February 12, 2021

Via Electronic Delivery

Joshua Wayland, PhD
Surface Transportation Board
c/o ICF
9300 Lee Highway
Fairfax, VA 22031
Attention: Environmental filing, Docket No. FD 36284

Re: Draft EIS Comments on Uinta Basin Railway

Dear Mr. Wayland:

Thank you for the opportunity to comment on the draft Environmental Impact Statement ("draft EIS" or "DEIS") for the Uinta Basin Railway. The following comments on the draft EIS are submitted on behalf of the members and staff of the Center for Biological Diversity, Grand Canyon Trust, Western Resource Advocates, Living Rivers, Utah Native Plant Society,[1] Utah Physicians for a Healthy Environment, Mountain Lion Foundation, Conserve Southwest Utah, Friends of Browns Canyon, American Whitewater, Argyle Wilderness Preservation Alliance, Utah Tar Sands Resistance, Sierra Club, No Coal in Oakland, Southern Utah Wilderness Alliance, the Utah Rail Passengers Association, WildEarth Guardians, Elders Rising for Intergenerational Justice, Utah Audubon Council, and The Sunflower Alliance.

The Seven County Infrastructure Coalition's ("SCIC" or "Coalition") proposed crude oil railway is the first new freight railway construction of its kind and sweeping geographic scope in the U.S. in several decades. The preferred alternative, known as the Whitmore Park alignment ("project" or "railway"), would cut through 88 miles of rugged terrain in the Uinta Basin ("Basin"), including Indian Canyon and inventoried roadless areas of the Ashley National Forest. Construction of this route would involve paving 423 stream crossings and rerouting 55 streams; destroying and fragmenting thousands of acres of sensitive habitat for the highly imperiled Greater sage-grouse, migratory big game species, and several listed plants; and disrupting and displacing communities in Argyle Canyon. The draft EIS, however, fails to acknowledge the extent and nature of these effects by reducing the analysis to a mere accounting of number of resources or acres affected, and a generalized summary of adverse effects without meaningful discussion of their significance or site-specific analysis.

The draft EIS fails to acknowledge the very purpose of the project, which is to ramp up crude oil production in the Uinta Basin, by providing a new and cheaper means of transporting crude outside the Basin. As a result, the draft EIS fails to acknowledge the reasonably foreseeable effects of accelerated oil drilling and production throughout the Basin, while at the same time stating that up to 350,000 barrels of oil per day could be exported via the new rail to

[1] Utah Native Plant Society's participation in the letter is limited to issues involving native plants and their ecosystems.

out-of-state refineries, an amount far in excess of current production levels, and which, according to the SCIC, is not economically possible without the rail. By ignoring this reasonably foreseeable consequence of allowing a new crude oil transportation route, the draft EIS masks the air pollution, climate, and road safety impacts from increased oil drilling, production, and burning. Along similar lines, the draft EIS entirely fails to consider the reasonably foreseeable indirect and cumulative effects of increased tars sands and oil shale production that would be facilitated by the project.

The draft EIS's discussion of the railway's operations and downline effects is also severely deficient. It arbitrarily confines its analysis of downline operational impacts to only as far as the Denver Metro area, although crude oil would be destined for refineries many hundreds of miles further east, including Gulf Coast refineries. The analysis of derailment and spill risks does not take into account various risk factors, including the increased danger posed by unit crude oil trains and unique local factors that could increase the chance of derailment. It also fails to conduct meaningful analysis of the consequences of derailment and their potential severity.

The draft EIS fails to fully account for all direct, indirect, and cumulative criteria air pollutant and greenhouse gas (GHG) emissions from the project and uses outdated emissions data. It fails to acknowledge that the project would undermine attainment of health-based air quality standards and worsen the climate crisis. Its treatment of impacts on listed plants, Greater sage-grouse, and big game lacks any consideration of the current state of local populations and how the viability and health of these populations or species would be impacted. And its discussion of water resources lacks meaningful quantitative analysis of how streams would be polluted by runoff, spills and leaks, and sedimentation from stream crossings and realignments, and lacks meaningful evaluation of the severity of these effects.

Throughout the document, the draft EIS repeatedly fails to specifically identify possible mitigation measures and analyze their effectiveness. Instead, it defers the formulation of mitigation measures until after the project is approved, depriving the public of essential information regarding the feasibility and effectiveness of possible measure to reduce or avoid impacts, and the opportunity to weigh in on these issues.

Finally, the EIS must be revised to analyze potential impacts along the Tennessee Pass Line in Colorado, which Colorado, Midland & Pacific Railway Company—a wholly owned subsidiary of Rio Grande Pacific, the proposed operator of the Uinta Basin Railway—recently proposed to reactivate. The construction of the Uinta Basin Railway and reopening of the Tennessee Pass Line could result in crude trains traversing the Arkansas River Valley and Browns Canyon National Monument, threatening significant harm to these sensitive resources and recreational tourism.

In light of these serious errors, the Surface Transportation Board's (STB) Office of Environmental Analysis (OEA) must prepare a revised EIS fully addressing the issues raised in our comments and should recirculate the revised EIS for public comment.

I. The EIS's Range of Alternatives Is Inadequate

As an initial matter, the DEIS does not analyze an adequate range of alternatives. All alternatives analyzed in the DEIS result in the destruction of wetland habitat near and along the

Price River[2] and all alternatives come within less than one mile of Greater sage-grouse leks or mating grounds. The EIS should consider more protective alternatives of these important and highly sensitive resources, including an alternative that completely avoids wetlands along the Price River and an alternative that does not come within at least three miles of the leks in Emma Park. *Nat. Res. Def. Council v. U.S. Forest Serv.*, 421 F.3d 797, 813 (9th Cir. 2005) (holding that the Forest Service unlawfully failed to consider an alternative to a timber program that would have provided greater protection for old-growth habitat); *N.M. ex rel. Richardson v. BLM*, 565 F.3d 683, 711 (10th Cir. 2009) (faulting EIS for failing to consider alternative that would have closed sensitive area to oil and gas leasing). Instead of formulating an alternative that avoids sage-grouse abandonment of lek habitat, however, the alternatives seem to have been modified with only an eye toward avoiding BLM land, to avoid stronger federal protections for sage-grouse.

In addition, conservation groups suggested a "solutionary alternative" or electrified rail in their scoping comments. The EIS fails to analyze this alternative or explain why it should not be considered. The rail industry is advancing toward electrification in Europe, including battery-operated rail, and General Electric is currently working on a battery.[3] Electrified rail is feasible. The EIS should consider this alternative to reduce the project's impacts on energy consumption, air quality, and climate change.

II. The EIS Fails to Acknowledge the Railway's Impacts of Increasing Crude Production in the Uinta Basin

The DEIS fails to acknowledge that the purpose of the rail is to increase crude oil production in the Basin by providing a cheaper alternative to shipping Uinta crude oil outside the Basin, and thereby increasing crude oil demand and production in the Basin. As a result, the DEIS does not acknowledge various indirect impacts, including air pollution, water depletion and contamination, and wildlife habitat degradation from increased oil drilling, fracking, and oil production.

"Indirect effects" are "caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable." 40 C.F.R. § 1508.8.[4] Courts have found that fossil fuel extraction and consumption induced by a federal action are reasonably foreseeable, indirect effects. *See*, *e.g.*, *N. Plains Res. Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1081-82 (9th Cir. 2011) (finding that NEPA review must consider induced coal production at mines, which was a reasonably foreseeable effect of a project to expand a railway line that would carry

[2] Center for Biological Diversity, Aquatic Resources Map (2021).

[3] Halvorson, Bengt, Battery-powered electric trains will soon bring cleaner air – especially in Europe, Green Car Reports (March 29, 2020), https://www.greencarreports.com/news/1127629_battery-powered-electric-trains-will-soon-bring-cleaner-air-especially-in-europe.

[4] This action is governed by the Council on Environmental Quality's 1978 regulations, as amended and as in force in 2019, and so all references herein are to those rules. Although CEQ issued a final rulemaking in July 2020 fundamentally rewriting those regulations, the new rules apply only "to any NEPA process begun after September 14, 2020," or where the agency has chosen to "apply the regulations in this subchapter to ongoing activities." 40 C.F.R. § 1506.13 (2020). The Uinta Basin Railway NEPA process was begun before September 2020, and the DEIS nowhere indicates that it has chosen to apply the 2020 rules to this project. In addition, the changes made to the rules are unlawful, and the current administration is now reviewing the illegitimacy of the 2020 regulations.

coal, especially where company proposing the railway line anticipated induced coal production in justifying its proposal); *Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 549-50 (8th Cir. 2003) (environmental effects of increased coal consumption due to construction of a new rail line to reach coal mines was reasonably foreseeable and required evaluation under NEPA).

Here, it is reasonably foreseeable that the railway will lead to increased oil production in the Uinta Basin. The SCIC pitched the project to Uinta Basin communities and Utah state agencies based on the economic gains that could be realized from increased oil production. For example, in its grant application to the Utah Permanent Community Impact Board (CIB) for funds to pay for the environmental review and permitting process, the SCIC stated that "[a]ccess to alternate markets will raise the price paid for the Uinta Basin waxy crude and allow significant increases in oil production;" that "oil production would double, at a minimum" with access to markets outside Utah; and that "[a]ccess to multiple markets is the best market force to reduce or eliminate the loss/discount on the Uinta crude."[5]

In an updated grant application to the same agency, the SCIC provided findings from a study it commissioned by R.L. Banks & Associates ("R.L. Banks Study"),[6] touting that:

> The RL Banks report believes that rail would *facilitate increased oil production* in the Uinta Basin increasing from approximately 80,000 to 90,000 bopd to 225,000 to 350,000 Bopd (Bopd = barrels of oil per day) [current production for Salt Lake City (SLC) refineries is capped near 80,000 to 90,000 Bopd][7]

In a May 2020 filing with the STB, the SCIC's Executive Director submitted written testimony highlighting the economic benefits of increased oil production from developing the rail:

> The Uinta Basin Railway also could increase royalties and tax revenues. Royalties and tax revenues are received by state, local and tribal sovereign governments. The Coalition's consultants estimate that, between 2007 and 2016, the lack of adequate transportation infrastructure in the Basin resulted in a discount paid for oil produced in the Uinta Basin compared to the standard of West Texas Intermediate oil, which discount resulted in hundreds of millions of dollars of lost taxes and royalties to state and local governments. The development of the Uinta Basin Railway would give oil producers the opportunity to access new markets and *expand production* depending on adequate market conditions. Such *oil production expansion* would generate greater royalties and tax revenue.[8]

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[5] Feb. 2018 App., at 9-10 of 20 (unnumbered pages), Ex. 10.

[6] R.L. Banks & Associates, Inc., Pre-Feasibility Study of a Prospective Railroad Connecting the Uinta Basin to the National Rail Network (August 9, 2018) ("R.L. Banks Study").

[7] Seven County Infrastructure Coalition (SCIC), Sept. 2018 CIB App., Attachment A at 3 of 10 (emphasis added).

