹³⁵ *See, e.g., Utah GHG Emissions Report* at 3.

¹³⁶ FEIS Vol. I at 3-5.

¹³⁷ *See IPCC Physical Science Basis* at 714.

This EIS analyzes a planning decision to designate proposed corridors on BLM lands. Without specific project information available (because no projects have been proposed yet), the BLM has provided its best estimate of GHG emissions in Section 3.2.5.1 (with backup in Appendix I). Site specific NEPA would be conducted for future EOR projects within the proposed corridors and would analyze GHGs in greater detail and would include both the 20-year and 100-year GWP.¹³⁸

However, NEPA requires BLM to analyze the short- and long-term impacts of its decisions, 40 C.F.R. § 1508.27(a), using accurate scientific analysis, *Id.* § 1502.24, and at the earliest possible time. *Id.* § 1501.2. Analysis may be deferred only when it is impossible to prepare it until a later stage, which is not the case here. *See id.*; *see also W. Org. of Res. Councils*, 2018 WL 1475470, at *18.

D. BLM Must Fully Analyze and Disclose the Direct and Indirect Emissions Resulting from Its Actions

BLM must utilize recent climate science to analyze and disclose to the public the GHG emissions and climate impacts that would result from the construction and operation of the proposed CO₂, oil, and gas pipeline network. BLM acknowledges that while pipeline infrastructure exists in these areas; the proposed action alternative would facilitate additional routes into new areas¹³⁹ and that under all action alternatives, pipeline construction, operation, and maintenance activities, along with future potential EOR production, would affect air quality, including GHG emissions.¹⁴⁰ Yet in the FEIS, BLM fails to quantify all of the emissions from construction and operation, instead arguing that “because no specific potential projects are proposed at this time, the exact types and numbers of equipment and vehicles that would be used are unknown and combustion emissions from construction and operation activity by alternative cannot be quantified.”¹⁴¹

BLM must analyze and disclose the direct and indirect GHG emissions and climate change impacts from the construction and operation of the WPCI project, including increased oil and gas production facilitated by the project due to the increased access to markets resulting from the project’s pipelines. While BLM assumes that CO₂-EOR would occur to the reasonably foreseeable extent and that new injection wells and that new production wells, or conversion of wells to injection could occur, BLM asserts that “data available do not allow the BLM to predict how many total wells may be necessary to support future CO₂-EOR operations” and “because it is currently not possible to predict whether new production wells may be necessary to further

¹³⁸ FEIS Vol. II at K-45.

¹³⁹ FEIS Vol. I at 2-2.

¹⁴⁰ *Id.* at 3-6.

¹⁴¹ FEIS Vol. I at 3-7.

develop an oil field, emissions from the drilling, completion, and operation of these wells cannot be reasonably predicted.”¹⁴²

NEPA requires that [federal agencies] engage in reasonable forecasting” and thus, courts “must reject any attempt by agencies to shirk their responsibility under NEPA by labeling any and all discussions of future environmental effects as crystal ball inquiry.” *Save Our Ecosystems v. Clark*, 747 F.2d 1240, 1246 n.9 (9th Cir. 1984) (quoting *Scientists’ Inst. for Pub. Info., Inc. v. Atomic Energy Comm.*, 481 F.2d 1079, 1092 (D.C. Cir. 1973)); *N. Plains Res. Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1079 (9th Cir. 2011) (citation omitted). “The BLM can certainly explain specific projections with reference to uncertainty; however, it may not rely on a statement of uncertainty to avoid even attempting the requisite analysis.” *Or. Natural Res. Council Fund v. Brong*, 492 F.3d 1120, 1134 (9th Cir. 2007). NEPA’s hard look merely requires “a reasonably thorough discussion of the significant aspects of the probable environmental consequences” to “foster both informed decision-making and informed public participation.” *Ctr. for Biological Diversity v. NHTSA*, 538 F.3d at 1194 (quotations and citations omitted). As here, BLM has refused to address the implications of its actions in the context of climate change on the basis of uncertainties which has led BLM to take short-sighted, arbitrary, and capricious action that does not, in fact, account for climate change.

Notably, courts have repeatedly held that agencies must analyze and disclose to the public the GHG emissions resulting from the production, transportation, processing, and end-use of fossil fuels that will be produced or transported as a result of agency approvals.¹⁴³ See, e.g., *Sierra Club v. FERC*, 867 F.3d 1357, 1374 (D.C. Cir. 2017) (GHG emissions from the combustion of gas “are an indirect effect of authorizing this [pipeline] project, which [the agency] could reasonably foresee”); *Citizens for a Healthy Cmty. v. U.S. Bureau of Land Mgmt.*, No. 1:17-cv-02519-LTB-GPG, 2019 WL 1382785, at *8 (D. Colo. Mar. 27, 2019) (“Defendants acted in an arbitrary and capricious manner and violated NEPA by not taking a hard look at the foreseeable indirect effects resulting from the combustion of oil and gas.”); *WildEarth Guardians v. Zinke*, 368 F. Supp. 3d 41, 71 (D.D.C. 2019) (“BLM failed to take a hard look at the environmental impacts of leasing because it failed to quantify and forecast aggregate GHG emissions from oil and gas development.”); *Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 549-50 (8th Cir. 2003); *San Juan Citizens All. v. U.S. Bureau of Land Mgmt.*, 326 F. Supp. 3d 1227, 1242-43 (D.N.M. 2018) (BLM’s reasoning for not analyzing indirect GHG emissions was “contrary to the reasoning in several persuasive cases that have determined that combustion emissions are an indirect effect”); *W. Org. of Res. Councils*, 2018 WL 1475470, at *13 (D. Mont. Mar. 26, 2018) (“In light of the degree of foreseeability and specificity of information available to the agency while completing the EIS, NEPA requires BLM to consider in the EIS the environmental consequences of the downstream combustion of the coal, oil and gas resources potentially open to development under these RMPs.”); *Mont. Envtl. Info. Ctr. v. U.S. Office of Surface Mining Reclamation and Enft.*, 274 F. Supp. 3d 1074, 1098-99 (D. Mont.

¹⁴² *Id.* at 3-8.

¹⁴³ Michael Burger, et al., Columbia Law School Sabin Center for Climate Change Law, *Working Paper – Downstream and Upstream Greenhouse Gas Emissions: The Proper Scope of NEPA Review* 15 (2016), https://web.law.columbia.edu/sites/default/files/microsites/climate-change/downstream_and_upstream_ghg_emissions_-_proper_scope_of_nepa_review.pdf, submitted as Attachment 73 of Conservation Groups’ DEIS comments.

2017) (holding indirect effects from coal trains includes the 23.16 million metric tons of GHG emissions from the combustion of coal extracted from the mine); *Wilderness Workshop v. U.S. Bureau of Land Mgmt.*, 342 F. Supp. 3d 1145, 1156 (D. Colo. 2018) (“BLM acted in an arbitrary and capricious manner and violated NEPA by not taking a hard look at the indirect effects resulting from the combustion of oil and gas in the planning area under the RMP [Resource Management Plan].”); *Diné Citizens Against Ruining Our Env’t v. U.S. Office of Surface Mining Reclamation and Enft*, 82 F. Supp. 3d 1201, 1213 (D. Colo. 2015) (“[T]he coal combustion-related impacts of [the mine’s] proposed expansion are an ‘indirect effect’ requiring NEPA analysis”), *vacated as moot*, 643 Fed. App’x 799 (2016); *High Country Conservation Advocates v. U.S. Forest Serv.*, 52 F. Supp. 3d 1174, 1198 (D. Colo. 2014) (“[R]easonably foreseeable effect [of downstream combustion] must be analyzed, even if the precise extent of the effect is less certain.”).

Yet BLM refuses to fully analyze and disclose to the public the GHG emissions and climate change impacts resulting from this project, asserting that “new utility corridor designation in existing utility corridors would not result in any irretrievable or irreversible impacts to air quality or climate change. Unavoidable adverse effects to air quality would occur indirectly after designation of the corridors when specific projects are implemented. These impacts would consist of increases in criteria pollutants, HAPs [hazardous air pollutants], and GHGs from the construction, operation, and maintenance of the potential projects.”¹⁴⁴ Agencies “need not foresee the unforeseeable, but ... reasonable forecasting and speculation ... is implicit in NEPA.”¹⁴⁵ BLM cannot shirk its responsibilities under NEPA by labeling any and all discussion of future environmental effects as crystal ball inquiry. Contrary to BLM’s implication, emissions quantification over the lifetime of projects or programs is not too complex or speculative to undertake.

As BLM acknowledges, most of the information needed is indeed readily available.¹⁴⁶ For example, the emissions associated with the production of fossil fuels from federal lands can be divided into two categories: (1) direct emissions associated with activities such as construction, drilling, completion, and well operation; and (2) indirect or “downstream” emissions associated with activities such as transportation, processing and end use of those fuels. Since direct emissions from production represent only a small proportion of the life cycle emissions from the fossil fuels, agencies must analyze and disclose to the public both the direct and indirect effects for the entire supply chain. This includes emissions from exploration, development, drilling, completion (including hydraulic fracturing), production, gathering, boosting, processing, transportation, transmission, storage, distribution, refining, and end use. Agencies must disclose their estimates of emissions from these sources and describe the methodologies used to make their estimates. The production of oil and gas is a predicate for the transportation of these fossil fuels through this pipeline corridor and therefore must be accounted for in BLM’s NEPA analysis.

¹⁴⁴ FEIS Vol. I at 3-9.

¹⁴⁵ See *Delaware Riverkeeper Network v. FERC*, 753 F.3d 1304, 1310 (D.C. Cir. 2014) (citing *Scientists’ Inst. for Pub. Info., Inc. v. Atomic Energy Comm’n*, 481 F.2d 1079, 1092 (D.C. Cir. 1973)).

¹⁴⁶ See FEIS Vol. I at 3-8, 3-9; FEIS Vol. II at K-46, Appendix I.

The Council on Environmental Quality's (CEQ) 2016 final guidance on the consideration of GHG emissions and the effects of climate change provided examples of the types of impacts that should be considered specifically for resource extraction projects.¹⁴⁷ Similarly, the U.S. Environmental Protection Agency (EPA) concluded that the Federal Energy Regulatory Commission (FERC) should estimate the GHG emissions from the development and production of gas being transported through proposed pipelines, as well as from product end use, due to the reasonably close causal relationship of this activity to the project.¹⁴⁸

Further, it is not necessary to know the exact locations of all of the wells that will supply oil and gas to the pipelines, or the methods used to obtain that oil and gas, in order to analyze the potential impacts. Average production rates and production methods from wells in the supply region could be used to estimate the number of wells and the types of equipment and production methods necessary to supply pipeline capacity. *See Birckhead v. FERC*, 925 F.3d 510, 520 (D.C. Cir. 2019). ("It should go without saying that NEPA also requires the Commission to at least attempt to obtain the information necessary to fulfill its statutory responsibilities."). This information could then be used to analyze the potential GHG emissions and to develop a reasonable range of alternatives and mitigation measures to offset such emissions.

