

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLORADO
LEWIS T. BABCOCK, JUDGE

Civil Case No. 1:17-cv-02519-LTB-GPG

CITIZENS FOR A HEALTHY COMMUNITY;

HIGH COUNTRY CONSERVATION ADVOCATES;

CENTER FOR BIOLOGICAL DIVERSITY;

WILDEARTH GUARDIANS; and

WILDERNESS WORKSHOP;

Plaintiffs,

v.

UNITED STATES BUREAU OF LAND MANAGEMENT, an agency of the U. S.
Department of Interior;

DAVID BERNHARDT, in his official capacity as Acting U.S. Secretary of the
Interior;

STEPHANIE CONNOLLY, in her official capacity as Southwest District Manager;

UNITED STATES FOREST SERVICE, an agency of the U.S. Department of
Agriculture;

SONNY PERDUE, in his official capacity as U.S. Secretary of Agriculture; and

SCOTT G. ARMENTROUT, in his official capacity as Forest Supervisor;

Defendants,

and

SG Interests I, Ltd. and SG Interests VII,
Ltd.,

Intervenor-Defendants.

Memorandum Opinion and Order

Babcock, J.

This matter is before me on Plaintiffs’ Amended Complaint for Declaratory and Injunctive Relief and Petition for Review of Agency Action. ECF No. 14. Plaintiffs seek judicial review of: (1) Defendant Bureau of Land Management’s (“BLM”) approval of a master development plan; (2) Defendant United States Forest Service’s (“USFS”) approval of certain natural gas wells, well pads, and related infrastructure; and (3) both Defendants’ approval of related applications for permits to drill. *See* Addendum to this Opinion for a list of acronyms used. I refer to USFS and BLM collectively as “Defendants.”

The public officers named as defendants in this case have been updated pursuant to Fed. R. Civ. P. 25(d). SG Interests I, Ltd. and SG Interests VII, Ltd. (“Intervenor-Defendants”) properly intervened. ECF No. 26. The matter is fully briefed and the administrative records (“AR”) are lodged with the Court. ECF Nos. 44, 45, 47, 50–52.

After carefully analyzing the briefs and the relevant portions of the record, I DEFER final ruling pending further briefing on remedies in accordance with this Order.

I. LAW

A. The National Environmental Policy Act (“NEPA”)

NEPA is the “basic national charter for protection of the environment” and its “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. Congress enacted NEPA to ensure that all federal agencies consider the environmental impacts of their actions to prevent or eliminate damage to the environment. *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 371 (1989); *see* 42 U.S.C. § 4321. NEPA’s requirements are augmented by longstanding regulations issued by the Council on Environmental Quality, to which courts owe substantial deference. *New Mexico ex rel. Richardson v. Bureau of Land Mgmt.*, 565 F.3d 683, 703 (10th Cir. 2009) (“*New Mexico*”) (citing *Marsh*, 490 U.S. at 372).

Under NEPA, federal agencies must “include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on,” in relevant part, the environmental impact of the proposed action and alternatives to the proposed action. 42 U.S.C. § 4332(C)(i)–(iii). This report may be an Environmental Assessment (“EA”), where the agency determines whether the action “is likely to significantly affect the quality of the human environment.” *New Mexico*, 565 F.3d at 703 (alterations and quotations omitted). If the agency finds that the action is not likely to significantly affect the quality of the human environment, it may issue a “finding of no significant impact” (“FONSI”). *Id.* (quoting 40 C.F.R. § 1508.13). If so, the agency must prepare a more thorough Environmental Impact Statement (“EIS”)—the agency may also skip the EA and directly prepare an EIS. *Id.* at 703, n.23.

The requirement to complete an EIS aims to ensure “that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts” and 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).

B. Authority to Lease Oil and Gas on Federal Land

Through the Mineral Leasing Act, 30 U.S.C. §§ 181–287, the Federal Land Policy and Management Act, 43 U.S.C. §§ 1701–1787, and related regulations, BLM has authority to lease public lands with oil and gas reserves to private industry for development. *W. Energy All. v. Zinke*, 877 F.3d 1157, 1161 (10th Cir. 2017). Lands contained in national forests have additional oversight from the Secretary of Agriculture. 30 U.S.C. § 226(h).

In enacting the Federal Land Policy and Management Act, Congress aimed to empower the Secretary of the Interior to manage the United States’ public lands. 43 U.S.C. § 1701. The Secretary, through BLM, “shall manage the public lands under principles of multiple use and sustained yield.” 43 U.S.C. § 1732(a). “Multiple use” means “a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values” 43 U.S.C. § 1702(c). Congress entrusts BLM with the “orderly and efficient exploration, development and production of oil and gas.” 43 C.F.R. § 3160.0-4; 43

U.S.C. § 1732(b). This is done by using a “three-phase decision-making process.” *W. Energy All. v. Zinke*, 877 F.3d at 1161 (quoting *Pennaco Energy, Inc. v. U.S. Dep’t of Interior*, 377 F.3d 1147, 1151 (10th Cir. 2004)).

In the first phase, BLM creates a resource management plan (“RMP”), which is “designed to guide and control future management actions and the development of subsequent, more detailed and limited scope plans for resources and uses.” 43 C.F.R. § 1601.0–2; *id.* Part of an RMP indicates the lands open or closed to the development of oil and gas, and subsequent development must abide by the terms of the RMP. *W. Energy All.*, 877 F.3d at 1161–62. The approval of an RMP “is considered a major Federal action significantly affecting the quality of the human environment” and thus requires an EIS. 43 C.F.R. § 1601.0–6.

In the second phase, through state offices, BLM identifies parcels that it will offer for lease, responds to potential protests of the suggested parcels, and conducts “a competitive lease sale auction.” *W. Energy All.*, 877 F.3d at 1162 (citing 43 C.F.R. Subpart 3120). During the identification of parcels available for leasing, a 2010 Department of Interior policy mandates additional review, including: (1) an interdisciplinary team reviewing the parcels proposed for leasing and conducting site visits; (2) identifying issues BLM must consider; and (3) obliging BLM to consult other stakeholders “such as federal agencies, and State, tribal, and local governments.” *Id.*

In the final phase, after the sale of a lease, BLM “decides whether specific development projects will be permitted on the leased land.” *Id.*; see 43 C.F.R. §

3162.3-1; 30 U.S.C. § 226. BLM must approve applications for permits to drill after parcels of land are leased. 30 U.S.C. § 226(g).

C. The Administrative Procedure Act

NEPA provides no private cause of action and thus Plaintiffs' claims arise under the Administrative Procedure Act. *New Mexico*, 565 F.3d at 704. Under the Act, a person who is suffering a "legal wrong because of agency action" is entitled to judicial review. 5 U.S.C. § 702. An agency's NEPA compliance is reviewed to see whether it is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." *New Mexico*, 565 F.3d at 704 (quoting 5 U.S.C. § 706(2)(a)).