[8] SCIC, Petition for Exemption at 39-40 (May 29, 2020). *See also id*. at 41 ("The Uinta Basin Railway will provide a connection to the interstate rail network, giving shippers within the region an alternative to trucking. This rail option will provide these industries with the ability to access new markets and expand production…)

This statement strongly suggests that without the rail, Uinta oil prices and production have been suppressed due to local producers' lack of adequate access to alternative markets, but that with the rail, oil production would no longer be capped and would increase. Local oil operators in the Uinta Basin supported the Project on the same grounds. For example, one of the Basin's largest producers Newfield Exploration Company urged the Utah Permanent Community Impact Board to subsidize the Project, because it was needed to spur Uinta crude production:

> Numerous studies have shown transportation to be an issue with major consequences even before production volumes exceed local refinery capacity. Today, a number of operators in the Basin have reduced their drilling plans because of this challenge. . . .
>
> Although several large operators have intentions to increase production significantly in the Basin, based on the current transportation constraints, these plans are not likely to be realized. The proposed railroad would . . . provide access to alternative refining markets and increase competition for this historically discounted crude . . . .[9]

Indeed, the economic viability of the project depends on the railway spurring increased oil production in the Basin. In 2018, the applicant commissioned a study by R.L. Banks & Associates analyzing the feasibility of an oil railway in the Uinta Basin ("R.L. Banks Study").[10] According to the study, the "viability and competitiveness of the prospective railroad is directly related to the volumes of traffic which would be shipped over the line."[11] Further, "Basin oil producers will be able and motivated to extract, and market conditions *will encourage the extraction of, no less 225,000 bpd on a consistent basis if the railroad is built and operated as presently envisioned*."[12] This increase would be "almost a tripling of recent production volumes."[13] Under the R.L. Banks Study's "Higher" production forecast, Basin oil producers are projected to produce 350,000 barrels of oil per day in the Basin—quadruple current production

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[9] SCIC, Industry Letters of Support for Uinta Basin Railway (2018). *See also id*. (Finley Resources: "Producers have few options beyond the five Salt Lake City area refineries because there are no pipelines or railroads to move this oil, and heated oil in insulated trucks cannot be hauled much farther than Salt Lake City. Uinta Basin waxy oil production has long been subject to significant discounts compared to other US oil. This issue is compounded by the fact that we are currently producing more oil than the Salt Lake refineries can process. And many of us would like to produce more. We need a permanent solution to our transportation problems that will allow access to alternate markets . . . ."); *id*. (Crescent Point Energy: "The SCIC's effort to bring a viable rail system to the Basin will . . . create opportunities for the Basin to reach oil and gas markets that the Basin has not had the opportunity to reach in the past. . . . The successful completion of a Rail system in the Basin will continue to grow the opportunities of growth for the Vernal, Roosevelt and surrounding areas."); *id*. (Enefit: "The transport of goods and commodities into and out of the Uinta Basin is severely limited by existing infrastructure. The Uinta Basin Rail Line would provide access for oil and gas producers - both conventional and unconventional - to markets outside of the region, increasing competition and raising market prices for the Basin's high-quality products.").
[10] R.L. Banks Study *at* xiv.
[11] *Id*. at xiv.
[12] *Id*. at 15.
[13] *Id*.

volumes.[14] As STB Chairman Taubman noted in his dissent from the Board's decision preliminarily granting the SCIC's petition for exemption: "[T]here can be no doubt that the singular rationale for constructing the proposed railroad is to provide rail transportation to stimulate an increase in oil production in the Basin. It is beyond contradiction that without the hoped-for increase in oil production, there is virtually no possibility the railroad would be financially viable."[15]

The DEIS evades analysis of the increase in oil production facilitated by the rail by suggesting that increased production would depend solely on "global crude oil and capacity at oil refineries" and not on development of the railway:

> The actual volumes of oil that would move over the proposed rail line would depend on the *demand for crude oil from the Basin, which is determined by global crude oil prices and capacity at oil refineries.*

DEIS 2-35. However, the EIS must acknowledge that demand for crude oil from the Basin would also be determined by the price of *Uinta* crude, which is influenced in part by the costs of transporting it outside the Basin. The SCIC attributes the current Uinta crude price "discount" to the existing "lack of adequate transportation in the Basin," and has claimed that development of the rail would lead to expansion of production by eliminating this price discount.[16] Thus, the EIS must acknowledge that developing the rail would enable the desired price increase and demand and increased production of Uinta crude.

The failure to acknowledge this indirect effect infects the entire EIS, by masking significant impacts associated with expanded oil production in the Basin, which would be enabled by development of the rail. For example, the DEIS's discussion of air quality impacts fails to analyze the exhaust emissions from increased local truck traffic between oil fields and the rail terminal, even while admitting that increased truck traffic would result from construction of the rail. Further, it illogically claims that an increase in exhaust emissions would only be caused by an increase in oil production and would be entirely independent of the rail:

> Depending on market conditions, including the price of crude oil, the production of crude oil in the Basin could increase significantly in the future. *If the proposed rail line were constructed, trucks would likely transport much of the additional crude oil to the rail terminals near Myton and Leland Bench. This would increase local truck traffic and truck exhaust emissions.* Because increased crude oil production in the Basin is not part of the Coalition's proposed action and because the Board has no jurisdiction over and no way to predict future oil development in the Basin, an assessment of increased exhaust emissions from local truck traffic in the Basin would not be appropriate in this section.

DEIS 3.7-12 (emphasis added).

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[14] *Id*. at vi.
[15] Surface Transportation Board, Docket No. FD 36284S, Decision Preliminarily Granting SCIC Pet. for Exemption at 14 (Jan 4, 2020).
[16] SCIC Petition for Exemption at 39-40.

Oddly, however, in analyzing the project's rail traffic and operations, the DEIS assumes that the rail would transport anywhere from 130,000 barrels and 350,000 barrels of oil per day—an amount that far exceeds existing production levels by roughly 30% to four times existing levels—and would entail "a daily average of 3.68 to 9.92 and loaded and empty oil trains on the proposed rail line."[17] These forecasts are inconsistent with the DEIS's statement that the Board has "no way to predict future oil development in the Basin."

Moreover, for purposes of analyzing rail traffic, the DEIS states that rail construction would result in up to 10 trains of oil train traffic along the rail each day, which necessarily assumes "increased crude oil production" in the Basin.[18] On the other hand, for purposes of analyzing air quality impacts, the DEIS illogically assumes that any increases in local truck traffic to transport crude oil from oil fields to the rail terminal would not result from rail construction but from "increased oil production," which "is not part of the Coalition's proposed action." But increased oil production would be an *indirect effect* of the Coalition's proposed action, which in turn would generate *both* the truck traffic to the railway and the resulting oil train traffic out of the Basin. The EIS must be revised to correct its inconsistent assumptions and flawed reasoning.

The DEIS's cumulative impacts analysis, which discusses the impacts of higher levels of oil and gas development associated with transporting greater amounts of oil outside the Basin, does not cure the flawed analysis. This discussion treats the impacts from increased oil and gas development as if they would not be effects of the project, especially with respect to air quality impacts as noted above.[19] With respect to socioeconomic impacts, however, the DEIS suggests that the project would generate increased oil and gas development and increased tax revenues and economic activity.[20]

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[17] Surface Transportation Board, Office of Environmental Analysis, Uinta Basin Railway Draft Environmental Impact Statement (Oct. 2020) ("DEIS"), http://www.uintabasinrailwayeis.com/DocumentsAndLinks.aspx at 2-35.

[18] *See id*.

[19] For example, the DEIS uses data from the Monument Butte project to calculate oil and gas emissions for the "reasonably foreseeable development" scenario that would be associated with transporting higher amounts of oil outside the Basin with the rail project—but then discounts the Monument Butte project itself from the reasonably foreseeable development scenario in the cumulative impacts analysis without reasoned explanation. *See* DEIS at 3.15-28 ("To assess cumulative impacts on air quality and greenhouse gases, OEA added the estimated emissions from operation of the proposed rail line to estimated emissions from other reasonably foreseeable projects, including the oil and gas development that would be needed to meet the oil production scenarios, and compared those combined emissions to the emissions for the maximum emissions year from the Monument Butte EIS. *OEA did not add the maximum emissions year emissions from the Monument Butte EIS to the cumulative emissions from the proposed rail line and reasonably foreseeable future projects because doing so would unreasonably overestimate potential future emissions from oil and gas development and cumulative air quality impacts in the study area*.").

[20] DEIS at 3.15-45 ("Construction of the proposed rail line would increase transportation capacity to ship an additional 130,000 to 350,000 barrels of oil on average each day from existing oil fields in the study area (Figure 3.15-1). To produce a steady state volume of oil to meet the planned transportation capacity of the proposed rail line, OEA estimates that oil and gas companies would need to drill between 49 and 131 new wells annually and would need to construct ancillary facilities for oil field development . . . .

The failure to clearly disclose the causal relationship between the project and increased oil and gas development fails to accurately inform the public of its full costs and benefits. *Cf. High Country Conservation Advocates v. United States Forest Serv*., 52 F. Supp. 3d 1174, 1191 (D. Colo. 2014) (ignoring project's costs while touting its benefits is arbitrary).

In sum, the DEIS should disclose that the railway is intended to facilitate increased oil production and that its construction and operation could lead to quadrupling of oil production in the Uinta Basin. The DEIS should also disclose the reasonable foreseeably effects of this expansion in oil production, including increased

- drilling and fracking of new wells;
- water pollution from runoff, sedimentation, leaks, and spills;
- water depletions for drilling and fracking of new wells;
- hazardous waste disposal (e.g., wastewater and drill cuttings);
- truck traffic on local roadways to transport oil to the railway;
- air pollution from construction, drilling, production, and trucking;
- greenhouse gas emissions from construction, drilling, and production, as well as downstream emissions from transporting, refining, and burning the extracted oil; and
- habitat destruction and fragmentation from development of new oil wells and related infrastructure.

III. The OEA Failed to Address the Reasonably Foreseeable Development of Oil Shale and Tar Sands in their Indirect and Cumulative Impact Analyses

In taking a hard look at the environmental consequences of a proposed action, OEA must analyze the direct, indirect, and cumulative impacts of the proposed action. 40 C.F.R. § 1508.25(c). Direct impacts are those caused by the action that are occurring at the same time and place as the action. *Id.* § 1508.8(a). Indirect impacts are likewise caused by the action, but are later in time or further removed in distance from it; however, these impacts are still reasonably foreseeable consequences of the action. *Id.* § 1508.8(b). Cumulative impacts are those resulting from the "incremental impact of the action when added to other past, present, and reasonably foreseeable future actions," no matter what agency or person undertakes such actions. *Id.* § 1508.7.

There is no question that the development of oil shale and tar sands – highly destructive activities with huge carbon footprints – in the Uinta Basin are reasonably foreseeable future actions that would be facilitated by the proposed action. Therefore, the environmental impacts of this development must be considered as indirect and cumulative consequences of the proposed

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This estimated increase in annual oil production would generate long-term employment, labor income, and increased direct, indirect, and induced spending on goods and services in the cumulative impacts study area and would generate increased state and local revenue through income taxes and sales and use taxes. New wells drilled on state land or accessing state minerals would also generate additional revenue for the state through royalties and lease payments.")

rail line. Because the DEIS did not undertake this analysis, the NEPA evaluation is legally insufficient.

For example, the R.L. Banks Feasibility Study for the proposed project concludes that the Estonian oil shale company Enefit American Oil would start shipping significant quantities of its product on the planned rail line in 2026, a yearly amount that would double to 28,516 carloads in 2030. Specifically, based on an interview with Enefit, the authors of the study included in its higher forecast:

> the assumption that the plant would commence operations in mid-to-late 2025 and would generate approximately 14,258 carloads per year for three years, beginning in 2026, after which time volume would increase to a doubling of production, or 28,516 carloads per year, beginning in 2030.[21]

Similarly, a 2013 Utah Department of Transportation study concluded that current transportation infrastructure serving the Uinta Basin significantly limit overall oil and gas production opportunities in the Basin.[22] UDOT based this analysis in part on the assumption that oil shale and tar sands would be developed in the Uinta Basin and that current transportation infrastructure would be inadequate to move the product about of the Basin.[23] Thus, according to UDOT's analysis, the construction of additional transportation infrastructure, like the proposed rail line, would allow and encourage production of oil shale and tar sands in the Uinta Basin. This conclusion further cements the relationship between the planned rail line and the development of oil shale and tar sands in the Basin, underscoring again that the OEA must address in full the direct, indirect and cumulative impacts of these reasonably foreseeable activities on the full suite of resources and values in the Basin.

Recent agency decisions confirm that oil shale and tar sands development in the Basin is reasonably foreseeable. On September 24, 2018, BLM granted rights-of-way across federal land submitted by Enefit American Oil and Moon Lake Electric Association for authorization to construct and operate 19 miles of water supply pipeline, 9 miles of natural gas supply pipeline, 11 miles of oil product delivery pipeline, 30 miles of overhead 138-kilovolt power lines, and 6 miles of upgrading and paving of a county access road so that Enefit could build its proposed South Project oil shale project on private land.[24] On January 21, 2021, the Utah School and Institutional Trust Lands Administration (SITLA) approved an OBA for a lease of 16,696.29

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[21] R.L. Banks Study *at* 21; *see also id. at* xi & xiii.