BLM failed to remedy several of the discrepancies with its emissions calculations that we previously identified in our DEIS comments. First, while BLM clarified its approach to determining oil field production decline ratio by providing additional data, its approach remains flawed. BLM explained that data from only 15 fields were used to estimate an average annual oil production decline rate, which would be applied to every field as if it were a good representation. While it may be reasonable to rule out certain fields based on evidence of declining production, BLM initially failed to disclose the final list of fields used, which made it impossible for the public to review the list to ensure transparency and provide public comment regarding the accuracy of this analysis. In the FEIS, BLM added a table to Appendix I (Table I-6), with the names and production data used pertaining to the 15 fields. No additional discussion was added to body of the document or Appendix describing any attempt to evaluate representativeness of these 15 fields. Further, these 15 fields are used to calculate an average to apply to all fields, including the ones used for determination of the average and those excluded from consideration due to differing behavior – either in terms of increasing number of wells or increasing production over the period from 2010-2019. Thus, BLM should explain why it chose to apply this average

¹⁴⁷ Council on Env'tl. Quality, *Exec. Office of the President, Memorandum for Heads of Federal Departments and Agencies, Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews* 14 (2016), available at: https://obamawhitehouse.archives.gov/sites/whitehouse.gov/files/documents/nepa_final_ghg_guidance.pdf [hereinafter, *CEQ Final Guidance*]. Although CEQ withdrew the CEQ Final Guidance in response to President Trump's Executive Order 13783, "Promoting Energy Independence and Economic Growth," Withdrawal of Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews, 82 Fed. Reg. 16,576 (Apr. 5, 2017), this does not preclude agencies from utilizing the tools contained therein to consider the impacts of its actions on climate change when conducting environmental reviews, as required by NEPA and relevant case law.

¹⁴⁸ *Mountain Valley Pipeline, LLC*, FERC Docket No. CP16-10, *et al.*, U.S. Environmental Protection Agency, Comments on the MVP DEIS, FERC eLibrary No. 20161229-0033 at 3 (December 29, 2016) [hereinafter, "EPA Comments on MVP DEIS"], submitted as Attachment 74 of Conservation Groups' DEIS comments.

value rather than the known past multi-year decline behavior for the 15 fields used to calculate the average of 42% oil decline between 2010-2019.

If an average must be used, then the statistical representativeness of an arithmetic average should be investigated. The field-level decline values vary considerably for oil, from as low as 3.5% in the case of Grass Creek to as high as 94.3% in the case of Sand Draw North between 2010-2019. Notably, the majority of the oil produced by these 15 fields is produced at Grass Creek (56.7% or 786,897 bbls out of 1,035,089 bbls in 2019). The next largest producing field, Byron (25.2% or 349,511 bbls out of 1,035,089 bbls in 2019), also has a smaller than average decline rate of 17.998% from 2010-2019. Together, this means over 80% of oil produced from these fields in the most recent year came from fields with decline rates far less than the simple average suggests. If a production-weighted approach were applied instead, these 15 fields would have an average of 12.96% oil decline between 2010-2019 rather than 42% when field production size is ignored, and all fields are treated the same. If a 12.96% decadal decline rate were applied to all fields, this would increase the expected oil production from years 11-20 by 23.35 million bbls and GHG emissions associated with this oil by 10.04 Mmt CO₂e. A production-weighted approach would also result in a lower estimate of gas decline rate of 55.97% gas decline between 2010-2019 rather than 61.9125% when field production amount is ignored, and all fields are treated the same. This would also increase expected gas production above what is presented in the FEIS and result in a higher level of expected GHG emissions from gas as well.

Further, a mathematical error in the determination of the average decline rate remains uncorrected.¹⁴⁹ BLM used two, individual year data points – production in year 2010 and production in year 2019 – as representative of decline over a 10-year period. BLM used the percent difference between production during the year 2010 and production during the year 2019 to infer annual average production decline, and did so by dividing by 10; however, the period between these data points is only nine years long, not 10. This error results in a slightly lower decline rate of 4.2% per year being reported for oil and 6.19% per year for gas rather than 4.67% per year for oil and 6.88% per year for gas. This effect is small relative to the effects of the averaging approach described above but still represent another instance in a pattern of analytical errors that call the reliability of this analysis into question.

There are also several missing sources of additional indirect emissions, which BLM still failed to provide. First, BLM claims “it is currently not possible to predict whether new production wells may be necessary to further develop an oil field, direct emissions from the drilling, completion, and operation of these wells cannot be reasonably predicted.”¹⁵⁰ However, it is plausible that new wells will need to be built to accommodate the added production, so BLM should at least provide an estimate of potential GHG emissions impacts from drilling, completion, and operation of additional wells, even if not precise. BLM refused to provide any estimate of either: (1) the maximum number of wells that could be needed to produce the reported levels of potential future additional oil and gas from EOR, from each field and total; or (2) the GHG emissions expected from drilling, completion, and operation of an average

¹⁴⁹ FEIS Vol. I at 3-39.

¹⁵⁰ *Id.* at 3-8.

additional well. If the impact will be a function of the volume of expected production, GHG emissions from wells for different volume categories should be provided. This information, when applied to the reported additional production volume expected per field, would enable an estimate of range for total indirect emissions from this missing source. While it is possible that no additional wells are needed, BLM has a responsibility to provide the GHG emissions from building and operating a new well and potential range of new wells to understand what impact could be for this reasonably foreseeable impact.

While BLM added unit labels to allow for interpretation of crucial data reported in Table I-3 in the FEIS, these issues remain for Table I-4, identified in comments on the DEIS, and new Table I-6. Table I-4 is labeled “Total CO₂e Calculations by Gas Field Based on 2019 Production Data” but the data in the vast majority of the table (i.e. all but the final row appear to represent gas production) can be deduced to represent gas production, which would have units of volume (e.g. BCF) or mass (MMT), not CO₂e. BLM must consistently label its data tables in ways that are transparent for the public to interpret and verify. Table I-5 lacks unit labels in all but one column and includes rows with unexplained highlighting (orange), and columns with unexplained significance (i.e. “Cumulative G:O”). Table I-6 similarly lacks unit labels throughout the table and includes four columns without headers to verify what they represent let alone what units of measure they are in. A reverse engineering of the data suggests that the column labeled “Annual Decline in Oil Production 2010-2019 (bbls)” actually represents the (near) decadal decline between the years 2010-2019, not an annualized decline, as the name would suggest. The public should not have to make guesses to follow BLM’s analysis of indirect emissions. BLM needs to provide Transparent labeling of all data in Tables I-3 through I-6, either in the tables themselves, or in additional descriptive text in the corresponding Appendix, where BLM indicates that all calculations are shown. Finally, while it can be deduced from the table and sections referenced that the first row labeled “CO₂e” are the indirect emissions from the additional production calculated in Table I-3, it is not clear what the second row labeled CO₂e references or how it was estimated. The “Total CO₂e” row can be determined as the sum of those two CO₂e rows, but without knowing the purpose of the second CO₂e row, its meaning or relevance is also unclear. The values in these rows do not appear to be referenced at all in the FEIS, which makes it unclear why these values are mentioned here.

As part of its GHG analysis, BLM estimates the amount of CO₂ input that is needed to perform the enhanced oil and gas recovery and presents it as CO₂ “sequestered under the WPCI.”¹⁵¹ BLM uses this “sequestered” amount of CO₂ input to suggest its net GHG emissions from operation is being offset by the use of CO₂ in the process. This is most clearly demonstrated in calculation of net emission reported in the cumulative impacts discussion: “With the potential for 2.05 Mmt CO₂e to be sequestered annually through the use of CO₂-EOR (see Section 3.2.5.1), the net effect would be an approximate reduction in emissions from 156 to 153.95 CO₂e Mmt.”¹⁵² However, the value presented in the FEIS for annual CO₂ sequestered is overinflated because BLM made a data interpretation error. This error continues a pattern from the DEIS, where potentially sequestered CO₂ was also overstated, although much more dramatically so, due to mathematical errors noted by Conservation Groups in their DEIS

¹⁵¹ *Id.* at 3-9.

¹⁵² *Id.* at 4-2.

comments. While BLM corrected the originally identified errors in the FEIS, it created a new error in the process of reporting it. The corrections from the DEIS resulted in a new total result of just 2.05 Mmt CO₂ input needed for EOR being calculated as compared to the 7,619.7 Mmt CO₂ originally reported in the DEIS¹⁵³ – a 99.97% reduction. However, in the FEIS, BLM reports this 2.05 Mmt CO₂ value as the amount needed for the process “on an annual basis,”¹⁵⁴ when in fact it is derived from data describing production over the 20-year period of EOR production, not annual amounts. Therefore, BLM did the math in reverse. The annual CO₂ input need indicated by the data in Appendix I-3 should be 2.05 Mmt CO₂ divided by 20 years of operation or 0.102 Mmt CO₂ per year rather 2.05 Mmt CO₂ itself. This error meant the 20 year total of 40.9 Mmt CO₂ sequestered was also off by a factor of 20.¹⁵⁵ BLM must correct this new error, which overstates the potential amount of CO₂ sequestration and is crucial to interpreting the net effect of this project on climate emissions.

There are also several missing sources of additional indirect emissions, which BLM still failed to provide. First, BLM claims “it is currently not possible to predict whether new production wells may be necessary to further develop an oil field, direct emissions from the drilling, completion, and operation of these wells cannot be reasonably predicted.”¹⁵⁶ However, it is plausible that new wells will need to be built to accommodate the added production, so BLM should at least provide an estimate of potential GHG emissions impacts from drilling, completion, and operation of additional wells, even if not precise. BLM refused to provide any estimate of either: (1) the maximum number of wells that could be needed to produce the reported levels of potential future additional oil and gas from EOR, from each field and total; or (2) the GHG emissions expected from drilling, completion, and operation of an average additional well. If the impact will be a function of the volume of expected production, GHG emissions from wells for different volume categories should be provided. This information, when applied to the reported additional production volume expected per field, would enable an estimate of range for total indirect emissions from this missing source. While it is possible that no additional wells are needed, BLM has a responsibility to provide the GHG emissions from building and operating a new well and potential range of new wells to understand what impact could be for this reasonably foreseeable impact.

Additionally, BLM failed to quantify or disclose emissions from foreseeable CO₂ reprocessing and reinjection of CO₂ used in EOR. The agency noted that “the produced gas stream [from EOR]... may include CO₂ as the injected gas begins to break through at producing well locations [and] must be further processed,”¹⁵⁷ and that “[b]ecause CO₂ is purchased for use, operators would recapture CO₂ from the production stream and reinject it into the field to support ongoing EOR.”¹⁵⁸ Research on EOR has identified gas processing and CO₂ compression as energy intensive components and they contribute between 9-54% and 32-46% of operating

¹⁵³ DEIS at 3-9.

¹⁵⁴ FEIS Vol. I. at 3-8.

¹⁵⁵ *Id.*

¹⁵⁶ *Id.*

¹⁵⁷ FEIS Vol. I at 3-8.

¹⁵⁸ *Id.* at 3-9.

emissions, respectively.¹⁵⁹ However, BLM failed to include the emissions associated with this process. BLM should analyze and disclose any emissions associated with the process whereby “[p]roduced CO₂ is separated from the produced gas and recompressed for reinjection along with additional volumes of newly-purchased CO₂.”¹⁶⁰ Any uncertainty regarding how much reprocessing could occur can be handled by normalizing to total CO₂ input (i.e. percent of CO₂ input reprocessed) and making transparent disclosures on a reasonable range of values. However, BLM failed to provide any information to characterize these emissions.