The agency action is arbitrary and capricious if the agency

(1) entirely failed to consider an important aspect of the problem, (2) offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise, (3) failed to base its decision on consideration of the relevant factors, or (4) made a clear error of judgment.

Id. (quoting *Utah Env'tl. Cong. v. Troyer*, 479 F.3d 1269, 1280 (10th Cir. 2007))

(quotations omitted).

When reviewing factual determinations made by agencies under NEPA, short of a "clear error of judgment," an agency is required to take "hard look" at information relevant to a decision. *Id.* A court considers only the agency's reasoning at the time it made its decision, "excluding post-hoc rationalization concocted by counsel in briefs or argument." *Id.* (citing *Utahns for Better Transp. v. U.S. Dep't of Transp.*, 305 F.3d 1152, 1165 (10th Cir. 2002)); see 3 Charles H. Koch, Jr. and Richard Murphy, *Admin. L. & Prac.* § 9:26 (3d ed. 2018) ("Without engaging in

review of the actual resolution of factual questions of this variety, courts by using the hard look standard assure that the agency did a careful job at fact gathering and otherwise supporting its position.”).

In reviewing an EIS or EA, the role of a federal court under NEPA is to simply “ensure that the agency has adequately considered and disclosed the environmental impact of its actions.” *Coal. of Concerned Citizens To Make Art Smart v. Fed. Transit Admin. of U.S. Dep’t of Transportation*, 843 F.3d 886, 902 (10th Cir. 2016) (quoting *Wyo. v. U.S. Dep’t of Agric.*, 661 F.3d 1209, 1256–57 (10th Cir. 2011)). As such, the agency action is presumed valid and the burden of proof rests upon those challenging the agency action. *New Mexico*, 565 F.3d at 704 (quoting *Citizens’ Comm. to Save Our Canyons v. Krueger*, 513 F.3d 1169, 1176 (10th Cir. 2008)). “So long as the record demonstrates that the agencies in question followed the NEPA procedures . . . the court will not second-guess the wisdom of the ultimate decision.” *Utahns for Better Transp.*, 305 F.3d at 1163 (quoting *Robertson v. Methow Valley Citizens Council*, 490 U.S. at 350).

II. BACKGROUND

A. Bull Mountain Master Development Plan

The Bull Mountain Unit (the “Unit”) is located in the Colorado River basin, approximately 30 miles northeast of the town of Paonia and is bisected by State Highway 133. UNC0027453 (I use the numbering system consistent with the Administrative Record). The Unit consists of: 440 acres of federal surface lands underlain by a mineral estate administered by BLM; 12,900 acres of split-estate lands consisting of private surface and BLM-administered minerals; and 6,330

acres of fee land consisting of private surface and private minerals regulated by the Colorado Oil and Gas Conservation Commission. UNC0027470.

In 2008 and 2009, BLM sought input for a master development plan (“MDP”) concerning 2,300 acres of land owned by Intervenor-Defendants within the Unit. UNC0055338, 0055341. An MDP typically provides infrastructural information regarding a planned cluster of wells and associated facilities adjacent to an oil and gas unit or field. UNC0027451. BLM completed a preliminary EA, but then elected to complete an EIS regarding the Unit’s MDP. UNC0055344, 0078547. In January 2015, BLM published a draft EIS with an opportunity for public comment. UNC0005710–11. In July 2016, BLM published a final EIS. UNC0042302.

In the final EIS, BLM considered four alternatives: alternative A was a no-action alternative and alternatives B, C, and D contained a development of 146 new gas wells and four new water disposal wells. UNC0027457. Alternatives B, C, and D contained 36, 35, and 33 new well pads, respectively. *Id.* BLM selected alternative D as its preferred alternative. *Id.* It assumed the life of the project would be at least 50 years. UNC0027501. In October 2017, BLM approved the MDP in a Record of Decision. UNC0042509. This Record of Decision additionally approved an application for permit to drill (“APD”) by Intervenor-Defendants. UNC0042453. BLM notes that since the commencement of this suit, it has approved: (1) three other APDs in the same well pad location as the original APD; (2) two lateral extensions for an existing well bore on a different well pad; and (3) two APDs on well pads located on private surface lands. Defs.’ Resp., ECF No. 50 at 5.

B. 25-well Project

The 25-well Project addressed six APDs—three from Intervenor-Defendants and three from another company. UNC0097956. The 25-well Project is situated between Paonia and Carbondale. UNC0097964. It involves the construction of 25 natural gas wells on four new well pads and one existing well pad and the approval of 19 additional APDs. UNC0097956–57. One proposed well pad occurs on split estate lands with federal minerals underneath private surface land. UNC0097944. Three other well pads are located on federally managed lands. *Id.* The fifth well pad is located on private surface lands over private mineral estate, but is planned to bore horizontally into adjacent federal mineral estate. *Id.*

In March 2015, BLM and USFS announced their intention to complete an EA for the 25-well Project and invited public comment. UNC0079341–42. In June, the agencies issued a preliminary EA with an invitation for additional public comment. UNC0079346. In September, the agencies issued a final EA and a draft FONSI. UNC0097938, 0098284. In December 2015, both agencies signed FONSI and accepted the EA. UNC0098295, 0098306, 0098311.

III. ANALYSIS

Plaintiffs are non-profit organizations who focus on environmental issues. ECF No. 14 at 6–10. Plaintiffs challenge the NEPA review process performed by Defendants regarding the Unit’s MPD and the 25-well Project, alleging generally that Defendants “failed to consider a reasonable range of alternatives” and “failed to take a hard look at the direct, indirect, and cumulative impacts to people and the environment.” Pls.’ Br., ECF No. 47 at 11, 15.

A. Consideration of Alternatives

Plaintiffs argue that Defendants considered an insufficiently narrow range of alternatives in violation of NEPA. ECF No. 47 at 11. They contend that Defendants should have considered a “phased development alternative . . . which would involve clustering drilling geographically to maintain open areas and allowing concentrated development that proceeds in stages rather than all at once.” *Id.* at 12. This proposed alternative would involve clustering oil and gas development in certain areas, then moving to other areas and using interim surface reclamation measures as a way to preserve open space for wildlife and recreation. *Id.*

Defendants respond that Plaintiffs: (1) misunderstand the design features accompanying alternatives C and D; and (2) ignore Defendants’ explanation of why it did not further consider an extended development timeframe. ECF No. 50 at 8. Defendants note that in alternative C, they considered a “progressive development plan” which contained “timing limitations that would allow for drilling and construction in phased timeframes.” *Id.* at 11–12. This plan considered voluntary seasonal timing limitations for private mineral development and included methods to monitor wells that would reduce disturbances to wildlife. *Id.* at 12. Intervenor-Defendants add that Plaintiffs have not offered a sufficient explanation of what a phased development plan would contain. Intervenor-Defs.’ Br., ECF No. 51 at 9–10.