[22] U.S. Department of Transportation *et al*., Final Report: Uinta Basin Energy and Transportation Study (April 2013) ("As shown in the traffic projection simulation results, many of the transportation corridors serving the Uinta Basin will face severe constraints given the projection of oil and gas–related traffic. The current constraints therefore reduce the overall oil and gas production opportunity for the Uinta Basin and the State."); *see also id.* at 74-75 ("Under current constraints, a significant portion of conventional and unconventional energy traffic that would otherwise be generated by producers cannot be carried, resulting in a shortfall of production.").

[23] *E.g. Id.* at 36-37.

[24] U.S. Bureau of Land Management, Record of Decision for the Enefit American Oil Utility Corridor Project (2018), https://eplanning.blm.gov/public_projects/nepa/37462/158127/193295/001_ROD_for_the_Enefit_Utility_Corridor_Project_-_Signed_9.24.18.pdf.

acres for tarsand stripmining at Asphalt Ridge with Valkor Energy Holdings, LLC who proposed to lease the lands through the "Other Business Arrangement" process.[25]

In December 2020, BLM proposed leasing 2,100 acres in Utah's Uinta Basin to tar sands developers.[26] According to *The Salt Lake Tribune* BLM "dust[ed] off an old proposal to sell federal leases on Asphalt Ridge and putting it out for public comment in an apparent effort to fast-track a final decision[.]"[27] "The proposed BLM leases are on six parcels intermingled with 16,200 acres of state trust land already under lease for tar sands development. The leases are also near an existing tar sands mine and processing plant on private land."[28] In addition, a Canadian firm called Petroteq Energy "is poised to extract marketable crude from tar sands south of Vernal on aptly named Asphalt Ridge" in the Uinta Basin.[29]

Additional "past and present" oil shale and tar sands development projects were catalogued by BLM in its review of the Enefit right-of-way. These projects include development of leases on 23,000 acres of Utah school trust lands (SITLA lands) and the approved Red Leaf Resources project which encompasses approximately 17,000 acres of SITLA lands and would extract 9,500 barrels of oil shale per day.[30] In the same review, BLM listed and considered other "reasonably foreseeable" oil shale and tar sands projects.[31] As did BLM, OEA must undertake a thorough evaluation of the direct, indirect and cumulative impacts of these projects on climate, environmental resources and values and public health as part of an adequate NEPA analysis.

Adverse environmental impacts from the Enefit project alone that the OEA must consider include:

- building a half-square mile industrial complex in the Uinta Basin – the first commercial-scale oil shale retorting and processing operation in the United States;
- strip mining up to 28 million tons of rock per year over 14 square miles of undeveloped lands—resulting in waste rock totaling up to 750 million tons;
- removing up to 100 billion gallons of water from the already over-allocated Colorado River basin during the next three decades, a time when climate change and growing populations are likely to reduce river flows even further;

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[25] Trustlands Utah, Board of Trustees Meeting Agenda for Jan 21, 2021, State of Utah School and Institutional Trust Lands Administration (2021).
[26] U.S. Bureau of Land Management, BLM National NEPA Register webpage announcing 21 Leases being offered in the Dec. 8, 2020 online lease sale, https://eplanning.blm.gov/eplanning-ui/project/2001127/570 (last accessed Jan. 26, 2021).
[27] Maffly, Brian, We've heard it before, but this Utah tar sands operation says it's poised to produce oil and actually make money, The Salt Lake Tribune (June 18, 2018) ("Maffly 2018"), https://www.sltrib.com/news/environment/2020/12/10/feds-fast-track-plan/.
[28] *Id.*
[29] Maffly 2018.
[30] U.S. Bureau of Land Management, Final Environmental Impact Statement for the Enefit American Oil Utility Corridor Project, Vol. I (May 2018), https://eplanning.blm.gov/public_projects/nepa/37462/145046/178753/2_Volume_I.pdf at Table 4-19.
[31] *Id.* at Table 4-19.

- nearly doubling oil production in the Uinta Basin, which already has over ten thousand oil and gas wells;
- emitting toxic air pollutants in an area recently designated as violating national health standards for smog due to winter-time inversions and pollution from existing fossil fuel production facilities; and,
- using an extraction and refining process that results in nearly 40% more carbon dioxide emissions per unit of energy than conventional oil, and more even than notoriously dirty tar sands, at a time when the world needs to move quickly to cleaner, not dirtier, fuels if humanity is to avoid the worst impacts of climate change.[32]

BLM's ROD on the Enefit right-of-way and programmatic EIS and ROD opening up vast areas of the Uinta Basin to Oil Shale and Tar Sands leasing provide further analysis of the destructive nature of oil shale and tar sands resources, their possible development and the adverse impacts that development would have on the environment and public health.[33] The severity of direct and indirect impacts from oil shale and tar sands in the sensitive Uinta Basin, already plagued by dangerous levels of air pollution must be addressed by the DEIS and a failure to do so fails to comply with NEPA.

IV. The EIS Must Clarify How the Project Will Affect Trucking to Salt Lake City and Salt Lake Oil Refineries

The EIS's assumptions regarding how the railway would affect trucking from the Uinta Basin to Salt Lake City refineries are unclear. On the one hand, the DEIS's socioeconomic impacts section suggests that trucking along this route would continue indefinitely and would not be affected by the railway:

> OEA expects that trucks would continue to transport crude oil to refineries in Salt Lake City, so jobs associated with long-haul trucking of crude oil from the Basin to refineries in Salt Lake City would not be affected.

DEIS 3.13-12. On the other hand, the DEIS's cumulative impacts section suggests that trucking between the Uinta Basin and Salt Lake City refineries would only continue in the "short-term":

> OEA does not anticipate that crude oil transported via the Action Alternatives would directly serve the existing oil refineries in Salt Lake City ***in the short-term***

[32] *E.g.* DEIS, FEIS and ROD for the Enefit right-of-way, including public comment (Appendix I) on the project to understand the unparalleled harms to environmental values, climate and public health anticipated from the Enefit project. U.S. Bureau of Land Management, Draft Environmental Impact Statement (DEIS) for the Enefit American Oil Utility Corridor Project, Vol. I (April 2016), U.S. Bureau of Land Management, Final Environmental Impact Statement for the Enefit American Oil Utility Corridor Project, DOI-BLM-UT-G010-2014-0007-EIS, Vol I (May 2018) ("Enefit FEIS Vol. I 2018"), and U.S. Bureau of Land Management, Record of Decision (ROD) for the Enefit American Oil Utility Corridor Project (2018). All documents available at https://eplanning.blm.gov/eplanning-ui/project/37462/570.

[33] U.S. Bureau of Land Management, The Approved Land Use Plan Amendments/Record of Decision for Allocation of Oil Shale and Tar Sands Resources on Lands Administered by the Bureau of Land Management in Colorado, Utah, and Wyoming and Final Programmatic Environmental Impact Statement (2013), and its supporting programmatic EIS.

> because those refineries do not currently have the facilities to accept trains carrying crude oil. OEA anticipates that the crude oil would be transported by rail to other states. Therefore, the additional production of crude oil would contribute to the national supply of crude oil but would not directly affect petroleum refining in Utah or directly contribute to petroleum-product production in Utah. OEA expects that the direct impacts from the proposed rail line would not result in cumulative impacts on petroleum refining or petroleum production in Utah.

DEIS 3.15-36 (emphasis added). While overall this passage suggests that the railway would not have any effect on Salt Lake refineries (or trucking to Salt Lake refineries), it also suggests that could change over the "long-term."

The EIS must clarify whether the cumulative impacts analysis or any other analyses in the EIS assume that the railway would eventually transport oil to Salt Lake City refineries beyond the "short-term," and if so, it should clarify how this assumption is used in the EIS's analysis (e.g., whether in assessing cumulative air quality impacts, the EIS assumes that rail will eventually displace trucking to Salt Lake refineries after a certain number of years).

The EIS, however, must use consistent assumptions throughout the entire document. The most reasonable assumption is that the rail will not displace trucking to Salt Lake City. A Rio Grande Pacific representative (the proposed operator) has publicly stated that building new rail offloading facilities at the Salt Lake refineries would be cost-prohibitive,[34] and therefore shipping oil by rail to these refineries is not likely to occur.[35]

V. The DEIS Fails to Analyze the Project's Geotechnical Impacts

The DEIS fails to present an adequate baseline for assessing geotechnical aspects of the proposal, thereby making it impossible to reasonably conclude that the geotechnical impacts of the project will not be significant. Rather than establish the necessary baseline data, the DEIS errs in providing for further investigation of geotechnical conditions as post-approval mitigation measures, thereby presupposing that the results of these investigations will not result in the discovery of significant and unmitigable impacts.

"NEPA aims (1) to ensure that agencies carefully consider information about significant environmental impacts and (2) to guarantee relevant information is available to the public. . . . The use of mitigation measures as a proxy for baseline data does not further either purpose." *Northern Plains Council v. STB*, 668 F.3d 1067, 1072 (9th Cir. 2011). In *Northern Plains*, plaintiffs challenged STB approval of construction of a rail line that would transport coal from mines to markets, arguing that the STB had failed to take the requisite "hard look" at the proposed project. Among the issues considered was whether the STB's imposition of post-approval mitigation measures to conduct additional studies and surveys to further assess the

[34] Stop the Uinta Basin, Frequently Asked Questions, https://www.stopuintabasinrailway.com/faq (last accessed on Jan. 26, 2021).

[35] The R.L. Banks Study projects that refined oil products (but not raw crude) from the planned Uinta Advantage Refinery would be shipped by rail to Salt Lake City under the "high" oil transport scenario. Because this would be an entirely new product that would be shipped to Salt Lake, existing truck traffic to Salt Lake City would not be affected by rail shipping of this product.

impacts of the project on various species was sufficient to satisfy its obligations under NEPA. The court held that it was not sufficient, noting that "NEPA requires that an agency provide the data on which it bases its environmental analysis," and that "[s]uch analyses must occur before the proposed action is approved, not afterward." *Id.* at 1083. The court noted that conducting additional studies or surveys after approval did nothing to help evaluate and understand the impact before construction: "In a way, reliance on mitigation measures presupposes approval. It assumes that – regardless of what effects construction may have on resources – there are mitigation measures that might counteract the effect without first understanding the extent of the problem." *Id.* at 1084-85. Regarding the STB's arguments that it was unable to conduct some surveys prior to approval due to rough terrain and restricted access to private land, the court noted that these excuses did not explain how conducting these surveys after approval rather than before would alleviate the issue." *Id.* at 1085.

In the DEIS OEA notes that "[c]onstruction of any of the Action Alternatives would involve large amounts of earthmoving and soil disturbance" that "could potentially be affected by geological hazards, such as landslides, but this impact would be minimized by the implementation of appropriate mitigation measures, including pre-construction geotechnical investigations to identify areas that are at risk of landslide." DEIS S-10. The DEIS specifically identifies the presence of geological units over which the railroad line would pass in areas known to be susceptible to mass movement, as well as unmapped mines and landslide deposit areas. DEIS 3.5-19, 3.5-21. *See also* DEIS 3.5-29. Because the construction of the project would "create steep slopes or disturb the surface within unstable geologic units," the DEIS notes that these activities "could cause geologic hazards such as landslides, debris flows, and rockslide." DEIS 3.5-19. Furthermore, "[i]f mass movement were to occur during or following construction, it could dislocate, damage, or destroy rail-related facilities and result in both environmental damage and potentially cause injury or death." *Id.*

The DEIS notes that the project's tunneling activities in unstable geologic units in particular increased both construction and post-construction risk of collapse, as well as potentially dangerous interactions with subsurface features such as groundwater and underground inflammable gases. DEIS at 3.5-21 to 3.5-22. As a proposed mitigation measure, the OEA recommends conducting geotechnical investigations "to identify and address such geologic hazards," concluding that if this were done "OEA concludes that the risks associated with collapse, water inrush, portal landslide, and gas explosion during tunnel construction would be minimized." *Id.* at 3.5-22. *See also id.* at 3.5-26.