Finally, BLM asserts that “[a]lthough there could be some future leakage from the reservoir or during production operations, it cannot be reasonably estimated at this time.”¹⁶¹ BLM failed to provide any support for this assertion. NETL recently published a review of research on CO₂ leakage from EOR operations, including leakage rates from select case studies where leakage occurred.¹⁶² In at least one example, the Rangely Oil Field in Western Colorado, leakage was reported in the context of its total volume of CO₂ injected per year,¹⁶³ creating the opportunity for calculation of a generalizable factor of CO₂ leakage per volume of CO₂ injected that BLM should adopt or at least consider and reject it for transparent cause. BLM instead defers this analysis, asserting that “[w]hen a site-specific application for permit to drill or other project proposal is submitted for approval, the BLM would further refine its GHG emission estimates.”¹⁶⁴ While BLM states in its response to our DEIS comments that it “agrees that the provided information does provide good context and BLM has added information to this section to provide a range of potential leakage while acknowledging that the geology of the reservoir and BACT controls on production facilities will ultimately control these future potential rates,”¹⁶⁵ it fails to provide this information in the FEIS. At a minimum, BLM should qualitatively explain what this type of analysis would entail, particularly since BLM acknowledges that it intends to tier to this FEIS or incorporate it by reference in future site-specific approvals.

Here, we point to a number of errors, some of which BLM acknowledged in its response to our DEIS comments. Errors in emission calculations matter. “While each error in isolation may be merely a flyspeck, when considered together, the errors do raise concerns. The number of errors suggests a sloppy and rushed process, not the ‘[a]ccurate scientific analysis’ that is ‘essential to implementing NEPA.’” See *WildEarth Guardians v. Bernhardt*, Memorandum Opinion, Case No.: 1:16-cv-01724-RC (D.D.C. Nov. 13, 2020) at 29, attached hereto and

¹⁵⁹ Nunez-Lopez, V. et al. “Carbon balance of CO₂-EOR for NCNO classification,” *Energy Procedia*, Conference: 13th International Conference on Greenhouse Gas Control Technologies, GHGT-13, 14-18 November 2016, Lausanne, Switzerland, available at: <https://www.osti.gov/servlets/purl/1407713>, attached hereto and incorporated herein as Exhibit S.

¹⁶⁰ FEIS Vol. I at 3-8.

¹⁶¹ *Id.*

¹⁶² Vikara, Derek [KeyLogic], Anna [KeyLogic] Wendt, Michael [Enegis LLC] Marquis, Timothy [NETL] Grant, Rana [Energis] Rassipour, Jeffrey [Enegis LLC] Eppink, Tom L. [Enegis] Heidrick, et al. 2019. “CO₂ Leakage During EOR Operations – Analog Studies to Geologic Storage of CO₂.” United States. <https://doi.org/10.2172/1557141>, attached hereto and incorporated herein as Exhibit T.

¹⁶³ *Id.*

¹⁶⁴ FEIS Vol. I at 3-9.

¹⁶⁵ FEIS Vol. II at K-48.

incorporated herein as Exhibit U (citing 40 C.F.R. § 1500.1(b)). “Errors of this nature—that can easily be corrected by double checking the work—may be flyspecks standing alone, but the cumulative effect of all the acknowledged errors undermines the Court’s confidence in the other calculations in the Supplemental EA.” *See id.* at 30. Therefore, BLM should thoroughly review its emissions calculations and supplement them, as appropriate.

E. BLM Must Fully Analyze and Disclose the Cumulative Emissions of Its Actions and the Resulting Impacts on the Climate

Agencies must analyze and disclose the cumulative impacts of the GHG emissions resulting from their actions. “Cumulative” effects are “the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions,” 40 C.F.R. §§ 1508.7, 1508.25(c), and “can result from individually minor but collectively significant actions taking place over a period of time.” 40 C.F.R. § 1508.7.

Analysis of cumulative impacts protects against “the tyranny of small decisions,” *Kern v. U.S. Bureau of Land Mgmt.*, 284 F.3d 1062, 1078 (9th Cir. 2002), by confronting the possibility that agency action may contribute to cumulatively significant effects even where impacts appear insignificant in isolation, 40 C.F.R. §§ 1508.7, 1508.27(b)(2).¹⁶⁶ This is particularly important in the climate change context where, given the national and global magnitude of the problem, agencies, including BLM, have attempted to portray the GHG emissions associated with a single project as relatively insignificant. Courts have not viewed this practice favorably.

For example, the Ninth Circuit held that the impact of “greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct.” *Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1217 (9th Cir. 2008). In *WildEarth Guardians v. Zinke*, the court held that “[g]iven the national, cumulative nature of climate change, considering each individual drilling project in a vacuum deprives the agency and the public of the context necessary to evaluate oil and gas drilling on federal land before irretrievably committing to that drilling.” 368 F. Supp. 3d 41, 83 (D.D.C. 2019). Thus, an agency’s failure to quantify GHG emissions renders its cumulative impact analyses inadequate. *Id.* at 76. More recently in *Wildearth Guardians v. BLM*, ---F. Supp. 3d---, 2020 WL 2104760, *9-10 (D. Mont. May 1, 2020), the court found that BLM’s failure to analyze the cumulative impacts of its oil and gas leasing decisions violates NEPA.

Thus, BLM must analyze and disclose the impacts of its actions and the cumulative climate impacts analysis should include the incremental GHG emissions increases, added to other past, present, and reasonably foreseeable emissions on a regional and national scale. *See* 40 C.F.R. §§ 1508.7, 1508.27(a); *see also WildEarth Guardians*, 368 F. Supp. 3d at 76-77. Given the national, cumulative nature of climate change, considering each individual project in a

¹⁶⁶ *See also* Council on Env’tl. Quality, Exec. Office of the President, *Considering Cumulative Effects Under the National Environmental Policy Act* (1997), available at: https://www.energy.gov/sites/prod/files/nepapub/nepa_documents/RedDont/G-CEQ-ConsidCumulEffects.pdf; 40 C.F.R. § 1508.27(b)(7) (“Significance cannot be avoided by . . . breaking [an action] down into small component parts.”), submitted as Attachment 78 of Conservation Groups’ DEIS comments.

vacuum deprives the agency and the public of the context necessary to evaluate an agency action before irretrievably committing to that action. *Id.* at 83. In addition to looking at direct impacts in the immediate vicinity of the proposed pipeline project, BLM must consider other effects that are reasonably foreseeable, including whether this project would facilitate increased oil and gas production or exploration and any associated GHG and climate impacts.

Courts have determined that agencies are not free to ignore the cumulative impacts, particularly GHG emissions resulting from fossil fuel leasing and development approvals. In *WildEarth Guardians v. Zinke*, the court held that BLM cannot ignore the impacts from similar, cumulative federal lease sales. 368 F. Supp. 3d 41, 56 (D.D.C. 2019). Further, The Tenth Circuit Court of Appeals held that if BLM has prepared a reasonably foreseeable development scenario (RFDS) for a particular area then the agency must fully analyze the impacts of developing the full number of wells identified in that RFDS in its site-specific NEPA analysis, if that analysis has not previously been conducted. *Diné Citizens Against Ruining Our Env't v. Bernhardt*, 923 F.3d 831, 854 (10th Cir. 2019). Thus, for purposes of NEPA analysis, those reasonably foreseeable wells must be considered in the agency's cumulative impacts analysis. *See id.* at 853. ("We conclude that the [RFD] made it reasonably foreseeable that 3,960 horizontal Mancos Shale wells would be drilled, and NEPA therefore required the BLM to consider the cumulative impacts of those wells in the EAs."). There, BLM was "foreclose[d]" from authorizing a proposed activity when the agency had failed to fully analyze all reasonably foreseeable cumulative impacts. *Id.* at 854. As the Tenth Circuit explained, once an RFDS has been issued, the wells predicted in that document were "reasonably foreseeable future actions." *Id.* at 853. (citing 40 C.F.R. § 1508.7). Thus, for purposes of NEPA, those reasonably foreseeable wells must be considered in the agency's cumulative impact analysis. *See id.*

In *WildEarth Guardians v. Zinke*, the court found that BLM's approval and issuance of five oil and gas leases for 282 separate parcels spanning approximately 303,995 acres in Wyoming did not sufficiently consider the impacts of climate change before authorizing oil and gas leasing on federal land in the state. 368 F. Supp. 3d at 41. Specifically, BLM failed to: (1) quantify and forecast drilling-related GHG emissions; (2) adequately consider GHG emissions from the downstream use of oil and gas produced on the leased parcels; and (3) compare those GHG emissions to state, regional and national GHG emissions forecasts, and other foreseeable regional and national BLM projects. *Id.* at 83. The court remanded the EAs and FONSI to the agency for further consideration. On remand, BLM produced a supplemental assessment of the potential effects that oil and gas leasing on the federal land in Wyoming may have on climate change, but plaintiffs maintained that BLM's supplemental assessment still failed to take the requisite "hard look" at the environmental impacts of the leasing decisions. *Wildearth Guardians v. Bernhardt*, Memorandum Opinion, Case No.: 1:16-cv-01724-RC (D.D.C. Nov. 13, 2020) at 1-2. The court agreed, finding that BLM's supplemental EA failed to properly consider proposed and "reasonably foreseeable BLM lease sales in the [state,] region[,] and nation." *Id.* at 16 (citing *Zinke*, 368 F. Supp. 3d at 77). Consequently, the court found that BLM did not analyze the cumulative impact that the Wyoming Lease Sales would have when added to the lease sales in neighboring states. *Id.* at 18.

Plaintiffs also contended that BLM's Supplemental EA was deficient because it failed to consider total emissions (over the life of the proposed projects) and instead only considered annual emission rates. Because the magnitude of climate change depends more on total

cumulative emissions than it does on yearly rates, plaintiffs argued that the Supplemental EA obscured the damaging effects of the planned oil and gas leases. *Id.* at 19. BLM’s analyses of direct, indirect, and cumulative impacts, at bottom, largely rested on comparisons of yearly rates. *Id.* at 22. The court noted that “[i]f a proposed action generates only slight changes in yearly emission rates, but will produce emissions for hundreds of years, disclosing the yearly rate by itself does not paint the whole picture. Similarly, if a project will greatly increase yearly emission rates, but will only produce emissions for a year or two, the full environmental impact cannot be understood knowing only the yearly rate.” *Id.* at 21-22. Consequently, the court concluded that it was “doubtful that BLM took the requisite ‘hard look’ at the full environmental impact.” *Id.* at 22. The court ultimately held that BLM failed to take a “hard look” at GHG emissions from the Wyoming Lease Sales. *Id.* at 34.

There are similar shortcomings in BLM’s analysis here. BLM considers annual emission rates but fails to report a 20-year total for cumulative impacts including other related projects. Specifically, BLM reports GHG emissions from WPCI additional production as a result of EOR cumulatively over time as 308.7 Mmt CO₂e over 20 years,¹⁶⁷ but only calculates comparisons annually (using the 15.4 Mmt per year figure¹⁶⁸); 0.31% of US total annually¹⁶⁹ and 11.4% of Wyoming state total annually.¹⁷⁰

In the cumulative impacts section, BLM reports a “cumulative annual emissions from oil and gas operations in Wyoming” of 156 Mmt CO₂e per year by adding the following:

- Annual indirect emissions from the additional EOR in this FEIS (15.4 Mmt CO₂e per year)
- Annual direct and indirect emissions for BLM Wyoming field office annually (86.2 Mmt CO₂e per year)
- Annual direct and indirect emissions from two “programmatic oil & gas documents recently completed or near completion”:
 - Moneta Divide EIS (26 Mmt CO₂e per year); and
 - Converse County EIS (28 Mmt CO₂e per year).¹⁷¹

However, it appears that BLM excludes coal emissions from Buffalo Field Office RMP amendments and the BLM Casper Field Office, asserting that “emissions from coal in this planning area are not considered reasonably foreseeable because of market downturns and lack of activity.”¹⁷² BLM fails to justify or otherwise provide support for its position that these actions are not reasonably foreseeable. *See Wildearth Guardians v. Bernhardt*, Memorandum Opinion, Case No.: 1:16-cv-01724-RC (D.D.C. Nov. 13, 2020) at 16-18. In so doing, BLM failed to “consider the cumulative impact of GHG emissions generated by past, present, or reasonably

¹⁶⁷ FEIS Vol. I at 3-8.