The exploration of alternatives is the “heart” of an EIS, where the agency must rigorously explore and objectively evaluate all reasonable alternatives to the proposed action. *New Mexico*, 565 F.3d at 708 (citing 40 C.F.R. § 1502.14). In an EA, the agency must provide a “brief discussion” of alternatives. 40 C.F.R. 1508.9(b); *see*

also *Greater Yellowstone Coal. v. Flowers*, 359 F.3d 1257, 1278–79 (10th Cir. 2004) (a less extensive search for reasonable alternatives is required under NEPA when an agency makes an informed decision that the environmental impact of proposed action will be small).

“While NEPA ‘does not require agencies to analyze the environmental consequences of alternatives it has in good faith rejected as too remote, speculative, or impractical or ineffective,’ it does require the development of ‘information sufficient to permit a reasoned choice of alternatives as far as environmental aspects are concerned.’” *New Mexico*, 565 F.3d at 708 (quoting *Colo. Env’tl. Coal. v. Dombeck*, 185 F.3d 1162, 1174 (10th Cir. 1999)). As such, an agency need only evaluate alternatives that are significantly distinguishable from the considered alternatives. *Id.* at 708–09 (quoting *Westlands Water Dist. v. U.S. Dep’t of the Interior*, 376 F.3d 853, 868 (9th Cir. 2004)).

The sufficiency of an agency’s analysis of alternatives in an EIS is measured against two guideposts using a “rule of reason.” *Id.* at 709. First, an alternative is reasonable only if it falls within the agency’s statutory mandate. *Id.* (citing *Westlands*, 376 F.3d at 866). “Second, reasonableness is judged with reference to an agency’s objectives for a particular project.” *Id.* (citing cases). Further, if “the action subject to NEPA review is triggered by a proposal or application from a private party, it is appropriate for the agency to give substantial weight to the goals and objectives of that private actor.” *Citizens’ Comm. to Save Our Canyons v. U.S. Forest Serv.*, 297 F.3d 1012, 1030 (10th Cir. 2002) (citing cases). However, this does

not “allow an agency to define the objectives so narrowly as to preclude a reasonable consideration of alternatives. *Id.* (citing *Davis v. Mineta*, 302 F.3d 1104 (10th Cir. 2002)).

In the EIS and EA, Defendants did not consider an alternative explicitly named “phased development,” but they provided aspects of Plaintiffs’ suggestions such that they were not significantly distinguishable from the considered alternatives. *See New Mexico*, 565F.3d at 708–09. Alternative C was a modification of Intervenor-Defendants’ proposal. UNC0042479; ECF No. 50 at 10. It “was developed by modifying the geographic information system □ model to minimize surface disturbance by putting greater emphasis on soil types and proximity to existing roads and collocating roads and pipelines.” UNC0042479. “This, in turn, would reduce the miles of roads and pipelines needed to service the pad sites” *Id.* Further, seasonal winter timing limitations “would limit drilling and construction over private and federal minerals to no more than one-quarter of the Unit in any given period” *Id.* Under the preferred alternative D, Intervenor-Defendants meet with Defendants annually to pace development and mitigation activities. UNC0026840; ECF No. 51 at 13.

Additionally, alternative C contained a progressive development plan which “could mitigate for impacts on big game during construction or resource development activities in sensitive winter habitats.” UNC0027928–29. This would effectively reduce traffic in parts of the Unit. UNC0027994. Further, Defendants required that Intervenor-Defendants use multiple well pad sites, which would

reduce surface disturbance and overall habitat fragmentation. UNC0026840. Also, Defendants required Plaintiff to comply with interim reclamation design features. UNC0026845. Finally, Defendants explained why it did not pursue an alternative with an extended drilling horizon, stating that they “assumed that development would be spread out over 10 or more years . . . consequently, a separate alternative longer than 10 years was eliminated from analysis.” UNC0042482.

Taken as a whole, Plaintiffs have not made a sufficient showing that their proposed alternative significantly differs from certain aspects of the alternatives considered.

In the EA, Defendants briefly explained why they chose to eliminate certain proposed alternatives from detailed study, writing that

Both the five year timeframe of development and efforts by both operators to drill multiple wells targeting adjacent resources from each of the well pads in this proposed action is consistent with the intent of Federal best management practices to develop the Federal mineral resource in a logical and timely manner and reduce unnecessary disturbance by drilling from fewer locations on the landscape.

UNC0097999. Additionally, Defendants assumed multi-well pads for development, UNC0097978; discussed interim reclamation features, UNC0097997; and listed site-specific design features and best management practices, UNC0098146–89. As such, Defendants explored aspects of Plaintiffs’ proposed alternative and provided sufficient explanation for why they did not explore other aspects of Plaintiffs’ suggestions.

B. Direct, Indirect, and Cumulative Impacts to People and Environment

In the EIS and EA, Plaintiffs claim that Defendants failed to take a hard look at: (1) the severity and impacts of greenhouse gas (“GHG”) pollution and climate change; (2) the severity and impacts of hydraulic fracturing on water resources and human health; and (3) the cumulative impacts of air quality, water quantity, and wildlife.

In an EIS or EA, federal agencies must consider the direct, indirect, and cumulative predicted impacts of a proposed action. *New Mexico*, 565 F.3d at 703 (citing 42 U.S.C. § 4332(2)(C); 40 C.F.R. pt. 1502 & §§ 1508.11, 1508.25(c)); *Hillsdale Env'tl. Loss Prevention, Inc. v. U.S. Army Corps of Engineers*, 702 F.3d 1156, 1166 (10th Cir. 2012). “The significance of an impact is determined by the action’s context and its intensity.” *Hillsdale*, 702 F.3d at 1166 (citing *Middle Rio Grande Conservancy Dist. v. Norton*, 294 F.3d 1220, 1224 (10th Cir. 2002)). “Applicable regulations require agencies to consider ten factors when assessing intensity, including the proposed action’s effects on public health, the unique characteristics of the geographic area, the uncertainty of potential effects, and the degree of controversy surrounding the effects on the human environment.” *Id.* (citing 40 C.F.R. § 1508.27(b)).

1. GHG Pollution and Climate Change

Plaintiffs contend that Defendants failed in their analysis of: (1) the foreseeable indirect impacts of oil and gas; (2) the cumulative impacts of GHG pollution and climate change; and (3) the magnitude and severity of GHG emissions from the Unit’s EIS and the 25-well Project’s EA (collectively, the “Projects”).

a. Foreseeable Indirect Impacts of Oil and Gas

Plaintiffs argue that in the EIS and EA, Defendants provided no analysis of the indirect impacts of oil and gas production, specifically the emissions resulting from the eventual combustion of those fuels. ECF No. 47 at 17. Defendants respond that they have “repeatedly explained that available scientific models could not perform such precise calculations.” ECF No. 50 at 17. Defendants continue that “it is unknown which specific uses will be made of those minerals, where those uses will occur, what type and amount of GHG emissions will result from those uses, and what incremental effects those emissions may have on climate change.” *Id.* Intervenor-Defendants add that it would be inappropriate and irrelevant for Defendants to analyze downstream combustion at this time because: (1) the Unit’s MDP is an umbrella analysis “meant to facilitate separate actions that will actually authorize resource extraction . . .”; (2) BLM’s rejection of the MDP would not invalidate Intervenor-Defendants’ existent leases; and (3) if BLM denied the 25-well Project, “federal minerals would be drained through oil and gas development on private mineral estate adjacent to the 25-Well Project . . .” ECF No. 51 at 15–16.