The DEIS also notes the risk of induced liquefaction, where ground shaking causes soil saturated with water to temporarily lose strength and act like a liquid, potentially causing infrastructure built on the soil to collapse. *See* DEIS 3.5-3. The DEIS states that all of the Action Alternatives either cross or run close to the Duchesne-Pleasant Valley fault system, a poorly understood network of faults with a history of ground-rupturing seismic events and strong ground shaking. *See* DEIS 3.5-24. As a result, all of the Action Alternatives would be susceptible to induced liquefaction. To address this, the DEIS calls for the Coalition to conduct as post-approval mitigation measures geotechnical investigations to identify areas of risk and potentially replace such soils with engineered soils. DEIS at 3.5-24.

According to the DEIS, portions of the project study area appear to contain soils with high corrosivity to concrete or steel, making any such materials embedded in those soils

vulnerable to corrosion. DEIS 3.5-23. To mitigate this potential, OEA recommends imposing post-approval requirements to investigate soil corrosivity to identify corrosive soils for replacement. *Id.*

The DEIS's mitigation measures calling for further post-approval geotechnical investigation of identified risks to human health and the environment constitute precisely the same sort of impermissible deferral of environmental analysis observed by the court in *Northern Plains*. Rather than adequately assessing the potential effects of unstable geological soils and bedrock subject to mass movement or slumping, unmapped mines and landslide areas, high corrosivity soils, and soils at higher risk of seismically induced liquefaction, all of which are reasonably foreseeable risks that are actually foreseen by OEA, the OEA calls for identification of these risks *after* approval. OEA offers these investigations as mitigation measures, even though identifying these effects will do nothing to mitigate them. These measures presuppose the project's approval, even though the effects of the project are not understood because the requisite data has not yet been collected. Moreover, OEA has provided no reason for why these investigations cannot be conducted prior to approval. Accordingly, OEA must require that these investigations be conducted prior to approval, rather than as post-approval mitigation measures.

The potential direct impact of landslides, erosion, and unstable soils on railroads is far from theoretical. In 1983, a landslide in Thistle, Utah created a natural dam that blocked a rail line. As a result, Utah's State Hazard Mitigation Plan notes, "[t]he Marysvale branch of the Denver and Rio Grande Railroad was never reopened, leaving a large area of central Utah without rail service."[36]

The EIS must be revised to disclose existing geological hazards in the project area.

VI. The DEIS Fails to Adequately Analyze Transportation Safety Issues

The DEIS's analysis of the risks of derailment and other transportation hazards is seriously flawed. The EIS must expand the STB's "study area" of the likely main unit train transportation routes for Uinta crude cargoes beyond "the outskirts of Denver" to consider the risks of all the routings likely to be traversed by Uinta crude unit trains. Further, the EIS must consider any special environmental and geologic hazards for each route and unique risk factors to crude unit trains, in analyzing the chances of a derailment. It must also perform a robust analysis of the consequences of derailment, with attention to risks to densely populated areas.

A. The Downline Study Area Is Arbitrarily Limited

The EIS confines the "downline study area" to "segments of existing rail lines outside of the Basin that could experience an increase in rail traffic above OEA's thresholds at 49 C.F.R. § 1105.7(e)(5) if the proposed rail line were constructed." DEIS at 3.2-1. This area "extends from the proposed connection near Kyune to the northern, eastern, and southern edges of the Denver Metro/North Front Range air quality nonattainment area (Appendix C, *Downline Analysis Study Area and Train Characteristics*, Figure C-1)." *Id.*

[36] Utah Department of Public Safety, Division of Emergency Management, 2019 Utah State Hazard Mitigation Plan, at 146 (2019), *available at:* https://hazards.utah.gov/wp-content/uploads/Utah-State-Hazard-Mitigation-Plan-2019.pdf.

OEA's thresholds under 49 C.F.R. § 1105.7(e)(5), however, appear to only limit the area of analysis for air quality impacts. There is nothing in the regulation to suggest that it was intended to limit the STB's review of downline public safety impacts. The STB merely states in conclusory fashion: "Based on its experience applying the thresholds for air and noise on freight rail construction and operation projects, OEA has determined that these thresholds should also apply to freight rail safety and grade-crossing safety and delay." DEIS at C-1. It is unclear why this should be the case. OEA cannot limit NEPA review in this manner where NEPA requires the disclosure of indirect effects of a proposed action so long as they are reasonably foreseeable.

Limiting the downline study area for rail safety impacts to only those particular segments where train traffic is likely to increase by eight trains per day (or three trains per day in nonattainment areas) without explanation is arbitrary and unsupported. At a minimum, the EIS should analyze the overall risk of an accident along the entire route between the Uinta Basin and eastern refineries. Focusing on limited segments of the rail between and within the Uinta Basin and the Denver nonattainment area ignores the vast majority of the downline rail route along which an accident or derailment could occur.

B. The DEIS's Rail Safety Risk Analysis Must Be Revised

The DEIS's risk analysis analyzes both the probability and consequences of derailment using a quantitative risk assessment. As explained in Attachment A, risk assessments are notoriously flawed because they rely on shoddy and incomplete data and unreliable assumptions, and recent risk assessments of crude by rail accident risks have been discredited by real-world historical data.

Instead of performing a risk assessment based on irrelevant data, the EIS should look at real-world and site-specific local conditions and use real world data specific to crude oil trains in analyzing both the chances and consequences of a rail derailment, as further explained in Attachment A.

In any case, the DEIS's quantitative risk assessment contains major flaws, which must be corrected.

1. The DEIS's projection of accident rates is flawed

The DEIS does not consider local site-specific factors in assessing the risk of accidental derailment. Instead the DEIS merely takes into account the national average of derailment accidents, multiplied by an accident rate factor for the specific track class at issue (e.g., a factor of 2 for lower quality Class III tracks and a factor of 0.5 for higher quality tracks—meaning that accidents are twice as likely to occur on Class III tracks compared to the national average for all tracks classes, and half as likely to occur for higher class tracks compared to the national average for all tracks overall). DEIS at E-2.

Numerous local factors can increase the risk of derailment including climate, local geological conditions, and condition of tracks. The DEIS notes that the proposed rail will be built in areas prone to landslides and soil erosion by wind and water, while substantial portions of the project area's landslide potential soil characteristics are unknown. For example:

> In some locations, the weak and weathered Green River Formation has failed, resulting in mass movement. Approximately 2,200 acres in the study area have been mapped as landslide, debris flow, and rockslide areas (Utah Geological Survey 2010a). These include deep or unclassified landslides that are generally more than 10 feet thick and deep, as well as shallow landslides from talus, colluvial, rock-fall, glacial, or soil-creep deposits (Utah Geological Survey 2010b) (Figure 3.5-2). Mapped landslides lie primarily in the southwestern portion of the study area underlain by the Green River Formation. However, this portion of Utah has not undergone an extensive landslide mapping; accordingly, this mapped acreage likely represents only a small proportion of areas affected by mass movement.

DEIS at 3.5-7. Landslides can and have caused train derailments.[37] Flooding could also increase the risk of derailment.[38] Given the hundreds of stream crossings and stream realignments required for the project and proposed development in floodplains, derailment caused by flooding could be a real risk.

Further, the Canada National Transportation Safety Board has stated that unit trains, made up entirely of tank cars, could make tracks more susceptible to failure.[39] The frequent running of crude unit trains on the proposed railway may increase the risk of track failure.

The DEIS should consider all site-specific conditions and hazards that may increase the risk of track weakening and/or derailment.

In addition, the DEIS fails to consider the unique derailment risks posed by heavy, long unit trains that would exclusively transport crude oil. The DEIS's statement that "the specific cargo type does not determine the chance of a train accident" is incorrect. DEIS at E-4. According to the Pipeline and Hazardous Materials Safety Administration (PHMSA), such carloads tend to be heavier and thus more susceptible to derailment:

> There is reason to believe that derailments of [High-Hazard Flammable Trains] will continue to involve more cars than derailments of other types of trains. There are many unique features to the operation of unit trains to differentiate their risk. The trains are longer, heavier in total, more challenging to control, and can produce considerably higher buff and draft forces which affect train stability. In addition, these trains can be more challenging to slow down or stop, and can be more prone to derailments when put in emergency braking, and the loaded tank

[37] Washington State Energy Facility Site Evaluation Council, Adjudication Findings of Fact, Conclusions of Law, and Order to Proceed to Recommendation to the Governor, In the Matter of: Application No. 2013-01 Tesoro Savage, LLC, Vancouver Energy Distribution Terminal, Case No. 15-001 at 37, 39, 43, 62-63 (Dec. 19, 2017) (hereafter "Washington EFSEC 2017").
[38] Chavez, Nashelly, Flooding likely factor in train derailment, Union Pacific says, Sacramento Bee (Feb. 11, 2017), https://www.sacbee.com/news/local/transportation/article132227414.html.
[39] Martell, Allison, Exclusive: CN Rail derailment numbers soared before recent crashes, Reuters (Mar. 23, 2015) https://www.reuters.com/article/instant-article/idUSKBN0MJ0AZ20150323.

> cars are stiffer and do not react well to track warp, etc., which when combined with high buff/draft forces can increase the risk of derailments.[40]

The length of crude unit trains proposed here—up to almost two miles long—would also affect the risk of derailment. Including all freight train data in the accident rate analysis is unsupported. The DEIS should analyze the rate of crude oil unit train derailments, not that of freight trains generally.

The DEIS's analysis of the risk of derailment also assumes that loaded and empty cars would have an equal risk of derailment. DEIS at 3.2-5 ("Because OEA predicts that accidents would be equally likely to occur for loaded trains leaving the Basin and empty trains entering the Basin, only half of the predicted accidents would involve loaded trains with the potential to release any quantity of crude oil."). This assumption is not backed by any evidentiary support or fact-based reasoning. A study analyzing derailment data from the Federal Railroad Administration's database found: "Approximately five times more loaded unit train derailments were recorded in the database than empty unit trains . . . ," but the study could not compare the *rate* of derailments for loaded versus unloaded trains in the absence of rail traffic data.[41] Still, the assumption that loaded and empty cars have an equal chance of derailment seems highly questionable given that loaded trains are heavier and would take longer to decelerate. The EIS must justify this assumption with reasoned analysis and data.

The DEIS also attempts to minimize the increased risk of a derailment by stating that the probability of an accident of unit crude trains between the Uinta Basin and Denver is lower than the current baseline probability of an accident along this route. DEIS at 3.2-7. ("Table 3.2-2 shows that the predicted accident risk involving trains coming from or heading to the proposed rail line would be lower than the baseline accident risk on all downline segments except for the Kyune to Denver segment."). But the new rail line would *add to* the overall risk of train derailment along this route by increasing overall traffic levels, not reduce the overall chance of a derailment as the DEIS misleadingly suggests.

The DEIS must also consider the safety record of Rio Grande Pacific in its analysis of accident rates. The STB requires the applicant to submit in its environmental report for the proposed action "the applicant's safety record (to the extent available) on derailments, accidents and hazardous spills." 49 CFR 1105.7(7)(e)(ii). This real-world historical data should be taken into account in analyzing the project's chances of derailments, accidents, and hazardous spills.

Further discussion of flaws in the STB's accident probability analysis is provided in Attachment A.

2. The DEIS minimizes the consequences of derailment

[40] U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration, Draft Regulatory Impact Analysis for Hazardous Materials: Enhanced Tank Car Standards and Operational Controls for High-Hazard Flammable Trains; Notice of Proposed Rulemaking, July 2013 ("Draft RIA PHMSA-2012-0082") at 24.

[41] Li, Weixi, Quantitative Analysis of the Derailment Characteristics of Loaded and Empty Unit Trains, Journal of the Transportation Research Board (Nov. 2018), https://doi.org/10.1177/0361198118810780.

