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Sent via Electronic Mail and USPS

U.S. Bureau of Land Management
Attn: NFMMDP
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**RE: Draft EA Comments: North Fork Mancos Master Development Plan
(DOI-BLM-CO-N040-2017-050-EA)**

The Western Environmental Law Center, along with Citizens for a Healthy Community, High Country Conservation Advocates, Wilderness Workshop, WildEarth Guardians, Center for Biological Diversity, the Wilderness Society, Western Colorado Alliance, and the Sierra Club (together “Citizen Groups”), submit the following Scoping Comments regarding a proposal (the North Fork Mancos Master Development Plan, or NFMMDP) to drill, complete, and operate 35 horizontal wells from four new well pads and one existing well pad and to construct associated access roads and gathering lines over a 3-year period in Gunnison and Delta Counties, Colorado.

This 35-well project, which is the first phase of a potential development of a total of 13 well pads and up to 104 wells, is located near and adjacent to other oil and gas development in the area—and in some cases may share associated pipeline and flowback pit infrastructure with such development. Citizen Groups submitted robust legal and technical Scoping Comments on March 22, 2017, as well as Supplemental Comments on June 5, 2017. These comments, and the many exhibits and expert reports contained therein, and are incorporated by reference. Moreover, those comments also incorporated by reference prior administrative comments for the 150-well Bull Mountain Master Development Plan, and the 25-well federal project in the GMUG, jointly approved by BLM and the Forest Service. Although both projects are now the subject of federal litigation, *Citizens for a Healthy Community, et al. v. U.S. Bureau of Land Management*, Civ. No. 17-cv-0219-WJM-GPG (D. Colo.), these administrative comments remain important for BLM’s cumulative analysis, here, and are properly before the agency. These incorporated comments and exhibits offer detailed technical information, expert reports, and legal analysis that the agency is required to consider in its decisionmaking process for the proposed action. *See Forest Guardians v. U.S. Fish and Wildlife Service*, 611 F.3d 692, 717 (10th Cir. 2010) (“The purpose behind NEPA is to ensure that the agency will only reach a

decision on a proposed action after carefully considering the environmental impacts of several alternative courses of action and *after taking public comment into account.*”).

Western Environmental Law Center (“WELC”) uses the power of the law to defend and protect the American West’s treasured landscapes, iconic wildlife and rural communities. WELC combines legal skills with sound conservation biology and environmental science to address major environmental issues in the West in the most strategic and effective manner. WELC works at the national, regional, state, and local levels; and in all three branches of government. WELC integrates national policies and regional perspective with the local knowledge of our 100+ partner groups to implement smart and appropriate place-based actions.

Citizens for a Healthy Community (“CHC”) is a grass-roots organization with more than 500 members formed in 2010 for the purpose of protecting people and their environment from the impacts of oil and gas development in the Delta County region. CHC’s members and supporters include organic farmers, ranchers, vineyard and winery owners, sportsmen, realtors, and other concerned citizens impacted by oil and gas development. CHC members have been actively involved in commenting on BLM’s oil and gas activities.

High Country Conservation Advocates (“HCCA”) is located in Crested Butte, Colorado with over 800 members. HCCA was founded in 1977 to protect the health and natural beauty of the land, rivers, and wildlife in and around Gunnison County now and for future generations. HCCA has engaged on oil, natural gas, and coal bed methane development in Gunnison County for over a decade to prevent irreparable harm to its members' interests. HCCA's members and supporters live in, use, and enjoy the communities and landscapes that the proposed Bull Mountain development would affect.

Wilderness Workshop (“WW”) is a non-profit organization engaged in research, education, legal advocacy and grassroots organizing to protect the ecological integrity of local public lands. WW is based in Carbondale, Colorado and has approximately 800 members. WW not only defends pristine public lands from new threats, but also strives to restore the functional wildness of landscapes fragmented by human activity. WW works to protect and preserve existing wilderness areas, advocate for expanding wilderness, defend roadless areas from development that would destroy their wilderness character, and safeguard the ecological integrity of all federal public lands in the vicinity of the White River National Forest. WW has a long history of participation in forest planning and public land management on the White River National Forest, the Grand Mesa Uncompahgre and Gunnison National Forest, and adjacent Bureau of Land Management lands. WW has engaged on oil and gas issues in and around the headwaters of the North Fork for years.

The Wilderness Society (“TWS”) has a long-standing interest in the management of Bureau of Land Management and National Forest lands in Colorado and engages frequently in the decision-making processes for land use planning and project proposals that could potentially affect wilderness-quality lands and other important natural resources managed by the BLM and USFS in Colorado. TWS members and staff enjoy a myriad of recreation opportunities on public lands, including hiking, biking, nature-viewing, photography, and the quiet contemplation in the solitude offered by wild places. Founded in 1935, our mission is to

protect wilderness and inspire Americans to care for our wild places.

WildEarth Guardians (“Guardians”) is dedicated to protecting and restoring the wildlife, wild places, wild rivers, and health of the American West. Guardians is a west-wide environmental advocacy organization with thousands of members in Colorado and surrounding states. Guardians members live in and regularly use and enjoy lands in the project area.

Center for Biological Diversity is a non-profit environmental organization with over 1.6 million members and online activists, with many members who live and recreate in western Colorado. The Center uses science, policy and law to advocate for the conservation and recovery of species on the brink of extinction and the habitats they need to survive. The Center has and continues to actively advocate for increased protections for species and their habitats in Colorado. The lands that will be affected by the proposed project include habitat for listed, rare, and imperiled species that the Center has worked to protect including rare, endangered and threatened species like the Gunnison Sage-Grouse and fish species such as the Colorado Pikeminnow and Razorback Sucker. The Center’s board, staff, and members use the public lands in Colorado, including the lands and waters that would be affected by expanded fossil fuel development authorized by this master development plan, for quiet recreation (including hiking and camping), scientific research, aesthetic pursuits, and spiritual renewal.

Western Colorado Alliance (formerly Western Colorado Congress) is a grassroots, democratic organization working for a future where local engaged voices are leading communities across Western Colorado that are healthy, just, and self-reliant. Our 1,000+ members live, work, and play in communities surrounded by public lands and are directly affected by their management. Together we work for a balanced approach to energy development on public land, ensuring landowner rights, public safety and environmental health are prioritized in management decisions.

The Sierra Club is a national nonprofit organization of approximately 795,900 members dedicated to exploring, enjoying, and protecting the wild places of the earth; to practicing and promoting the responsible use of the earth’s ecosystems and resources; to educating and enlisting humanity to protect and restore the quality of the natural and human environment; and to using all lawful means to carry out these objectives. The Colorado Chapter of the Sierra Club has approximately 23,000 members, including members who live and recreate in the project area. Sierra Club members use the public lands in this area for quiet recreation, aesthetic pursuits, and spiritual renewal.

I. National Environmental Policy Act

A. BLM and the Forest Service are Required to Prepare an Environmental Impact Statement

An environmental impact statement (“EIS”) should be prepared for the NFMMDP. An EIS is required when a major federal action “significantly affects the quality of the human environment.” 42 U.S.C. § 4332(2)(C); 40 C.F.R. § 1502.4. A federal action “affects” the environment when it “will or *may* have an effect” on the environment. 40 C.F.R. § 1508.3 (emphasis added); *Airport Neighbors Alliance v. U.S.*, 90 F.3d 426, 429 (10th Cir. 1996) (“If the agency determines that its proposed action *may* ‘significantly affect’ the environment, the agency must prepare a detailed statement on the environmental impact of the proposed action in the form of an EIS.”) (emphasis added). Similarly, according to the Ninth Circuit:

We have held that an EIS *must* be prepared if ‘substantial questions are raised as to whether a project ... *may* cause significant degradation to some human environmental factor.’ To trigger this requirement a ‘plaintiff need not show that significant effects *will in fact occur*,’ [but instead] raising ‘substantial questions whether a project may have a significant effect’ is sufficient.

Idaho Sporting Cong. v. Thomas, 137 F.3d 1146, 1149-50 (9th Cir. 1998) (citations omitted) (emphasis original). Given the magnitude of the proposed action and possible direct, indirect and cumulative impacts to both the natural environment and human communities, BLM and the Forest Service’s proposed finding of no significant impact (FONSI) is completely unsupported.

Critically, the UFO has also failed to “put forth a convincing statement of reasons’ that explains why the project will impact the environment no more than insignificantly. This account proves crucial to evaluating whether the [agency] took the requisite ‘hard look.’ ” *Ocean Advoc. v. U.S. Army Corps of Engrs.*, 402 F.3d 846, 864 (9th Cir. 2005). Nowhere in BLM and the Forest Service’s EA does there exist a convincing statement explaining the insignificance of impacts from this project. If BLM proceeds in its refusal to perform an EIS, it must provide a detailed accounting of each NEPA significance factor, as provided in 40 C.F.R. § 1508.27, explaining why the project will impact the environment no more than insignificantly. The cursory and evasive manner in which BLM has addressed these significance factors in the EA unsigned FONSI is insufficient to meet the agency’s NEPA mandate.

Under NEPA, agencies “must analyze not only the direct impacts of the proposed action, but also the indirect and cumulative impacts of ‘past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions.’” *Wyoming v. U.S. Dept. of Agriculture*, 661 F.3d 1209, 1251 (10th Cir. 2011) (citing *Colorado Environmental Coalition v. Dombeck*, 185 F.3d 1162, 1176 (10th Cir. 1999) (quoting 40 C.F.R. § 1508.7)); *see also* 40 C.F.R. § 1508.25 (c) (stating that the “scope” of an EIS includes consideration of “cumulative” impacts). Where “several actions have a cumulative ... environmental effect, this consequence must be considered in an EIS.”

Neighbors of Cuddy Mountain v. U.S. Forest Service, 137 F.3d 1372, 1378 (9th Cir. 1998) (citing *City of Tenakee Springs v. Clough*, 915 F.2d 1308, 1312 (9th Cir. 1990)); *see also* 40 C.F.R. § 1508.25(a) (stating that the “scope” of an EIS includes consideration of “connected actions”). The purpose of this requirement is to prevent agencies from dividing one project into multiple individual actions “each of which individually has an insignificant environmental impact, but which collectively have a substantial impact.” *Thomas v. Peterson*, 753 F.2d 754, 758 (9th Cir.1985). As provided in Citizen Groups’ earlier comments, an EIS incorporating all oil and gas development in the greater North Fork Valley area is required—particularly because the UFO is still operating from a stale 1989 Resource Management Plan (RMP), and the Grand Mesa, Uncompahgre and Gunnison National Forests (GMUG) is operating from a 1991 Amended Land and Resource Management Plan (LRMP)—both of which fail to address oil and gas development in the present context, and thus puts into serious question the accuracy of the agency’s reasonably foreseeable development assumptions, consideration of alternatives, and hard look analysis at resource impacts. *See* EA at 9-10.

Failure to include cumulative impacts of *all* the leasing and permitting decisions “impermissibly subjects the decisionmaking process contemplated by NEPA to ‘the tyranny of small decisions.’” *Kern v. BLM*, 284 F.3d 1062, 1078 (9th Cir. 2002); *see also* *NRDC*, 865 F.2d at 297-298. Indeed, the Supreme Court has held that, under NEPA, an agency not only has a duty to consider cumulative impacts, but also a separate duty, applicable here, to consider those impacts in a single NEPA process:

proposals for ... related actions that will have cumulative or synergistic environmental impact upon a region concurrently pending before an agency must be considered together. Only through comprehensive consideration of pending proposals can the agency evaluate the different courses of action.

Kleppe v. Sierra Club, 427 U.S. 390, 410, 96 S.Ct. 2718, 2730, 49 L.Ed.2d 576 (1976). In the present case, the proposed NFMMDP comes within the context of broader proposed and ongoing oil and gas development in the area of the North Fork Valley. Moreover, given the proximity of the NFMMDP to other area development, it is also likely that other extraction infrastructure, such as roads, power lines, evaporation ponds, pipelines, may be shared. If so, these are connected, as well as cumulative, actions—currently segmented, improperly, into separate decisionmaking processes—and must be considered under a single comprehensive EIS. 40 C.F.R. §§ 1508.25(a)(1), (2).

Although a comprehensive, programmatic EIS is currently being prepared through the revision of the UFO RMP, and the GMUG is also presently engage in LRMP revision, those processes have not yet been completed, and therefore the agency is still operating under its stale plans. As detailed in Citizen Groups Scoping Comments, a moratorium on all oil and gas development within the UFO is required, pending revisions to the UFO RMP/EIS and GMUG LRMP/EIS. Proceeding with oil and gas development while the plans revisions are pending would prejudice the ultimate decision and limit the choice of alternatives considered in the RMP/EIS. 40 C.F.R. §1506.1.

NEPA requires that, until an agency issues a Record of Decision for a pending NEPA document, “no action concerning the proposal shall be taken which would: (1) have an adverse environmental impact; or (2) limit the choice of reasonable alternatives.” 40 C.F.R. § 1506.1(a)(1), (2). NEPA prohibits agencies from making an “irreversible and irretrievable commitment of resources.” 40 C.F.R. §§ 1502.2(f); *Conner v. Burford*, 848 F.2d 1441, 1446 (9th Cir. 1986); *see also Pacific Rivers Council v. Thomas*, 30 F.3d 1050, 1056-57 (9th Cir. 1994), *cert. denied*, 115 S. Ct. 1793 (1995) (interpreting identical language in ESA). “The purpose of an EIS is to apprise decisionmakers of the disruptive environmental effects that may flow from their decisions at a time when they ‘retain[] a maximum range of options.’” *Conner*, 848 F.2d at 1446. Taking actions in the interim which could limit those options undermines the purpose and effectiveness of the NEPA process.

BLM defends its choice to prepare an EA, stating: “The Colorado BLM typically follows the approach of preparing an EA for specific oil and gas projects such as the NFMMDP. . .” And that, “[t]he decision to analyze the Proposed Action in an EA is supported by the location, scale, intensity, and duration of the project, the use of technologies widely and successfully applied in the oil and gas industry, and the wide range of BLM/Forest Service and State of Colorado protection for surface and subsurface resources and for human health.” EA at 12. Yet, other than general statements, BLM offers no defense of its failure to prepare an EIS, and fails to evaluate its choice within the context of NEPA significance factors. 40 C.F.R. § 1508.27. Notably, this failure comes despite the agency’s recognition of uncertainty concerning the significance of cumulative impacts: “The uncertainty around subsequent development in or near the NFMMDP area remains and has increased as GELLC continues to evaluate how best to plan and design future projects.” EA at 12. In addition, the anticipated size and scale of the NFMMDP as originally proposed to the BLM and USFS by GELLC is on par with the adjacent Bull Mountain MDP, which did undergo an EIS. Documents obtained through a Freedom of Information Act reveal that second phase 104-well development was sufficiently sketched out to be reasonably foreseeable, yet the BLM advanced a piecemeal approach to the environmental analysis, which is exactly what the NEPA requirement on cumulative impacts is intended to avoid.¹

B. BLM Must Take a Hard Look at the Direct, Indirect, and Cumulative Impacts of Oil and Gas Development.

The National Environmental Policy Act (“NEPA”), 42 U.S.C. § 4321 *et seq.*, and its implementing regulations, promulgated by the Council on Environmental Quality (“CEQ”), 40 C.F.R. §§ 1500.1 *et seq.*, is our “basic national charter for the protection of the environment.” 40 C.F.R. § 1500.1. Recognizing that “each person should enjoy a healthful environment,” NEPA ensures that the federal government uses all practicable means to “assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings,” and to “attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences,” among other policies.

¹ Original *North Fork Mancos Delineation Project Master Development Plan for Oil and Gas DOI-BLM-CO-N040-2016-XXXX-EA*, submitted by GELLC in June 2016, (attached as Exhibit 16).

43 U.S.C. § 4331(b).

NEPA regulations explain, in 40 C.F.R. §1500.1(c), that:

Ultimately, of course, it is not better documents but better decisions that count. NEPA's purpose is not to generate paperwork – even excellent paperwork – but to foster excellent action. The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment.

Thus, while “NEPA itself does not mandate particular results, but simply prescribes the necessary process,” *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989), agency adherence to 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*, 490 U.S. at 350 (citations omitted) (emphasis added). These “environmental consequences” may be direct, indirect, or cumulative. 40 C.F.R. §§ 1502.16, 1508.7, 1508.8. A cumulative impact—particularly important here—is defined as:

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. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

40 C.F.R. § 1508.7.

Federal agencies determine whether direct, indirect, or cumulative impacts are significant by accounting for both the “context” and “intensity” of those impacts. 40 C.F.R. § 1508.27. Context “means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality” and “varies with the setting of the proposed action.” 40 C.F.R. § 1508.27(a). Intensity “refers to the severity of the impact” and is evaluated according to several additional elements, including, for example: unique characteristics of the geographic area such as ecologically critical areas; the degree to which the effects are likely to be highly controversial; the degree to which the possible effects are highly uncertain or involve unique or unknown risks; and whether the action has cumulatively significant impacts. *Id.* §§ 1508.27(b).