“Indirect impacts are defined as being caused by the action and are later in time or farther removed in distance but still reasonably foreseeable.” *Utahns for Better Transp.*, 305 F.3d at 1177 (citing 40 C.F.R. § 1508.8(b)). An effect is considered reasonably foreseeable if it is “sufficiently likely to occur that a person of ordinary prudence would take it into account in reaching a decision.” *Colo. Env’tl. Coal. v. Salazar*, 875 F. Supp. 2d 1233, 1251 (D. Colo. 2012) (citing cases).

Courts with persuasive authority have found that combustion emissions are an indirect effect of an agency's decision to extract those natural resources. *See San Juan Citizens All. v. U.S. Bureau of Land Mgmt.*, 326 F.Supp. 3d 1227, 1242–43 (D.N.M. 2018) (collecting cases) (“*San Juan*”). I found similarly in *Wilderness Workshop v. United States Bureau of Land Management*, when I held that “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.” 342 F. Supp. 3d 1145, 1156 (D. Colo. 2018). As explained *supra*, the creation of an RMP is an initial step in the oil and gas development process, followed by the leasing of parcels and approval of APDs.

Defendants argue that the facts of *San Juan* differ from the facts here, namely that in *San Juan*, “the agency did not assert that it lacked information to quantify GHG emissions” and that the “leases were located on federal lands where substantial development had already occurred.” ECF No. 50 at 18. Defendants continue that here, “in contrast, very limited production has occurred in the project areas, and both agencies lack sufficient information to project with certainty potential production from any of the wells[.]” *Id.*

However, as Plaintiffs point out in their Reply, there has been development of gas in the Unit. ECF No. 52 at 7; UNC0027522 (displaying a table listing the Unit's annual gas production from 2010 to 2015). Further, Defendants relied upon Intervenor-Defendants' production estimations when conducting its economic analysis. UNC0028001 (“Estimates of production and related tax and royalty

revenue based on full build-out were also supplied from [Intervenor-Defendants].”); *see also* Michael Burger & Jessica Wentz, *Downstream and Upstream Greenhouse Gas Emissions: The Proper Scope of NEPA Review*, 41 Harv. Envtl. L. Rev. 109, 183 (2017) (listing a variety of available of tools that can be used to estimate the indirect greenhouse gas emissions from fossil fuel production).

Simply put, an agency cannot rely on production estimates while simultaneously claiming it would be too speculative to rely upon the predicted emissions from those same production estimates. *Wilderness Workshop*, 342 F. Supp. 3d at 1155–56 (quoting *High Country Conservation Advocates v. United States Forest Service*, 52 F.Supp.3d 1174, 1196 (D. Colo. 2014)).

Intervenor-Defendants’ arguments are similarly unpersuasive. They claim that there would be no change in the indirect effects of combustion emissions because its ability to develop oil and gas resources would be unaffected by Defendants’ acceptance of the MDP. ECF No. 51 at 15–16. As such, they essentially argue that because the analysis of indirect effects of emissions had not occurred in earlier stages, it is now simply too late for such consideration to have any bearing. Under this reasoning, it could theoretically reward agencies for skirting NEPA requirements in prior stages of oil and gas development, which does not align with the informed decision-making goals of NEPA. *See Robertson v. Methow Valley Citizens Council*, 490 U.S. at 349. Further, conducting an analysis of indirect effects of combustion emissions at this point aligns with the NEPA mandate that “[a]gencies shall integrate the NEPA process with other planning at the earliest

possible time to insure that planning and decisions reflect environmental values” 40 C.F.R. § 1501.2. Since it did not happen before, this stage of the development process would be the earliest possible time.

As such, 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 in the EIS and EA. Defendants must quantify and reanalyze the foreseeable indirect effects the emissions.

b. Cumulative Impacts of GHG and Climate Change

Next, Plaintiffs allege that while Defendants did analyze the cumulative, incremental nature of climate change, they failed to provide analysis of GHG emissions from the Projects combined with regional and national emissions. ECF No. 47 at 19. Plaintiffs continue that Defendants failed to consider cumulative GHG emissions resulting from the Projects’ development in a context that sufficiently informed the public about the impacts of GHG gas pollution and climate change. *Id.* at 20. Plaintiffs contend that even if an individual project’s impacts were minimal, it is the minimal impacts combined together that “amplify the threat” of climate change, and as such these impacts may “nevertheless be significant.” *Id.* at 21.

Defendants respond that the analysis of the effects of GHG emissions does not lend itself to a traditional NEPA cumulative effects analysis. ECF No. 50 at 19. Under the traditional analysis, an agency must identify an area where the effects of the proposed project would be felt. *Id.* However, they continue, the global nature of climate change would make it impossible for them to sufficiently analyze the cumulative effects because “for any GHG-emitting project, an agency would be

required to identify any past, present, or reasonably foreseeable GHG-emitting projects *worldwide*, [] regardless of whether the project was undertaken by a federal, state, private, or even a foreign entity.” *Id.* at 20 (emphasis in original).

“Cumulative impact is the impact on the environment which results from 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. “Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” *Id.*

The impacts to consider include ecological, aesthetic, historic, cultural, economic, social, or health considerations. *Wyo. v. U.S. Dep’t of Agric.*, 661 F.3d at 1251 (explaining that the scope of an EIS includes cumulative impacts, and thus the considerations of direct and indirect effects apply similarly to cumulative effects); *see* 40 C.F.R. §§ 1508.7, 1508.8, 1508.25. However, agencies must only discuss those impacts which are reasonably foreseeable. *Id.* (quoting *Utahns for Better Transp.*, 305 F.3d at 1176).

As such, “cumulative impacts that are too speculative or hypothetical to meaningfully contribute to NEPA’s goals of public disclosure and informed decisionmaking need not be considered.” *Wyo. v. U.S. Dep’t of Agric.*, 661 F.3d at 1253.

[A] meaningful cumulative impact analysis must identify five things: (1) the area in which the effects of the proposed project will be felt; (2) the impacts that are expected in that area from the proposed project; (3) other actions—past, present, and proposed, and reasonably

foreseeable—that have had or are expected to have impacts in the same area; (4) the impacts or expected impacts from these other actions; and (5) the overall impact that can be expected if the individual impacts are allowed to accumulate.