¹⁶⁸ *Id.*

¹⁶⁹ *Id.* at 3-9.

¹⁷⁰ *Id.*

¹⁷¹ *Id.* at 4-2.

¹⁷² *Id.*

foreseeable BLM lease sales in the region and nation.” *See id.* at 18 (citing *Zinke*, 368 F. Supp. 3d at 77).

Further, BLM reports a “net effect” of 153.95 CO₂e Mmt by subtracting the carbon potentially sequestered by this project of “2.05 Mmt CO₂e,” which is an erroneous value as discussed in more detail in the prior section, it should be 0.1025 Mmt per year. However, BLM fails to use this net total for comparisons. Instead, BLM uses the gross total of 156 Mmt per year to estimate that the cumulative impact across projects in Wyoming is 2.4% of all U.S. emissions annually and 3.9% of oil & gas in the U.S. annually. At a minimum, BLM should disclose the total value of cumulative emissions over the 20-year period.

Also, relevant here, BLM has prepared at least one RFDS for each RMP at issue. In each RFDS, BLM anticipated the drilling of a certain number of oil and gas wells over a certain period of time (e.g., fifteen years). Yet none of the aforementioned RFDSs included analyses of the site-specific environmental impacts of these anticipated reasonably foreseeable oil and gas wells, as required by NEPA. *Diné CARE*, 923 F.3d at 854. Based on the foregoing, BLM must supplement its cumulative impacts analysis in the FEIS.

G. Agencies Must Analyze and Disclose the Significance of Their Actions’ Greenhouse Gas Emissions and Implications for Climate Change

In the FEIS, BLM failed to analyze the environmental effects of the anticipated GHG emissions (*i.e.*, direct, indirect, and cumulative). Instead, BLM merely quantified the total emissions and used that number as a proxy for environmental effects. But BLM “must do more than quantify pollution” rather the agency “must also ‘discuss the *actual* environmental effects resulting from those emissions.’” *WildEarth Guardians v. Zinke*, 2019 WL 2404860, *8 (D. Mont. Feb. 11, 2019) (quoting *Ctr. for Biological Diversity v. Nat. Highway Traffic Safety Admin.*, 538 F.3d 1172, 1216 (9th Cir. 2008)). BLM must analyze the effects of GHG emissions in the same manner as it must for any other resource. *See Ctr. for Biological Diversity*, 538 F.3d at 1216-17.

BLM projected average annual GHG emissions resulting from the additional production: approximately 0.31% of the 4,912 Mmt reported by EPA for total U.S. combustion emissions in 2017, approximately 20.5% of the USGS 2014 combustion emissions for federal lands in Wyoming, and approximately 11.4% of the statewide 2018 production estimate of 134.6 Mmt (see Appendix I).¹⁷³ An agency’s comparison of an action’s annual emissions to state, national, or global emissions misleadingly suggests that an action’s contribution to climate change is static and small, while in fact a continuing stream of emissions will add to the already too-high level of GHGs in the atmosphere and exacerbate the already excessive damage occurring each year. Comparing an agency action’s emissions to a state, national, or global inventory reveals nothing about the significance of the action’s contributions to actual environmental impacts. Merely quantifying GHG emissions and calculating what percentage they represent of U.S. GHG emissions is inadequate. *Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1216-17 (9th Cir. 2008).

¹⁷³ *Id.* at 3-9.

BLM attempts to downplay the significance of the GHG emissions resulting from its actions, which misleadingly trivializes the climate impacts of its fossil fuel decisions in violation of NEPA. Considering this action and resulting additional production in a vacuum, as BLM urges, would deprive the public of the broader context: the significant climate impacts of BLM's overall fossil fuel program. *See California v. Bernhardt*, No. 4:18-CV-05712-YGR, 2020 WL 4001480, at *49 (N.D. Cal. July 15, 2020). Once the cumulative emissions are correctly calculated, BLM must then analyze and disclose the significance of these emissions, rather than attempt to minimize or downplay the impacts of its decisions. Nowhere in FEIS does BLM specifically link the emissions resulting from its approvals to the specific climate change impacts they will cause other than to add text that states that “these emissions would contribute to and exacerbate the climate change impacts described in Section 3.2.2.3. Collectively, the incremental addition of GHG emissions from numerous currently proposed and future projects have a large impact on a global scale.”¹⁷⁴ This text is no substitute for an analysis of the significance of the emissions resulting from its decisions.

Merely quantifying GHG emissions and calculating what percentage they represent of U.S. GHG emissions is inadequate. *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1216-17 (9th Cir. 2008); *see also California*, 2020 WL 4001480, at *48-49 (citing *San Juan Citizens All. v. BLM*, 326 F. Supp. 3d 1227, 1248 (D.N.M. 2018) (rejecting “facile conclusion” that leasing decision’s climate impacts were “minor” and no cumulative impacts analysis was required); *see also Kleppe v. Sierra Club*, 427 U.S. 390, 414 (1976) (discussing “practical considerations” of studies)). Even in combination with a general, qualitative discussion of climate change, calculating only the tons of greenhouse gases emitted or a percent comparison to sectoral or national emissions fails to meaningfully assess the actual incremental impacts to property, human health, productivity, and so on.¹⁷⁵ Comparing an agency action’s emissions to a state, national, or global inventory reveals nothing about the significance of the action’s contributions to actual environmental impacts. *See California*, 2020 WL 4001480, at *46 (citing Stack & Vandenberg, *The One Percent Problem*, 111 COLUM. L. REV. 1385, 1393 (2011) (framing sources as less than 1% of global emissions is dishonest and a prescription for climate disaster)). An agency would therefore fall short of its legal obligations and statutory objectives by focusing only on volume estimates.

Further, in the FEIS, BLM still does not translate the percentage “into locally-quantifiable environmental impacts”¹⁷⁶ despite the fact that oil and gas regulation and development are not new, nor are the expected impacts. *California*, 2020 WL 4001480, at *52 (citing *Barnes*, 655 F.3d at 1140; *see also CBD v. Kempthorne*, 588 F.3d at 712; *Am. Wild Horse*

¹⁷⁴ FEIS Vol. II at K-48, K-49.

¹⁷⁵ *See High Country*, 52 F. Supp. 3d at 1190 (“Beyond quantifying the amount of emissions relative to state and national emissions and giving general discussion to the impacts of global climate change, [the agencies] did not discuss the impacts caused by these emissions.”); *Mont. Env'tl. Info. Ctr. v. U.S. Office of Surface Mining*, 274 F. Supp. 3d 1074, 1096–99 (D. Mont. 2017) (rejecting the argument that the agency “reasonably considered the impact of greenhouse gas emissions by quantifying the emissions which would be released if the [coal] mine expansion is approved, and comparing that amount to the net emissions of the United States”).

¹⁷⁶ BLM merely states that “[t]hese emissions would contribute to and exacerbate the climate change impacts described in Section 3.2.2.3. Collectively, the incremental addition of GHG emissions from numerous currently proposed and future projects would have a large impact on a global scale.” FEIS Vol. I at 3-9; FEIS Vol. II at K-49.

Campaign v. Zinke, 353 F. Supp. 3d 971, 988 (D. Nev. 2018); *WildEarth Guardians*, 368 F. Supp. 3d at 83 (“Defendants correctly note that ‘oil and gas leasing is commonplace in the mountain west,’ and that the ‘uncertainties Plaintiffs point to concerning quantity of GHG emissions . . . do not establish uncertainty as to the effect of GHG emissions.’”). In *Wildearth Guardians v. BLM*, the court noted that “if BLM ever hopes to determine the true impact of its projects on climate change, it can do so only by looking at projects in combination with each other, not simply in the context of state and nation-wide emissions.” 2020 WL 2104760, at *11. “Without doing so, the relevant ‘decisionmaker’ cannot determine ‘whether, or how, to alter the program to lessen cumulative impacts’ on climate change.” *Id.* (internal citations omitted).

In its 2016 Final Guidance on the consideration of GHG emissions and the effects of climate change, CEQ explicitly addressed the inappropriateness of an agency’s assertion that the emissions resulting from its actions represent only a small fraction of global emissions in order to avoid analysis and disclosure of climate impacts, as follows:

Climate change results from the incremental addition of GHG emissions from millions of individual sources, which collectively have a large impact on a global scale. CEQ recognizes that the totality of climate change impacts is not attributable to any single action, but are exacerbated by a series of actions including actions taken pursuant to decisions of the Federal Government. *Therefore, a statement that emissions from a proposed Federal action represent only a small fraction of global emissions is essentially a statement about the nature of the climate change challenge, and is not an appropriate basis for deciding whether or to what extent to consider climate change impacts under NEPA.* Moreover, these comparisons are also not an appropriate method for characterizing the potential impacts associated with a proposed action and its alternatives and mitigations because this approach does not reveal anything beyond the nature of the climate change challenge itself: the fact that diverse individual sources of emissions each make a relatively small addition to global atmospheric GHG concentrations that collectively have a large impact.¹⁷⁷

In addition to including quantitative estimates of the total GHG emissions resulting from its approvals, BLM must also assess the ecological, economic, and social impacts of those emissions, including assessing their significance. See 40 C.F.R. §§ 1508.8(b); 1502.16(a)-(b). The inclusion of this information in an agency’s NEPA analysis allows members of the public and interested parties to evaluate this information, submit written comments where appropriate, and spur further analysis as needed. *W. Org. of Res. Councils v. U.S. Bureau of Land Mgmt.*, CV16-21-GF-BMM, 2018 WL 1475470, at *16 (D. Mont. Mar. 26, 2018). Without all the relevant information, a NEPA analysis cannot “foster informed decision-making” and is unlikely to survive judicial scrutiny. *Id.* (citing *California v. Block*, 690 F.2d 753, 761 (9th Cir. 1982)). Agencies must analyze the significance and severity of emissions, so that decisionmakers and the public can determine whether and how those emissions should influence the choice among alternatives. See *Robertson v. Methow Valley Citizens Council*, 490 U.S. at 351-52 (recognizing

¹⁷⁷ 2016 Final Guidance at 10-11 (emphasis added).

that EIS must discuss “adverse environmental effects which cannot be avoided[,]” which is necessary to “properly evaluate the severity of the adverse effects”).

BLM should not place the burden of analyzing data and drawing conclusions from it on the public. *WildEarth Guardians v. Zinke*, 368 F. Supp. 3d at 83. Even if it were possible for the public to analyze GHG emissions of agency decisions based on the data made available, it does not relieve agencies from their burden to consolidate the available data as part of its “informed decisionmaking,” before taking action. *Id.* (citing *WildEarth Guardians v. Jewell*, 738 F.3d 298, 303 (D.C. Cir. 2013) (quoting *New York v. Nuclear Regulatory Comm’n*, 681 F.3d 471, 476 (D.C. Cir. 2012))).

To take the required “hard look,” agencies must tell the public what quantitative estimates mean in terms of “actual environmental effects.” *Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1216 (9th Cir. 2008) (“While the EA quantifies the expected amount of CO₂ emitted from light trucks MYs 2005-2011, it does not evaluate the ‘incremental impact’ that these emissions will have on climate change or on the environment more generally. . . . The EA does not discuss the actual environmental effects resulting from those emissions.”); *Or. Nat. Res. Council v. U.S. Bureau of Land Mgmt.*, 470 F.3d 818, 822-23 (9th Cir. 2006) (rejecting assessment of logging project’s impacts by looking exclusively at the number of acres to be harvested); *Klamath-Siskiyou Wildlands Ctr. v. U.S. Bureau of Land Mgmt.*, 387 F.3d 989, 995 (9th Cir. 2004) (While tallies of “the number of acres to be harvested” and “the total road construction anticipated” were “a necessary component” and “a good start” to the analysis, respectively, they do not amount to the required “description of actual environmental effects”); 40 C.F.R. § 1508.25(c).