Citizen Groups provided detailed scoping comments on a large number of potential impacts to resource values in the project area, many of which BLM failed to include or sufficiently address in the NFMMDP draft EA. These technical comments and associated expert reports are reiterated and included by reference. In addition, Citizen Groups would like to address several of these resources in greater detail, below.

1. Human Health and Safety Impacts

BLM and Forest Service's draft EA was devoid of meaningful analysis on the many human health impacts that may result from implementation of the NFMMDP project. The draft EA stated: "For both human health and safety and regionally important organic and other agriculture, potential sources of impacts are associated primarily with changes in air quality, surface water and groundwater quality, and the transportation, use, and generation of hazardous materials, the last also primarily by air or water-borne exposure pathways. Potential impacts on climate were also mentioned by a number of commenters. The BLM, Forest Service, and State of Colorado manage oil and gas projects specifically to minimize the potential for human and environmental impacts." EA at 13. Despite this recognition, no specific analysis or mitigation measures were provided or suggested by the agency.

In the absence of this analysis, BLM and Forest Service identified "[s]ome of the protections are captured in lease stipulations, but many more are contained in the suite of surface-use COAs attached to the EA in Appendix A and, if it is approved, applied and enforced in connection with subsequent permits and other land use authorizations." EA at 13. Such a list of measures is insufficient to demonstrate serious risks to human health and the environment are not significant. "A 'perfunctory description,' or 'mere listing of mitigation measures, without supporting analytical data,' is insufficient to support a finding of no significant impact." *National Parks & Conservation Ass'n v. Babbitt*, 241 F.3d 722, 735 (9th Cir. 2001). The court, when determining the sufficiency of the mitigation measures, considers "whether they constitute an adequate buffer against the negative impacts that may result from the authorized activity. Specifically, [the court] examine[s] whether the mitigation measures will render such impacts so minor as to not warrant an EIS." *Id.*; see also, *Hill v. Boy*, 144 F.3d 1446, 1451 (11th Cir.1998) (explaining that where an agency relies on an assumption to reach a FONSI, the assumption must be supported by substantial evidence). Moreover, the proposed mitigation underlying the FONSI "must be more than a possibility" in that it is "imposed by statute or regulation or have been so integrated into the initial proposal that it is impossible to define the proposal without mitigation." *Wyoming Outdoor Council v. U.S. Army Corps of Eng'rs*, 351 F.Supp.2d 1232, 1250 (D.Wyo. 2005).

BLM recognized that "[n]ear-field HAP (benzene, toluene, ethyl benzene, xylenes, n-hexane, and formaldehyde) emissions from production operations were evaluated for purposes of assessing impacts in the immediate vicinity of the project area for both short-term (acute) exposure assessment and for calculation of long-term human health risk." EA at 55. And later concluded "[t]he estimated risk for both the most likely exposure and the maximum exposed individual scenarios are below a one-in-one-million cancer risk level." EA at 55. No further detail or analysis was provided. This dismissive approach is inconsistent with the body of research and information provided in Citizen Groups' scoping comments. See Scoping Comments at 15-20 (providing information and reports for air pollutant related impacts), 66-72 (providing information and reports on fracking related impacts), and 128-132 (providing information and reports on human health impacts related to oil and gas development); see also Expert Declaration of Dr. Carol Kwiatkowski, PhD (summarizing research regarding human health related impacts of oil and gas development, for submission to the court in *Western Organization of Resource Councils v. U.S. Bureau of Land Management*, Case No. 4:16-cv-

00021-BMM (D. Mont.) (May 25, 2018)) (attached as Exhibit 1).

Moreover, oil and gas development and associated infrastructure can also be a serious safety hazard if it is not properly installed, managed, and maintained. For example, in April 2017 a fatal explosion occurred in a subdivision of Firestone, Colorado that destroyed a home, killing two people.² The explosion was caused by an abandoned flow line, which was cut, uncapped, yet still connected to a natural gas well, which leaked gas into the house.³ Shareholders subsequently filed a class action lawsuit against Anadarko Petroleum, the company responsible for the explosion.⁴ The lawsuit alleges that the company, “Colorado’s largest energy driller[,] put profits over safety, creating massive risks.”⁵ The complaint states: “After oil prices collapsed, Anadarko reconsidered its commitment to safety. It slashed the remediation budget . . . [and] did not consider safety threats in determining which few wells to remediate, even though many of these wells were located near houses or schools.”⁶

Former Anadarko employees corroborated Anadarko’s lax approach to safety, noting that the company maintained inadequate staff and resources in Colorado, failed to inspect equipment or inform regulators of safety risks, and “kept faulty wells in production to avoid having to renegotiate leases.”⁷ These troubling allegations compound public concerns about the safety of oil and gas operations in Colorado, and suggest that companies that dismiss safety risks may operate for years, escaping scrutiny until an incident like the Firestone explosion sheds light on their disregard for public safety.

The rapid growth of Colorado’s oil and gas industry, coupled with the state’s population boom, has subjected more and more people to oil and gas safety risks. Other tragedies of comparable or greater magnitude may occur as a result of poorly maintained pipelines near occupied buildings: “After the Firestone disaster, data that Colorado regulators obtained from oil and gas companies reveal 120,815 underground flowline segments within 1,000 feet of buildings. The data show 428 segments failed integrity tests.”⁸

² Bruce Finley, *Deadly Firestone explosion caused by odorless gas leaking from cut gas flow pipeline*, DENVER POST (May 2, 2017), <https://www.denverpost.com/2017/05/02/firestone-explosion-cause-cut-gas-line/>. See also Mike Lee and Mike Soraghan, *Abandoned gas line caused Colo. home explosion*, E&E NEWS (May 3, 2017), available at: <https://www.eenews.net/stories/1060053963>.

³ *Id.*

⁴ *Edgar v. Anadarko Petroleum Co.*, No. 4:17-cv-01372 (S.D. Tex. Nov. 2, 2017).

⁵ Christopher Osher, *Former Anadarko employees say safety sacrificed for profits in run up to fatal home explosion in Firestone*, DENVER POST (May 8, 2018), <https://www.denverpost.com/2018/05/08/anadarko-firestone-home-explosion-safety-profits/>.

⁶ *Edgar*, 4:17-cv-01372 at *9.

⁷ Susan Greene, *Former Anadarko brass slam company for safety risks, callousness*, COLORADO INDEPENDENT (May 8, 2018), <http://www.coloradoindependent.com/170106/anadarko-firestone-explosion-safety-lawsuit>.

⁸ Bruce Finley, *A dozen fires and explosions at Colorado oil and gas facilities in 8 months since fatal blast in Firestone*, DENVER POST (Dec. 6, 2017),

Indeed, the Firestone explosion was not an isolated incident: state records showed that at least a dozen explosions and fires—two of which killed workers—occurred along oil and gas pipelines in the eight months following the Firestone explosion.⁹ Oil and gas production has quadrupled in Colorado since 2012, and as operations proliferate in populated areas, there is growing public concern about the risks to Colorado residents.¹⁰ The costs of disasters like the Firestone explosion include property damage, injuries, and death, as well as public anxiety about future safety risks. These health and safety risks remain unrecognized and unaddressed in BLM and Forest Service’s draft EA. *See* Scoping Comments at 73 (including information on pipeline safety risks).

2. Air Quality Impacts

The BLM and Forest Service failed to take a hard look at the air quality impacts from oil and gas leasing and development in the planning area, and failed to consider the Citizen Groups detailed Scoping Comments on air quality resources, at 13-20, incorporated herein. 40 C.F.R. § 1506.6.

With respect to the NFMMDP, BLM offers that “[t]he primary pollutants emitted during development would be PM10, PM2.5, nitrogen oxides (NOX), CO, SO2, volatile organic compounds (VOCs), and HAPs, including benzene, toluene, ethyl benzene, xylenes, n-hexane, and formaldehyde. These activities would temporarily elevate pollutant levels, but impacts would be localized and would occur only for the short-term duration of development.” EA at 52. “When maximum modeled concentrations from the modeled scenarios are added to representative background concentrations, it is demonstrated that the total ambient air concentrations are less than the applicable NAAQS and CAAQS.” EA at 53.

BLM relies on adaptive management of the Comprehensive Air Resource Protection Protocol (“CARPP”) for the NFMMDP. In general, CARPP is a reactive management tool, as opposed to a proactive one. There is very little required action in the CARPP unless or until an exceedance of a National Ambient Air Quality Standard (“NAAQS”) is recorded, making it ineffective as a tool to ensure air quality protection. And even when an air quality exceedance of the NAAQS is recorded, the BLM has established many opportunities for non-action. The discretionary nature of the CARPP is very concerning, especially when it is relied upon as a primary means for protecting air resources and used by BLM to justify not proposing additional management actions to address significant impacts shown in the impact analysis. BLM must establish a comprehensive set of mitigation measures that ensures no significant air quality impacts from the proposed development would occur based on the best currently-available analysis tools, and should then use the CARPP as a means to improve upon and update those measures, as needed, based on periodic and specific monitoring and modeling commitments that the agency agrees to implement.

<https://www.denverpost.com/2017/12/06/colorado-oil-gas-explosions-since-firestone-explosion/>.

⁹ *Id.*

¹⁰ *Id.*

As part of the adaptive management strategy for managing air resources within the BLM planning areas, the BLM conducted a regional air modeling study to evaluate potential impacts on air quality from future mineral development in Colorado and northern New Mexico. The CARMMS (BLM 2017) assesses predicted impacts on air quality and AQRVs from projected oil and gas development. EA at 140.

Table 36. Oil and Gas Emissions (tpy) from the Colorado BLM Planning Areas, SUIT Land, and Mancos Shale for CARMMS 2025 High Development Scenario

<i>Scenario</i>	<i>NO_x</i>	<i>VOC</i>	<i>CO</i>	<i>SO₂</i>	<i>PM₁₀</i>	<i>PM_{2.5}</i>
Federal Wells	33,919	57,948	30,459	1,387	9,492	2,310
Non-Federal Wells	98,574	193,929	128,019	407	56,900	10,666
All Wells	132,493	251,877	158,478	1,794	66,392	12,977

BLM concluded: “As indicated in the CARMMS report, the maximum contribution to year 2025 regional ozone formation from the UFO planning area Federal land oil and gas sources is 0.8 ppb, which occurs near the project area. However, given that the UFO planning area Federal land oil and gas emissions include 501 tpy NO_x and 393 tpy VOCs and that the maximum future year emissions from project sources include 105.5 tpy NO_x and 14.0 tpy VOCs (combined construction and production emissions), the contribution to regional ozone formation from project sources would be expected to be less.” EA at 142.

BLM should commit to implementation of specific and enforceable management actions that ensure no significant impacts to air quality and air quality related values—as determined by air quality modeling—in the RMP/EIS. The CARPP should only be used as a tool to improve upon and adapt these management actions as more and improved data become available. Specifically, BLM must consider Best Management Practices (BMPs) to ensure that human health and the environment are protected from oil and gas drilling over the life of the NFMMDP project, as detailed in Citizen Groups’ Scoping Comments.

Background concentrations of ozone in the Uncompahgre planning area are already at or exceed the National Ambient Air Quality Standards (“NAAQS”), leaving virtually no room for growth in emissions. See EA at 49 (Table 9). BLM identifies “[t]he primary pollutants emitted during development would be PM₁₀, PM_{2.5}, nitrogen oxides (NO_x), CO, SO₂, volatile organic compounds (VOCs), and HAPs, including benzene, toluene, ethyl benzene, xylenes, n-hexane, and formaldehyde. These activities would temporarily elevate pollutant levels, but impacts would be localized and would occur only for the short-term duration of development.” EA at 52. BLM ultimately concludes that “[w]hen maximum modeled concentrations from the modeled scenarios are added to representative background concentrations, it is demonstrated that the total ambient air concentrations are less than the applicable NAAQS and CAAQS.” EA at 53.

However, given the increasing development in the area, there may be higher concentrations that should be reflected. Of particular concern, background concentrations of ozone in the area are already at or exceed the NAAQS, leaving virtually no room for

growth in emissions as contemplated by the subject APDs. *See* Scoping Comments at 15. Indeed, the EA discloses background ozone levels from monitoring conducted between 2013-2015 at the Palisade monitor of 126 ug/m³. EA at 49. The ozone NAAQS/CAAQS threshold is 137 ug/m³. *Id.* Moreover, there is very little wintertime ozone monitoring in the area, and the scant wintertime monitoring that exists shows elevated ozone concentrations. BLM may not avoid including winter ozone modeling, even if information about winter ozone levels is incomplete. According to NEPA regulation, if an estimation of reasonably foreseeable significant adverse impacts cannot be obtained because, among other things, the means to obtain it are “not known,” BLM has an obligation to include an evaluation “based upon theoretical approaches or research methods generally accepted in the scientific community,” provided that “the analysis of the impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason.” 40 C.F.R. § 1502.22. These methods of dealing with incomplete information are required under NEPA and must be thoroughly exercised before drawing the conclusion that a wintertime ozone analysis cannot be included in the RMP/EIS. *See id.*

There is no room for growth in emissions that contribute to these harmful levels of ozone pollution in the area—namely, nitrogen oxides (“NO_x”) and volatile organic compounds (“VOCs”). Any increase in emissions of ozone precursors will exacerbate the negative health effects of ozone in the region, as discussed below, and is almost certain to threaten the area’s compliance with the EPA’s ozone standard. *See* Scoping Comments at 15-20. In addition to ozone precursors, the EA also discloses maximum modeled levels of nitrogen dioxide (NO₂) pushing the limit of the 1-hour NO₂ NAAQS in Table 13. EA at 54. NO₂ deposition is the primary contributor to acid rain which can cause serious environmental, water quality and health impacts.¹¹

3. Carbon Pollution, Climate Change, and Economic Impacts

Citing to the United Nations Intergovernmental Panel on Climate Change (IPCC), BLM’s draft EA recognized: “The findings presented in the AR5 indicate that warming of the climate system is unequivocal and many of the observed changes are unprecedented over decades to millennia.” EA at 50. BLM further recognized that “[i]t is extremely likely (95 to 100% probability) that human influence has been the dominant cause of the observed warming since the mid-20th century (IPCC 2013).” EA at 51. BLM provided the following table quantifying project emissions:

¹¹ U.S. Environmental Protection Agency, Nitrogen Dioxide Pollution Effects, available at <https://www.epa.gov/no2-pollution/basic-information-about-no2#Effects> (accessed June 6, 2018).

Table 16. GHG Emissions

<i>Pollutant</i>	<i>GWP</i>	<i>Development Emissions (metric tpy)</i>	<i>Production Emissions (metric tpy)</i>	<i>Downstream Emissions (metric tpy)</i>
CO ₂	1	9,837.9	22,084.9	6,468,506.3
CH ₄	36	3.2	87.7	122.0
N ₂ O	298	0.07	0.05	12.2
CO ₂ e (total)		9,975	25,257	6,476,534

However, BLM failed to take the critical next step by providing context for the magnitude and intensity of these greenhouse gas (GHG) emissions.

BLM determines whether direct, indirect, or cumulative impacts are significant by accounting for both the “context” and “intensity” of those impacts, 40 C.F.R. § 1508.27, as required to inform the decisionmaking process and the public about the significance of GHG pollution and associated impacts from climate change. Later, BLM offers: “While significance levels exist to determine PSD applicability and emissions control requirements for GHGs, policies regulating specific GHG concentration levels and their potential for significance with respect to regional or global impacts have not been established for GHGs.” EA at 143. “The fact that climate change is largely a global phenomenon that includes actions that are outside of the agency’s control does not release the agency from the duty of assessing the effects of its actions on global warming within the context of other actions that also affect global warming.” *Ctr. for Biological Diversity*, 538 F.3d at 1217 Here, BLM failed to provide any “detailed information” on cumulative GHG impacts, *Neighbors of Cuddy Mountain v. U.S. Forest Serv.*, 137 F.3d 1372, 1379 (9th Cir. 1998), which is far below the threshold of “meaningful analysis” that federal courts demands. *Grand Canyon Trust v. FAA*, 290 F.3d 339, 341, 345 (D.C. Cir.2002).