The DEIS also downplays the consequences of derailment and fails to reliably and meaningfully analyze the consequences of a crude train accident. An EIS's analysis of "reasonably foreseeable" impacts should include impacts "which have catastrophic consequences, even if their probability of occurrence is low, 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(b)(1).

As an initial matter, the DEIS's methodology for determining the probability and frequency of release of crude oil cargo is entirely opaque. The DEIS merely cites to various data that it relies on (e.g., accidental releases in Utah, average number of cars derailed in a crude by rail derailment, volumes of oil released in select major spill releases) and vaguely refers to "other" unidentified data without explaining how this data was weighted in its quantitative analysis or its method of determining the probability of a spill or release. DEIS at E-2 to E-4. The EIS must disclose all data and the methods used to make these projections.

It is also unclear whether in determining the probability of a release, the DEIS considered data or factors unique to crude oil unit trains. In a nine-year period between 2006 and 2016, almost two-thirds of crude and ethanol accidents (16 out of 24) spilled more than a quarter of the derailed tank car contents. [42] The average release from a crude oil or ethanol train derailment was 270,000 gallons, which is equivalent to about 30 gasoline cargo tank trucks.[43] However, the DEIS suggests that if any spills were to occur they would likely be minor releases "equivalent to one car or less." DEIS E-4.

The STB's quantitative analysis limits the consideration of consequences to only the occurrence and frequency of spills, presented in a chart showing small probabilities. DEIS at E-4. The same expert whose work the DEIS relies on for its rail safety risk analysis has attested that if crude oil is spilled in derailment "there's a fair chance that there's going to be an ignition source which will lead to a fire."[44] But the DEIS fails to estimate the likelihood, nature, size, or effects of potential fire/explosion impacts of any of the potential release volumes (e.g., area of impact and evacuation, number of people/homes evacuated, number of fatalities, hours or days burning, emergency response costs). Moreover, the DEIS fails to discuss these impacts in the context of the local environment along the proposed rail routes and representative downline and local communities that could be affected, and how they would be impacted.

The DEIS downplays the risks of spills and fires from releasing Uinta Basin crudes without citing any evidence or analysis on the properties of waxy crude, oil shale, or bitumen. It also does not acknowledge the potential for spills and release of a number of other products, including refined oil products and fracking chemicals, which the railway is likely to transport.

The DEIS also minimizes the risks of a spill accident by assuming that new federal oil tanker standards, once fully in effect, will effectively reduce risks, when these regulations are only marginally more effective in reducing the risk of a spill given the compromise that

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[42] Washington EFSEC 2017 at 52; Prefiled Testimony of Robert Chipkevich Filed by the City of Vancouver, In the Matter of Application No. 2013-01, Tesoro Savage, LLC, Vancouver Energy Distribution Terminal, Case No. 15-001 at 13 (May 9, 2016) (hereafter "Chipkevich Testimony").
[43] *Id.*
[44] *Id. at* 53.

regulators and rail shippers have struck: every additional layer of protection required to improve safety reduces the amount of cargo that can be transported given the constraints of train weight restrictions. The PHMSA estimates that the DOT-117 will only provide a 21% risk reduction over the unjacketed CPC-1232 and only a 10% risk reduction over the jacketed CPC-1232.[45] Evidence demonstrates that even the latest generation DOT-117 cars—which all oil tankers must upgrade to by 2025—puncture at speeds lower than the speed at which derailments occur.[46] DOT-117 cars have a puncture velocity of only 12.3 miles per hour and are designed to withstand pool fires for only up to 100 minutes and torch fires for up to 30 minutes.[47] Chlorine tank cars with 3/4-inch shells similar to the DOT-117 model punctured in accidents in South Carolina and Texas.[48]

The DEIS assumes that local emergency responders along the routes will have the capability to respond to serious derailments and crude rail disasters (e.g., training, manpower, access to high volumes of water/foam, communication/notification systems), without evidentiary support. In addition, once a fire occurs, there are "low odds of being able to actively fight and extinguish such a fire"; as of 2017, "no High Hazard Flammable Trains fire has been controlled by using an offensive strategy during Phase I and . . . fire fighters typically use either a defensive or non-intervention strategy."[49]

The DEIS must address the limitations of federal oil train regulations, and local emergency response.

Additional explanation of the flaws in the STB's accident consequences analysis is provided in Attachment A.

C. The DEIS's Analysis of Traffic Safety Impacts Is Flawed

The DEIS's comparison of the no-action alternative and action alternatives with respect to traffic safety risks is irrational.

The DEIS concludes that vehicle accidents would decline under any of the action alternatives in comparison to the no-action alternative because truck traffic between oil fields and the existing Price River Rail Terminal would be eliminated due to construction of the rail. DEIS at 3.2-8 ("OEA anticipates that the proposed rail line would eliminate the existing tanker truck traffic transporting crude oil from production areas in the Basin to the Price River Terminal in Wellington, Utah. Under the No-Action Alternative, crude oil that currently moves to the Price River Terminal from the Basin by truck would continue to move by truck and the benefits of the proposed rail line in terms of prevented vehicular accidents would not be realized.")

However, the DEIS ignores the increased risks of traffic accidents that would be caused by the significant increase in truck traffic on local roads to bring crude oil from oil fields to the rail

[45] Draft RIA PHMSA-2012-0082, p. 120.
[46] *Id*. at 52.
[47] *Id*. at 39-40, 346.
[48] *Id.*
[49] *Id*. at 54-55, 203.

terminal. *See* DEIS 3.2-8. This new traffic would not occur but for the new rail construction and is a reasonably foreseeable effect of the rail.

The DEIS discounts this increase in local truck traffic by claiming that any such increase would be attributable to an increase in Uinta crude production and not the rail. See section II above. But, elsewhere, when considering the no-action alternative, the DEIS has no problem considering how vehicle accident rates would be affected under the no-action alternative if oil production were to increase in the future:

> If oil production in the Basin were to increase in the future in response to market conditions, truck traffic on local roadways could increase under the No-Action Alternative because there would be no alternative transportation option available. This potential future increase in truck traffic would result in a greater number of vehicular accidents and decreased transportation safety under the No-Action Alternative relative to any of the Action Alternatives.

DEIS 3.2-8.

The DEIS's consideration, on the one hand, of how the no-action alternative would affect truck traffic and road accidents "if oil production in the Basin were to increase in the future," but on the other hand, its refusal to consider how any of the action alternatives would affect local truck traffic with increased oil production, is arbitrary. This is especially because, as noted in section II, the railway is specifically geared toward increasing Uinta crude production, and because the DEIS assumes that the rail will transport significant quantities of crude oil (at rates up to quadruple existing production levels), which trucks will have to bring to the rail terminal.

VII. The OEA Fails to Evaluate the Impact of the Proposed Project on Roadless Areas and on Roadless Values

The DEIS acknowledges that the preferred alternative – the Whitmore Park alignment – and the Indian Canyon alignment would damage at least 394 acres of Inventoried Roadless Areas (Roadless Areas) in the Ashley National Forest.

> Approximately 394 acres, or 98 percent of Forest Service lands in the study areas of the Indian Canyon alternative and Whitmore Park Alternative have been identified as IRAs. There are no Forest Service lands or IRAs in the study area for the Wells Draw Alternative.

DEIS at 3.11-7.

Management of Roadless Areas are governed by Roadless Area Conservation regulations (Roadless Rule). 66 Fed. Reg. 3244, 3247-48 (Jan. 12, 2001) (to be codified at 36 C.F.R. § 294). To protect valuable natural resources that are becoming increasingly scarce on public lands, the Roadless Rule generally forbids road construction and logging in Roadless Areas. The Roadless Rule defines "road construction" as an "activity that results in the addition of forest classified or temporary road miles." The rule defines "temporary road" as a road "authorized by contract, permit, lease . . . not intended to be part of the forest transportation system and not necessary for long-term resource management." 36 C.F.R. § 294.11.

Roadless Areas and other lands without roads are becoming increasingly scarce in our Nation and even within our National Forests. By virtue of their roadless and undeveloped character, these pristine lands offer crucial habitat for wildlife, including rare plants and animals, sources of public drinking water, significant opportunities for dispersed recreation and large undisturbed landscapes that provide solitude and seclusion. 66 Fed. Reg. 3244. In addition, these lands safeguard native biological diversity, present excellent opportunities for scientific study and protect against the spread of invasive species. *Id.* Nationally, Roadless Areas represent only two percent of the total land base of the United States and 28 percent of the 192 million acres of the National Forest System. *Id.*

The Forest Service determined that the Roadless Areas of the Ashley National Forest are valuable because they contain high quality or undisturbed soil, water and air; sources of public drinking water; diversity of plant and animal communities; habitat for threatened, endangered, and sensitive species, and for species dependent on large, undisturbed areas of land; non-motorized and semi-primitive camping and recreation; natural scenic landscapes; and traditional cultural properties and sacred sites.[50] According to the agency, these values are especially important and achieve their high quality specifically because roadless areas are largely undisturbed by motorized use, development and road construction.

Rather than taking a hard look at whether the two alternatives violate the Roadless Rule and at the adverse impacts the proposed project has on Roadless values, including values associated with unroaded and undeveloped areas, within the Ashley National Forest, the OEA refuses to address these issues and improperly put off these considerations for another day:

> For either the Indian Canyon Alternative or the Whitmore Park Alternative, the Coalition would seek Forest Service approval for the rail line right-of-way, which would include review by the Regional Forester to ensure consistency of the proposed rail line with the 2001 Roadless Rule (LUR-MM-4).

For several reasons, this approach violates NEPA.

A. Any Forest Service Approval of a Right-of-Way Over Ashley National Forest Lands, Including Roadless Areas, Is "Connected" to the Proposed Project

Any approval of the rail line right-of-way over National Forest lands is an action inexorably connected to the proposed project and its alternatives – neither the Indian Canyon nor the Whitmore Park alternatives is feasible without Forest Service approval.

When determining the scope of an EIS for a major federal action, Council on Environmental Quality (CEQ) regulations implementing NEPA require that agencies consider

[50] *E.g.* Trans West Express EIS, Appendix H, Inventoried Roadless Area and Unroaded/ Undeveloped Area Attributes (June 2013) ("TWE EIS, App. H") (listing the attributes of Roadless Areas and unroaded and undeveloped areas in the Ashley National Forest). The DEIS must map these areas vis-à-vis the various alignments and present a defensible analysis of the extent of impacts such as noise, vibrations, light pollution, emissions and impairment of scenic beauty.

the "direct," "indirect," and "cumulative" impacts of the action and any "connected actions" that are "closely related" to the major federal action. 40 C.F.R. § 1508.25. Connected actions must be considered together to prevent an agency from dividing a project into multiple "actions," "each of which individually has an insignificant environmental impact, but which collectively have a substantial impact." *Native Ecosystems Council v. Dombeck*, 304 F.3d 886, 894 (9th Cir. 2002) (citation omitted).

> Actions are "connected" if they:
>
> (i) [a]utomatically trigger other actions which may require environmental impact statements; (ii) [c]annot or will not proceed unless other actions are taken previously or simultaneously; and (iii) [a]re interdependent parts of a larger action and depend on the larger action for their justification.

40 C.F.R. § 1508.25. Both the Ninth and Tenth Circuits utilize an "independent utility" test to determine whether multiple actions are connected so as to require an agency to consider them in a single NEPA review. *Native Ecosystems Council*, 304 F.3d at 894; *Utahns for Better Transp. v. U.S. Dep't of Transp.,* 305 F.3d 1152, 1183 (10th Cir. 2002). "The crux of the test is whether **each of two projects** would have taken place with or without the other and thus had independent utility." *Sierra Club v. BLM*, 786 F.3d 1219, 1226 (9th Cir. 2015) (quoting *Cal. ex rel. Imperial Cnty. Air Pollution Control Dist. v. U.S. Dep't of the Interior*, 767 F.3d 781, 795 (9th Cir. 2014)) (internal quotation marks omitted) (emphasis added); *Wilderness Workshop v. BLM*, 531 F.3d 1220, 1229 (10th Cir. 2008). This test requires analysis of both projects to determine whether they both would have taken place without the other. *Id.*

Here, neither the proposed project, particularly the Indian Canyon and Whitmore Park alternatives, nor the right-of-way approval have any independent utility. Any proposal to approve a right-of-way for the rail line over forest lands would not be considered except in the context of the rail line project proposal. Similarly, the preferred alternative and the Indian Canyon Alignment cannot proceed without a right-a-way approval. Said another way, without the right-of-way, the two alternatives cannot be built and without the two proposed rail line alternatives, the right-of-way serves no purpose. Thus, because any right-of-way approval and the rail line proposal are connected actions, the DEIS must disclose and evaluate the impacts of the combined actions on Roadless Areas and Roadless values.