While agencies are not required to use any specific protocols to determine the significance of emissions under NEPA, BLM must undertake a more robust discussion of GHG emissions. *WildEarth Guardians v. Zinke*, 368 F. Supp. 3d 41, 78 (D.D.C. 2019). This is because an agency’s failure to provide a discussion of the significance of impacts resulting from its decisions and associated climate implications deprives the public of important information on the cumulative GHG emissions and true climate implications of agency actions. *See Or. Nat. Desert Ass’n v. U.S. Bureau of Land Mgmt.*, 625 F.3d 1092, 1099-1100 (9th Cir. 2010) (“[NEPA] require[es] agencies to take a ‘hard look’ at how the choices before them affect the environment, and then to place their data and conclusions before the public.”). Accepted methods exist to quantify and analyze the significance of GHG emissions (through monetization), which BLM could use to evaluate the significance of those emissions and to balance consequences of emissions against benefits of a specific approval.¹⁷⁸

Here, BLM’s only attempt to assess the significance of emissions is to use EPA’s Greenhouse Gas Equivalencies calculator to convert its estimate of emissions to the equivalent

¹⁷⁸ See Jayni Hein et al., NYU School of Law Inst. for Policy Integrity, *Pipeline Approvals and Greenhouse Gas Emissions* 5 (2019), available at: <https://policyintegrity.org/publications/detail/pipeline-approvals-and-greenhouse-gas-emissions> [hereinafter, *Pipeline Approvals and GHG Emissions*], submitted as Attachment 32 of Conservation Groups’ DEIS comments; *Utah GHG Emissions Report* at 2.

emissions from passenger vehicles and home energy use.¹⁷⁹ While this may be helpful for trying to contextualize emissions, it is insufficient to meet BLM's obligations under NEPA to analyze and disclose significance, as it misleadingly trivializes the project's contributions. The public does not necessarily have any frame of reference to assess whether the energy used by a certain number of homes in a year or by a certain number of cars driven for a year is significant or not. Such figures are still abstract, lack context, and on their own are misleading. Monetization is a much more relatable scale for the public to understand and it assesses the significance of a project's contributions.

To this end, one tool available to analyze and disclose the significance of emissions and related climate change impacts is the Interagency Working Group's Social Costs of Carbon,¹⁸⁰ which – even though purportedly withdrawn by Executive Order 13783¹⁸¹ – remains the best available scientific and economic basis for determining the value of avoiding each ton of GHG emissions. Even Executive Order 13783 requires agencies to –

monetiz[e] the value of changes in greenhouse gas emissions resulting from regulations, including with respect to the consideration of domestic versus international impacts and the consideration of appropriate discount rates, agencies shall ensure, to the extent permitted by law, that any such estimates are consistent with the guidance contained in OMB Circular A–4 of September 17, 2003 (Regulatory Analysis), which was issued after peer review and public comment and has been widely accepted for more than a decade as embodying the best practices for conducting regulatory cost-benefit analysis.¹⁸²

Here, BLM touts the economic benefits of the WPCI project, such as an estimated total payroll for the reasonably foreseeable development of an additional approximately \$668 million per year at full development and an estimated \$900 million per year of cumulative tax, royalties, and lease revenues from that reasonably foreseeable development.¹⁸³ Yet it fails to similarly disclose the economic costs, even though it could use the Social Costs of Greenhouse Gases to do so. Even if NEPA does not require a cost benefit analysis in every case, NEPA does require BLM to assess the significance of its actions, and the social cost of greenhouse gases metrics remain one of the best tools available to analyze and disclose to the public the significance of GHG emissions. Nonetheless, BLM refuses to use it by asserting as follows:

BLM maintains that without any other monetized benefits or costs reported, monetized estimates of the social cost of carbon emissions would be presented in

¹⁷⁹ FEIS Vol. I at 3-9; FEIS Vol. II at K-49, Appendix I.

¹⁸⁰ See Interagency Working Group on Social Cost of Greenhouse Gases, United States Government, *Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866* (Aug. 2016) [hereinafter, "IWG 2016 Report"], available at: https://www.epa.gov/sites/production/files/2016-12/documents/sc_co2_tsd_august_2016.pdf, submitted as Attachment 33 of Conservation Groups' DEIS comments.

¹⁸¹ 82 Fed. Reg. 16093 (Mar. 31, 2017).

¹⁸² *Id.* §5(c).

¹⁸³ See FEIS Vol. I at 4-7; see also Appendix D.

isolation, without any context for comparison. Quantifying only the economic costs of oil and gas development by using the social cost of carbon metrics, but not the economic benefits (as measured by, for example, the economic value of the proposed oil and gas development and production generally equaling the price of oil and gas minus the cost of producing, processing, and transporting the minerals, or the costs to society measured by the impacts to standards of living) would yield information that is both inaccurate and not useful for the decision maker.¹⁸⁴

The analysis in the underlying EISs prepared for the RMPs, and in this amendment, were prepared in accordance with policy [see Washington Office Instruction Memorandum (IM) 2013-131] and were not based on economic theory and modelling under a cost-benefit umbrella, as suggested by the commenter. Economic “impact” is not the same as economic “benefit.” The analysis in this EIS has not provided a quantitative monetary estimate of any benefits or costs. As defined by IM 2013-131, “Impact analysis provides estimates of the direct, indirect, and cumulative economic activity that a given management decision is expected to create within a specified geographic area. This activity is typically expressed as projected changes in employment, personal income, or economic output. For example, developing a large oil and gas field might employ 9,000 workers and provide \$500 million in wages per year, with a certain proportion of that economic impact remaining in the county or other local area. This type of analysis calculates the changes in activity for various economic sectors, typically measured as a difference from the “no-action alternative.” Impact analysis is what was prepared for the underlying RMPs versus a cost-benefit analysis which is defined in IM 2013-131 as: “Benefit-cost analysis in principle estimates the full range of economic benefits and costs to society of a proposed activity, both market and nonmarket, providing another picture of the proposed action. The spatial scale of benefit-cost analysis is usually large, for it attempts to capture benefits and costs to individuals regardless of where they reside. Such an analysis can provide a more holistic picture of each management scenario.” As it relates to assessments of oil and gas development, the definitions in IM 2013-131 are more refined as: “To assess the impacts of a proposed oil and gas field, for example, the BLM routinely performs an impact analysis that estimates the jobs, income, and economic output that will occur over the life of the development. A benefit-cost analysis would estimate the overall economic value of the proposed field. From a market perspective, the economic value of the proposed oil and gas development and production would generally equal the price of oil and gas minus the cost of producing, processing, and transporting the minerals” In the EA, BLM explained the difference between the impact analysis that had been completed and how that would differ from a cost-benefit analysis. BLM did not prepare a cost benefit analysis as defined by IM 2013-131 in this EIS, or in the underlying RMP EISs. The commenter has not provided any new information not previously considered. BLM maintains that without any other monetized benefits or costs reported,

¹⁸⁴ FEIS Vol. II at K-49.

monetized estimates of the social cost of carbon emissions would be presented in isolation, without any context for comparison. Quantifying only the economic costs of oil and gas development by using the social cost of carbon metrics, but not the economic benefits (as measured by, for example, the economic value of the proposed oil and gas development and production generally equaling the price of oil and gas minus the cost of producing, processing, and transporting the minerals, or the costs to society measured by the impacts to standards of living) would yield information that is both inaccurate and not useful for the decision maker. BLM explained the difference between the impact analysis that had been completed and how that would differ from a cost-benefit analysis. BLM did not prepare a cost benefit analysis as defined by IM 2013-131 in the underlying RMP EISs. The commenter has not provided any new information not previously considered. BLM maintains that without any other monetized benefits or costs reported, monetized estimates of the social cost of carbon emissions would be presented in isolation, without any context for comparison. Quantifying only the economic costs of oil and gas development by using the social cost of carbon metrics, but not the economic benefits (as measured by, for example, the economic value of the proposed oil and gas development and production generally equaling the price of oil and gas minus the cost of producing, processing, and transporting the minerals, or the costs to society measured by the impacts to standards of living) would yield information that is both inaccurate and not useful for the decision maker.¹⁸⁵

First, the market value of the extracted oil and gas is the project's economic benefit, since it represents the amount that society values the good and there are no major positive externalities to oil and gas development that are not reflected in that market price. BLM admits as much in its response, recognizing that "the economic value of the proposed oil and gas development and production would generally equal the price of oil and gas minus the cost of producing, processing, and transporting the minerals."¹⁸⁶ Typically when BLM refers to a proposal's "economic output" (as it does in this response) it is referring to the expected market value of the extracted resource. So as long as BLM has calculated output here, then it has, by its own admission, calculated the proposal's economic benefit. It is arbitrary and capricious for BLM to refuse to apply the social cost of greenhouse gases based on an untrue premise—namely, that it has not monetized the project's economic benefit.

Second, courts have faulted agencies for monetizing certain beneficial economic impacts in an EIS while refusing to monetize climate costs—even when those economic impacts are not economic "benefits" in the strict sense of the term. See *High Country Conservation Advocates v. U.S. Forest Service*, 52 F. Supp. 3d 1174, 1191 (D. Colo. 2014) (agency improperly "weighed several specific economic benefits—coal recovered, payroll, associated purchases of supplies and services, and royalties"—but arbitrarily failed to monetize climate costs using the readily available social cost of carbon protocol"); *Mont. Env'tl. Info. Ctr. v. U.S. Office of Surface*

¹⁸⁵ Note that we presume any references to an "EA" in this response to comments was in error. FEIS Vol. II at K-50.

¹⁸⁶ FEIS Vol. II at K-50.

Mining, 274 F. Supp. 3d 1074, 1094–99 (D. Mont. 2017) (calling agency's distinction between economic “benefit” and economic “impact” a “distinction without a difference”).

Third, CEQ regulations also support the monetization of impacts that can be readily monetized, even if a full cost-benefit analysis is not feasible, explaining that when monetization of particular costs or benefits is “relevant to the choice among alternatives,” that analysis can be presented alongside “any analyses of unquantified environmental impacts, values, and amenities.” 40 C.F.R. § 1502.22. The regulations also instruct agencies to apply “research methods generally accepted in the scientific community” to assess a proposal’s impacts even when scientific methods preclude a complete assessment of all impacts. *Id.* § 1502.21(c)(4). The Social Costs of Carbon and Methane are available tools to use for this analysis and are discussed in further detail below.

i. Social Cost of Carbon

The social cost of carbon protocol (hereinafter, “SCC”) is a metric that is used to reflect the damages associated with an increase in carbon emissions.¹⁸⁷ The SCC analysis is an important tool to effectuate the purposes of NEPA. The SCC can be used by agencies to put the significance of the emissions in a context that decisionmakers and members of the public could understand because it was “designed to quantify a project’s contribution to costs associated with global climate change.” *High Country Conservation Advocates*, 52 F. Supp. At 1190-91. The SCC allows agencies to “present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options.” 40 C.F.R. § 1502.14.

The SCC was developed by the Interagency Working Group (IWG) on Social Cost of Greenhouse Gases.¹⁸⁸ The IWG was comprised of multiple federal agencies and White House economic and scientific experts, and the SCC was developed using up-to-date peer-reviewed models.¹⁸⁹ According to one analysis, “[t]he SCC estimates the benefit to be achieved, expressed in monetary value, by avoiding the damage caused by each additional metric ton (tonne) of

¹⁸⁷ 2016 Final Guidance at 32, n.86.