To avoid this analysis, BLM stated: “Research on climate change impacts is an emerging and rapidly evolving area of science, but given the lack of adequate analysis methods, it is not possible to identify specific local, regional, or global climate change impacts based on potential GHG emissions from any specific project’s incremental contributions to the global GHG burden. Moreover, specific levels of significance have not yet been established by regulatory agencies. Therefore, climate change analysis for the purpose of this analysis is limited to accounting for GHG emission changes that would contribute incrementally to climate change.” EA at 57. Although climate attribution models continue to improve in their ability to assign specific *localized* impacts to climate change, focusing on any current shortcomings in these models to avoid analyzing the severity of emission impacts is not only disingenuous, but also misses the point of NEPA. *See Scientists’ Inst. for Pub. Info.*, 481 F.2d at 1092. Indeed, and contrary to BLM’s assertions, measures do exist for evaluating the extent and severity to which project-specific GHG emissions contribute to broader atmospheric and environmental degradation, even where those emissions make up only a small fraction of national or global emissions.

As detailed in Citizen Groups’ scoping comments, one of the measuring standards available to the agency for analyzing the magnitude and severity of BLM-managed oil and gas

emissions is by applying those emissions to the remaining global carbon budget. *See* Scoping Comments at 28-37. BLM arbitrarily failed to address carbon budgeting in its draft EA. Meaningful analysis of any new fossil fuel project, including the NFMMDP, in the context of carbon budgeting demonstrates that no additional leasing and development can be authorized if we have any hope of staying below scientifically backed warming thresholds. While Citizen Groups recognize that, at the drilling stage, BLM’s authority may be more constrained by valid existing lease rights, these lease rights are not unlimited. Pursuant to the Mineral Leasing Act (MLA), the Secretary of the Interior has discretion to determine where, when, and under what terms and conditions mineral development should occur. 43 C.F.R. § 3101.1-2; 30 U.S.C. § 226(a). The grant of rights in a federal mineral lease is subject to a number of reservations of authority to the federal government, including reasonable measures concerning the timing, pace, and scale of development. *Id.*

The second measure available to BLM to evaluate the magnitude and severity of GHG emissions was the social cost of carbon protocol (“SCC”) and social cost of methane, both of which BLM also arbitrarily failed to apply. *See* Scoping Comments at 41-47. The social cost of carbon is based on peer-reviewed scientific and economic studies, and its use has been upheld in federal court. *Zero Zone Inc. v. Dept. of Energy*, 832 F.3d 654, 677-78 (7th Cir. 2016). Although the social cost of carbon does not include all climate damages—and thus undervalues total costs¹²—it is a valuable tool for estimating the social cost of GHG emissions.¹³ It has been used in project-level environmental impact analyses and other applications; for example, in 2017 the Colorado Public Utility Commission ordered Xcel Energy to use the social cost of carbon to put a price on future power plant emissions.¹⁴ Here, using the IWG’s central value of \$43 per ton of CO₂ and applying that to the total project emissions BLM quantified in table 16, the social cost of the project results in \$280,005,938 of harm per year. *See* Scoping Comments at 44. Using the Stanford University study suggesting a more complete estimate of costs at \$220 per ton, the damage balloons to \$1,302,353,200 per year. *See* Scoping Comments at 45.

Notably, for carbon dioxide equivalent emissions of other GHG pollutants, BLM relies on a global warming potential (GWP). This calculation is premised on a GHG’s ability to contribute to global warming, based on its longevity in the atmosphere and its heat trapping capacity. In order to aggregate GHG emissions and assess their contribution to global warming, BLM offered the following: “The CO₂e emissions for a GHG are derived by multiplying its emissions by the associated GWP. The GWPs for the inventoried GHGs are CO₂:1, CH₄:36, N₂O:298 (IPCC 2013).” EA at 57. Although BLM correctly applied warming potentials from the IPCC AR5, in particular providing a 100-year warming potential for methane of 36, the

¹² Chelsea Harvey, *Should the Social Cost of Carbon be Higher?*, SCIENTIFIC AMERICAN (Nov. 22, 2017), <https://www.scientificamerican.com/article/should-the-social-cost-of-carbon-be-higher/> (summarizing studies).

¹³ *See, e.g., High Country Conservation Advocates v. U.S. Forest Serv.*, 52 F. Supp. 3d 1174, 1190-91 (D. Colo. 2014) (explaining the value of the social cost of carbon in environmental impact analyses).

¹⁴ Herman Trabish, *Colorado regulators seize the climate fight in landmark ruling on carbon costs*, UTILITY DIVE (May 25, 2017), <https://www.utilitydive.com/news/colorado-regulators-seize-the-climate-fight-in-landmark-ruling-on-carbon-co/443186/>.

agency failed to also provide calculations based on methane's 20-year warming potential of 87. *See* Scoping Comments at 53-57. By applying the 20-GWP for methane, rather than just the 100-year GPW, total CO₂e emissions for methane increase from 7,664.4 tpy to 18,522.3 tpy, a 142% increase. BLM's NEPA analysis must provide 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", and requires and agency to ensure "scientific integrity" in the analyses contain in the NEPA analysis. 40 C.F.R. §§ 1500.1(b), 1502.24. NEPA finds relevant "both short- and long-term effects." 40 C.F.R. § 1508.27(a). As recently recognized in the District of Montana, "BLM's unexplained decision to use the 100-year time horizon, when other more appropriate time horizons remained available [i.e., 20-year], qualifies as arbitrary and capricious under these circumstances. BLM's unexplained decision to use the 100-year time horizon further fails to satisfy NEPA's purpose of 'foster[ing] informed decision-making.'" *Western Organization of Resource Councils v. U.S. Bureau of Land Management*, Case No. 4:16-cv-00021-BMM (D. Mont.) (March 26, 2018) at 41.

Also left unaddressed in BLM's draft EA is the economic harms that climate change can have on other sectors of Colorado's economy. Outdoor recreation and tourism is a powerful economic driver in Colorado, which attracts residents and draws visitors from around the world to enjoy the state's outstanding scenery, natural resources, and recreational opportunities. Skiing and snowboarding, mountain climbing, hunting, fishing, hiking, and other recreational activities support local businesses, attract tourists, and help retain residents. Over 70% of Colorado residents participate in outdoor recreational activities,¹⁵ and a recent study found that a majority of residents in nine rural Colorado counties moved there from other states because they enjoyed the environment, recreational opportunities, and access to public lands.¹⁶ In 2015, Governor Hickenlooper recognized the economic and cultural importance of outdoor recreation in Colorado by establishing the Colorado Outdoor Recreation Industry Office.¹⁷

Colorado's outdoor recreation industry already contributes tens of billions of dollars to the state's economy every year,¹⁸ and this amount will likely increase as the state's population grows.¹⁹ Outdoor recreation is a key economic sector in Colorado and generates substantial economic benefits:

- \$28.0 billion in annual consumer spending
- \$9.7 billion in wages and salaries

¹⁵ Outdoor Industry Association, *Colorado* (2017), <https://outdoorindustry.org/state/colorado/>.

¹⁶ Lauren Davies, *Professors delve into Colorado migration in new study: population study shows how residents feel about rural Colorado*, THE CRITERION (Apr. 6, 2018), <http://thecrite.com/coloradomesau/professors-delve-into-colorado-migration-in-new-study/>.

¹⁷ Colorado Outdoor Recreation Industry Office, <https://choosecolorado.com/programs-initiatives/outdoor-recreation-industry-office/>.

¹⁸ Outdoor Industry Association, *Colorado* (2017), <https://outdoorindustry.org/state/colorado/>.

¹⁹ Kevin Hamm, *Colorado's population tops 5.6 million, according to Census figures*, DENVER POST (Mar. 22, 2018), <https://www.denverpost.com/2018/03/22/colorado-population-2017-census/>.

- \$2.0 billion in state and local tax revenue
- 229,000 direct jobs²⁰

Notably, outdoor recreation is a larger contributor to Colorado's economy than the oil and gas industry. According to a 2015 study, the oil and gas industry contributed \$15.8 billion in production value, \$4.1 billion in employee income, almost \$1.2 billion in public revenue (including leases, royalties, and taxes), and 38,659 direct jobs in the state.²¹ Outdoor recreation outperforms oil and gas on all of these metrics, generating more than twice as much employee income, over \$8 million more public revenue, and nearly six times as many direct jobs as the oil and gas industry. Consumer spending on outdoor recreation was over \$12 billion more than the production value of oil and gas in Colorado.

Although outdoor recreation is a powerful and growing economic force in Colorado, the industry faces an increasingly serious threat from climate change.²² Oil and gas development contributes directly to this threat. The public health and environmental impacts of oil and gas development also harm outdoor recreation by limiting opportunities to access and recreate on public lands.

Major impacts of climate change in Colorado include decreased snowpack and water supply, higher temperatures, heat waves, droughts, wildfires, and insect infestations,²³ all of which negatively affect outdoor recreation. In 2017, Colorado had its lowest snowpack average in 37 years, its third warmest year overall, and its warmest February and November ever recorded.²⁴ Snowpack is declining as warm autumn days linger and spring arrives earlier. This can have devastating economic consequences for the state's ski resorts, which are already forced to open later and operate for fewer days.²⁵ Lack of snow has already cost the ski industry millions of dollars, and operators are concerned that warming temperatures will eventually render the state's ski resorts uneconomic.²⁶

²⁰ Outdoor Industry Association, *Colorado* (2017), <https://outdoorindustry.org/state/colorado/>.

²¹ Richard Wobbekind & Brian Lewandowski, *Oil and Gas Industry Economic and Fiscal Contributions in Colorado by County, 2014: Report for the Colorado Oil and Gas Association*, 2 (Dec. 2015), <http://www.coga.org/wp-content/uploads/2015/12/COGA-2014-OG-Economic-Impact-Study.pdf> (attached as Exhibit 2).

²² Amber Childress et al., *Colorado Climate Change Vulnerability Study* 137 (2015), http://wwa.colorado.edu/climate/co2015vulnerability/co_vulnerability_report_2015_final.pdf (attached as Exhibit 3).

²³ EPA, *What Climate Change Means for Colorado*, <https://19january2017snapshot.epa.gov/sites/production/files/2016-09/documents/climate-change-co.pdf> (attached as Exhibit 4).

²⁴ Michael Sakas, *Colorado Just Had Its 3rd Warmest Year Ever*, COLORADO PUBLIC RADIO NEWS (Jan. 9, 2018), <https://www.cpr.org/news/story/colorado-just-had-its-3rd-warmest-year-ever>.

²⁵ Eddie Pells, *Lack of snow could cost Colorado ski towns \$154 million in revenue, NRDC finds*, ASSOCIATED PRESS (Dec. 19, 2017), <https://theknow.denverpost.com/2017/12/19/lack-of-snow-ski-revenue/170514/>.

²⁶ *Id.*

Climate impacts also threaten warm-weather recreation in Colorado. Heat waves can cause serious health impacts, particularly in children and other vulnerable groups, and reduce people's ability to engage in outdoor activities.²⁷ Wildfires can severely impair air quality and endanger public health, forcing people to stay indoors.²⁸ Increased temperatures endanger plant and animal species, including high-elevation species such as the pika;²⁹ the decline of such species reduces wildlife watching opportunities. Insect infestations—like the pine beetle outbreaks that devastated Colorado forests over the past decade—kill trees and can negatively impact the forest's ecological integrity and scenic value.³⁰ Decreased stream flows reduce opportunities for water activities such as river rafting and fishing.³¹ Specifically, the North Fork Valley economy is virtually dependent on the abundant fresh, clean water of the North Fork of the Gunnison. The North Fork Valley's climate is changing and it has already seen the impacts of warmer winters, and false springs in terms of early runoff, depleted water resources midway through the growing season, higher temperatures impacting vegetative growth, change in wildlife migration as they adapt to warmer temperatures, and resiliency of orchards to adapt to shorter winters. BLM and USFS have not considered the risk of accelerating our climate's changes by contributing methane and other greenhouse gases, to what is already a high methane output region from the West Elk Coal mine and existing oil and gas development.

Colorado's robust outdoor recreation industry provides billions of dollars in economic benefits, and both residents and visitors cherish the state's extraordinary environmental amenities. The sector will continue to provide economic benefits and contribute to the health and wellbeing of Coloradans, but the impacts of climate change—and localized environmental and health impacts of oil and gas development—threaten the long-term viability of outdoor recreation in the state. Colorado's iconic ski resorts are particularly vulnerable due to their short operating season and dependence on snowpack and cold temperatures.

In addition to these Colorado specific economic harms, BLM also failed to acknowledge the significant issues with global fossil fuel markets, stranded assets, and

²⁷ Colorado Health Institute, *Colorado's Climate and Colorado's Health: Examining the Connection* (last updated July 10, 2017), <https://www.coloradohealthinstitute.org/research/colorados-climate-and-colorados-health>.

²⁸ EPA et al., *Wildfire Smoke: A Guide for Public Health Officials* (2016), https://www3.epa.gov/airnow/wildfire_may2016.pdf.

²⁹ National Park Service, Rocky Mountain National Park, *Pika*, <https://www.nps.gov/romo/learn/nature/pikas.htm>.

³⁰ Colorado State Forest Service, *Colorado's Forest in a Changing Climate*, <https://csfs.colostate.edu/colorados-forests-changing-climate/#1475778395377-770e3e3b-4f73>; Daniel Strain, *Climate Change Sends Beetles Into Overdrive*, SCIENCE (Mar. 16, 2012), <http://www.sciencemag.org/news/2012/03/climate-change-sends-beetles-overdrive>.

³¹ Stephen Saunders & Tom Easley, The Rocky Mountain Climate Organization, *Climate Change in the Headwaters: Water and Snow Impacts*, 25 (2018), <http://www.rockymountainclimate.org/images/ClimateChangeInHeadwaters.pdf> (attached as Exhibit 5).

international finance, and how these factors can contribute to harm and uncertainty for the NFMMDP project. *See* Scoping Comments at 38-41.

4. Water Resource Impacts

Groundwater contamination is among the most serious and consequential impacts of the oil and gas drilling industry, especially where hydraulic fracturing (“fracking”) is anticipated. Accordingly, evidence of groundwater contamination from oil and gas operations must be fully analyzed by the BLM. The draft EA falls short of this goal. BLM acknowledges that “[g]roundwater resources in the area include Wasatch and Mesaverde sandstone aquifer systems and Quaternary age alluvial aquifer systems. Within the North Fork Gunnison River Basin, the thickness of the Upper Cretaceous aquifers varies from 250 to 4,500 feet.” EA 115. The agency further states that project proponent Gunnison Energy “has monitored groundwater quality in the NFMMDP project area since 2002.” EA at 115. BLM then concludes that “[c]ompliance with applicable BLM and COGCC regulations, project design features included in Section 2.2, adherence to the SPCC Plan, and the COAs (Appendix A) to protect groundwater and surface water resources would minimize risks of pollution of surface waters. These include installation of surface casing to isolate the wellbore from shallow freshwater aquifers and cementing throughout the wellbore to isolate deeper aquifers.” EA at 115.

However, BLM ignored significant risks, including an industry report prepared for NFMMDP proponent Gunnison Energy Corporation that acknowledged the potential for significant impacts to water resources from fracking. *See* Scoping Comments at 66-72. The simple fact of the matter is that natural gas development has the potential for poisoning our water with toxic, hazardous, and carcinogenic chemicals as well as naturally occurring radioactive radium, and BLM has failed to provide a thorough hard look analysis of these potentially significant impacts in its analysis for NFMMDP project. Despite BLM’s explanation that a thick layer of bedrock safely separates the gas-containing rock layer being fractured from groundwater used for drinking and surface water sources, the agency failed to sufficiently address emerging evidence that warns that contaminants from gas wells are making their way into groundwater. *See* Scoping Comments at 67-71.

Regarding surface waters, BLM states that “[a]ll releases of any substance to soil or water would be immediately reported to the BLM and, as appropriate, the Forest Service, as well as the COGCC... Spills of any kind would be cleaned up, reported, and disposed as required by Federal, State, and local regulations.” EA at 38. BLM also states that while the “USGS has not collected streamflow or surface water quality data for any of the streams in the project area,” that “[w]ater quality monitoring performed by [Gunnison Energy] since 2002.” EA at 108, 109.