B. At the Very Least, Consequences to Roadless Areas and Roadless Values Are Indirect and Cumulative Impacts of the Proposed Rail Line Project

NEPA requires federal agencies to take a hard look at the direct, indirect and cumulative impacts of the proposed project and its alternatives. 40 C.F.R. § 1508.25(c). At a minimum, the geographic boundaries of an adequate NEPA analysis must be broad enough to encompass all potentially significant environmental impacts to the resources at issue, such as air quality, water quality, wildlife, recreation and public safety. NEPA's "hard look" requirement directs that an EIS address environmental consequences that are "reasonably foreseeable" from the proposed action and its alternatives. 40 C.F.R. § 1508.25. An effect is "reasonably foreseeable" if it is

"sufficiently likely to occur that a person of ordinary prudence would take it into account in reaching a decision." *City of Dallas v. Hall,* 562 F.3d 712, 719 (5th Cir. 2009).

Thus, because damage to Roadless Areas and Roadless values are reasonably foreseeable direct, indirect and cumulative impacts from the proposed rail line project, they must be evaluated as part of the current EIS. Any NEPA analysis that neglects to take a hard look at these potential impacts necessarily falls short.

C. The DEIS Does Not Take a Hard Look at the Impacts of the Rail Line Project on Roadless Areas and Roadless Values

Thus, regardless of whether it does so because approval of the right-of-way over Roadless Areas or unroaded areas is a connected action – which the law confirms it is – or because the impacts of the approval are a reasonably foreseeable direct, indirect or cumulative consequence of the proposed project, the OEA must take a hard look at the impact of the Whitmore and Indian Canyon alternatives on Roadless Areas and values. This hard look must be undertaken now and may not be postponed because, *inter alia*, this is an important consideration that must inform decision makers.

Initially, the DEIS must consider whether the rail line alternatives "threaten[] a violation of Federal, State, or local law or requirements imposed for the protection of the environment." 40 C.F.R. § 1508.27(b); *see also id.* § 1502.2(d) ("Environmental impact statements shall state how alternatives considered in it and decisions based on it will or will not achieve the requirements of [NEPA] and other environmental laws and policies."). Because the Roadless Rule is an environmental law, this examination is mandated. The DEIS suggests that a railroad "may be authorized in IRAs if the use can be accommodated without road access and the use and occupancy is consistent with the management objectives for the IRA values[.]" DEIS at 3.11-18. The agencies admit that "[c]onstruction of new temporary access roads within IRAs under any of the Action Alternatives would be incompatible with the 2001 Roadless Rule." *Id.*

However, the DEIS makes no effort to address whether or not, for example, the proposed rail line would entail the construction of temporary roads or whether or not the building of a rail line in a Roadless Area is consistent with Roadless values. This examination is particularly warranted given that the rail line would entail railbed and track construction, construction staging areas, bridges, culverts, stream realignments, tunnels, grade crossings, road relocations, siding tracks, set-out tracks, distribution and power lines, communication towers, fencing, and retaining walls. *E.g.* DEIS at 2-30 to 2-35. It is also anticipated that the rail line will hold between 3.68 to 10.52 trains per day, on average, each train containing more than 110 cars. DEIS at 2-35.

Second, the DEIS must consider impacts of the proposed project and its alternatives on Roadless values, including values associated with any undesignated unroaded and undeveloped areas.[51] To do this, the OEA must map these areas vis-à-vis the various alignments based on a defensible analysis of the extent of impacts such as noise, wildlife fatalities and harassment, vibrations, light pollution, emissions and impairment of scenic beauty. The DEIS must then take a hard look at the damage that the construction and operation of the proposed rail line might have

[51] *E.g.* TWE EIS, App. H.

on the values that the Forest Service has assigned to the relevant Roadless Areas and the objectives by which the agency manages these areas. The same assessment must be undertaken for any additional unroaded and undeveloped areas that may be impacted by the project and its alternatives.

D. The OEA Failed to Evaluate the Consistency of the Proposed Project with the Ashley Forest Plan

The 1986 Ashley National Forest Land and Resource Management Plan (1986 Forest Plan) [52] was developed pursuant to the National Forest Management Act (NFMA). Under NFMA, any permits, contracts, and other instruments for the use and occupancy of National Forest System lands must be consistent with the relevant Forest Plan. *E.g.* 16 U.S.C. § 1604(i). Therefore, any use of the Forest by the proposed project must be consistent with this plan. As a result, the DEIS must take a hard look at whether the proposed project and its alternatives are consistent with the Forest Plan. OEA must determine whether the proposed project and its alternatives "threaten[] a violation of Federal, State, or local law or requirements imposed for the protection of the environment." 40 C.F.R. § 1508.27(b); *see also id.* § 1502.2(d) ("Environmental impact statements shall state how alternatives considered in it and decisions based on it will or will not achieve the requirements of [NEPA] and other environmental laws and policies."). Further, the DEIS must take a hard look at the direct, indirect and cumulative impact the proposed project may have on the management values, purposes, goals, objectives, standards and guidelines adopted by the 1986 Forest Plan. This it has not done.

For example, the 1986 Forest Plan divides the Ashley National Forest into unique Management Areas. However, the DEIS fails to specify which Management Areas the project will impact and how the project and its alternatives might impinge upon these Management Areas and the purposes for which they were designated. Ultimately, the DEIS must also take a hard look at whether these impacts are consistent with the Forest Plan. Not only do NEPA and NFMA require such analyses, but plainly these evaluations are necessary to well-informed decision making and must be completed before the STB and the cooperating agencies consider the proposed project and its alternatives.

Forest Plans set out management prescriptions, standards and guidelines for future decision making and are adjusted based on monitoring and evaluation. As projects and activities are proposed and reviewed – for example the rail line project – the plan is used in project-level decision making. The plan management area prescriptions and forest-wide direction are the ordinances under which site-specific decisions are made. Therefore, it is incumbent on the DEIS to examine whether the proposed rail line is in keeping with the 1986 Forest Plan.

More specifically, while the DEIS discusses adverse project impacts, including anticipated harms to air quality, water quality, riparian resources and wildlife, the document does **not** address these issues in the context of the 1986 Forest Plan and therefore does not meet the requirements of NEPA and NFMA. Rather, the analysis must evaluate whether the proposed rail

[52] U.S. Department of Agriculture, Land and Resource Management Plan for the Ashley National Forest, Forest Service Region 4 Ashley (1986), available at https://www.fs.usda.gov/detail/ashley/landmanagement/planning/?cid=stelprdb5277265.

line is in keeping with specific Forest Plan directives and is compatible with Forest Plan designations and delineations.

For example, the 1986 Forest Plan requires the Forest Service to maintain air quality related values, Plan at IV-37, and "to control and minimize air pollution impacts from land management activities." *Id.* at IV-42. To this end, the agency must: 1) "integrate air resource management objectives into all resource planning and management activities;" 2) "detect and monitor the effects of air pollution . . . on Forest resources" and "monitor air pollutants when Forest Service goals and objectives are at risk;" 3) "preserve and protect air quality related values (AQRV) within the Flaming Gorge NRA and High Uintas Wilderness;" and, 4) "determine the air quality or AQRV condition (base level) from which increments of limits of acceptable change will be measured." Plan at IV-42.

The 1986 Forest Plan acknowledges that, in the Ashley National Forest, the "necessary level of water quality can be met by compliance with Federal and State water quality standards." Plan at II-13. The Plan dictates that the Forest Service shall "improve and conserve the basic soil and water resources." Plan at IV-37. To this end, the agency must "protect all surface waters from chemical contamination." *Id*; *see also* 1986 Forest Plan ROD at 13 ("Maintaining . . . State water quality standards [is an] example[] of [a] standard[] and guideline[] which act[s] as [a] mitigation measure prescribed in Chapter IV of the Plan.")

Likewise, the Forest Service must, under the 1986 Plan, "maintain or improve riparian areas and riparian dependent resource values including wildlife, fish, vegetation, watershed and recreation in a stable or upward trend." Plan at IV-45. The Forest Service must manage for riparian species diversity. *Id.*

Under the 1986 Plan, "riparian area dependent resources will be given preferential consideration in cases of unresolvable conflicts." Plan at IV-45. Facilities and ground disturbing activities are not permitted in riparian areas "unless alternative routes have been review and rejected as being more environmentally damaging." *Id.*

The 1986 Forest Plan directs the Forest Service to "manage fish and wildlife habitat to maintain or improve diversity and productivity." Plan at IV-28. In addition, the Forest Service must "manage the habitat of all . . . sensitive plant and animal species to maintain or enhance their status." Plan at IV-30; *see also id.* ("management activities will be allowed if they will not adversely affect any . . . sensitive species").

The 1986 Forest Plan also establishes "tolerance limits" that indicate when the actual performance of the Plan has unacceptably varied from the "predicted performance" of the Plan. Plan at V-2. "When these limits are exceeded, further evaluation is required." *Id.*

For example, a "violation of State Air Quality Standards and adverse public reactions" are sufficient to "cause further evaluation and/or a change in management direction," Plan at V-13, as is a "violation of State Water Quality Standards or a 20% increase in predicted sediment yield," *id.* at V-11, a "violation of Forest Riparian Standards and Guidelines, *id.* at V-14, "or a 10% drop in the breeding population of sage grouse." *Id.* at V-7.

The 1986 Forest Plan is a controlling document. In each of the instances noted above, the 1986 Forest Plan is specific – setting forth standards, guidelines, triggers for reevaluation and other directives for managing Forest resources and values. Because these provisions determine how the Ashley National Forest is to be managed, the DEIS must consider them. In addition to addressing the impacts of the proposed rail line on Forest resources and values including air quality, water quality, riparian resources and wildlife, the OEA must disclose how the proposed project and it alternatives comport with the 1986 Forest Plan, it directives, Management Areas, standards, guidelines, goals and purposes.

VIII. The Analysis of Direct, Indirect and Cumulative Impacts on Air Quality, Public Health, Regional Haze and AQRVs is Insufficient

As explained elsewhere, in taking a hard look at the environmental consequences of a proposed action, OEA must analyze the direct, indirect, and cumulative impacts of the proposed action. 40 C.F.R. § 1508.25(c). Direct impacts are those caused by the action that are occurring at the same time and place as the action. *Id*. § 1508.8(a). Indirect impacts are likewise caused by the action, but are later in time or further removed in distance from it; however, these impacts are still reasonably foreseeable consequences of the action. *Id.* § 1508.8(b). Cumulative impacts are those resulting from the "incremental impact of the action when added to other past, present, and reasonably foreseeable future actions," no matter what agency or person undertakes such actions. *Id.* § 1508.7.

A. Ozone Levels in the Uinta Basin, which Will Be Exacerbated by the Proposed Rail Line, are a Danger to Public Health and the Environment and Contribute to Regional Haze

Ozone concentrations in the Uinta Basin have long exceeded national health-based standards and the proposed project will further endanger public health, the environment and visibility across Utah and into Colorado.