¹⁸⁸ *IWG 2016 Report* at 1. While Exec. Order No. 13783 (March 28, 2017) at § 5(b), disbanded the Federal Government’s Interagency Working Group on the Social Cost of Carbon, and withdrew its Technical Support Document (“TSD”) “as no longer representative of governmental policy,” notably, the Order did not refute or undermine the scientific or economic basis of the TSD, but rather withdrew the document for political reasons. Therefore, the protocol remains a credible tool for assessing the impacts of GHG emissions. See 40 C.F.R. § 1502.22(b)(3) (requiring the use of “existing credible scientific evidence which is relevant to evaluating the reasonably foreseeable significant adverse impacts on the human environment.”).

¹⁸⁹ Interagency Working Grp. on Social Cost of Greenhouse Gases (IWG), *Technical Support Document: - Technical Update on the Social Cost of Carbon for Regulatory Impact Analysis - Under Executive Order 12866 2* (2013) available at: <https://obamawhitehouse.archives.gov/sites/default/files/omb/assets/inforeg/technical-update-social-cost-of-carbon-for-regulator-impact-analysis.pdf>, submitted as Attachment 34 of Conservation Groups’ DEIS comments; Interagency Working Group on Social Cost of Greenhouse Gases (IWG), *Technical Support Document: - Technical Update on the Social Cost of Carbon for Regulatory Impact Analysis - Under Executive Order 12866 2* (2010), available at: https://www.epa.gov/sites/production/files/2016-12/documents/scc_tsd_2010.pdf, submitted as Attachment 35 of Conservation Groups’ DEIS comments.

carbon dioxide (CO₂) [released] into the atmosphere.”¹⁹⁰ These costs are created when GHG emissions force climate change, increasing global temperatures. This leads to sea level rise, increased intensity of storms, drought, and other changes, which have negative economic impacts including property damage from storms and floods, reduced agricultural productivity, impacts on human health, and reduced ecosystem services. The SCC estimates the dollar value of these negative economic impacts and recognizes that every marginal ton of CO₂ carries with it a social cost of carbon.¹⁹¹

While the SCC may underestimate climate costs because it does not include all important damages, the IWG’s social cost metrics remain the best estimates yet produced by the federal government for monetizing the impacts of GHG emissions and are “generally accepted in the scientific community.” 40 C.F.R. § 1502.22(b)(4). Several courts have rejected agency refusals to use the SCC as a means of evaluating the impact of GHG emissions that result from agency action. *See, e.g., Sierra Club v. FERC*, 867 F.3d 1357, 1375 (D.C. Cir. 2017); *Montana Env’tl. Info. Ctr. v. U.S. Office of Surface Mining Reclamation and Enft*, 274 F. Supp. 3d 1074, 1094-99 (D. Mont. 2017) (rejecting agency’s failure to incorporate the federal SCC estimates into its cost-benefit analysis of a proposed mine expansion); *Zero Zone, Inc. v. U.S. Dep’t of Energy*, 832 F.3d 654, 679 (7th Cir. 2016) (holding estimates of the SCC used to date by agencies were reasonable); *High Country Conservation Advocates v. U.S. Forest Serv.*, 52 F. Supp. 3d 1174, 1190-93 (D. Colo. 2014) (holding the SCC was an available tool to quantify the significance of GHG impacts, and it was “arbitrary and capricious to quantify the *benefits* of the lease modifications and then explain that a similar analysis of the *costs* was impossible”) (emphasis in original). If an agency monetizes the economic benefits of fossil fuel extraction, it must then also monetize the costs of carbon pollution. *See Montana Env’tl. Info. Ctr.*, 274 F. Supp. 3d at 1094-99. An agency may not assert that the social cost of fossil fuel development is \$0: “by deciding not to quantify the costs at all, the agencies effectively zeroed out the costs in its quantitative analysis.” *High Country Conservation Advocates*, 52 F. Supp. 3d at 1192; *see also Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1200 (9th Cir. 2008) (finding that while there is a range potential social cost figures, “the value of carbon emissions reduction is certainly not zero”).

As noted, while Executive Order 13783 purports to have revoked the Interagency Working Group’s work product, it instructs agencies to rely on OMB Circular A-4. That document instructs that:

Special ethical considerations arise when comparing benefits and costs across generations. Although most people demonstrate time preference in their own consumption behavior, it may not be appropriate for society to demonstrate a similar preference when deciding between the well-being of current and future

¹⁹⁰ Ruth Greenspan Bell & Dianne Callan, Env’tl. Law Inst., *More than Meets the Eye: The Social Cost of Carbon in U.S. Climate Policy, in Plain English* 1 (2011), available at: https://wriorg.s3.amazonaws.com/s3fs-public/pdf/more_than_meets_the_eye_social_cost_of_carbon.pdf?ga=2.264401292.2091293810.1554226136-1873117202.1554226136, submitted as Attachment 36 of Conservation Groups’ DEIS comments.

¹⁹¹ Richard Revesz et al., *Global Warming: Improve Economic Models of Climate Change*, 508 *Nature* 173, 173-175 (2014) available at: [https://web.stanford.edu/~goulder/Papers/Published%20Papers/Revesz%20et%20al%20-%20Social%20Cost%20of%20Carbon%20\(Nature%20508\).pdf](https://web.stanford.edu/~goulder/Papers/Published%20Papers/Revesz%20et%20al%20-%20Social%20Cost%20of%20Carbon%20(Nature%20508).pdf), submitted as Attachment 37 of Conservation Groups’ DEIS comments.

generations. Future citizens who are affected by such choices cannot take part in making them, and today's society must act with some consideration of their interest.¹⁹²

For this reason, OMB cautioned against using high discount rates for decisions with intergenerational consequences.¹⁹³

Even if NEPA does not require a cost benefit analysis in every case, NEPA does require agencies to assess the significance of their actions, and the SCC remains one of the best tools available to analyze and disclose to the public the significance of GHG emissions and should not be arbitrarily taken off the table as a tool for analysis. For example, disclosing that a lease sale will have \$100 million in climate impacts presents an easily digestible figure for the public, as opposed to trying to minimize the impacts as a percentage of total emissions, for example, 0.31% of U.S. total emissions, as BLM did here.¹⁹⁴

Further, a percent comparison to, for example, national emissions, as BLM did here, is misleading. A project that adds, for example, 23 million additional tons per year of carbon dioxide would have contributed to 0.43% of total U.S. carbon dioxide emissions in the year 2012.¹⁹⁵ In the year 2014, that same project with the same carbon pollution would have contributed to just 0.41% of total U.S. carbon dioxide emissions—a seemingly smaller relative effect, since the total amount of U.S. emissions increased from 2012 to 2014.¹⁹⁶ However, because of rising background concentrations of global greenhouse gas stock, and because of growing stresses in physical and economic systems, the marginal climate damages per ton of carbon dioxide (as measured by the social cost of carbon) increased from \$33 in 2012 to \$35 in 2014 (in 2007\$).¹⁹⁷ Consequently, those 23 million additional tons would have caused marginal climate damages costing \$759 million in the year 2012, but by 2014 that same 23 million tons would have caused \$805 million in climate damages. To summarize, the percent comparison to national emissions misleadingly implied that a project adding 23 million more tons of carbon dioxide would have a relatively less significant effect in 2014 than in 2012, whereas monetizing

¹⁹² Office of Management and Budget, *Circular A-4* at 35 (Sept. 17, 2003), available at: <https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/circulars/A4/a-4.pdf>, submitted as Attachment 38 of Conservation Groups' DEIS comments.

¹⁹³ *Id.* at 36.

¹⁹⁴ FEIS Vol. II at K-49.

¹⁹⁵ Institute for Policy Integrity at New York University School of Law, *Comments on Failure to Monetize Greenhouse Gas Emissions in the Farmington Mancos-Gallup Draft Resource Management Plan Amendment and Environmental Impact Statement* (2020) at 6-7, attached hereto and incorporated herein as Exhibit V. Total U.S. carbon dioxide emissions in 2012 were 5,366.7 million metric tons (for all greenhouse gases, emissions were 6,529 MMT CO₂ eq). See EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016* at ES-6, tbl. ES-2 (2018).

¹⁹⁶ *Id.* (Total U.S. carbon dioxide emissions in 2014 were 5,568.8 million metric tons (and for all greenhouse gases, 6,763 MMT CO₂ eq. See EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016* at ES-6, tbl. ES-2 (2018)).

¹⁹⁷ *Id.* (citing Interagency Working Group on the Social Cost of Greenhouse Gases, Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis at 25 tbl. A1 (2016) (calculating the central estimate at a 3% discount rate) [hereinafter, "2016 TSD"]).

climate damages would accurately reveal that the emissions in 2014 were much more damaging than the emissions in 2012—almost \$50 million more. Thus, comparing an action’s emissions to a state, national, global, or sectoral inventory reveals nothing about the significance of the action’s contributions to actual environmental impacts.¹⁹⁸

Capturing how marginal climate damages change as the background concentration changes is especially important because NEPA requires assessing both present and future impacts.¹⁹⁹ Marginal climate damages caused by an action’s additional emissions depend not just on the rate of other emissions, but crucially also on how an action adds to the background concentration of greenhouse gases, which may continue to rise even if the national or worldwide rate of emissions decreases in the short term.²⁰⁰ By factoring in projections of the increasing global stock of greenhouse gases as well as increasing stresses to physical and economic systems, the social cost of greenhouse gas metrics enable accurate and transparent comparisons of projects with varying greenhouse gas emissions over time.²⁰¹

Instead, BLM refused to use the Social Cost of Carbon (SCC), by asserting as follows:

The BLM respectfully disagrees that SCC provides more understandable information, since this methodology cannot discern if, where, when and how the dollar-represented changes may actually manifest. And, like emissions levels that differ by orders of magnitude, comparisons of dollar figures that differ by orders of magnitude (e.g., \$325 million and \$3.3 billion) may be difficult to comprehend. Similarly, economic models themselves are abstractions of reality (Randall, 1984); for this reason, BLM has provided a qualitative discussion of climate change, and the projected impacts that could occur at the statewide, regional and national level (see Appendix I). This complies with NEPA; where there are important qualitative considerations, monetization is not necessary and should not be used.²⁰²

ii. Social Cost of Methane

Similarly, the Social Cost of Methane is another available tool that BLM could use in its NEPA analysis to analyze and disclose the significance of impacts of its decisions as required by 40 C.F.R. §§ 1508.8(b), 1502.16(a)-(b). In August 2016, the IWG provided an update to the SCC technical support document,²⁰³ adopting a similar methodology for evaluating the climate impact

¹⁹⁸ *Id.*

¹⁹⁹ *Id.* (citing 42 U.S.C. § 4332(2)(C)) (NEPA requires agencies to weigh the “relationship between local short-term uses of man’s environment and the maintenance and enhancement of long-term productivity,” as well as “any irreversible and irretrievable commitments of resources.”).

²⁰⁰ *Id.*

²⁰¹ *Id.*

²⁰² FEIS Vol. II at K-52.

²⁰³ *IWG 2016 Report* at 3. The August 2016 update added some clarifying information around uncertainties in the modeling that supports the social cost of carbon, *id.* at 2, but did not adjust the damages values (the costs) published in the 2015 update, *id.*; compare *id.* at 7 with Interagency Working Group on Social Cost of Greenhouse Gases

of each additional ton of methane and nitrous oxide emissions.²⁰⁴ Similar to the SCC, the Social Cost of Methane provides a standard methodology that allows state and federal agencies to quantify the social benefits of reducing methane emissions.