Nevertheless, BLM acknowledges that there remains “a potential risk of contamination of surface water during accidental releases of the waste products or of lubricants and fuels and other chemicals that could flow into streams or ditches after spills.” EA at 113. BLM then describes how well pad construction and containment protocol would reduce risk to surrounding soils and surface waters. But the agency has failed to address several fundamental questions that are central to fulfilling its hard look mandate. It is undisputed that millions of gallons of water are needed to frack a single well. This raises several issues that BLM has

failed to fully address in the NFMMDP EA. *See State of New Mexico v. BLM*, 656 F.3d 963, 714-15 (10th Cir. 2009) (providing that the EIS failed to take hard look at water quality impacts from proposed oil and gas lease sale where wells would generate significant amounts of waste water). Likewise, the BLM does not quantify, nor fully address, the risk of potentially catastrophic spills and blowouts at well sites. This is a serious error because such major spills are not uncommon in natural gas drilling.

5. Fracking Impacts

Citizen Groups provided detailed technical comments and associated reports on hydraulic fracturing, which BLM failed to meaningfully address. *See* Scoping Comments at 64-78. BLM's draft EA offered some description of the process, as well as the target formations and fresh-water aquifers that may be impacted. EA at 118. And although BLM recognized that “[v]arious authors (e.g., Shonkoff et al. 2014) have described the potential for contamination of groundwater via HF-induced fractures,” the agency dismissed these reports, claiming that “no such contamination has been demonstrated.” This is inconsistent with the body of evidence provided by Citizen Groups. Based on its summary, BLM concluded “that use of HF technology in completions of oil and gas wells for the purpose of facilitating recovery of Federal fluid minerals does not represent a significant risk of impacts to human health and the environment.” EA at 119.

As detailed by Citizen Groups, the potential impacts that may result from hydraulic fracturing are myriad and significant, and include, among others: impacts to water quality and supply, impacts to habitat and wildlife, impacts to human health, as well as impacts to greenhouse gas emissions and air quality. *See* Scoping Comments at 66-72. Although industry often asserts that hydraulic fracturing is safe and doesn't result in contamination or harm to people and the environment—a conclusion parroted by BLM, here—a NEW YORK TIMES investigation uncovered a 1987 U.S. Environmental Protection Agency (“EPA”) report to Congress which found, among other things, that fracking can cause groundwater contamination, and cites as an example a case where hydraulic fracturing fluids contaminated a water well in West Virginia. The EPA report was further summarized and reviewed in an Environmental Working Group report, and demonstrates the long-known dangers of employing this technology to extract mineral resources. Although the Pavillion Report was never finalized, EPA shared preliminary data with, and obtained feedback from, Wyoming state officials, EnCana, Tribes, and Pavillion residents, prior to release. Even in draft form, the Pavillion Report and its troubling findings – as well as other evidence of fracking related contamination from around the country – satisfies the low threshold for consideration of the impacts described therein in the NEPA analysis.

Here, BLM offers that “COGCC-mandated sampling includes baseline samples and subsequent monitoring samples from all available groundwater sources, to a maximum of four within a 0.5-mile radius of a proposed oil and gas well, multi-well pad, or dedicated disposal well.” EA at 120. And that “[t]he proposed gas wells would target the Williams Fork, Iles, and Mancos formations for gas production. Drilling would target production zones at approximate depths between 5,000 and 10,000 feet.” EA at 123. As a water source, BLM states that “water from existing offsite water rights (Oxbow Mine or Farnsworth Construction & Gravel

Company) would be used,” and that “[w]ater from West Muddy Creek might be used during “Free River” conditions. EA at 123. But because the water is either industrial or “free”, then “no new impacts on water rights beyond those already permitted would occur.” EA at 123.

This conclusion arbitrarily ignores the body of evidence before the agency, as well as detailed information describing the unique mixture of chemicals used. Fracking fluid is a conglomeration of many highly toxic chemicals and compounds. The Endocrine Disruption Exchange (“TEDX”) has documented nearly 1,000 products energy companies inject into the ground in the process of extracting natural gas. Many of these products contain chemicals that are harmful to human health. *See* Scoping Comments at 66-67. According to TEDX:

In the 980 products identified...[for use during natural gas operations], there were a total of 649 chemicals. Specific chemical names and CAS numbers could not be determined for 286 (44%) of the chemicals, therefore, the health effects summary is based on the remaining 362 chemicals with CAS numbers...Over 78% of the chemicals are associated with skin, eye or sensory organ effects, respiratory effects, and gastrointestinal or liver effects. The brain and nervous system can be harmed by 55% of the chemicals. These four health effect categories...are likely to appear immediately or soon after exposure. They include symptoms such as burning eyes, rashes, coughs, sore throats, asthma-like effects, nausea, vomiting, headaches, dizziness, tremors, and convulsions. Other effects, including cancer, organ damage, and harm to the endocrine system, may not appear for months or years later. Between 22% and 47% of the chemicals were associated with these possibly longer-term health effects. Forty-eight percent of the chemicals have health effects in the category labeled ‘Other.’ The ‘Other’ category includes such effects as changes in weight, or effects on teeth or bones, for example, but the most often cited effect in this category is the ability of the chemical to cause death.

A Congressional Report issued in April 2011 reveals that energy companies have injected more than 30 million gallons of diesel fuel or diesel mixed with other fluids into the ground nationwide in the process of fracking to extract natural gas between 2005 and 2009. In Colorado, 1.3 million gallons of fluids containing diesel fuel were used in fracking wells. The EPA has stated that “the use of diesel fuel in fracturing fluids poses the greatest threat” to underground sources of drinking water. According to Congresswoman Diana DeGette of Colorado, fracking with diesel fuel was done without permits in apparent violation of the Safe Drinking Water Act.

In addition, recent research has identified that the mixture of chemicals from fracking fluid and produced wastewater interact in a way that can lead to soil accumulation of these chemicals. Plants may potentially absorb the chemicals.³² Fifteen chemicals often used in

³² Molly C. McLaughlin, Thomas Borch,, and Jens Blotevogel, *Spills of Hydraulic Fracturing Chemicals on Agricultural Topsoil: Biodegradation, Sorption, and Co-contaminant Interactions*, *Environ. Sci. Technol.* 2016, 50, 6071–6078.

fracking have been identified as toxic, persistent and fast-traveling.³³ Most recently, in March 2018, the 5th edition of the Physicians for Social Responsibility’s Compendium on the Impacts of Fracking on Health, 266 page review of the scientific and medical studies on fracking and health, concludes that “There is no evidence that fracking can operate without threatening public health directly or without imperiling climate stability upon which public health depends.”³⁴ Failure to address these distinctions in the NFMMDP EA is arbitrary and capricious.

6. Oil and Gas Well Abandonment

BLM and Forest Service describe that “[n]ew wells that prove unproductive or non-economic would be plugged, abandoned, and reclaimed within 90 days of well completion, weather permitting. During abandonment, each borehole would be plugged, capped, and its related surface equipment removed. . . . A well pad that no longer has a producing well or associated facilities would undergo final reclamation following plugging and abandonment. Final reclamation would commence within 1 year following plugging and abandonment of the final well on the pad.” EA at 39. The agencies offers nothing else on the topic, falling short of acknowledging and notifying the public about the full magnitude of the well abandonment crisis that exists in Colorado, and throughout the West.

Abandoned oil and gas sites pose public safety risks and impose substantial cleanup costs on Colorado state government and taxpayers. There are hundreds of confirmed abandoned oil and gas sites in Colorado; others likely exist but have not been discovered.³⁵ It is hard to precisely estimate the number of abandoned sites because they are difficult to locate, especially when roads, housing developments, and other types of infrastructure are built on top of them.³⁶ Colorado did not require GPS coordinates for active wells until 2005, so there is substantial uncertainty about the location of older wells.³⁷ The growing number of abandoned sites poses a public safety risk, especially now that human settlements occupy many former oil and gas fields. When companies abandon oil and gas sites, the sites are no longer maintained or monitored, increasing the likelihood of leaks, fires, and explosions. The fiscal responsibility for remediating these sites falls on state government—and ultimately, Colorado taxpayers.

³³ Jessica D. Rogers, Troy L. Burke, Stephen G. Osborn, and Joseph N. Ryan, *Framework for Identifying Organic Compounds of Concern in Hydraulic Fracturing Fluids Based on Their Mobility and Persistence in Groundwater*, *Environ. Sci. Technol. Lett.*, May 15, 2015

³⁴ Concerned Health Professionals of New York & Physicians for Social Responsibility. (2018, March). Compendium of scientific, medical, and media findings demonstrating risks and harms of fracking (unconventional gas and oil extraction) (5th ed.) p. 266. <http://concernedhealthny.org/compendium/>

³⁵ Joe St. George, *Oil and gas companies leaving without cleaning up sites; state believes problem will get worse*, FOX 31 (Feb. 26, 2018), <http://kdvr.com/2018/02/26/oil-and-gas-companies-leaving-colorado-without-cleaning-up-sites-state-believes-problem-will-get-worse/>.

³⁶ Stephanie Joyce & Jordan Wirfs-Brock, *Abandoned wells could have major consequences*, SUMMIT DAILY (Feb. 23, 2016), <https://www.summitdaily.com/news/abandoned-wells-could-have-major-consequences/>.

³⁷ *Id.*

Moreover, Colorado is struggling to pay for site remediation. Required bond amounts are rarely adequate to cover cleanup costs, which can lead companies to forfeit bonds rather than remediate.³⁸ Cleaning up a single abandoned site costs about \$80,000,³⁹ and costs have increased over time as average well depth has increased.⁴⁰ Colorado’s annual budget for remediating abandoned oil and gas sites is \$445,000, which only covers the cost of about ten cleanup projects.⁴¹ By comparison, Colorado estimated the cost of remediating the 244 confirmed abandoned wells at \$5.3 million annually over the next five years.⁴² As a result of this funding gap, hundreds of abandoned sites have not been addressed. Many sites may never even be discovered, let alone remediated.

Public concern over the safety risks these sites pose to Colorado residents has spurred discussion about how to hold oil and gas operators accountable for remediation costs; however, the problem has not been resolved. In 2018, Governor Hickenlooper signed a bill⁴³ that requires unspent funds in a remediation account to remain in the account, rather than being transferred.⁴⁴ But this funding tweak is just a small step in the right direction—the state’s remediation funds are still inadequate, and regulators have no mechanism to hold operators that abandon sites accountable for remediation expenses. The cost of cleaning up abandoned oil and gas sites, and the safety risks these sites pose, is a significant liability that has been passed from oil and gas operators—the entities responsible for the problem—to Colorado and its taxpayers. BLM must address these issues in its analysis of the NFMMDP project.

7. Unregulated Gas Gathering Pipelines

The Citizen Groups submitted detailed technical comments regarding the risks associated with class 1 gas gathering lines and the increased risks that arise from their exemption from state and federal pipeline safety regulations, which the BLM and USFS failed to address. *See* Scoping Comments at 117-120.

³⁸ Joshua Zaffos, “Orphaned” oil and gas wells are on the rise, HIGH COUNTRY NEWS (Jan. 16, 2018), <https://www.hcn.org/issues/50.3/energy-industry-orphaned-oil-and-gas-wells-are-on-the-rise>.

³⁹ *Id.*

⁴⁰ ECONorthwest, *Reclaiming Oil and Gas Wells on Federal Lands, Estimate of Costs*, Fig. 6 (Feb. 2018), <http://westernpriorities.org/wp-content/uploads/2018/02/Bonding-Report.pdf> (attached as Exhibit 6).

⁴¹ Jonathan Romero, *State on the hook to clean up orphan oil and gas wells in La Plata County*, DURANGO HERALD (Oct. 21, 2017), <https://durangoherald.com/articles/190438>.

⁴² Joshua Zaffos, “Orphaned” oil and gas wells are on the rise, HIGH COUNTRY NEWS (Jan. 16, 2018), <https://www.hcn.org/issues/50.3/energy-industry-orphaned-oil-and-gas-wells-are-on-the-rise>.

⁴³ HB18-1098, Roll Over Year-end Balance Envtl. Response Account, <http://leg.colorado.gov/bills/hb18-1098>.

⁴⁴ John Fryar, *Oil and gas bill to help cap “orphan wells” gets green light*, DENVER POST (Apr. 2, 2018), <https://www.denverpost.com/2018/04/02/orphan-wells-capping-bill/>.

Rural gas gathering pipelines are exempt from federal pipeline safety regulations and therefore state regulation. 49 CFR § 192. Exempt gas gathering pipelines are at higher risk of failure than regulated pipelines. See PHMSA Notice of Proposed Rulemaking on Gas Transmission and Gathering Lines 68 Fed. Reg. 20728 (April 8, 2016) (amending 49 CFR Parts 191 and 192). PHMSA and COPUC have regulatory jurisdiction over these pipelines, which they have chosen to exempt from their regulations. For clarification, we refer to exempt gas-gathering pipelines and unregulated gas-gathering pipelines interchangeably. The project estimates 1.04 miles (5519 feet) of new gathering lines, and will utilize several miles of existing, unregulated gas gathering lines. The Preliminary EA contains no indication that the agencies consulted with either PHMSA or the COPUC as a part of its analysis of the proposed gathering pipelines.

The preliminary EA fails to address deficiencies in agencies' risk management and assessment. As described in detail by Citizen Groups, under current federal and state regulations, the BLM, USFS and oil and gas operators have no way of assuring the public that rural gas gathering pipelines will be properly constructed to prevent risks of failure.⁴⁵ We know regulated and monitored pipelines fail regularly; and we have tragically and recently learned in Colorado, even small flowlines can be a grave hazard to human health and safety. In Colorado, the oil and gas industry reports an average of almost 1.5 incidents per day involving non-exempt pipelines, flowlines, and wellsites regulated by the COGCC, COPUC, or PHMSA⁴⁶ Between December 8, 2016 and December 8, 2017, there were 207 spill or release incidents involving water gathering lines, flowlines, or non-exempt gathering lines.⁴⁷ In 2016, 17,357 BBLs of produced water and 2,608 BBLs of oil were spilled in 529 total incidents reported to the COGCC.⁴⁸ In 2016, 12% of spills resulted in water contamination.⁴⁹ Despite this incident rate on non-exempt infrastructure, review of documents obtained through a Freedom of Information Act request revealed that no oil and gas operators in the Uncompahgre Field Office reported any incidents involving Class 1 rural gas gathering lines to the BLM. This lack of incident reporting is virtually certain to be the result of state and federal statutes only requiring an incident report if the release would necessitate an evacuation, and not evidence of lack of incident occurrence.⁵⁰ The BLM's lack of jurisdiction over pipeline safety does not preclude the agency from analyzing the risks of such development during the NEPA review process.

⁴⁵ See Letter from Joe Molloy, Section Chief, COPUC Pipeline Safety Program, to Natasha Leger (October 17, 2016) (attached as Scoping Comments Exhibit 305) ("Molloy Letter").

⁴⁶ *Colorado Oil and Gas Conservation Commission, Spill Analysis by Year, 1999-3rd Qtr 2017*, COGCC, available at:

<http://cogcc.state.co.us/documents/data/downloads/environmental/SpillAnalysisByYear.pdf>.

⁴⁷ COGCC database

⁴⁸ *Spill Analysis*

⁴⁹ *2016 Colorado Oil and Gas Toxic Release Tracker*, Center for Western Priorities, January 2017. (Available at: <http://westernpriorities.org/2016-colorado-oil-and-gas-toxic-release-tracker/>)

⁵⁰ 4 CCR 723-4-4911(b) Operators of Class 1 rural gathering lines are only required to report an incident if it requires evacuation of people or the closing of a road.

Under current federal and state regulations, oil and gas operators do not have an obligation to disclose incremental failures that may occur or may have occurred on exempt gas gathering pipelines.⁵¹ Non jurisdictional pipeline operators are not required to take all practicable measures to protect pipelines from “washouts, floods, unstable soil, landslides, or other hazards that may cause the pipeline to move or to sustain abnormal loads.”⁵² The Pipeline Hazardous Materials and Safety Administration (PHMSA) has exclusive jurisdiction over pipeline safety. Intrastate pipelines are delegated to the states via an interagency agreement with PHMSA called a “certification agreement.”⁵³ Neither BLM, COGCC, nor the state and federal pipeline safety inspectors have visibility into the qualification of contractors or whether the actual work performed was adequate.⁵⁴ Finally, “due to the sheer mileage of active pipeline in the United States, regulatory agencies rarely keep detailed operator maps.”⁵⁵

The Preliminary EA also fails to address risks to public safety arising from unregulated rural gas gathering pipelines. *See* Scoping Comments at 118-120. As described in detail by Citizen Groups, BLM and USFS must consider impact of extreme weather and geologic instability on pipeline integrity and subsequent risk to public safety.⁵⁶ BLM must also consider pipeline safety impacts on hikers, campers, hunters, anglers, and other recreationists utilizing public lands.⁵⁷ BLM must account for risk of pipeline explosions, and other catastrophic failures, and the increased potential for forest fires as a result.⁵⁸ The Preliminary EA fails to consider pipeline impact scenarios associated with such failures. Reports from the Gas Research Institute indicate that high consequence zones can extend up to 500’ to either side of the pipeline based on pipeline diameter and operating pressure.⁵⁹ BLM and USFS must include this high consequence impact zone analysis along with in its analysis of the increased risk of wildfire ignition along pipeline Rights of Way (ROWs). BLM and USFS must account for the risk associated with the lack of pipeline safety inspections. State pipeline safety inspectors simply do not have the authority or capacity to ensure gathering lines in rural settings are appropriately operated or maintained.⁶⁰

⁵¹ *Id.*

⁵² *See id.*; 49 CFR 192.317. *See* 49 CFR 192 for requirements applied to transmission lines and non-exempt gathering lines

⁵³ A Regulatory Review of Liquid and Natural Gas Pipelines in Colorado at 4 (December 2014) (attached as Scoping Comments Exhibit 306).