San Juan Citizens All. v. Stiles, 654 F.3d 1038, 1056 (10th Cir. 2011) (quoting *TOMAC, Taxpayers of Mich. Against Casinos v. Norton*, 433 F.3d 852, 864 (D.C. Cir. 2006)).

Defendants: (1) looked at statewide emissions levels from emitting coal-fired power plants in Colorado and provided a comparative assessment, UNC0027836–39, 0098020–23, 0098259; (2) provided a qualitative analysis of climate change and the role played by GHG emissions, and discussed the potential for climate change impacts using reports from the Intergovernmental Panel on Climate Change and National Climate Assessment, UNC0027655–61, 0098020, 0098110; (3) performed a regional cumulative impacts analysis of the future mineral development in the region for ten years, relying upon the Colorado Air Resources Management Modeling Study to assess predicted impacts on air quality, UNC0098103; and (4) followed draft Council on Environmental Quality guidance in predicting that 146 wells in the Unit and the expected wells in the 25-well Project would respectively produce 44,389 and 24,706 metric tons of GHG emissions per year. UNC0027828, 0027842, 0098103 (listing carbon dioxide alongside other emissions).

Defendants noted that “the assessment of GHG emissions and climate change is extremely complex because of the inherent interrelationships among its sources, causation, mechanisms of action, and impacts” and as such, it was impossible to attribute a particular climate impact in any given region to GHG emissions from a

particular source. UNC0027819. In the EIS and EA, Defendants explain that tools did not exist that would allow them to predict how a project's emissions would impact global, regional, or local climate because, at the time, government agencies did not have standardized protocols or specific levels of significance by which they could quantify climate impacts. UNC0027826, 0098023.

Plaintiffs fault Defendants for not explaining why it would be impractical for BLM to discuss its own cumulative emissions at less than a global scale, but this contention misses the mark. Plaintiffs are free to ask such questions, but it is not the role of the court to decide whether Defendants' choices were ideal; I am merely tasked with determining whether Defendants' analyses met the minimum threshold necessary to constitute a "hard look." *W. Watersheds Project v. Bureau of Land Mgmt.*, 721 F.3d 1264, 1273 (10th Cir. 2013).

I find that Defendants took an appropriately hard look at cumulative climate change impacts in the EIS and EA. *See Hillsdale*, 702 F.3d at 1177–78 (explaining that courts are not in a position to decide the propriety of competing methodologies and must simply determine whether the agency had a rational basis for employing the challenged method, especially when the dispute involves a technical judgment within the agency's area of expertise) (citing cases).

c. Use of the Social Cost of Carbon Protocol

Next, Plaintiffs argue that Defendants insufficiently examined the ecological, economic, and social impacts of the Projects' predicted GHG emissions. ECF No. 47 at 22–23. Plaintiffs dispute the reasoning that Defendants lacked tools to predict the Projects' impacts on a large scale and argue that Defendants should have used

the social cost of carbon protocol (the “Protocol”), which contextualizes the costs associated with climate change. *Id.* at 23–24. Plaintiffs concede that Defendants are not required to conduct a cost-benefit analysis, but argue that Defendants acted in an arbitrary and capricious manner by choosing to quantify the benefits of an action, but then incorrectly claimed that they could not analyze the related costs. *Id.* at 24–25. Specifically, Plaintiffs argue that Defendants “trumpeted” benefits concerning economic, revenue, and employment data for the Projects, but then did not quantify the economic costs related to those benefits. *Id.* at 25–26.

Defendants respond that they “quantified the project-related GHG emissions, presented them in the context of emissions from other sources statewide, and included a qualitative discussion of the impacts of climate change.” ECF No. 50 at 23. They continue that their chosen method to analyze climate change impacts is entitled to deference and followed Council on Environmental Quality guidance, which discourage the use of cost-benefit analyses in situations involving “important qualitative considerations.” *Id.* at 24; 40 C.F.R. § 1502.23. Defendants also dispute that their analyses of economic impacts constitute a cost-benefit analysis. *Id.* at 25. They posit that “[c]hanges in economic activity are not the ‘benefit’ side of a cost-benefit analysis.” *Id.* Defendants add that they did not “trumpet” the benefits, as the data appears 500 pages into the EIS, and on pages 61 and 139 of the EA, in summaries of the socioeconomic impacts attributed to the Projects or discussions on workforce needs. *Id.*

In the EIS, Defendants provide a general description and a national assessment of climate change, followed by the main points in a climate change analysis regarding the region in which the Unit is located. UNC0026334–37. In response to comments that they should use the Protocol, Defendants in the EIS explained that estimations using the Protocol was “challenging because it is intended to model effects on the welfare of future generations at a global scale caused by additional carbon emissions occurring in the present and does not account for the complexity of multiple stressors and indicators.” UNC0027330. They added that “[u]ncertainty of production rates, volumes, and end uses from the proposed action and alternatives would seriously limit the utility of the [P]rotocol.” *Id.*; UNC0098270–71 (describing the same in the EA).

Concerning the socioeconomic impacts, the EA provided: (1) projections on labor workforce needed to accomplish the various phases of development for the 25-well Project, UNC0097998 and (2) a model of economic projections for the region, noting that those who prioritize increased economic activity would see the proposed action as beneficial while those who prioritize environmental protection would see the same actions as harmful, UNC0098077. The EIS provided a discussion in the context of specific economic sectors, public revenue, public services, community social conditions, property value, and nonmarket effects, alongside projected labor requirements and costs. UNC0028001–26.

“[T]he weighing of the merits and drawbacks of the various alternatives need not be displayed in a monetary cost-benefit analysis and should not be when there

are important qualitative considerations.” 40 C.F.R. § 1502.23. However, if an agency chooses to conduct a cost-benefit analysis in an EIS, that analysis should not be misleading. *High Country*, 52 F. Supp. 3d at 1182 (citing cases).

The Protocol was “designed to quantify a project’s contribution to costs associated with global climate change” *High Country*, 52 F. Supp. 3d at 1190. The *High Country* court found the agencies’ cost-benefit analysis misleading because they “expressly relied on the anticipated economic benefits of [lease modifications] in justifying their approval,” but the agencies then explained “that a similar analysis of the costs was impossible when such an analysis was in fact possible and was included in an earlier draft EIS.” *Id.* at 1191.

Here, I agree with Defendants that it is within their discretion to decide when to analyze an effect quantitatively or qualitatively. *See Hillsdale*, 702 F.3d at 1177–78. Further, Plaintiffs have not sufficiently argued that Defendants presented economic upsides without discussing downsides. Defendants qualitatively discussed the Projects and while they did provide figures on workforce estimates among other projections, these do not appear to be the “benefits” side of a cost-benefit analysis.