The Social Cost of Methane is intended to “offer a method for improving the analyses of regulatory actions that are projected to influence [methane or nitrogen oxide] emissions in a manner consistent with how [carbon dioxide] emission changes are valued.”²⁰⁵ Like the SCC, the Social Cost of Methane is presented as a range of figures across four discount rates; it is based on results from three integrated assessment models; displayed in dollars per metric ton of emissions; and increases over time because emissions become more damaging as their atmospheric concentrations increase.²⁰⁶ The IWG estimated that each additional ton of methane emitted in 2020 will cost between \$540 and \$3,200 dollars (measured in 2007 dollars).²⁰⁷

The IWG’s social cost metrics remain the best estimates produced by the federal government for monetizing the impacts of GHG emissions and are “generally accepted in the scientific community,” as required by 40 C.F.R. § 1502.22(b)(4). This is true despite the issuance of Executive Order 13,783, which disbanded the IWG and formally withdrew its technical support documents “as no longer representative of governmental policy.”²⁰⁸ However, this Executive Order did not find fault with any component of the IWG’s analyses. To the contrary, it encourages agencies to “monetiz[e] the value of changes in greenhouse gas emissions” and instructs agencies to ensure such estimates are “consistent with the guidance contained in OMB Circular A-4.”²⁰⁹ The IWG tools, however, illustrate how agencies can appropriately comply with the guidance provided in Circular A-4, as OMB participated in the IWG and did not object to the group’s conclusions. As agencies follow the Circular’s standards for using the best available data and methodologies, they will necessarily choose similar data, methodologies, and estimates as the IWG, since the IWG’s work continues to represent the best estimates presently available.²¹⁰ Thus, the IWG’s 2016 update to the estimates of the Social Costs of Greenhouse

(IWG), *Technical Support Document: - Technical Update on the Social Cost of Carbon for Regulatory Impact Analysis - Under Executive Order 12866 1, 7* (2015).

²⁰⁴ Interagency Working Group on Social Cost of Greenhouse Gases (IWG), *Addendum to Technical Support Document on Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866: Application of the Methodology to Estimate the Social Cost of Methane and the Social Cost of Nitrous Oxide 2-3* (2016), available at: https://www.epa.gov/sites/production/files/2016-12/documents/addendum_to_sc-ghg_tsd_august_2016.pdf, submitted as Attachment 39 of Conservation Groups’ DEIS comments.

²⁰⁵ *Id.* at 3.

²⁰⁶ *Id.* at 7.

²⁰⁷ *Id.* For comparison purposes, the current social cost of carbon values for CO₂ emissions in the 2019 to 2020 range is \$120 to \$123 per ton. *IWG 2016 Report* at 25.

²⁰⁸ Promoting Energy Independence and Economic Growth, Exec. Order No. 13,783, § 5(b), 82 Fed. Reg. 16,093, 16095-96 (Mar. 31, 2017), available at: <https://www.govinfo.gov/content/pkg/FR-2017-03-31/pdf/2017-06576.pdf>.

²⁰⁹ *Id.* § 5(c), at 16,096.

²¹⁰ Richard L. Revesz et al., *Best Cost Estimate of Greenhouse Gases*, 357 Science 655, 655 (2017), available at: http://policyintegrity.org/files/publications/Science_SCC_Letter.pdf, submitted as Attachment 40 of Conservation Groups’ DEIS comments (explaining that, even after President Trump’s Executive Order, the social cost of GHG estimate of \$50 per ton of carbon dioxide is still the best estimate).

Gases remains the best available and generally accepted tool for assessing the significance of GHG emissions, notwithstanding the fact that this document has since been withdrawn.

“‘Accurate scientific analysis’ is ‘essential to implementing NEPA.’” *WildEarth Guardians v. Zinke*, 369 F. Supp. 3d 41, n.31 (D.D.C. 2019) (quoting 40 C.F.R. § 1500.1(b)). “And NEPA requires an agency to ensure ‘scientific integrity’ in its environmental assessments.” *Id.* (quoting 40 C.F.R. § 1502.24). For example, agencies “may not forgo using the social cost of carbon simply because courts have thus far been reluctant to mandate it.” *Id.* “Given that the Department of Energy and other agencies consider the social cost of carbon reliable enough to support rulemakings . . . the protocol may one day soon be a necessary component of NEPA analyses.” *Id.* (citing *Zero Zone, Inc. v. U.S. Dep’t of Energy*, 832 F.3d 654, 677 (7th Cir. 2016)); see *High Country Conservation Advocates v. U.S. Forest Serv.*, 52 F. Supp. 3d 1174, 1193 (D. Colo. 2014) (“I am not persuaded by the[] cases [the Government cites], or by anything in the record, that it is reasonable completely to ignore a tool in which an interagency group of experts invested time and expertise.”).

In the absence of other tools, BLM should use the social cost of greenhouse gas metrics, including carbon and methane, to assist in analyzing and disclosing to the public the significance of the GHG emissions resulting from its decision under NEPA. Even if NEPA does not require a cost benefit analysis in all cases, it does require agencies to assess the significance of their actions, and the social costs of carbon and methane remain as some of the best tools available to analyze and disclose to the public the significance of GHG emissions. Critically, these protocols not only contextualize costs associated with climate change but can also be used as a proxy for understanding climate impacts and comparing alternatives. See 40 C.F.R. § 1502.22(a) (stating agency “shall” include all “information relevant to reasonably foreseeable significant adverse impacts [that] is essential to a reasoned choice among alternatives”).

iii. Global Carbon Budgeting

Another measuring standard available to agencies for analyzing the significance of GHG emissions is to apply those emissions to the remaining global carbon budget through carbon budgeting—which offers a cap on the remaining stock of greenhouse gases that can be emitted while keeping global average temperature rise below scientifically researched warming thresholds, beyond which climate change impacts may result in severe and irreparable harm.²¹¹ Research shows that enormous and rapid cuts in GHG emissions are needed to meet climate goals. The IPCC’s Special Report on 1.5°C estimated a remaining budget from the start of 2018 of approximately:

²¹¹ The Paris Agreement states that global warming must be held “well below 2°C above pre-industrial levels” with a goal to “limit the temperature increase to 1.5°C.” U.N. Framework Convention on Climate Change Conference of the Parties, Twenty-First Session, *Adoption of the Paris Agreement*, Art. 2, U.N. Doc. FCCC/CP/2015/L.9/Rev.I (Dec. 12, 2015), available at: http://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf [hereinafter, *Paris Agreement*], submitted as Attachment 41 of Conservation Groups’ DEIS comments.

- 420 Gigatonnes of CO₂ (GtCO₂) for a two-thirds chance of limiting warming to 1.5°C;²¹²
- 580 GtCO₂ for a 50 percent chance of limiting warming to 1.5°C;²¹³
- 1170 GtCO₂ for a two-thirds chance of limiting warming to 2°C;²¹⁴ and
- 1500 GtCO₂ for a 50 percent chance of limiting warming to 2°C.²¹⁵

In order to meet these targets, global CO₂ emissions would need to reach net zero in about 30 years to stay within a 580 GtCO₂ budget, reduced to 20 years for a 420 GtCO₂ budget.²¹⁶

However, there are also significant uncertainties in these carbon budgets—uncertainties that in some cases are nearly as large as the entire budgets themselves. While the multiple sources of uncertainties cannot be formally combined, the IPCC concluded that, overall, “current understanding of the assessed geophysical uncertainties suggests at least a ±50% possible variation for remaining carbon budgets for 1.5°C-consistent pathways.”²¹⁷ In other words, the remaining global carbon budget may be significantly smaller than these estimated budgets. The potential carbon emissions from existing fossil fuel reserves—the known belowground stock of extractable fossil fuels—considerably exceed both 2°C and 1.5°C of warming. Globally, the IPCC found in AR5 that, “[e]stimated total fossil carbon reserves exceed [the 2°C budget] by a factor of 4 to 7.”²¹⁸ Another study found that, to meet the target of 2°C, “a third of oil reserves, half of gas reserves and over 80 percent of current coal reserves should remain unused from 2010 to 2050.”²¹⁹

Research shows that potential emissions from just U.S. federal fossil fuels could take up all or a significant portion of the remaining global carbon budget. A 2015 analysis prepared by EcoShift Consulting estimated that the potential emissions from all U.S. fossil fuels is 697-1,070 GtCO₂eq.²²⁰ Federal fossil fuels—including crude oil, gas, coal, oil shale, and tar sands—

²¹² See Joeri Rogelj, et al., *Mitigation Pathways Compatible With 1.5°C in the Context of Sustainable Development* 108 (V. Masson-Delmotte et al. eds., 2018) (An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty) [hereinafter, *Chapter 2 of IPCC 1.5°C Report*], available at: https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_Chapter2_Low_Res.pdf, submitted as Attachment 42 of Conservation Groups’ DEIS comments.

²¹³ *Id.*

²¹⁴ *Id.*

²¹⁵ *Id.*

²¹⁶ *Id.* at 96.

²¹⁷ *Id.* at 107.

²¹⁸ AR5 at 63.

²¹⁹ Christophe McGlade & Paul Ekins, *The Geographical Distribution of Fossil Fuels Unused When Limiting Global Warming to 2°C*, 517 *Nature* 187, 187 (2015), available at: <https://www.nature.com/articles/nature14016.pdf>, submitted as Attachment 43 of Conservation Groups’ DEIS comments.

²²⁰ Dustin Mulvaney et al., EcoShift Consulting, *The Potential Greenhouse Gas Emissions of U.S. Federal Fossil Fuels* 18 (2015), available at: <https://www.ourenergypolicy.org/wp-content/uploads/2015/08/Potential-Greenhouse->

account for as much as 492 GtCO₂eq, or approximately 46 to 50 percent of total potential emissions.²²¹ Unleased federal fossil fuels comprise 91 percent of these potential emissions, with already leased federal fossil fuels accounting for as much as 43 GtCO₂eq.²²² Unleased federal gas has potential GHG emissions ranging from 37.86 to 47.26 GtCO₂eq, while leased federal gas represents 10.39 to 12.88 GtCO₂eq.²²³ Unleased federal crude oil has potential GHG emissions ranging from 37.03 to 42.19 GtCO₂e, while potential emissions from leased federal crude oil represents from 6.95 to 7.92 GtCO₂e.²²⁴

Here, as in its response to comments, BLM declines to use global carbon budgeting, stating, in part, that:

NEPA does not require that BLM use a particular tool, so long as its methods of analysis are reasonable. The Supplemental EA describes potential GHG emissions at various scales (including for the subject lease parcels and Colorado-wide) and compares them to larger-scale projected emissions estimates to provide context for their potential contribution to climate change. Please see Appendix I for additional information regarding the state of existing GHG emissions and we refer the reader to page 3-9 of the EA for discussion of existing national emissions levels and projected emissions from the project. Moreover, in responding to an argument that by not utilizing the “social cost of carbon” and the “global carbon budget,” BLM “arbitrarily dismissed the need to analyze cumulative GHG impacts,” the court specifically found that in the case of the Wyoming leasing analyses, “BLM’s decision to forgo the protocols’ use does not rise to the level of a NEPA violation.” *WildEarth Guardians v. Zinke*, (D.D.C. No. 1:16-cv-01724-RC) (March 19, 2019).²²⁵

Again, while it’s true that NEPA doesn’t require the use of any one particular tool to disclose significance, it does not mean that agencies are free to fail to do this analysis or mislead the public with the method it elects to use. While global carbon budgets are imperfect, they represent tools presently available to agencies to use in analyzing and disclosing to the public the significance of their decisions on GHG emissions and their implications for climate change. The global carbon budget is rapidly being spent, and every additional ton of emissions is a debit against the climate. Thus, BLM should analyze and disclose to the public how the emissions resulting from its leasing decisions would impact the remaining global carbon budget.