⁵⁴ Molloy Letter at 6.

⁵⁵ Molloy Letter at 7.

⁵⁶ *See* Notice of Proposed Rulemaking on Gas Transmission and Gathering Lines, 68 Fed. Reg. 20728 (April 8, 2016) (amending 49 CFR Parts 191 and 192).

⁵⁷ *Id.* at 20730

⁵⁸ *Id.* at 20728

⁵⁹ Mark J. Stephens, A MODEL FOR SIZING HIGH CONSEQUENCE AREAS ASSOCIATED WITH NATURAL GAS PIPELINES, October 2000. <http://www.pipelinesafetytrust.com/docs/C-FerCircle.pdf>

⁶⁰ *See* GAO Report, *Oil and Gas Transportation: Department of Transportation Is Taking Actions To Address Rail Safety, But Additional Actions Are Needed To Improve Pipeline Safety* (August 2014) at 27 (attached as Scoping Comments Exhibit 308).

The Preliminary EA fails to address the cumulative impact and environmental risk associated with the proposed 1.04 miles of new unregulated gathering lines along with the already existing and operational unregulated gathering lines in the area or any reasonably foreseeable future pipelines to be constructed in the area. The cumulative impacts analysis must account for the risks associated with undisclosed, incremental failures of the existing and proposed gathering lines on human health, the environment, wildlife, surface and groundwater contamination, grazing cattle, and the uptake of oil and gas chemicals by crops. 40 C.F.R. § 1502.22. The regulatory exemptions for class 1 rural gas gathering lines make this cumulative impact analysis more vital. Without proper oversight or insight into the construction or operation into the network of pipelines associated with this and other nearby development projects, how can the agencies determine the level of environmental impact associated with the NFMMDP? The agencies must properly describe their basis for impact analysis in a way that accounts for the above described risks.

In addition, while the Preliminary EA states that gas gathering pipelines will be 12 inches in diameter, constructed of welded high strength steel and coated with corrosion inhibitor chemicals, it does not state the anticipated operating pressure. The PEA takes measures to prevent pipelines from freezing but does little else to ensure that the public and the environment are properly protected against risks of pipeline failure. “All gathering pipelines would be buried to a minimum depth of 4 feet from surface to top of pipe (or greater where needed to avoid freezing in winter). The gathering pipeline trench would be excavated mechanically; pipe segments would then be welded together and tested, lowered into the trench, and covered with excavated material. After burial, each gathering pipeline would be pressure tested with compressed air or nitrogen to locate leaks.”⁶¹ The Agencies should require these pipelines to be constructed pursuant to regulated gas gathering pipeline standards (49 CFR 192). In addition, pipeline safety testing requirements are complicated, and depend upon the anticipated operating pressure of the pipeline. The Agencies need to indicate how they reached the determination that compressed air or nitrogen testing is adequate.

Citizen Groups recognize that pipeline safety is the exclusive jurisdiction of PHMSA and its certified state agency partners. Citizen Groups are not asking that the BLM and USFS to undertake regulating pipeline safety. Citizen Groups are requesting that the BLM and USFS account for the risks described above in its risk assessment and risk management, and to analyze the cumulative impacts associated with the network of unregulated gas gathering lines associated with this project.

Rural gas gathering lines are not subject to an independent permitting process by any agency. Instead, they are approved part and parcel with the development projects they are associated with. Unless analyzed by the BLM and USFS at the MDP stage, they will fall into a regulatory black hole: unregulated, unanalyzed, uninspected, and largely unaccounted for. It is incumbent upon the BLM to account for the above stated risks during its NEPA review process.

⁶¹ EA at 29, 31.

In addition to BLM and USFS legal obligation under NEPA to conduct a risk analysis, the agencies have the opportunity to exercise their authority over pipeline ROWs to add additional conditions of approval (COAs) to address the impacts stated above. BLM and USFS have thus far failed to exercise their authority over ROWs to effectively protect the public and analyze all risks associated with such approval.

8. Wildlife Impacts

As pointed out in Citizen Groups' scoping comments, the NFMMDP project area is home to a variety of species.⁶² The proposed project is near and within vital habitat for ungulates like mule deer, elk, and moose, as well as other species such as Canada lynx, yellow-billed cuckoo, bald eagle, purple martin, northern goshawk, cutthroat trout, and bluehead sucker.⁶³ Due to the large-scale of proposed natural gas industrialization in and around this area of the North Fork it is especially critical that BLM thoroughly analyzes and discloses direct, indirect, *and* cumulative impacts to these species and their habitats. This has yet to be done.

An umbrella issue for the species listed below as well as other wildlife species discussed in the Draft EA is insufficient cumulative impacts analysis. As further discussed in the following section, Draft EA rather than providing analysis on the cumulative impacts merely provides a list of past, present, and reasonably foreseeable activities.⁶⁴ This list may be the starting place for then analyzing impacts, but it does not pass as analyze. BLM needs to cure this shortfall for all wildlife species, especially given the size and scale of proposed natural gas development in this area of the North Fork.

i. Elk, Mule Deer, and Moose

Citizen Groups' scoping comments discussed at length the impacts of oil and gas on ungulate species.⁶⁵ The scoping comments provided a number of peer reviewed studies, Colorado Parks and Wildlife ("CPW") official comments, CPW collected data, and other information confirming negative impacts from oil and gas development on ungulates. BLM has not addressed these concerns and/or the information provided in those comments.⁶⁶

BLM needs to clarify the direct impacts on all three of these species. Although BLM provides the direct acreage amount that will be lost for elk (45.17 acres) this information appears to be missing for both mule deer and moose.⁶⁷ The Draft EA is also missing information on impacts to these species during the production phase of the development, which will last 30 years.⁶⁸

⁶² Citizen Groups' scoping comments at 78-102.

⁶³ *Id.*

⁶⁴ NFMMDP EA at 134-137.

⁶⁵ *Id.* at 79-85.

⁶⁶ *See*

⁶⁷ NFMMDP Appendix C at 52 (Biological Evaluation and MIS Report).

⁶⁸ NFMMDP DEA at 33; *see e.g.* NFMMDP at 97 (conclusory stating without addressing contrary evidence submitted in Citizen Groups' scoping comments that "[d]isturbance during

The Draft EA does not account for indirect impacts to these species. Yet, the greatest impact of roads related to oil and gas industrialization is the *indirect effects* of habitat fragmentation and avoidance by wildlife.⁶⁹ These indirect effects greatly increase the area of influence or impacted/affected area. Proper indirect analysis will fully account for the indirect acreage that is affected and do so in a way that accounts for on-the-ground cover variances.⁷⁰ Perfunctory statements in the BA about elk utilizing impacted areas in the North Fork do not obviate BLM's duty to take a hard look at these indirect impacts on elk nor what these indirect impacts amount to cumulatively.⁷¹ This includes a hard look at impacts to highways (e.g. State Highway 133) that will be used. It is also not clear why BLM has chosen to rely on avoidance patterns related to logging operations where there is ample information on ungulate impacts from oil and gas activities—the very type of activities BLM is considering as part of this proposal.⁷² Where, as here, there is relevant information on hand on impacts from the exact activities proposed, BLM needs to be using that information for its impact analysis or adequately explain why it choose not to.⁷³

The Draft EA perpetuates a consistent analysis shortfall both BLM and the Gunnison National Forest make when analyzing oil and gas proposals in the North Fork area. Rather than providing analysis on the cumulative impacts the NFMMDP would have on these species, the Draft EA provides merely a list of past, present, and reasonably foreseeable activities.⁷⁴ Although such information is necessary in order to then analyze impacts, the list is not analysis itself. BLM also needs to explain why the 10-mile buffer it adopted is appropriate. BLM's use of this 10-mile buffer as well as watershed scale used in the Biological Evaluation stands to create a false conclusion on cumulative impacts, as it fails to account for habitat within the watershed that is essential to wildlife species.⁷⁵ As discussed in Citizen Groups' scoping comments, severe winter range and winter concentration areas stand to be impacted by this proposal.⁷⁶ Such habitat is not interchangeable (i.e. discounted by diluting impacts by comparing to overall percentage of watershed impacted) but rather limited and already stands to be greatly impacted as a result of other proposed natural gas activities, such as the directly adjacent Bull Mountain Master Development Plan proposal. As such, it is all the more critical that BLM fully comply with the cumulative impacts analysis mandates of NEPA, for failure to

production and maintenance would be minimal and could result in avoidance of an area around well pads and possible access roads.”).

⁶⁹ Citizen Groups' scoping comments at 82.

⁷⁰ *Id.* at 80 (noting that areas with limited cover complete elk habitat loss at a road density of only .8 miles of road per square mile.).

⁷¹ NFMMDP Appendix C at 53. Moreover, merely because elk *may* be using impacted habitat currently does not mean they will continue to do so as oil and gas industrialization and associated increases.

⁷² *Id.* at 52.

⁷³ See Citizen Groups' scoping comments 79-85.

⁷⁴ NFMMDP EA at 134-137.

⁷⁵ *Id.*; NFMMDP Appendix C at 55.

⁷⁶ Citizen Groups' scoping comments at 79.

do so has significant ramifications in understanding the impacts BLM's decision will have on these species and their habitat.

Lastly, as currently proposed the only mitigation measures seemingly applicable to big game are winter timing limitations that can be waived and would be applicable only during construction, drilling, and completion.⁷⁷ BLM must consider alternatives and/or stipulations that would provide mitigation measures throughout the live of the proposed activities, including production and reclamation.⁷⁸ This is particularly critical if BLM continues to conclude that production impacts will be "minimal."⁷⁹ Failure to do so is inconsistent with the mandates of NEPA.

ii. Canada Lynx

Citizen Group's scoping comments discussed at length how the proposed project area is surrounding by suitable and potential lynx habitat, at least one lynx analysis unit, as well as lynx linkage areas.⁸⁰ These comments also discussed the significance of high elevation sagebrush and mountain shrub with intermixed forested areas as providing important habitat of lynx prey as well as connectivity.⁸¹ BLM was noticed, among other things, that it must do more than simply rely on the Southern Rockies Lynx Amendment ("SLRA") Biological Opinion for effects analysis, that such analysis and consultation documents be made publically available, as well as the agency consider reasonable alternatives that would protect areas with Primary Constituent Elements for lynx critical habitat.⁸²

There does not appear to be any analysis to support BLM's "No Effect" determination and FWS' concurrence.⁸³ This is a fatal flaw that requires prompt correction. BLM must describe in detail how each objective, standard, and guideline in the SLRA will be met as the SLRA is clear that it is to be implemented and the "[e]ffect would be based on site specific conditions that would require subsequent project level . . . consultation with the [U.S. Fish and Wildlife] Service" — a level of quantitative and qualitative analysis BLM has utterly failed to do here. This includes full compliance with direct, indirect, and cumulative impacts mandates of NEPA. If such analysis has been done, BLM must make it publically available on the

⁷⁷ NFMMDP Appendix A at 7.

⁷⁸ *Id.*

⁷⁹ *See e.g.* NFMMDP at 97 (conclusory stating without addressing contrary evidence submitted in Citizen Groups' scoping comments that "[d]isturbance during production and maintenance would be minimal and could result in avoidance of an area around well pads and possible access roads.").

⁸⁰ Citizen Groups' scoping comments at 85-90.

⁸¹ *Id.* at 85-87.

⁸² *Id.* at 87-90.

⁸³ *See e.g.* Appendix C at 2; Appendix D Biological Evaluation Table of Contents at i-ii (lynx not listed as species evaluated); *see generally* NFMMDP EA failing to provide analysis of lynx impacts (a control F search yield only two mentions of Canada lynx, at 83 claiming that the BA concluded "no effect" and in a matrices on 84 with no analysis, merely habitat and "no effect" determination provided).

project website where the DEA and Appendices are posted. BLM must also provide another comment period for the public as such information was not available during the DEA comment period.

iii. Migratory Bird and Treaty Act and New Science on Oil and Gas Impacts to Avian Species.

The BLM's analysis and determinations for impacts to avian species seems largely dependent on concluding that Gunnison Energy LLC is required to comply with the Migratory Bird and Treaty Act ("MBTA").⁸⁴ Protections for migratory birds under this Act have, however, arguably been significantly hamstrung as a result of a Department of Interior Memorandum issued December 22, 2017. This memorandum has reversed previous policy by limiting the Act to affirmative actions of taking or killing migratory birds, their nests, or their eggs.⁸⁵ As a result, there is a legitimate concern and possibility that precautionary measures that would prevent or avoid bird deaths from the proposed activities may not be implemented. BLM cannot assume this Act will adequately safeguard against inadvertent takings or killings of migratory birds while this memorandum remains in place. BLM needs to fully analyze these changed circumstances and require additional measures as Conditions of Approvals ("COAs") to ensure against takes or killing of migratory birds instead of shirking this duty by stating that the operator is required to comply with the MBTA on its on accord.⁸⁶

Another piece of new information that BLM must fully analyze and incorporate is a recent peer-reviewed study published November 14, 2017.⁸⁷ This study shows that when birds choose a nesting site exposed to high noise levels from oil and gas activity that they suffer from glucocorticoid-signaling dysfunction and decreases in fitness. Thus, across all species (including those not considered endangered, threatened, and sensitive species) noise exposure decreases baseline corticosterone in adults, nestlings, and conversely increases acute stressor-induced corticosterone in nestlings.⁸⁸ In sum, noise from oil and gas development is a chronic, inescapable stressor that affects avian fitness, even in species that may choose noisy places to nest that have been discounted as being negatively impacted. This information must be incorporated into impacts analysis for avian species in the DEA including in the necessary—yet entirely lacking—cumulative impacts analysis for such species.

⁸⁴ See e.g. Appendix A at 8 (COA stating that the operator will be responsible for compliance with the Migratory Bird Treaty Act); DEA at 127.

⁸⁵ The Migratory Bird Treaty Act Does Not Prohibit Incidental Take M-37050 (Dec. 22, 2017).

⁸⁶ See e.g. Appendix A at 8 (COA stating that the operator will be responsible for compliance with the Migratory Bird Treaty Act); DEA at 127.

⁸⁷ Nathan J. Kleist et al., Chronic Anthropogenic Noise Disrupts Glucocorticoid Signaling and Has Multiple Effects on Fitness in an Avian Community, PNAS (Nov. 14, 2017) (attached as Exhibit 7).

⁸⁸ *Id.*

iv. Yellow-billed cuckoo

Yellow-billed cuckoo were recently listed under the Endangered Species Act (“ESA”) and have designated critical habitat in the North Fork Valley.⁸⁹ It is likely that not all habitat for this species has been mapped, indicating that there may be more habitat in the area.⁹⁰ In light of the nearby occurrences of yellow-billed cuckoo Citizen Groups’ scoping comments pointed out the necessity of BLM taking a hard look at impacts to this species, accounting for impacts such as disturbance, habitat degradation, pesticide use, and predators — all of which can be exacerbated by oil and gas development.⁹¹

Despite the essentialness of this hard look analysis, there is again a complete dearth of analysis nearly identical (if not identical) to the shortfalls in the agency’s Canada lynx analysis.⁹² Should BLM have conducted impacts and hard look analysis this must be made publically available on the project website where the DEA and Appendices are also posted. BLM must also provide another comment period for the public as such information was not available during the DEA comment period.

v. Bald Eagle

As the DEA acknowledges bald eagles are present within the vicinity of the proposed project area and as recently as last year successfully fledged a chick.⁹³ Yet, this is not sufficient *analysis* particularly in light of the amount of oil and gas proposed in this area. As Citizen Groups’ scoping letter pointed out, BLM needs to map forage areas as well as winter range in the project area. This has yet to be done and is concerning given BLM’s seeming conclusion that impacts will be minimal because oil and gas development is a “predictable activity.”⁹⁴ It is imperative that nesting surveys, avoiding surface disturbance within one mile of nests or foraging areas well as prohibiting loud noises within a one mile buffer are adopted to minimize impacts to this species and their habitat.

vi. Purple Martin, Northern Goshawk, Lewis’ Woodpecker, Olive-sided Flycatcher, and Brewer’s Sparrow

CPW shared concerns during scoping that both these species may be disproportionately impacted by the proposed project.⁹⁵ Purple martins are known to be in and near the proposed

⁸⁹ Citizen Groups’ scoping comments at 90-91.