An important aspect of *High Country* was the fact that the agencies had attempted to quantify contributions to the costs of global climate change in drafts of their EIS, but then removed that portion “in part it seems, in response to an email from one of the BLM’s economists that pointed out that the social cost of carbon protocol is ‘controversial.’” 52 F.Supp. 3d at 1191. Plaintiffs do not posit that a similar action occurred here. This does not speak to the potential effectiveness of

the Protocol. Simply put, under 40 C.F.R. § 1502.23, Defendants were not required to perform a cost-benefit analysis. They chose not to do so, provided sufficient support in the record to show this, and thus satisfied NEPA in this respect. As such, Defendants sufficiently examined the ecological, economic, and social impacts of the Projects' predicted GHG emissions.

2. Impacts of Hydraulic Fracturing on Water Resources and Human Health

Next, Plaintiffs argue that Defendants failed to examine and disclose threats to resources and human health from modern oil and gas drilling techniques, including hydraulic fracturing. ECF No. 47 at 28–29. Plaintiffs contend that they called for Defendants to assess the human health effects of hydraulic fracturing for the Projects, but Defendants did not sufficiently provide such analysis in the EIS and EA. *Id.* at 29–30. Plaintiffs argue that Defendants did not meaningfully address health risks concerning air pollution and ground and surface water contamination, and fault Defendants for only relying upon industry to protect groundwater. *Id.* at 30–32.

Defendants argue they sufficiently discussed potential impacts to health and safety, noting that the EIS and EA cite studies of risks from spills of produced water and extracted fluid minerals, hydraulic fracturing operations and air emissions, and risks to worker health and safety. ECF No. 50 at 26–27. Defendants add that the EIS and EA included mitigation requirements and incorporated best management and monitoring practices. *Id.* at 27–28. Further Defendants argue that they are following NEPA regulations in delaying a full analysis, instead tiering their

analysis to provide “an informed discussion when each decision ripens and the information necessary for a full analysis is most available.” *Id.* at 28.

In their Reply, Plaintiffs argue that the sections of the EIS that Defendants point to “inform residents of virtually no actual health consequences other than cancer, and mention only a few of the chemical threats people face.” ECF No. 52 at 16. Plaintiffs argue that Defendants ignored four key studies on the effects certain chemicals used in gas development have on humans and the environment. *Id.* Plaintiffs add that the EIS included in its list of references, “but nowhere else mention[ed], a key peer-reviewed study from the planning area, McKenzie *et al.* (2012), which used EPA guidance to sample air emissions and calculated both non-cancer and cancer risks for residents within and outside one half-mile of oil and gas operations.” *Id.* at 17 (citing UNC0039093).

In the EIS, Defendants discussed pollutants for the first ten years of the Unit’s development, including an analysis of volatile compounds, hazardous air pollutant (“HAP”) emissions, near-field impacts, far-field impacts, and air pollutant concentrations. UNC0027644–49, 0027827–35. The EA similarly contained an analysis of HAPs, air pollutant concentrations, and ambient air quality. UNC0098016–20, 0098234–51. Defendants summarized the environmental consequences by alternative, including air and water resources. *E.g.*, UNC0027610–15, 0027618–19.

Defendants noted concerns of hydraulic fracturing on underground sources of drinking water and that “the quality of water could be degraded by accidental spills

or releases of hazardous substances stored or used at the project sites,” 0027766–67, 0028015, 0098068–72. Further, the EIS and EA note design features, mitigation measures, and conditions of approval attached to APDs, which in part involve air and water quality concerns (including groundwater contamination). UNC0026831, 0026835, 0026838, 0026847, 0027600–07, 0098190–91.

Regarding health impacts, Defendants modeled the estimated maximum impacts that could occur from HAP emissions and found them below applicable thresholds and noted that “health and quality of life related to air quality are not likely to be significantly impacted by project activities for any alternative.” UNC0027830, 0028015, 0098103–04. They modeled expected cancer risk from suspected carcinogens. UNC0027830–31, 0098022–23. They considered certain indicators for the impacts to human health and safety in the storing and handling of hazardous materials, including the risk of spills, and discussed related concerns surrounding chemicals used in hydraulic fracturing. UNC0027997–8001.

Defendants note that in the EIS they “appropriately deferred more localized and detailed analyses for some resource impacts until the APD approval stages, when substantially more will be known about development.” ECF No. 50 at 28. This is in accordance with NEPA regulations on “tiering” which “refers to the coverage of general matters in broader environmental impact statements . . . with subsequent narrower statements or environmental analyses (such as regional or basinwide program statements or ultimately site-specific statements) incorporating by reference the general discussions and concentrating solely on the issues specific to

the statement subsequently prepared.” 40 C.F.R. 1508.28. In the EIS, Defendants explained that if they adopt Intervenor-Defendants’ MDP for the Unit, or a modified alternative to it, “the exact locations of wells, roads, pipelines, and other facilities would be determined when those wells or facilities are proposed for drilling or construction as part of an APD.” UNC0027478.

Plaintiffs argue that Defendants did not sufficiently consider studies that Plaintiffs submitted during the comment periods of the EIS and EA. ECF No. 52 at 16–17. Plaintiffs’ summaries of the studies show concerning impacts. But the analysis provided by Defendants, coupled with the regulations on tiering and the deference owed to the agencies, lead me to find that Defendants took a sufficiently hard look in the EIS and EA at the impacts of hydraulic fracturing on water resources and human health.

3. Cumulative Impacts of the Project to Specific Resources

Plaintiffs argue that Defendants fail to take a hard look at the cumulative impacts of the Projects on specific resources, namely air quality, water quantity, and wildlife. Discussed *supra*, cumulative impacts are the impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. 40 C.F.R. § 1508.7. Agencies must only discuss those impacts which are reasonably foreseeable. *Wyo. v. U.S. Dep’t of Agric.*, 661 F.3d at 1251.

a. Cumulative Impacts to Air Quality

Plaintiffs argue that Defendants erred in analyzing cumulative air quality impacts by: (1) improperly relying upon the Colorado Air Resources Management Modeling Study (“CARMMS”) rather than undertaking a comprehensive regional inventory; and (2) not properly assessing background concentrations of pollutants and assuming that air pollution would be acceptable if none of the National Ambient Air Quality Standards (“NAAQS”) are violated. ECF No. 47 at 34.

CARMMS “assesses predicted impacts on air quality and air quality related values [] from projected increases in oil and gas development” and “includes potential impacts using projections of oil and gas development up to a maximum of 10 years in the future to reflect realistic estimations of development projections and technology improvements.” UNC0027843. NAAQS are “health-based criteria for the maximum acceptable concentrations of air pollutants at all locations to which the public has access.” UNC0027645.

Plaintiffs claim that CARMMS was not up to date and did not contain all emissions that may impact the study area and notes surrounding states and projects that it argues Defendants should have included in a cumulative air quality impact inventory. ECF No. 47 at 34. Plaintiffs continue that Defendants did not take a hard look at the Projects’ effects of pollutants for which the government has established NAAQS. *Id.* at 35. Plaintiffs specifically point to monitored concentrations of ozone close to the Unit that “are already significantly above the level of the NAAQS, leaving virtually no room for growth in emissions.” *Id.* Plaintiffs claim that Defendants used data that the Environmental Protection

Agency (“EPA”) determined was stale. *Id.* They conclude that without properly modeling air pollution levels, Defendants cannot justify a conclusion that incremental increases of ozone would be insignificant. *Id.* at 36.