Short and long-term exposure to ozone, even at levels below the national standard, causes adverse health impacts. Ozone has immediate adverse effects, causing shortness of breath, wheezing and coughing; asthma attacks; inflamed and damaged the airways and increased risk of respiratory infections and hospital visits for people with lung diseases, like asthma or chronic obstructive pulmonary disease.[53] Exposures to high ozone levels for as little as one hour can lead to a particular type of cardiac arrhythmia that itself increases the risk of premature death and stroke.[54]

Long term exposure to ozone increases the risk of death from respiratory diseases and means more hospital admissions for children with asthma, with younger children and children

[53] American Lung Association, Ozone, https://www.lung.org/our-initiatives/healthy-air/outdoor/air-pollution/ozone.html ("ALA Ozone") (last accessed Feb. 3, 2021).
[54] Rich, D.Q. et al., Increased Risk of Paroxysmal Atrial Fibrillation Episodes Associated with Acute Increases in Ambient Air Pollution, 114 Environ Health Perspect 120 (2006).

from low-income families more likely than other children to need hospital admissions.[55] Long-term exposure to ozone also leads to the development of asthma and lower birthweight and decreased lung function in newborns.[56]

Children and teens, individuals 65 and older, people who work or exercise outdoors, persons with lung diseases and people with cardiovascular disease are particularly vulnerable to ozone pollution.[57] According to EPA:

> Children are at greatest risk from exposure to ozone because their lungs are still developing and they are more likely to be active outdoors when ozone levels are high, which increases their exposure. Children are also more likely than adults to have asthma.[58]

Studies indicate that women, people who suffer from obesity and people with low incomes are also more likely to suffer adverse impacts from exposure to ozone.[59] Moreover, research shows that even at levels well below the current standard, ozone increases risk of premature death in older adults.[60]

Ozone also harms plant and animal communities. Ozone damages sensitive vegetation, particularly during the growing season, and harms ecosystems, including forests, parks, wildlife refuges and wilderness areas.[61] Ozone pollution leads to a loss of species diversity, damages habitat quality and alters water and nutrient cycles.[62]

Ozone also impairs visibility, including at National Parks and National Forests. The Forest Service states regarding ozone, that "in the summer it is usually associated with pollution episodes involving haze and participates in chemical reactions that lead to haze-forming particles."[63] The primary pollutants that cause regional haze, are particulate matter, nitrogen oxides (NO_X), sulfur dioxide (SO_2 , and volatile organic compounds (VOCs). NO_X and VOCs are ozone precursors.

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[55] U.S. Environmental Protection Agency, Health Effects of Ozone Pollution, https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution ("EPA Health Effects of Ozone") (last accessed Feb. 3, 2021).
[56] *Id.*
[57] ALA Ozone.
[58] EPA Health Effects of Ozone
[59] ALA Ozone.
[60] Di, Qian et al., Association of Short-Term Exposure to Air Pollution with Mortality in Older Adults,318 JAMA 2446 (2017).
[61] U.S. Environmental Protection Agency, Ecosystem Effects of Ozone Pollution, https://www.epa.gov/ground-level-ozone-pollution/ecosystem-effects-ozone-pollution ("EPA Ecosystem Effects of Ozone") (last accessed Feb. 3, 2021).
[62] *Id.*
[63] U.S. Forest Service., U.S. Forest Service Interpreting Visibility Data, https://www.fsvisimages.com/visdata.aspx (last accessed Feb. 3, 2021).
[63] *Id.*

"Ozone can also be transported long distances by wind."[64] Colorado has confirmed that emissions of ozone precursors and ozone itself from neighboring states, including Utah, adversely impact air quality in Colorado.[65] This means that any individual or cumulative increases in concentrations of ozone or emissions of ozone precursors in the Uinta Basin will adversely impact air quality in downwind states.

B. The Uinta Basin Will Soon Be a Moderate Nonattainment Area for the 2015 Ozone Standard

Air quality in the Uinta Basin is poor and currently poses a danger to public health and the environment and contributes to regional haze. For example, the Uinta Basin is currently designated as a marginal nonattainment area for the 2015 8-hour ozone NAAQS on August 3, 2018 and will fail to attain the standard by the August 2021 deadline.

Ozone concentrations in the Uinta Basin, which occur largely in the winter, are directly tied to oil and gas development.[66] As the State of Utah has concluded relative to the Uinta Basin:

> NO_X comes from hot combustion sources, and the highest levels are in the oil production areas and population centers. VOC comes from oil and gas production with the highest levels in the gas production areas.[67]

Ozone is not emitted directly. Rather, ozone is created by chemical reactions between NO_X and volatile organic compounds (VOCs) in the presence of sunlight.[68] According to DAQ, in the Uinta Basin, "chemical reactions" during the wintertime ozone forming "episodes differ greatly from summer ozone formation in urban areas."[69] This means that modeling designed to predict the formation of ozone in urban environments will not accurately represent ozone formation in the Uinta Basin.

According to the Utah Division of Air Quality (DAQ), the Uinta Basin will **not** attain the ozone NAAQS by the attainment deadline on August 3, 2021. Therefore, the Uinta Basin will be "bumped up" to a designation as a moderate nonattainment area sometime around February 2022. As DAQ explains:

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[64] U.S. Environmental Protection Agency, Ground-level Ozone Basics, https://www.epa.gov/ground-level-ozone-pollution/ground-level-ozone-basics ("EPA Ozone Basics") (last accessed Feb. 3, 2021).
[65] Parsons, Zack & Steven Arnold, Ozone Transport in the West, Western States Air Resources Council (2004) ("Parsons & Arnold 2004"), available at https://www.colorado.gov/pacific/sites/default/files/AP_PO_Ozone-Transport-in-the-West.pdf
[66] Utah Department of Environmental Quality, Ozone in the Uinta Basin, https://deq.utah.gov/air-quality/ozone-in-the-uinta-basin (last accessed Feb. 3, 2021).
[66] *Id.*
[67] Utah Department of Environmental Quality, Utah Division of Air Quality 2018 Annual Report (2019) ("Utah 2018 Annual Report") at 34, https://documents.deq.utah.gov/air-quality/annual-reports/DAQ-2019-000949.pdf.
[68] EPA Ozone Basics.
[69] Utah 2018 Annual Report at 34.

> [S]everal monitors in the Basin measured high levels of ozone during a strong inversion in February 2019. These monitored levels indicate that it will almost be impossible for the Basin to attain the ozone standard by 2021. Therefore, the DAQ, EPA, and Ute Tribe are beginning to plan for the likely bump up in nonattainment classification from marginal to moderate. This bump up would most likely occur around February of 2022 with a moderate SIP due in February of 2023. The moderate SIP will require additional controls and a modeled attainment demonstration of the standard by August of 2024.[70]

Once the Uinta Basin is designated as a moderate nonattainment area, sources there will need to implement Reasonably Available Control Technology (RACT) requirements. Further, DAQ and EPA must achieve a 15% reduction in VOCs to demonstrate reasonable further progress (RFP) within 6 years.[71] Moreover, the Uinta Basin must achieve attainment of the 2015 ozone standard as soon as possible, but no later than moderate attainment deadline of August 2024.[72]

C. OEA Fails to Take a Hard Look at the Direct, Indirect and Cumulative Impacts of the Proposed Rail Line Project on Ozone Concentrations

OEA relies on air quality modeling for the Monument Butte project to "assess the cumulative impacts of the proposed rail line and the projected oil and gas development" on air quality. DEIS at 3.15-31. As explained below, the Monument Butte modeling effort is not an accurate representation of the cumulative effects of the proposed project and necessarily underestimates increases in criteria and hazardous air pollutants that would result from oil wells in the Uinta Basin.

That said, OEA admits that the Monument Butte modeling shows exceedances of the national ozone standard:

> [M]odeled total ozone levels exceed the NAAQS at some sites under existing conditions in the absence of Monument Butte. This is consistent with ozone exceedances measured by DEQ in winter in the Basin. Although the Monument Butte project would increase ozone concentrations, the Monument Butte modeling predicted no new exceedances due to Monument Butte. Because the high oil production scenario that OEA analyzed would involve a smaller number of wells than were considered in the Monument Butte project, OEA concludes that cumulative emissions of ozone precursors (VOC and NOX) from the proposed rail line and potential future oil and gas development would be lower than predicted for the Monument Butte project. Existing exceedances of the ozone NAAQS would still occur.

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[70] Utah Department of Environmental Quality, Utah Division of Air Quality 2020 Annual Report (2021) ("Utah 2020 Annual Report") at 42, https://documents.deq.utah.gov/air-quality/planning/air-quality-policy/DAQ-2021-000768.pdf.

[71] Utah Department of Environmental Quality, Ozone State Implementation Plan (SIP) Process – Moderate Area Ozone SIP, https://deq.utah.gov/air-quality/ozone-state-implementation-plan-sip-process-moderate-area-ozone-sip ("Utah Ozone SIP") (last accessed Feb. 3, 2021).

[72] Utah Ozone SIP.

DEIS at 3.15-33.

This does not constitute a hard look at the direct, indirect and cumulative impact of the proposed project on concentrations of ozone in the Uinta Basin and the consequences to public health, the environment and regional haze that will result from the significant increases in emissions of NO_X and VOCs that will stem from the project.

First, OEA ignores the cumulative impact the project will have on the ability of the Uinta Basin nonattainment area to comply with the Clean Air Act and attain the ozone NAAQS as soon as possible. After all, as part of their NEPA obligations, OEA and its cooperating agencies must explain how their actions will or will not comply with environmental laws and policies. 40 C.F.R. § 1508.27(b) (stating federal agencies must consider "[w]hether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment"); *see also id.* § 1502.2(d) ("Environmental impact statements shall state how alternatives considered in it and decisions based on it will or will not achieve the requirements of [NEPA] and other environmental laws and policies.").[73]

Not surprisingly, a requirement of the Clean Air Act is that an ozone nonattainment area comply with the NAAQS as expeditiously as possible, but no later than the next applicable attainment deadline.[74] Moreover, in the case of a moderate ozone nonattainment area, the relevant air quality agencies must achieve a 15% reduction in VOCs within 6 years of the baseline year.[75] In the case of the Uinta Basin, the moderate attainment deadline is August 2024.

Therefore, the OEA is obligated to examine in detail the impact of the direct, indirect and cumulative increase of something like 5,679 tons per year of VOCs and 4,384 tons per year of NO_X in the Basin as a result of, facilitated by or in tandem with the proposed project. Without question, these increases will impede the attainment of the ozone standard in the Basin and will make it significantly more difficult to secure the 15% reduction in VOCs.

However, rather than addressing this critical finding that the Monument Butte development would violate NAAQS, OEA simply waves away the problem by claiming that cumulative emissions from the rail line and reasonably foreseeable new oil wells would be less than emissions predicted by the Monument Butte modeling. This does not constitute a hard look at the issue of compliance with air quality standards and is not supported by record evidence. At a minimum, OEA is obligated to quantify, based on evidence in the record, the difference between the increase in concentrations predicted by the Monument Butte modeling and what OEA considers to be an accurate calculation of cumulative ozone concentrations. Further, OEA also ignores the impacts of increased levels of ozone on public health and the environment, which occur at levels below the NAAQS, and on regional haze.

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[73] Pursuant to the Clean Air Act, federal agencies are required to comply with all applicable air quality laws, regulations, standards and implementation plans. 42 U.S.C. § 7418(a). Importantly, the requirements of 42 U.S.C. § 7418(a)(1) and (a)(2) apply "to the exercise of any Federal, State, or local administrative authority[.]"42 U.S.C. § 7418(a)(2)(C).

[74] *E.g.* 40 C.F.R. § 51.1308

[75] 40 C.F.R. § 51.1310

Moreover, as argued elsewhere, because OEA fails to include other important reasonably foreseeable emission sources in its cumulative impact analysis, including new gas wells and oil shale and tar sands development, it underestimates the cumulative impacts of the rail line project on ozone concentrations. Similarly, reliance on the Monument Butte modeling at all is highly problematic. Therefore, OEA's assessment of the cumulative impacts of the proposed project on ozone concentrations and the resulting consequences for public health, the environment and regional haze is inadequate.

D. OEA's Reliance on the Monument Butte Analysis to Analyze Cumulative Impacts Is Ill-Conceived

For several reasons, OEA's decision to rely on the Monument Butte modeling effort to quantify the cumulative impacts of the proposed rail line project is not defensible.

First, as OEA acknowledges:

> The exact locations of new oil and gas development would depend on many factors, including domestic and global demand, as well as future decisions by private, state, tribal, and federal owners of mineral rights in the Basin. The Monument Butte Oil and Gas Development Project, which proposes to develop up to 5,750 oil and gas wells in an area located about 6 miles south of Myton, Utah, is an example of a proposed oil and gas development project in the region (BLM 2016).