⁹⁰ *Id.*

⁹¹ *Id.* at 91.

⁹² *See e.g.* Appendix C at 2; Appendix D Biological Evaluation Table of Contents at i-ii (yellow-billed cuckoo not listed as species evaluated); *see generally* NFMMDP EA failing to provide impacts analysis on yellow billed-cuckoo (a control F search yield only two mentions of yellow-billed cuckoo, at 83 claiming that the BA concluded “no effect” and in a matrices on 84 with no analysis, merely habitat and “no effect” determination provided).

⁹³ NFMMDP DEA at 22-23.

⁹⁴ NFMMDP DEA at 42.

⁹⁵ Citizen Groups’ scoping comments at 92.

project area, including immediately adjacent to access roads for the proposed natural gas operations.⁹⁶ Although BLM acknowledged that purple martin as well as Lewis' woodpecker, olive-sided flycatcher, and Brewer's sparrow will be directly impacted by habitat loss, BLM punts on actually analyzing the indirect and cumulative impacts to these species.⁹⁷ BLM must actually analyze the indirect impacts for each of these species (how much habitat is *truly* lost as a result, what are the impacts in light of the Kleist et al. findings, and what are the cumulative habitat impacts when this proposal is compounded with Bull Mountain and other proposals that stand to add hundreds of wells, if not more, to this area of the North Fork).

vii. Gunnison Sage-Grouse

Another error in BLM's analysis is its failure to consult with Fish and Wildlife Service (FWS) on the effects of the proposal on the survival of Gunnison Sage-Grouse as well as the prospects for recovery and re-colonization of historic but currently-unoccupied habitat.⁹⁸ The ESA requires agencies to "conserve endangered and threatened species" which includes not only the avoidance of extinction but "use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which [protection under the ESA is no longer required.]"⁹⁹

Despite this clear duty, BLM's BE has no analysis of this proposal's impacts on Gunnison Sage-Grouse.¹⁰⁰ Nor is such analysis found in the Draft EA.¹⁰¹ This is clearly erroneous and in violation of BLM's duty under the ESA to conserve the species. BLM must cure this analysis void before it may move forward with any approval of the proposal.

viii. Native Cutthroat Trout and Bluehead Sucker

As discussed in Citizen Groups' scoping comments, CPW has identified areas in the Clear Fork of the Muddy Creek watershed as strong candidates for cutthroat restoration.¹⁰² CPW raised concerns during scoping that future development could jeopardize this proposed restoration or impact these conservation populations.¹⁰³ The Draft EA needs to, but presently does not, discuss how the proposed project would not jeopardize the restoration and/or impact these populations. There also does not appear to be any discussion or analysis regarding impacts such as but not limited to whirling disease and endocrine disruption, which were raised in Citizen Groups' scoping comments.¹⁰⁴

⁹⁶ DEA at 91.

⁹⁷ *Id.* at 93 (concluding that "habitat loss would be minimal in relation to unaffected portions of the project area and similar habitats outside the project area.").

⁹⁸ Citizen Groups' scoping comments at 92-98.

⁹⁹ ESA Section 2(c)(1); ESA Section 3(3).

¹⁰⁰ Appendix D Biological Evaluation Table of Contents at i-ii (Gunnison sage-grouse not listed as species evaluated).

¹⁰¹ *See generally* NFMMDP EA failing to provide analysis of Gunnison sage-grouse impacts.

¹⁰² Citizen Groups' scoping comments at 98.

¹⁰³ *Id.*

¹⁰⁴ Citizen Groups' scoping comments at 98-102.

9. Economic Impact on the North Fork Valley Economy

Oil and gas development proposals such as the NFMMDP can also have direct impacts on the local and regional economy. According to a recent report on the economic impact of oil and gas development on Delta County, every dollar in economic gain from the NFMMDP could cause two dollars in loss from impacts to the county's existing tax revenue, not including any associated costs from health, infrastructure or environmental impacts.¹⁰⁵ This report focused specifically on impacts to the North Fork Valley, the frontline community impacted by the NFMMDP, and its corresponding financial impact on Delta County's budget. The potential losses stem from decreased property values, decreases in recreation visitation, and decreased agritourism revenue.

The Preliminary EA pays lip service to the unique economic characteristics of the North Fork Valley, but states: "Historically, tourism and farm-based agritourism in Gunnison and Delta counties have developed concurrently with mineral extraction in the North Fork Valley, and the Proposed Action would not be likely to affect tourism across the region."¹⁰⁶ Neither Delta County, nor Gunnison County have conducted a cost-benefit analysis on the NFMMDP to determine the net economic impact to the North Fork Valley economy. The BLM and the USFS have not provided support for a project-specific cost-benefit analysis which supports their assertion; they must provide a basis for such a conclusion.

The agencies' minimal analysis does not take into account the unique economic drivers of the region, fails to account for the recent growth in arts, recreation, tourism, education, and small-scale sustainable agriculture. Nor does it take into account the value of the West Elk Viticulture Area, one of two certified AVAs in Colorado representing significant investment by local residents. The Preliminary EA fails to address any potential impacts associated with increased traffic on the West Elk Scenic Byway.

10. Cumulative Impacts

A 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." *Ocean Advoc. v. U.S. Army Corps of Engrs.*, 402 F.3d 846, 868 (9th Cir. 2005); 40 C.F.R. § 1508.7. The BLM's cumulative impacts analysis "must be more than perfunctory; it must provide a 'useful analysis of the cumulative impacts of past, present, and future projects.'" *Ocean Advoc.*, 402 F.3d at 868. The BLM must, therefore, "give a realistic evaluation of the total impacts [of the action] and cannot isolate the proposed project, viewing it in a vacuum." *Grand Canyon Trust v. FAA*, 290 F.3d 339, 342 (D.C. Cir. 2002).

¹⁰⁵ *The Economic Impact of natural Gas Development on Delta County*, Citizens for a Healthy Community, (January 2018), available at: http://www.chc4you.org/wp-content/uploads/2018/01/2018_CHC_EconomicImpactOfNaturalGasDev_V2.pdf) (attached as exhibit 15).

¹⁰⁶ EA at 79.

CEQ regulations require agencies to consider three types of related actions: “connected actions,” “similar actions,” and “cumulative actions.” 40 C.F.R. § 1508.25(a). Cumulative actions are actions that when viewed with other proposed actions have cumulatively significant impacts. 40 C.F.R. § 1508.25(a)(2). An agency’s consideration of cumulative impacts must contain “some quantified or detailed information; . . . general statements about ‘possible’ effects and ‘some risk’ do not constitute a ‘hard look’ absent a justification regarding why more definitive information could not be provided.” *Neighbors of Cuddy Mountain*, 137 F.3d 1372, 1379-80 (9th Cir. 1998). The Supreme Court has held that an agency not only has a duty to consider cumulative impacts in a single NEPA process: “proposals for . . . related actions that will have cumulative or synergistic environmental impact upon a region concurrently pending before an agency must be considered together. Only through comprehensive consideration of pending proposals can the agency evaluate the different courses of action.” *Kleppe v. Sierra Club*, 427 U.S. 390, 410 (1976).

In 2010, the Ninth Circuit rejected BLM NEPA review for mineral exploration that had failed to include detailed analysis of impacts *from nearby proposed mining operations*, stating:

In a cumulative impact analysis, an agency must take a “hard look” at all actions. An . . . analysis of cumulative impacts must give a sufficiently detailed catalogue of past, present, and future projects, and provide adequate analysis about how these projects, and differences between the projects, are thought to have impacted the environment. . . . Without such information, neither the courts nor the public . . . can be assured that the [agency] provided the hard look that it is required to provide.

Te-Moak Tribe v. U.S. Dep’t of Interior, 608 F.3d 592, 603 (9th Cir. 2010). *See also Wyoming Outdoor Council*, 351 F. Supp. 2d at 1243 (failure to review adequately all cumulative impacts is arbitrary and capricious and violates NEPA). Here, BLM provided a list of nearby projects that may result in cumulative impacts. *See* EA at 134-37 (Table 35). However, the agency arbitrarily failed to link the list of projects with hard look analysis at impacts to resource values in the cumulative impacts area for the NFMMDP.

BLM determined “the cumulative effects assessment area (CEAA) took a watershed level approach for most resources and the actual CEAA encompasses approximately 265,355 surface acres inside a boundary comprised of 11 HUC6 sub-watersheds within the upper reaches of the larger North Fork of the Gunnison River watershed, rather than that of a strict 10-mile buffer (Map 18).” EA at 133. This approach also arbitrarily limits the scope of potential cumulative impacts, most notably by failing to account for impacts to downstream communities. Notably, “[r]easonably foreseeable future actions (RFFAs) are actions that have been committed to or known proposals that would take place within a 50-year planning period.” EA at 139 (emphasis added). This recognition broadens the scope of potential projects, and also requires the agency to take into account new geologic information, evolving technological advances, and other factors such as market forces influencing leasing and development of oil and gas in the planning area. BLM also recognizes that “[t]wenty-five percent (224,950 acres) of the Federal fluid mineral estate in the UFO (916,030) is already leased. This includes

160,510 acres (24%) of BLM surface and 64,440 acres (27%) of split-estate lands (private, state, and local surface with Federal fluid mineral subsurface).” EA at 136. BLM can also draw informed conclusions regarding development of existing lease rights.

C. BLM Must Consider All Reasonable Alternatives.

“[T]he heart” of an environmental analysis under NEPA is the analysis of alternatives to the proposed project, and agencies must evaluate all reasonable alternatives to a proposed action.” *Colorado Environmental Coalition*, 185 F.3d at 1174 (quoting 40 C.F.R. § 1502.14). An agency must gather “information sufficient to permit a reasoned choice of alternatives as far as environmental aspects are concerned.” *Greater Yellowstone*, 359 F.3d at 1277 (citing *Colorado Environmental Coalition*, 185 F.3d at 1174); see also *Holy Cross Wilderness Fund v. Madigan*, 960 F.2d 1515, 1528 (10th Cir. 1992).

While certain lands may indeed be appropriate for responsible fossil fuel resource development, it is equally evident that there are lands where other resource values should prevail. FLPMA affords BLM great authority to appropriately balance these competing interests, which expressly includes the responsibility to “preserve and protect certain public lands in their natural condition.” 43 U.S.C. § 1701(a)(8). Moreover, FLPMA further delegates BLM authority to permanently withdraw lands from consideration. See 43 U.S.C. § 1714. This ability authorizes the Secretary to “make, modify, extend, or revoke withdrawals.” *Id.* In either event, the BLM cannot continue the public lands management practice of prioritizing oil and gas development above the other resource values at stake.

The Forest Service also has a similar mandate: “the national forests are established and shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes . . . [and] [i]n the administration of the national forests due consideration shall be given to the relative values of the various resources in particular areas.” 16 U.S.C. § 528; 16 U.S.C. § 529.

Here, BLM considered two alternatives to NFMMDP project: (1) the proposed action, and (2) no action. See EA at 15-42, 42-43. In addition, there was one alternative considered but eliminated from analysis, which involved an alternative access road for the project. EA at 43. No other reasonable alternatives, such as those included in Citizen Groups’ scoping comments were considered. Scoping at 133-136. BLM’s failure to consider these reasonable alternatives violates NEPA.

II. Leases on National Forest Lands Subject of the NFMMDP Are Invalid Because They Were Issued in Violation of NEPA and Should Have Expired Under the MLA

Based on information released recently by BLM and the U.S. Forest Service in response to Freedom of Information Act (FOIA) requests, it has come to light that BLM never fully complied with the NEPA when it sold oil and gas leases at issue in this MDP that overlap with National Forest lands. More specifically, BLM never undertook its own analysis of the potential impacts of selling the leases. Nor did the agency ever fulfill the

requirements necessary to adopt the U.S. Forest Service's analysis of oil and gas leasing on the lands at issue. BLM never issued an official Record of Decision (ROD) to support issuance of the leases. As a result, there is no record of BLM ever conducting an independent environmental analysis, and no official record of how BLM reached a decision to issue the leases. These are violations of NEPA, and of related statutes and regulations. Therefore, the leases must be canceled. Allowing the undeveloped leases to expire would, in this case, affect the same result. This new information must be considered and addressed prior to approval of any new activity or development. For reasons discussed below, and discussed in more detail in a separate letter submitted by Wilderness Workshop and The Wilderness Society, herein incorporated by reference, BLM should allow undeveloped leases within the proposed MDP that overlap the National Forest to expire or cancel the leases outright.

A. BLM Never Conducted Its Own Analysis or Issued a ROD for Oil and Gas Leases on this National Forest.

Before selling oil and gas leases such as those at issue here, NEPA requires BLM to conduct an environmental analysis of the agency's proposed lease sale. The Tenth Circuit has held in this context that "assessment of all 'reasonably foreseeable' impacts must occur at the earliest practicable point, and must take place before an 'irretrievable commitment of resources' is made." *New Mexico ex rel. Richardson v. BLM*, 565 F.3d 683, 718 (10th Cir. 2009); *see also Pennaco Energy v. Dep't of Interior*, 377 F.3d 1147, 1160 (10th Cir. 2004). The environmental assessment is supposed to involve an actual "hard look" at the scientific evidence and any reasonable alternative to development. *See New Mexico*, 565 F.3d at 718; *see also Pennaco*, 377 F.3d at 1160. Additionally, under pertinent regulations, BLM must follow certain procedures relating to its environmental analysis, including but not limited to publication of an official ROD before undertaking any action that would have an adverse environmental impact, so that substantive aspects of the agency's environmental analysis are publicly communicated and can be reviewed. *See, e.g., Nat'l Audubon Soc'y v. Dep't of Navy*, 422 F.3d 174, 185 (4th Cir. 2005) ("[O]nce the agency has made a decision [regarding an FEIS] it must publish a ROD."); *see also* 40 C.F.R. §§ 1505.2, 1506.1(a) (stating that until an agency issues a ROD, "no action" shall be taken that would have an adverse environmental impact or limit the choice of reasonable alternatives).

Here, in short, BLM was required to conduct an independent environmental analysis of the potential impacts *before* selling the subject leases, to take a "hard look" at all of the reasonably foreseeable environmental impacts of lease development, and to publish a ROD explaining the agency's analysis of these matters in relation to the decision to issue the leases.

BLM failed to meet these obligations. There is no indication in the agency's records that BLM ever conducted the required independent NEPA analysis. Glaringly, there is no final ROD (other than an unsigned draft) relating to the leases anywhere in the agency's record, so it is impossible to discern exactly how the agency reached the decision to issue the leases. For these reasons, the leases are invalid.

B. BLM's Supposed Reliance on the Forest Service Analysis Was Inadequate.

BLM has suggested that it relied on the Forest Service's prior 1993 environmental analysis when issuing the GMUG leases in question. Even if true (the record is unclear), this would have been inadequate as a matter of law.

When another agency has analyzed the environmental impact of oil and gas leasing under NEPA, BLM still has an *independent* obligation to ensure NEPA compliance, because the Secretary of the Interior has "the final authority and discretion to decide to issue a lease." See, e.g., *Wyo. Outdoor Council*, 159 IBLA 388, 414 (2003); see also 43 C.F.R. § 3101.7-2(b). The Forest Service is an agency within the Department of Agriculture, not Interior, and therefore the Forest Service's analysis is not legally binding upon Interior or the BLM. Courts have expressly held that "an agency may not avoid its NEPA obligations by simply relying on another agency's conclusions about a federal action's impact on the environment." *Anacostia Watershed Soc'y v. Babbitt*, 871 F. Supp. 475, 485 (D.D.C. 1994); see also *Great Rivers Habitat Alliance v. U.S. Army Corps of Eng'rs*, 437 F. Supp. 2d 1019, 1040 (E.D. Mo. 2006) ("An agency cannot abdicate its NEPA authority by relying on another agency's compliance with NEPA as a justification for its own failure to consider environmental impacts.").