Defendants respond that CARMMS included a sufficient range of projects and development and that the agencies would “continue to monitor oil and gas development in the region to verify that cumulative emissions rates are consistent with the annual rates modeled in CARMMS.” ECF No. 50 at 31. They argue that the record shows they sufficiently explained their decision on which geographic areas to model and that this decision is afforded deference. *Id.* at 32. Defendants note that modeling information and analysis of impacts to air quality would be updated if appropriate. *Id.* at 32–33. Defendants argue that they followed updated EPA numbers. *Id.* at 33. Finally, Defendants state that they sufficiently explained that ambient air quality concentrations would not exceed NAAQS and, as such, further NEPA analysis was not required. *Id.* at 34.

Indeed, Defendants stated that the “CARMMS high scenario inventory allowed for plenty of oil and gas growth in the project area,” UNC0027837, and modeled emissions for thirteen planning areas in Colorado, UNC0027846. Defendants explained that, contrary to Plaintiffs contention that the pollutant data was outdated and the geographic areas should be expanded, it included data from state and federal permitted sources, projects from neighboring states, and inventories from a local gas play area. ECF No. 50 at 32 (citing UNC0032956, 0032992, 0033030–32, 0033049).

In response to comments, Defendants explained that “[i]n addition CARMMS includes emissions from other regional sources, including oil and gas emissions throughout the modeling domain, which encompasses all of Colorado, western Arizona, western Utah, and north-central New Mexico and extends into southern Wyoming, western Nebraska, western Kansas, and northwest Texas.”

UNC0027343. Further, Defendants explained that it had updated its analysis using EPA’s new ozone NAAQS and that they would reprocess data based on revised EPA estimates. UNC0027275, 0027844. Finally, Defendants rationally concluded that air quality impacts would not cause concentrations that exceed NAAQS and as such, it is not the court’s role to mandate that it perform further NEPA analysis.

UNC0028015, 0098022–24; *see Hillsdale*, 702 F.3d at 1179 (government agency sufficiently explained that emissions levels would be well below NAAQS levels and as such, did not need to perform additional modeling).

Generally, Plaintiffs seem to argue that the information used for cumulative air quality impacts were not sufficiently representative, but Defendants explained their decision and stated they would update their information if they deemed it necessary. With the deference I must afford to Defendants, I find that they took a sufficiently hard look at the Projects’ cumulative impacts to air quality.

b. Direct and Cumulative Impacts to Water Quantity

Next, Plaintiffs argue that Defendants did not sufficiently assess the Projects’ direct and cumulative impacts to water quantity. ECF No. 47 at 37. Plaintiffs contend that Defendants fail to discuss “how water depletions from the Projects will impact the land, forests, wildlife, livestock, or human communities in the planning

area” and how those impacts would be further compounded by droughts in the southwestern United States. *Id.* Plaintiffs add that Defendants “recognized the impacts to surface and groundwater flow patterns in its EA for the Bull Mountain MDP,” but then omitted this information in the EIS and did not explain why they did so. *Id.* at 38.

In the EIS, Defendants explained that “[w]ater quantity effects relate to the quantity of water that would be required to accomplish the project objectives of drilling and maximizing the recovery of gas while minimizing the costs of production and the environmental effects associated with production.”

UNC0027874. They continued by explaining examples of what direct and indirect effects of water quantity may include, but added that “[t]he nature and magnitude of some types of potential effects would depend on options that have not yet been specified at the programmatic level of analysis.” *Id.* Defendants discussed the short-term effects, which relate to initial well and infrastructure construction.

UNC0027875. Defendants deferred to Intervenor-Defendants’ augmentation plan on the freshwater needs and noted that closed loop or “pitless” systems may be used to reduce water needs. *Id.* They state that the “quantity of water required for hydraulic fracturing would vary with the geology encountered in the reservoir rock, the type of well (vertical or horizontal/direction and the length(s) of the perforated interval(s), and would also depend on the amount of waste fluid that can be recycled for subsequent fracturing stages.” UNC0027875–76.

Defendants estimated the water usage needed for the alternatives B, C, and D to be “up to 2,480 acre-feet of water.” UNC0027885. They found that the demand for water would remain relatively steady for about 10 years, estimated total cumulative water quantity needed for this time, and that “[t]he impacts on water quantity are expected to be less than significant.” UNC0027889–91.

Defendants wrote that water depletion may impact aquatic wildlife by a loss of physical habitat, changes in water quality, sediment accumulation, habitat alteration, loss of habitat complexity, or food source reduction. UNC0027911. They added that “[d]ue to minimal change to water quantity and quality anticipated, direct impacts on agricultural operations are likely to be limited.” UNC0028012.

In the EA, Defendants discussed surface and groundwater impacts, finding in part an increased risk of spills for additional development. UNC98112. On impacts to fish, the EA read that the proposed action would result in the depletion of approximately 224.4 acre-feet of water from within the Colorado River basin, but would not likely affect adversely designated critical habitats for specified endangered fish. UNC0098045. Defendants briefly discuss the effects of drought on western United States. UNC0098113.

In their Reply, Plaintiffs argue that Defendants’ recounting of the EIS and EA analysis of water quantity prove they insufficiently examined “water quantity impacts other than to aquatic species.” ECF No. 52 at 21. Further, Plaintiffs suggest I rely upon *San Juan*, 326 F. Supp. 3d at 1254, for the proposition that the current

case is at the stage of the oil and gas leasing process where analysis should be more precise than what Defendants provided. *Id.* at 22.

I find neither argument compelling to overcome the deference paid to the agencies. Defendants provided projections and related explanations of the quantity of water needed for the Projects. They noted that the effects were not projected to be significant and repeated that conclusion in the context of agricultural concerns. Further, the conclusion of the court in *San Juan* hinged upon the fact that water usage was not quantified by BLM, which has occurred here. 326 F. Supp. 3d at 1254. Therefore, I find that Defendants sufficiently assessed the Projects' direct and cumulative impacts to water quantity.

c. Cumulative Impacts to Wildlife

Finally, Plaintiffs argue that Defendants failed to take a hard look at the cumulative impacts to wildlife in the area. ECF No. 47 at 38. For support, they look to a comment letter from the Colorado Division of Wildlife which read that it was “concerned with the proposed density and extent of development in the Bull Mountain Unit as the area provides high quality habitat for a variety of species, and contains important wintering habitat for big game.” UNC0054004. The comment had a set of wildlife best management practices concerning oil and gas development, where it noted that development activities should be planned at the largest scale possible and that development activities should be phased and concentrated, “so that large areas of undisturbed habitat for wildlife remain.” UNC0054006–07. Plaintiffs contend that Defendants did not take a sufficiently hard look at the cumulative impacts to wildlife when it narrowed the scope of the analysis to the

Unit's boundaries and did not include a variety of other planned oil and gas developments in adjacent areas. ECF Nos. 47 at 40; 52 at 23–24.