[Gas-Emissions-U-S-Federal-Fossil-Fuels.pdf](#), submitted as Attachment 44 of Conservation Groups’ DEIS comments.

²²¹ *Id.*

²²² *Id.*

²²³ *Id.*

²²⁴ *Id.*

²²⁵ Note that it appears that BLM copy and pasted reference to a Supplemental EA for a lease sale in Colorado and we presume this was done in error. Anywhere else this was mentioned in this FEIS, we also presumed it was in error. FEIS Vol. II at K-53.

BLM recently attempted to use global carbon budgeting in a draft environmental assessment for the New Elk coal lease in Colorado.²²⁶ The fact that BLM has recently used this tool to analyze the climate impact of both a single federal coal lease and a set of 283 federal oil and gas leases demonstrates the availability of the tool, its usefulness to the public and decisionmakers, and BLM's ability to apply the tool in the NEPA decision making context. NEPA requires agencies to use the tools available to them in order to ascertain essential information or explain why they cannot do so. 40 C.F.R. § 1502.22. Under the applicable NEPA regulations, if an agency intends not to include essential information in its NEPA review, it "shall" explain (1) why such essential information is incomplete or unavailable; (2) its relevance to reasonably foreseeable impacts; (3) a summary of existing science on the topic; and (4) the agency's evaluation based on any generally accepted theoretical approach. *Id.* § 1502.22(b).

Utilizing global carbon budgets would disclose the cumulative climate impacts of its decisions in a way that is clearly understandable to decisionmakers and the public. As explained above, it is a three-step process: (1) list the remaining global carbon budget for estimated probabilities of limiting warming to 2° and 1.5°C; (2) list the cumulative greenhouse gas emissions from its lease sales; and (3) compare figures (1) and (2).

BLM again defers an analysis of the significance of the emissions resulting from its decisions and their impacts on climate change, asserting as follows:

This EIS analyzes a planning decision to designate proposed corridors on BLM lands. The BLM has no WPCI specific information at this time but has provided its best estimate of emissions in Section 3.2. Site-specific NEPA would be conducted for future potential projects within the proposed corridors and would analyze GHG emissions in greater detail.²²⁷

However, revisions RMPs are fundamental to the public land use decision-making process. An RMP lays the foundation upon which all mineral resource management decisions are made. The intent of NEPA is for agencies to study the impact of their actions on the environment before the action is taken. *See Conner*, 848 F.2d at 1452 (NEPA requires that agencies prepare an EIS before there is "any irreversible and irretrievable commitment of resources"); *see also Upper Pecos Ass'n v. Stans*, 500 F.2d 17 (10th Cir. 1974) (concluding that "consideration of environmental factors should come in the early stages of program and project formulation"). Thus, all of the foregoing analysis should be disclosed at the planning stage rather than waiting until the project-level permitting stage, in order to comply with NEPA's mandate for agencies to integrate the NEPA process in their planning activities "at the earliest possible time." 40 C.F.R. §

²²⁶ Bureau of Land Mgmt., New Elk Coal Lease By Application, Federal Coal Lease (COC71978), Draft Environmental Assessment, at 3-17 (April 2019), *available at*: https://eplanning.blm.gov/public_projects/nepa/118470/176016/214475/DOI-BLM-CO-F020-2019-14_PRELIM_EA-508.pdf, attached hereto and incorporated herein as Exhibit W, *see also* BLM, Supplemental Environmental Assessment for the May 2015-August 2016 Sold and Issued Leases, No. DOI-BLM-WY-0000-2019-0007-EA, at 37, 48 (May 2019), *available at*: https://eplanning.blm.gov/public_projects/nepa/121368/172332/209480/20190507.WYWEGvZinke.SupplementalEA_Decision_Record.pdf, attached hereto and incorporated herein as Exhibit X.

²²⁷ FEIS Vol. II at K-53.

1501.2. Analysis may be deferred only when it is impossible to prepare it until a later stage. *See id.*; *see also N. Alaska Envtl. Ctr.*, 457 F.3d at 977. It would be error not to consider the significance of the emissions resulting from BLM’s decisions at the earliest stage feasible. *See, e.g., W. Org. of Res. Councils*, 2018 WL 1475470, at *13; *Diné CARE*, 923 F.3d at 853. Therefore, BLM should analyze and disclose the cumulative emissions resulting from its actions against the remaining carbon budget, thereby providing decisionmakers and the public the necessary context for understanding the significance of their decisions. *See* 40 C.F.R. § 1508.27(a).

Further, when determining whether to undertake a global carbon budget analysis, BLM either has to explain why using a carbon budget analysis would not contribute to informed decisionmaking, in response to our comments, or conduct an “accurate scientific analysis” of the carbon budget. *See Wildearth Guardians v. Bernhardt*, Memorandum Opinion, Case No.: 1:16-cv-01724-RC (D.D.C. Nov. 13, 2020) at 27 (citing 40 C.F.R. § 1500.1(b)). Here, the agency did neither. *See id.* at 27 (citing *Standing Rock Sioux Tribe v. U.S. Army Corps of Engineers*, 440 F. Supp. 3d 1, 22 (D.D.C. 2020)) (explaining that a challenge to methodology “cannot be resolved by the fact that the agency may not have been required to use this particular method in the first place [because] [s]uch a rule would immunize vast swaths of the [agency’s] analysis from judicial . . . review”). The NEPA “rule of reason” does not mean courts simply accept without question an agency’s decision; courts are “responsible for holding agencies to the standard the statute establishes,” which means ensuring the agency included “sufficient discussion of the relevant issues and opposing viewpoints” and that it engaged in “reasoned decisionmaking.” *Id.* at 28 (citing *Sierra Club II*, 867 F.3d at 1368). With respect to the global carbon budget analysis, BLM falls short of this standard. *See id.* Therefore, BLM must supplement its FEIS and “reassess whether the [carbon budget] or another methodology for quantifying climate change may contribute to informed decisionmaking,” *see id.* (citing *Zinke*, 368 F. Supp. 3d at 79 n.31), or it must conduct a more robust and complete global carbon budget analysis. *Id.*

H. Agencies Must Consider A Range of Reasonable Alternatives, Including t\Those That Reduce GHG emissions

Congress, through the NEPA process, requires agencies to “study, develop, and describe” reasonable alternatives to the agency’s proposed action. 42 U.S.C. § 4332(2)(C)(iii), (2)(E). This alternative analysis forms the “heart” of the NEPA process. 40 C.F.R. § 1502.14. To fulfill this mandate, federal agencies must “[r]igorously explore and objectively evaluate *all* reasonable alternatives.” 40 C.F.R. § 1502.14(a) (emphasis added). As the Ninth Circuit has explained, “[t]he existence of a viable but unexamined alternative renders an environmental impact statement inadequate.” *Westlands Water Dist. v. U.S. Dep’t of Interior*, 376 F.3d 853, 868 (9th Cir. 2004).

Agencies must analyze and disclose the GHG emissions associated with each alternative, so they can meaningfully consider a reasonable range of alternatives that would decrease the emissions resulting from their actions. For example, the Ninth Circuit Court of Appeals found that the National Highway Traffic Safety Administration failed to analyze an alternative raised by an outside commentator in its environmental analysis that would have decreased emissions. *Center for Biological Diversity v. NHTSA*, 538 F.3d. at 1217- 1219; *see also WildEarth Guardians v. U.S. Bureau of Land Management*, 870 F.3d 1222, 1236 (10th Cir. 2017); *Montana*

Environmental Information Center v. OSMRE, 274 F.Supp.3d 1074, 1098 (D. Mont. 2017); *Sierra Club v. FERC*, 867 F.3d at 1375.

Further, in *Western Organization of Resource Councils (WORC) v. BLM*, the court invalidated EISs for the Buffalo and Miles City resource management plans (RMPs) because BLM failed to consider a reasonable alternative that reduced the amount of coal made available under the plans. 2018 WL 1475470 at *9. The court found that “BLM’s failure to consider any alternative that would decrease the amount of extractable coal available for leasing rendered inadequate the Buffalo EIS and Miles City EIS in violation of NEPA.” *Id.* at *9. The court explained, “BLM cannot acknowledge that climate change concerns defined, in part, the scope of the RMP revision while simultaneously foreclosing consideration of alternatives that would reduce the amount of available coal based upon deference to an earlier coal screening that failed to consider climate change.” *Id.* at *17. Similarly, in *Wilderness Workshop v. U.S. Bureau of Land Mgmt.*, the court found that BLM failed to consider reasonable alternatives by omitting any option that would meaningfully limit leasing and development within the planning area. 342 F. Supp. 3d 1145, 1167 (D. Colo. 2018).

In its 2016 Final Guidance, CEQ instructed: “[w]hen conducting the analysis, an agency should compare the anticipated levels of GHG emissions from each alternative – including the no-action alternative – and mitigation actions to provide information to the public and enable the decision maker to make an informed choice.”²²⁸ It also instructed agencies to “consider reasonable alternatives and mitigation measures to reduce action-related GHG emissions or increase carbon sequestration in the same fashion as they consider alternatives and mitigation measures for any other environmental effects.”²²⁹

Conversely, BLM provides no analysis of the GHG emissions associated with each alternative. Instead BLM defers this analysis to an unknown later time:

Because no specific potential pipeline projects are proposed, emissions by alternative cannot be quantified at this time; however, using surface disturbance and the Riley Ridge to Natrona Project as a proxy for fugitive dust and combustion emissions and GHGs, Alternative E would have the potential to generate the greatest amount of fugitive dust, combustion emissions, and GHGs, and Alternative C would have the potential to generate the least amount of fugitive dust, combustion emissions, and GHGs. Individual projects would require an analysis of impacts to air quality, including the quantification of emissions and determination of the need for a conformity analysis. Emissions of GHGs and production from EOR under the alternatives are not expected to differ significantly.²³⁰

BLM’s failure to disclose the GHG emissions associated with each alternative makes it impossible for decisionmakers and the public to meaningfully analyze and differentiate among

²²⁸ 2016 Final Guidance at 15.

²²⁹ *Id.*

²³⁰ FEIS Vol. I at 3-9; FEIS Vol. II at K-45.

alternatives, including mitigation alternatives, to reduce GHG emissions and their implications for climate change, in violation of NEPA. And as previously discussed above, because so much uncertainty exists as to whether the CO2 pipelines would be net CO2 contributors or net CO2 negative, BLM must fully analyze an alternative that analyzes the impacts of the possible net CO2 outcomes and discuss how the impacts of a net CO2 contributor outcome would be avoided, minimized, and mitigated.

VI. Conclusion

The WPCI FEIS and proposed RMP amendments do not meet BLM's obligations under NEPA, FLPMA, and the APA, and implementing regulations. They also do not conform to the 2015 Wyoming Grouse ARMPA. Before BLM can approve the WPCI FEIS and amend the RMPs to designate corridors, BLM must supplement its NEPA analysis to remedy the violations described herein, including modification of the alternatives so that they conform to the 2015 Wyoming Grouse ARMPA. At a minimum, BLM should prepare a supplemental EIS and make it available to the public for a 90-day public comment period.

The Conservation Groups below respectfully request to be notified of all future public comment opportunities related to the WPCI Project, the availability of any supplemental NEPA analysis, and BLM's decisions related to it, pursuant to 40 C.F.R. § 1506.6.

Sincerely yours,



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