BLM's failure to publish a ROD is crucial in this matter, as it is the most potent example of BLM's failure to follow the NEPA process. The IBLA and BLM's own guidance documents instruct that BLM's NEPA compliance procedures require the publication of a ROD. *Wyoming Outdoor Council*, 159 IBLA 388, 415 (2003) ("CEQ guidance states that, following an EIS, a cooperating agency with jurisdiction by law over part of the proposed action will have to prepare its own ROD for its action, in which it must explain how it reached its conclusions."). BLM's NEPA Handbook similarly directs that the agency must issue a ROD for any such EIS. See BLM NEPA Handbook chap. 5.4.1. A ROD is "a concise written rationale by the RFO [Responsible Federal Officer] regarding implementation of a proposed action requiring an environmental impact statement." 7 C.F.R. § 650.4. A ROD must (1) state the decision made, (2) identify all alternatives considered, and (3) state whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why they were not. 40 C.F.R. § 15.05.2.

In this matter, there was no final, signed ROD (other than an unsigned draft document contained in the agency record). The BLM's failure to publish an official ROD was a direct violation of NEPA regulations. See *Nat'l Auduon*, 422 F.3d at 185 (holding that an agency adopting an FEIS "must publish a ROD."); *U.S. Ecology, Inc. v. DOI*, 231 F.3d 20, 22 (D.C. Cir. 2000) ("NEPA regulations require the agency to prepare a Record of Decision justifying its ultimate decision."); *Sensible Traffic Alternatives v. DOT*, 307 F. Supp. 2d 1149, 1166 (D. Haw. 2004) (same). NEPA regulations expressly state that "until an agency issues a record of decision . . . no action concerning the proposal shall be taken which would: (1) Have an adverse environmental impact; or (2) Limit the choice of reasonable alternatives." 40 C.F.R. § 1506.1(a). IBLA has held that it cannot infer compliance with these obligations absent a ROD. *Board of Commissioners of Pitkin County*

and Wilderness Workshop, et al., 173 IBLA 173, 183-4 (2007) (citing *Center for Native Ecosystems*, 170 IBLA 331, 347 (2006) ("this Board is not the proper entity to create NEPA documentation by inferring BLM's intent in not undertaking it")).

In conclusion, the leases on National Forest lands at issue in this MDP are invalid, and BLM should allow undeveloped leases within the proposed MDP that overlap the National Forest to expire or cancel the leases outright. BLM must not authorize development of undeveloped leases on National Forest lands in this MDP, and no decisions authorized in this MDP can be applied to authorize future development of those leases.

C. Undeveloped Oil and Gas Leases COC 69999, 70000, and 70002 in the Trail Gulch Unit Should Have Expired and Must Not be Subject to This MDP.

Leases 69999, 70000, and 70002 were improperly extended in violation of BLM's laws and policies, and should have expired on May 31, 2017. Therefore, no analysis included in this MDP or decisions authorized in this MDP may be applied to future development of those leases.

The May 31, 2017 Decision by BLM's Colorado River Valley Field Office (CRVFO) approving a requested suspension of operations and production on oil and gas leases COC 69999, 70000, and 70002 was made in violation of BLM law and policy. *See* CRVFO, Decision granting SOOP for the leases (In Reply Refer To: COC69999 COC70000 COC70002 Trail Gulch) (May 31, 2017) (attached as Exhibit 8). The leases were scheduled to expire on May 31, 2017, and BLM should rectify its erroneous suspension of the leases and confirm that the leases did in fact expire on May 31, 2017. The leases are located within inventoried roadless lands of the Thompson Divide area of the Grand Mesa, Uncompahgre and Gunnison National Forest (the GMUG).

In addition to leases COC 69999, 70000, and 70002 being improperly extended by BLM's illegal suspension of the individual leases, the leases were also improperly extended by BLM's suspension of the Trail Gulch Unit (TGU). BLM's June 12, 2017 decision approving suspension of the TGU was made in error for reasons similar to the individual lease suspensions being approved in error. *See* BLM, Trail Gulch Unit – Suspension Approval (In Reply Refer To: 3180 (CO-922) Trail Gulch—Suspension Approval COC78145X) (June 12, 2017) (attached as Exhibit 9). The TGU suspension request was submitted to BLM by Gunnison Energy (GE) on May 18, 2017, before the TGU had even been approved. The TGU had not received final approval at the time of the suspension requests due to GE's own inability to fulfill joinder requirements.

The BLM decisions suspending leases COC 69999, 70000, and 70002 and the TGU (COC 78145X) should be vacated and reversed, and the leases should be allowed to expire, for the following reasons:

1. BLM improperly granted the suspensions in violation of the Mineral Leasing Act and applicable regulations.

Section 39 of the Mineral Leasing Act (MLA), and BLM regulations, authorize suspension of operations and production “in the interest of conservation of natural resources,” 30 U.S.C. § 209; 43 C.F.R. § 3103.4-4(a); BLM Manual 3160-10.06, but only when diligent development has been pursued.¹⁰⁷ The IBLA has interpreted Section 39 to authorize suspension under two conditions:

- (a) Where unusual administrative delays “have the effect of denying the lessee timely access to the property.” Harvey Yates Co., 156 IBLA 100, 105 (2001). Such suspension is available only to provide “extraordinary relief when lessees are denied beneficial use of their leases.” TNT Oil, 134 IBLA at 203; BLM Manual 3160-10, Appendix 2 at 8 (1985 solicitor’s opinion).
- (b) A suspension may be granted to “prevent damage to the environment or loss of mineral resources.” Harvey Yates Co., 156 IBLA at 105.

Problems that are not caused by BLM or the Forest Service are not sufficient justification for a suspension. *See e.g.*, Colorado River Valley Field Office, Decision (In Reply Refer To: CON040) (Dec. 17, 2012) (finding suspension unwarranted due to operator’s own challenges connecting to a pipeline, or lack of access to a market for the gas) (attached as Exhibit 10). Suspensions are generally not warranted when drilling applications are “submitted incomplete or untimely (less than 30 days before lease expiration).” BLM Manual 3160-10.21(C).

For a suspension to be granted or directed on the ground that the company has been denied beneficial use of its lease, BLM’s Manual requires a showing that “activity has been submitted on the lease (such as filing a Notice of Staking (NOS) or an APD) and the activity has been stopped by actions beyond the operator’s control.” BLM Manual 3160-10.31(A)(3). When seeking a suspension on the ground that beneficial use of the lease has been denied, a company has an obligation to file permit applications early enough for them to be approved and drilled during the ten-year lease term. *See Hoyl v. Babbitt*, 129 F.3d 1377, 1384 (10th Cir. 1997); BLM Manual 3160-10.21(C) (ordinary weather conditions and incomplete APDs not grounds for suspension).

Here, GE was not denied beneficial use of its leases by BLM. Rather the leaseholder chose to delay filing while in negotiations with another oil and gas company. There were no unusual administrative delays that denied GE timely access to the leases. In fact, BLM acted quickly on each and every proposal that GE filed.

¹⁰⁷ A different provision of the Act, Section 17(i) authorizes suspensions of operations only, or of production only, where a force majeure event occurs. 30 U.S.C. § 226(i); 43 C.F.R. § 3103.4-4(a). The provisions of Section 17(i) are not applicable here.

By choosing to delay filing any drilling proposal until just weeks before these leases expired, GE waited too long to get approval and begin drilling. The BLM Manual states that suspension is inappropriate under these circumstances. BLM Manual 31360-10.21(C); *see also Cotton Petroleum Corp. v. U.S. Dept. of Interior*, 870 F.2d 1515, 1526 (10th Cir. 1989) (“...an administrative agency must explain its departure from prior norms (guidelines).”).

Importantly, GE has not even proposed to drill on these leases. Rather, the company tried to save the leases from expiring with a last minute request to drill a unit holder well on another lease in a unit agreement that was still unapproved when suspension of the suspended leases was requested. The unit was unapproved because GE had not been able to get the required joinders and it had not filed an application for final approval of the unit with BLM. GE’s inability to get other interest holders to join its proposed unit is not a delay that can be pinned on BLM. After GE finally asked BLM to approve the unit, the agency acted quickly and granted it within just a few days.

In summary, BLM inappropriately granted GE’s suspension request, which was filed in the last month of the lease term. The request relied upon an incomplete drilling proposal that was also filed less than 30 days before lease expiration for a proposed well on a completely different lease that was supposed to hold a unit that had not even been approved. By GE’s own admission, it was the company’s negotiations with another oil and gas company that delayed its filings. The Field Office decision completely ignored guidance in BLM’s own Handbook and it ignored the two findings required under Section 39 of the Mineral Leasing Act: (a) GE has been denied beneficial use of its leases, and that (b) suspension will prevent damage to the environment or avoid a loss of mineral resources. Neither prerequisite for a suspension existed here.

In addition, BLM’s suspension of the Trail Gulch Unit was inappropriate under Section 25 of the unit agreement and unsupportable by law for the same reasons.

2. BLM violated NEPA by relying on a categorical exclusion to suspend the leases.

It was inappropriate for BLM to suspend these leases with a Categorical Exclusion. Granting a suspension alters the status quo by preventing the leases from expiring and thus preserving GE’s right to drill in the Thompson Divide on leases that were issued without NEPA compliance (see *supra*), and by suspending the leaseholder’s obligation to pay rent on these Federal leases. Under these circumstances, BLM had an obligation to prepare a NEPA analysis addressing the reasonably foreseeable impacts of that decision before suspending the leases. *Pit River Tribe v. U.S. Forest Serv.*, 469 F.3d 768, 782-83 (9th Cir. 2006); *see also, California ex rel. California Coastal Comm’n v. Norton*, 311 F.3d 1162, 1174 (9th Cir. 2002) (reversing suspension decision that extended life of leases where no NEPA analysis done).

BLM’s categorical exclusion for lease suspensions was illegal here because several extraordinary circumstances exist, including the following:

- (A) “Have significant impacts on such natural resources and unique geographic characteristics as . . . wilderness areas, prime farmlands . . . or other ecologically significant or critical areas.” BLM NEPA Handbook Appendix 5 at 2.2.

This extraordinary circumstance arises because of the inventoried roadless within the leases, the leases’ overlap with the Thompson Divide, and the location of the leases in the North Fork Valley watershed, as well as numerous other environmental values. The Field Office reasoned that suspending the leases would have no significant impacts on those resources because suspension does not by itself allow surface disturbance. *See* Categorical Exclusion (DOI-BLM-CO-NO40-2017-0084-CX) at 3 (attached as Exhibit 11). The suspension, however, changes the status quo by preventing the leases from expiring and thus makes significant impacts from future drilling reasonably foreseeable. Those significant impacts preclude application of the categorical exclusion. *See Sierra Club v. Dep’t of Energy*, 255 F. Supp. 2d 1177, 1185 (D. Colo. 2002); *California*, 311 F.3d at 1176-77.

There is no genuine dispute today that the Thompson Divide represents an “ecologically significant or critical area.” The area was recently protected from future leasing by the adjacent White River National Forest, and has been proposed for permanent withdrawal from leasing by legislation introduced in the U.S. Senate. BLM has failed to consider this in its decision or in any of the applicable plans that it is relying on to support this suspension decision.

There is also no dispute that the North Fork Valley represents “prime farmland” and that existing, continued, and foreseeable oil and gas development may impact that resource. Indeed that was a primary concern of those who objected to BLM’s proposal to lease 30,000 acres in the Valley in 2012. Again, though, BLM has never considered the potential impacts that gas development may have on this resource.

- (B) “Have highly controversial environmental effects or . . . involve unresolved conflicts concerning alternative uses of available resources.” BLM NEPA Handbook Appendix 5 at 2.3.

As noted above, development of the roadless lands within the Thompson Divide and the North Fork Valley is highly controversial and the use of these public lands for oil and gas development is the subject of unresolved conflicts. For example, BLM recently received more than 8,000 public comments after scoping GE’s NFMMDP proposal. Commenters raised issues related to controversial environmental effects and unresolved conflicts concerning alternative uses of resources.

The Field Office’s assertion that there are no “unresolved conflicts” in the area appears to rest on the premise that a decades-old planning decision opened the area for leasing. BLM’s reasoning fails because the BLM never complied with its own mandate to analyze the potential impacts of selling these leases, nor is there any record that BLM legally adopted the USFS’s analysis. Furthermore, the applicable BLM and USFS land use plans for this planning area are outdated, stale, and in the process of being revised. Significant conflict does exist over the use

of these lands that has never been adequately considered by the agency. The Field Office's contrary conclusion has no support in the record.

Moreover, BLM has never analyzed the impacts that hydraulic fracturing will have on this area. The advent of hydraulic fracturing since 1993 raises significant new controversies over the environmental impacts of drilling. BLM must analyze those impacts here. *See Center for Biological Diversity v. Bureau of Land Management*, 937 F. Supp. 2d 1140 (ND Cal. 2013).

Similarly, BLM's decision to issue these leases did not consider cutthroat trout in the nearby streams as listed species under the ESA as currently required by FWS. *See* Scoping Comments at 98-102.

- (C) "Establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects." BLM NEPA Handbook Appendix 5 at 2.5.

Suspending these leases allows them to remain in force and make oil and gas development in the Thompson Divide reasonably foreseeable. BLM's assertion that suspending the leases "will maintain the status quo" and "does not authorize surface disturbance" fails for numerous reasons discussed throughout this petition. The decision extends the leases for the purpose of development that would not occur without the suspension. Any development of the leases may have direct, indirect, or cumulative effects that have never been considered by BLM.

- (D) "Have a direct relationship to other actions with individually insignificant but cumulatively significant environmental effects." BLM NEPA Handbook Appendix 5 at 2.6.

The suspension is directly related to future development of the area by preventing the leases from expiring without being drilled. The cumulative effect of enabling the leases to be developed will cause significant environmental harms that have never been considered or disclosed to the public as required by NEPA. The Field Office's contrary conclusion fails for the reasons stated above.

- (E) "Have significant impacts on properties listed or eligible for listing, on the National Register of Historic Places ..."

This suspension makes it reasonably foreseeable that development will occur in an area with important historic and cultural resources that have not been surveyed by BLM.

- (F) "Have significant impacts on species listed or proposed to be listed, on the List of Endangered or Threatened Species ..."

As discussed above, BLM has not considered whether the foreseeable development of the leases resulting from an extension of the lease terms will impact listed species in the area.

There is significant new information related to listed species that the agency did not consider when selling these leases.

- (G) “Violate a Federal law . . . imposed for the protection of the environment.” BLM NEPA Handbook Appendix 5 at 2.9.

As noted above, this suspension violates the Mineral Leasing Act and other laws.

- (H) “Contribute to the introduction, continued existence, or spread of noxious weeds.” BLM NEPA Handbook Appendix 5 at 2.12.

One of the most pervasive problems with oil and gas development is its role in spreading noxious weeds into previously undisturbed areas. The GMUG Oil and Gas Leasing Amendment includes no discussion of this issue at all. In dismissing this extraordinary circumstance, the Field Office again erred by addressing the suspension in isolation without considering the reasonably foreseeable development that the suspension makes possible. Sierra Club, 255 F. Supp. 2d at 1185. BLM does not question that the reasonably foreseeable development enabled by extending the leases will contribute to the introduction and spread of noxious weeds.

In conclusion, Leases 69999, 70000, and 70002 should have expired on May 31, 2017, and therefore no analysis included in this MDP or decisions authorized in this MDP may be applied to future development on those leases. These issues are discussed in more detail in a separate letter submitted by Wilderness Workshop and The Wilderness Society, herein incorporated by reference.

III. Endangered Species Act

Congress enacted the ESA to provide “a program for the conservation of . . . endangered species and threatened species.” 16 U.S.C. § 1531(b). Section 2(c) of the ESA establishes that it is “the policy of Congress that all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of this Act.” 16 U.S.C. § 1531(c)(1). The ESA defines “conservation” to mean “the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this [Act] are no longer necessary.” 16 U.S.C. § 1532(3). Section 7(a)(1) of the ESA explicitly directs that all federal agencies “utilize their authorities in furtherance of the [aforesaid] purposes” of the ESA. 16 U.S.C. § 1536(a)(1).

Section 7 of the ESA requires BLM, in consultation with the Fish and Wildlife Service (“FWS”), to insure that any action authorized, funded, or carried out by the agency is not likely to (1) jeopardize the continued existence of any threatened or endangered species, or (2) result in the destruction or adverse modification of the critical habitat of such species. 16 U.S.C. § 1536(a)(2). For each proposed federal action, BLM must request from FWS whether any listed or proposed species may be present in the area of the agency action. 16 U.S.C. § 1536(c)(1); 50 C.F.R. § 402.12. If listed or proposed species may be present in such area, BLM must prepare a

“biological assessment” to determine whether the listed species may be affected by the proposed action. *Id.*

If BLM determines that its proposed action may affect any listed species or critical habitat, the agency must engage in formal consultation with FWS. 50 C.F.R. § 402.14. To complete formal consultation, FWS must provide BLM with a “biological opinion” explaining how the proposed action will affect the listed species or habitat. 16 U.S.C. § 1536(b); 50 C.F.R. § 402.14. If FWS concludes that the proposed action will jeopardize the continued existence of a listed species, or result in the destruction or adverse modification of critical habitat, the biological opinion must outline “reasonable and prudent alternatives.” 16 U.S.C. § 1536(b)(3)(A).