Plaintiffs continue by looking to comments from Colorado Parks and Wildlife who voiced concern that oil and gas development displaced big game “long after drilling activities have ceased,” regardless of site-specific conditions of approval or best management practices. ECF No. 47 at 39 (quoting UNC0079421). Plaintiffs posit that the Unit includes areas that are crucial to elk and deer, especially during winter months. *Id.* They continue that Defendant's preferred alternative for the Unit “would result in at least 26 of the 33 well pads located within and directly adjacent to the core areas of the crucial elk and mule deer winter habitat areas, yet the agency still failed to provide any meaningful cumulative analysis.” *Id.* Plaintiffs dismiss Defendants' explanation in the comments that Defendants lacked sufficient information for a generalized cumulative impacts analysis because Defendants did not explain what information was needed or could not be obtained. *Id.* at 40.

Plaintiffs add that the EA was similarly deficient, in that the proposed pad locations were nearby elk winter concentration areas, but did not sufficiently analyze the related impacts. *Id.* at 40–41. Additionally, they argue that the EA did not analyze cumulative impacts to mule deer at all. *Id.*

In the EIS, Defendants defined the cumulative impacts analysis area as the Unit, plus a 10-mile buffer around the Unit, except that “each resource topic defines the area based on the specific issues and resources being addressed.” UNC0027792. Plaintiff notes that Defendants analyzed the cumulative impacts area for mule deer

and elk to the Unit itself, apparently excluding the additional 10-mile buffer. ECF No. 52 at 22, n.5 (citing UNC0027932). They analyzed direct and indirect impacts to deer and elk. UNC0027924. But Defendants recognized that it was “not possible to quantify the impacts on the deer and elk populations” and that “[b]ecause of the small size of the project, prime winter range would not be impacted by pad development, but it could be impacted by habitat avoidance in areas adjacent to access roads.” *Id.* From there, Defendants and Intervenor-Defendants point to details of a wildlife habitat plan, certain mitigation measures, an explanation of data Defendants were missing, and an acknowledgement that elk and deer habitat could be disturbed. ECF No. 50 at 36–37; 51 at 31–33.

After review of the briefs and record, it is not apparent to me whether Defendants considered the 10-mile buffer zone when compiling its cumulative impacts analysis regarding mule deer and elk. As such, I find that Defendants did not sufficiently explain their analysis in the EIS.

Compare this to the 25-well Project, where Defendants analyzed the impacts of big game species pursuant to federal regulations for the USFS. UNC0098058. Enveloping the analysis of mule deer into their analysis of elk, Defendants considered a 10-mile buffer area surrounding the proposed treatments and activities for the cumulative effects analysis. UNC0092685, 0093185. Defendants found that “[d]ue to the scale and type of this project, with limited habitat alteration and the low mileage of new road construction, effects of the project at this scale are negligible and would not show in the model unless taken to unreasonable levels of

precision (beyond that of the data used).” UNC0093185. They continued that “[s]imilar actions within the cumulative impacts area, specifically the proposed gas development in the Bull Mountain Unit and other future energy development, will also result in an incremental reduction in habitat suitability and availability for elk and expected changes to distribution,” but “at the scale of the watershed and the data analysis unit used to monitor elk populations, this project, even when considered with all other projects in the area, is not likely to result in significant changes to elk populations.” *Id.* Defendants sufficiently explained and analyzed cumulative impacts to mule deer and elk in the EA.

Concerning the EIS, while comments from Colorado wildlife agencies regarding the wildlife management in the EIS are by no means mandatory authority, they provide support to Plaintiffs arguments as to why a larger scope was not used. An agency is owed discretion when determining the physical scope it uses for measuring impacts, but its choice must be reasoned and not arbitrary. *Idaho Sporting Cong., Inc. v. Rittenhouse*, 305 F.3d 957, 973 (9th Cir. 2002) (citing cases).

Here, Defendants do not sufficiently explain the scope for cumulative impacts regarding mule deer and elk. As such, in the remedies briefing, discussed *infra*, Defendants must clarify the area it used when it analyzed the Unit MDP’s cumulative impacts on mule deer and elk in the EIS. Then, if Defendants only considered the Unit itself for its cumulative impacts analysis, it must reconsider that decision and provide sufficient explanation or expand the area of its analysis to comply with NEPA.

IV. CONCLUSION

For the reasons set forth above, the Court concludes that Defendants:

1. Considered reasonable alternatives to the proposed actions in the EIS and EA;
2. Failed to comply with NEPA by not taking a hard look at the reasonably foreseeable indirect impacts of oil and gas;
3. Took an appropriately hard look at cumulative climate change impacts in the EIS and EA;
4. Sufficiently examined the ecological, economic, and social impacts of the Projects' predicted GHG emissions;
5. Took a sufficiently hard look in the EIS and EA on the impacts of hydraulic fracturing on water resources and human health;
6. Sufficiently considered the Projects' impacts on air quality
7. Sufficiently considered the Projects' impacts on water quantity;
8. Failed to comply with NEPA by not taking hard look at the cumulative impacts on mule deer and elk. Defendants must clarify the area it used when it analyzed the Unit MDP's cumulative impacts on mule deer and elk in the EIS. Then, if Defendants only considered the Unit itself for its cumulative impacts analysis, it must reconsider that decision and provide sufficient explanation or expand the area of its analysis.

Pursuant to the Joint Case Management Plan Order, the parties shall address remedies accordant with the present Order in separate briefings. ECF No. 28 at 7.

It is ORDERED that counsel for all parties confer and attempt in good faith to reach an agreement as to remedies concerning the issues on which Defendants were not in compliance with NEPA. If an agreement is not reached, the parties may submit briefs. This briefing will consist of one brief from each party, including Intervenor-Defendants, not exceeding 4,000 words, including everything from the caption to the certificate of service. It shall be filed with the Court on or before May 6, 2019.

The Court DEFERS a final ruling on the remedies until further briefing is received.

Dated: March 27, 2019 in Denver, Colorado.

BY THE COURT:

s/Lewis T. Babcock
LEWIS T. BABCOCK, JUDGE

Addendum

APD	Application for permit to drill
AR	Administrative record
BLM	Bureau of Land Management
CARMMS	Colorado Air Resources Management Modeling Study
CRVFO	Colorado River Valley Field Office
EA	Environmental assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
FONSI	Finding of No Significant Impact
GHG	Greenhouse gas
HAP	Hazardous air pollutants
MDP	Master development plan
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Protection Act
RMP	Resource Management Plan
USFS	United States Forest Service