BLM acknowledges the existence of four endangered Colorado River fishes—the razorback sucker (*Xyrauchen texanus*), Colorado pikeminnow (*Ptychocheilus lucius*), humpback chub (*Gila cypha*), and bonytail chub (*Gila elegans*) in downstream reaches of the lower Gunnison and Colorado rivers, and that these species could be affected by project-related depletions of flows in those rivers.¹⁰⁸ The Draft EA states that water depletions from the Colorado River system for dust suppression, construction, drilling, and well completions associated with the project could indirectly affect all four endangered big-river fishes and the recent 2017 Programmatic Biological Opinion for these species concurred with BLM’s determination that water depletions associated with Federal oil and gas programs are “Likely to Adversely Affect” the Colorado pikeminnow, razorback sucker, humpback chub, and bonytail chub.¹⁰⁹

As discussed in Citizen Groups’ scoping comments, BLM has must comply with its duties under ESA Section 7 regarding water depletion and other indirect and cumulative impacts on the endangered fish.¹¹⁰ Although a programmatic biological opinion for BLM’s Fluid Mineral Program (2017 PBO) was released in December 2017, it does not cure the need for proper ESA consultation or fulfill BLM’s substantive duty to insure against jeopardy.¹¹¹ The 2017 PBO presents a skewed effects analysis that does not take into account realistic depletion scenarios or the potential for baseline stream flows to fall below recommended flows. It further ignores the potential for severe drought, lacks any serious consideration of cumulative effects from future water demand, fails to consider the best available information regarding Colorado pikeminnow population trends, and fails to provide an honest assessment of the Recovery Program’s effectiveness in offsetting depletion effects.

For example, in the Gunnison River Basin it is assumed that depletions will occur at a steady rate of .8 cfs over the year (equal to 607 acre-feet of depletions per year).¹¹² Thus the

¹⁰⁸ DEA at 83, 85-86.

¹⁰⁹ Draft EA at 85-86.

¹¹⁰ See Citizen Groups’ scoping comments at 138-160.

¹¹¹ USFWS, Programmatic Biological Opinion for Water Depletions Associated with Bureau of Land Management’s Fluid Mineral Program within the Upper Colorado River Basin in Colorado (Dec. 26, 2017) (“PBO or “2017 PBO”).

¹¹² PBO at 59.

effects analysis averages the annual depletions over the year rather than looking at depletion effects under real-time conditions.¹¹³ In doing so, it irrationally assumes depletions will occur at a constant rate over the entire year and fails to consider the potential for rapid depletions occurring over a short time period (e.g., over a week or month), which could have immediate and harmful effects on the endangered fish. As result of the proposed oil and gas activities it is more than reasonable that tens of millions of gallons of water could be removed more rapidly over the course of a month to supply water for the drilling and fracking of multiple wells at a rate exceeding .8 cfs. The rapid depletion of water in a short time frame could have far worse effects than projected in the PBO, under low-flow conditions.

The depletion rate for the proposed project must also be put in context of all water depletions in the Gunnison River Basin, including the entire life of the project—not merely the first three years (17.9 acre-feet per year for the first three years).¹¹⁴ Without information disclosing and analyzing existing water depletions (e.g. from other oil and gas proposals like Bull Mountain, the 25-well EA, other reasonably foreseeable development, as well as other existing and reasonably foreseeable depletions from other activities) as well as such depletions over the life of this proposed 30-year operation and others, the indirect and cumulative impacts of the proposal remains elusive.

The PBO's effects analysis also uses an improper baseline by which depletion effects are measured, by assuming that summer flows in the Gunnison River will be maintained at the recommended flow of 750 cfs for drought years,¹¹⁵ as FWS states that the base flow of 1,050 cfs corresponds with the minimum 300 cfs from Redlands Diversion Dam and that flows above 950 cfs “prevent fine sediments from settling in riffles, which might smother eggs and larvae of endangered fish.”¹¹⁶ The PBO suggests that various water commitments will provide enough water to maintain these flows,¹¹⁷ without evidentiary support or analysis that these commitments will be sufficient in drought years, when water demand would be higher and water supplies scarcer. The Gunnison River PBO, to which the 2017 PBO refers, does not explain how base flow commitments would be met.¹¹⁸ If flow commitments are largely voluntary, it is improper for the PBO to assume that this minimum recommended flow would offset depletions.

The PBO's discussion of climate change does not give any serious consideration to the potential for more severe and frequent droughts within the 10-year term of the PBO and beyond, or other catastrophic events.¹¹⁹ Rather, it assumes that climate change will occur

¹¹³ See PBO at 52 (providing a flat amount for annual depletions in the Gunnison River Basin), 58.

¹¹⁴ Draft EA at 86.

¹¹⁵ See PBO at 59.

¹¹⁶ PBO at 51.

¹¹⁷ See PBO at 59.

¹¹⁸ Gunnison River PBO at 9-10.

¹¹⁹ The Gunnison River PBO also fails to give serious consideration to climate change impacts on these species, concluding that it “relies on the historic record to analyze a range of possible

“gradually” as if on a linear continuum, with only slight changes detectable over the next 10 years.¹²⁰ This ignores the potential for more frequent and severe extreme events precipitated by temperature rise, as demonstrated by recent droughts, severe storms, and wildfires across the U.S. Scientists have recently projected a 70-99% megadrought risk in the southwest by the end of the century under a business-as-usual GHG emissions scenario.¹²¹ A megadrought could last several decades and “would impose unprecedented stress on the limited water resources of the area.”¹²² The probability of megadrought is virtually certain (99% likely) if precipitation drops below normal. But regardless of how or whether precipitation changes, regional warming would significantly increase the risk of megadrought.¹²³ The PBO should have considered a severe drought scenario and whether minimum flows in the Gunnison River and other sub-basins could be maintained with dwindling water supplies and increased water demand in a drought year. A severe drought reducing the Recovery Program’s ability to maintain 750 cfs in the Gunnison River subbasin and other sensitive reaches could have potentially devastating effects on the four endangered fish species, and any depletions could severely exacerbate those effects.

The PBO’s discussion of climate change provides no sense of the potential magnitude of stream flow declines caused by temperature rise, the declines that have already occurred, and their impact on the Recovery Program. A number of studies quantify these potential stream flow declines, many of which are discussed in our Scoping Comment.¹²⁴ In addition, a 2017 study by Udall and Overpeck (not discussed in the PBO) has formally linked the Upper Colorado River system’s declining flows to warming temperatures in the region.¹²⁵ The study examined historical and recent temperatures, precipitation, and river flows, and concluded that temperatures averaging 1.6°F above normal in the Upper Basin contributed to one-third or more of the river’s 19%/year decline in flow from 2000 to 2014: “Fifteen years into the 21st century, the emerging reality is that climate change is already depleting Colorado River water supplies at the upper end of the range suggested by previously published projections.”¹²⁶ Projecting these results into the future based on current greenhouse gas emissions and trends,

future flows” even though it concedes that natural flow in the Colorado River Basin will be reduced and that lower and earlier runoff is predicted. *Id.* at 19-20.

¹²⁰ See PBO at 47 (“We believe that the primary net effects are likely to be in a gradual increase in the competitive edge for some nonnative fish at the expense of native fish, including the four endangered fish in the Upper Colorado River Basin, gradual reductions in streamflow, and gradual changes to the timing of peak flows.”).

¹²¹ Ault, Toby R. et al., Relative impacts of mitigation, temperature, and precipitation on 21st-century megadrought risk in the American Southwest, *Science Advances*, Vol. 2, no. 10, e1600873 (2016), DOI: 10.1126/sciadv.1600873 (attached as Exhibit 12).

¹²² *Id.*

¹²³ *Id.*

¹²⁴ See Scoping Comment at 66-68.

¹²⁵ Bradley Udall and Jonathan Overpeck, *The 21st Century Colorado River Hot Drought and Implications for the Future*, *Water Resources Research* 53 (2017), doi:10.1002/2016WR019638 (attached as Exhibit 13).

¹²⁶ *Id.*

the authors concluded that “[u]nabated greenhouse gas emissions will lead to continued substantial warming, translating to 21st century flow reductions of 35% or more.”¹²⁷

Another recent publication by the Colorado River Research Group notes that the Colorado River Basin has already warmed by roughly 2° F (the PBO states 1.6° F), and is already locked in to roughly 5° F of additional warming by mid-century “regardless of any behavioral changes that may or may not be implemented by the world’s governments.”¹²⁸ Beyond 2050, “[d]epending on the climate model and the GHG emissions scenario used, the range of additional warming likely falls within the 6 to 10° F range by 2100.”¹²⁹ The researchers further note that significant temperature-driven runoff declines in the Basin are likely, and that it is “increasingly evident that the strong warming trend is likely to overwhelm any modest changes in precipitation.”¹³⁰ Given the 15% decline in Colorado River flows this century compared to the previous century (or 19% decline, according to Udall and Overpeck 2017), the researchers suggest that average streamflows will decline significantly more than Bureau of Reclamation’s projections of a roughly 9% decline in average streamflows by 2060: “[W]ith 16 years of the 21st century already passed, there is now considerable evidence that a 9 percent decline is likely an optimistic scenario.”¹³¹ The PBO’s failure to discuss even a range of potential stream reduction scenarios, or quantitatively analyze how these declines are already harming the Recovery Program’s ability to offset depletions, and how much worse off it could be in the future, is unjustified.

In addition, the PBO’s curtailed approach in limiting its analysis to climate change impacts over the next decade is short-sighted: as conditions will become more inhospitable over the next decade and beyond, it is even more important now to establish robust populations that are resilient to climate change effects, and to minimize depletion impacts. The PBO lacks any analysis of how or whether the endangered fish will tolerate these impacts into the future, and whether the Recovery Program is sufficiently offsetting harms to strengthen populations and reverse population declines to ensure a resilient population in the face of climate change. This is particularly problematic, where as here the proposed oil and gas development is slated to last 30 years and other oil and gas proposals that will result in depletions, such as Bull Mountain, have an even longer horizon.

The PBO provides no analysis of the proposed project’s cumulative effects in connection with past, present, and future depletions by private and state projects and climate change. While it quantifies potential increased municipal and industrial water demand through 2050, it lacks any analysis of how these depletions together with the proposed project’s depletions would impact the endangered fish. Again, the PBO fails to answer the fundamental question of whether maintaining recommended stream flows is sustainable with increasing

¹²⁷ *Id.*

¹²⁸ Colorado River Research Group, *Climate Change and the Colorado River: What We Already Know*, 2 (October 2016), available at http://www.coloradoriverresearchgroup.org/uploads/4/2/3/6/42362959/crrg_climate_change.pdf.

¹²⁹ *Id.*

¹³⁰ *Id.*

¹³¹ *Id.* at 3.

water demand, climate change, and drought, or whether the Recovery Program would offset new depletions. It also fails to acknowledge the cumulative effects of increased private well development of the Mancos shale and associated water depletions, in connection with BLM's Fluid Mineral Development Program.

The PBO fails to use the best available scientific information in discussing Colorado pikeminnow population trends. The most recent population data from 2015 indicates that long-term abundance of pikeminnow (i.e., average of all yearly monitoring data) is 596 adults while short-term abundance (average of 5 most recent data points) is 446 adults.¹³² The PBO cites 2010 data indicating a long-term abundance of 644 adults, and a short-term abundance of 658 adults.¹³³ The failure to use the best available scientific information masks the severely weakened state of this population, and continued population declines since 2010.

The PBO cites to Osmundson 2017 but ignores several of its key findings regarding Colorado pikeminnow. As acknowledged by the PBO, Osmundson finds that “low abundance and a recent rapid decline suggest long-term population persistence is tenuous.”¹³⁴ However, the PBO fails to note Osmundson's finding that “recovery efforts have not sufficiently addressed ongoing threats affecting recruitment, including river regulation, non-native fish invasions, and other potential threats yet to be evaluated.”¹³⁵ Further, “no progress toward recovery was evident based on demographic trends,” leading the authors to conclude “the Colorado River population of Colorado pikeminnow has not recovered after 25 [years] of Recovery Program implementation.”¹³⁶ These conclusions cast serious doubt on FWS's findings that sufficient progress has been made in recovery of the Colorado pikeminnow, and that the Recovery Program is adequately offsetting depletion effects.¹³⁷

The paper recommends focusing on enhanced recruitment and spawning habitat to reverse this trend. Specifically, increasing the frequency of reservoir releases during spring runoff is needed to improve habitat, but “the frequency of years with peak flows capable of mobilizing coarse substrates [to improve spawning habitat] . . . has declined from 30% [in the period between 1976 to 1996] to 25% in more recent years.”¹³⁸ Moreover, this declining trend is likely to continue as water supplies decrease, and as long as spring flow releases are only voluntary: “With already tight water supplies, a warming climate trend, and increasing demands for water, the voluntary participation by dam operators to release fish flows may

¹³² 2016 Sufficient Progress Assessment at 6; *see also* USFWS, 2016-2017 Abbreviated Assessment of Sufficient Progress under the Upper Colorado River Endangered Fish Recovery program in the Upper Colorado River Basin, 4 (Dec. 10, 2017).

¹³³ PBO at 13.

¹³⁴ Osmundson, Douglas B. & Gary C. White, Long-term mark recapture monitoring of a Colorado pikeminnow *Ptychocheilus lucius* population: assessing recovery progress using demographic trends, 34 *Endangered Species Research* 131-147 (2017), doi: <https://doi.org/10.3354/esr00842> (attached as Exhibit 14).

¹³⁵ *Id.*

¹³⁶ *Id.* at 141, 143.

¹³⁷ PBO at 8, 68.

¹³⁸ *Id.* at 143.

diminish over time, limiting future peak flow augmentation opportunities.”¹³⁹ The PBO lacks any meaningful discussion of these increasing strains on the Recovery Program’s ability to offset water depletions, and whether the Recovery Program will remain effective in offsetting depletions.

While the PBO cites the sufficient progress memos for support that the Recovery Program is effective, these documents do not discuss the impact of climate change or the potential for severe drought conditions, and fail to assess the Recovery Program’s ability to offset depletions into the future, in light of these changing conditions. Without significant retooling of the Recovery Program to ensure adequate peak spring and base flows in the Upper Colorado River Basin to mitigate the effects of water depletions, BLM cannot continue to rely on the Recovery Program to mitigate depletion effects on the four Colorado River endangered fish. BLM’s failure to address these issues in an EIS and Section 7 consultation violates NEPA and the ESA.

Finally, while the PBO does adopt or recommend measures beneficial to the endangered fish, which are steps in the right direction, these measures do not go far enough. The PBO recommends “[d]uring times of drought when river levels are very low (e.g., late summers of 2002 and 2012),” that BLM “strongly encourage operators to use treated produced water, instead of fresh water, to the fullest extent practicable for fracking/well completions.”¹⁴⁰ It explains further: “The use of produced water does not constitute a water depletion and would not deplete water from rivers. This would allow some water to remain in the rivers occupied by endangered fish during the times when it is needed most.”¹⁴¹ This recommendation validates our concerns that the potential for another serious drought with harmful effects on the endangered fish is real, and that depletions from oil and gas operators could have significant consequences, contrary to the PBO’s attempt to minimize these effects. BLM should be required to ban fresh water use for all fracking operations, year-round, drought-year or not. Limiting this condition to drought years when flows are “very low” does not provide clear direction to oil and gas operators.

In sum, BLM’s reliance on the 2017 Programmatic Biological Opinion for the Fluid Mineral Program is unlawful, and does not satisfy its duties to insure jeopardy against the endangered fish. BLM must reconsult with FWS to address these numerous flaws in the 2017 PBO. Further, BLM must prepare a NEPA analysis addressing water depletion effects of horizontal drilling on the endangered fish, in light of climate change, population declines, mercury and selenium contamination, and Recovery Program failures in meeting recommended flows, as discussed in Citizen Groups’ scoping comments.

¹³⁹ *Id.*

¹⁴⁰ PBO at 69.

¹⁴¹ *Id.*

Should you have any questions, please do not hesitate to contact me.

Sincerely,



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