DEIS at 3.15-4. OEA then relies on the Monument Butte modeling to estimate ozone concentrations at various sites. DEIS at 3.15-33. However, as OEA acknowledges, the Monument Butte project covers a discrete area in one corner of the Uinta Basin. In contrast, the up to 3,330 new oil wells that OEA projects are reasonably foreseeable would be developed across the Basin. DEIS at 3.15-6. This means that while the Monument Butte project would tend to exacerbate concentrations of various air pollutants in one portion of the Basin, the reasonably foreseeable oil wells would emit pollutants in diverse locations around the Basin and therefore impact sites in a different manner.

Second, the Monument Butte modeling relies on obsolete monitoring data and design values. As the Monument Butte analysis explains, "[t]he ozone NAAQS are formulated in terms of a Design Value, which is calculated as the 3-year average of the fourth highest monitored daily maximum 8-hour concentration at each monitoring site." Appendix K at 3-3. The observed design value, which is derived from actual monitoring data, served as the basis for the Monument Butte modeling exercise:

> EPA's latest modeling guidance (EPA, 2007) for projecting future year 8- hour ozone Design Values recommends the use of modeling results in a relative sense to scale the observed current year 8-hour ozone Design Value (DVC) to obtain a future year 8-hourozone Design Value (DVF).

Id.

However, given that the Monument Butte modeling was finalized in 2015, the monitoring data from which the design values were derived were necessarily recorded in 2012, 2013 and 2014 or earlier. Therefore, OEA improperly relies on modeling based on old data sets and fails to incorporate the most recent scientific information – in this case, monitoring at least as recent as 2017 to 2019. As a result, OEA has failed to take a hard look at the cumulative impacts of the proposed project. Without evidence in the record explaining how monitoring data collected before 2015 is adequate in 2020, OEA cannot claim that the Monument Butte modeling is a valid means to address the cumulative impacts of the rail line project. This is particularly true because there is ample, up-to-date monitoring data that can serve as the foundation for up-to-date modeling and design values.

Fourth, the Monument Butte modeling analysis and conclusions are based on the wrong NAAQS. In 2015, EPA lowered the 8-hour ozone NAAQS from .075 ppm to .070 ppm.[76] As the Monument Butte modeling analysis confirms, it was finalized before the standard was modified. Appendix K at 3-3 ("To attain the 2008 ozone standard, the Design Value for a given monitor must not exceed 75 ppb."). Therefore, the conclusions that the Monument Butte analysis draws regarding compliance with the relevant ozone NAAQS – the 2015 standard – and OEA's reliance on these conclusions necessarily miss the mark.

Fifth, the Monument Butte modeling is outdated. Recent inventories of oil and gas facilities in the Uinta Basin show that past calculations of total emissions were not accurate and underestimated the emissions resulting from oil and gas development. Therefore, because the Monument Butte modeling was based on an inaccurate understanding of oil and gas emissions, the results from the modeling cannot be considered accurate.

For example, Utah, EPA and the Ute Indian Tribe have updated the 2017 Uinta Basin Emissions Inventory as catalogued in a paper published in November 2020.[77] This effort made the inventory more accurate and found that the previous inventory was significantly underestimating VOC emissions from oil and gas operations.[78] In particular, the inventory was failing to account for the substantial VOC emissions from produced water disposal.[79] This analysis means that the Monument Butte modeling, completed in 2015 and based on "Utah State BLM Emissions Inventory Technical Support Document" dated November 2013 fails to take advantage of improved understandings of the actual emissions resulting from oil and gas development activities in the Uinta Basin.[80]

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[76] U.S. Environmental Protection Agency, NAAQS Table, available at https://www.epa.gov/criteria-air-pollutants/naaqs-table (last updated on Feb. 10, 2021).
[77] Uinta Basin Air Agencies, Uinta Basin VOC Composition Study Impacts on the 2017 Oil and Gas Emissions Inventory (November 2020), available at https://documents.deq.utah.gov/air-quality/planning/technical-analysis/DAQ-2020-016024.pdf.
[78] *Id.* at 18.
[79] *Id.*
[80] Should OEA claim that it is not required to rely on more accurate ways of determination emissions published in 2020, that does not excuse the agency from failing to update its analysis based on improvements made between 2013 and 2020.

Similarly, the Bingham Research Center provides a detailed summary of significant research findings that relate to air quality in the Uinta Basin. It includes outcomes from research performed by scientists at Utah State University, as well as researchers at other institutions, and is referenced so readers can refer to the original documents for more detailed information.[81] Again, these are the Uinta Basin specific resources that would inform a more accurate modeling and understanding of the direct, indirect and cumulative impacts of the proposed project on air quality.

Critical studies relevant to estimating and modeling emissions from produced water evaporation ponds were available in 2018 and concluded:

> Organic compound emissions from produced water ponds are poorly characterized, and they are not included or fully accounted for in oil and gas emission inventories (AECOM Environment and Sonoma Technology, Inc. 2014; U.S. Environmental Protection Agency [EPA] 2017) Information gaps include unquantified amounts and composition of gases emitted from these facilities. Produced water ponds are a source of organic compounds that, along with nitrogen oxides (NOx), are major precursors to ozone formation in the near-surface layer of the atmosphere.[82]

As the Monument Butte modeling fails to account for these emissions, it cannot present an accurate reflection of the cumulative impacts of the proposed rail line project.

Along the same lines, recent studies have established that methane (CH_4) leaks – and so corresponding leakage of VOCs and NO_X – occur at a very high rate in the Uinta Basin.

> The Uintah Basin has been shown to be unique in terms of its large leakage rate of CH_4 from the ONG industry (Karion et al. 2013; Ahmadov et al. 2015). The Basin is also geographically situated in a favorable location to observe ONG-derived CH_4 emissions without significant contamination from urban, agricultural, or biogenic sources. For reasons that are currently unknown, the fugitive emission (leakage) of CH_4 through the processes of its extraction, storage, transportation, and distribution within the Uintah Basin has been found to be among the highest observed in the United States. Karion et al. (2013) found the leakage rate of CH_4 from ONG activity within the Basin to be roughly 8.9 +/– 2.7% (emissions as a percentage of natural gas production), which is generally several percentage points higher than most other ONG regions across the United States.[83]

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[81] Bingham Research Center, Cumulative Summary of Research Relating to Uinta Basin Air Quality, Utah State University, https://binghamresearch.usu.edu/cumulativeresearchsummary (last accessed Feb. 3, 2021).

[82] Tran, Huy N.Q. et al., Emissions of organic compounds from produced water ponds II: Evaluation of flux chamber measurements with inverse-modeling techniques, 68 J. Air & Waste Management Assoc 7 (May 2018), .

[83] Foster, C. S. et al., Quantifying methane emissions in the Uintah Basin during wintertime stagnation episodes, 7 Elem Sci Anth 24 (June 2019) ("Foster 2019"), https://online.ucpress.edu/elementa/article/doi/10.1525/elementa.362/112499/Quantifying-methane-emissions-in-the-Uintah-Basin.

Importantly, CH_4 is co-emitted with nitrogen oxide (NOx) and volatile organic compounds (VOCs), key precursor pollutants for ozone and particulate pollution. Because the Monument Butte modeling and OEA's analysis fail to account for these significant rates of leakage, the resulting effort to take a hard look at the direct, indirect and cumulative impacts of the proposed project on air quality necessarily falls short.

Finally, in its 2020 Annual Report, DAQ found that in the Uinta Basin: 1) "[c]omplex patterns of light winds within the Basin appear to produce an east-west sloshing of air that contributes to intra-basin mixing of ozone and ozone precursors;" and, 2) "[a]romatic VOCs such as toluene and xylene contribute in secondary formation of wintertime ozone pollution in the Basin[.]"[84] Yet, neither the DEIS nor the Monument Butte modeling reflect or address these important insights which are necessary to determining the impact the proposed project will have on ozone concentrations.

These are but a few examples of the updated, more accurate and more sophisticated information and analysis that is **not** reflected in the Monument Butte modeling or OEA's efforts to quantify the direct, indirect and cumulative impacts of the proposed rail line. Because the DEIS relies on antiquated data and analysis, its assessment of the project's impacts to air quality are not sufficiently rigorous or sound.

E. The Scope of the Cumulative Impacts Analysis is Too Narrow

"Ozone can also be transported long distances by wind."[85] Colorado has confirmed that emissions of ozone precursors and ozone itself from neighboring states, including Utah, adversely impact air quality in Colorado.[86] Indeed, in scoping comments on the proposed project, the Colorado Department of Public Health and the Environment states:

> [A]ccording to the Uinta Basin Railway Project website, the proposed action may result in increased oil and gas, agriculture, and mining activity. Emissions from these activities can travel great distances, affecting air quality and public health including in the Denver/North Front Range ozone nonattainment area.[87]

Thus, direct, indirect and cumulative increases in concentrations of ozone or emissions of ozone precursors from these new and polluting activities will adversely impact air quality in downwind states. However, the DEIS does not address the direct, indirect or cumulative impact that the proposed project will have on air quality in Colorado. To comply with NEPA, the OEA must remedy this oversight.

Similarly, OEA fails to address adverse impacts from the proposed rail line on air quality in and around Salt Lake City. After all, according to Carbon County Commissioner Hopes, who helped spearhead the proposed project, a goal of the Uinta Railroad, and certainly a cumulative

[84] Utah 2020 Annual Report at 41.
[85] EPA Ozone Basics.
[86] Parsons & Arnold 2004.
[87] Colorado Department of Public Health and Environment's Preliminary Comments on the Proposed Uinta Rail Line (May 9, 2019) at 2.

impact of the plan, is to ship more Uinta Basin crude through Carbon County and ultimately to the Salt Lake City Inland Port.[88] As a result, the air quality analysis should also address air quality impacts in Carbon County, where rail line proponents anticipate there will be a hub tying rail traffic in that county with rail lines leading to the Uinta Basin and an Inland Port in Salt Lake City.[89] In any case, the financial analysis of the proposed rail line indicates that increased shipping of crude and other commodities to Salt Lake City oil refineries and other destinations is potentially feasible.[90] This again underscores that to be legally sufficient, the DEIS must consider air quality impacts to Salt Lake City – a serious nonattainment area for $PM_{2.5}$ and currently a marginal – although soon to be a moderate – ozone nonattainment area.

Finally, there is no doubt that the proponents base the financial viability of the rail line project on shipping much – if not all – of the increased production of crude oil in the Uinta Basis to Gulf Coast refineries. For example, the rail line feasibility study states with regard to a range of forecasts that

> [i]n both the Higher and Lower cases, railroad volumes were assumed to ramp up in the early years of the forecast, driven by increased production of crude oil in the Basin and the inputs that enable same, as well as greater and greater acceptance of the Basin's crudes at various refineries, primarily located in Gulf Coast states.[91]

It is common knowledge that the areas around the Gulf Coast oil refineries are some of the most polluted in the nation and that nearby communities are already disproportionately plagued by high levels of toxic and criteria pollutants. Yet, the OEA makes no effort to assess the reasonably foreseeable cumulative impacts of the rail line and its freight of 350,000 barrels or more per year aimed largely for the Gulf Coast refineries. As a result, the DEIS is not in keeping with NEPA's hard look mandate.

F. OEA's Repeated Claims that the Monument Butte Modeling Overestimates Emissions from Reasonably Foreseeable Oil and Gas Development Are Not Supported by the Record

To assess the consequences of reasonably foreseeable increases in **oil and gas** development for the purposes of analyzing cumulative impacts to air quality, OEA calculates the number of reasonably foreseeable new **oil** wells:

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[88] Castle Country Broadcast, Commissioner Casey Hopes Talks About the Uinta Basin Railway, May 22, 2019, available at http://www.castlecountryradio.com/2019/05/22/commissioner-casey-hopes-talks-about-the-uinta-basin-railway/; *see also,* McKellar, Katie, Rural counties vying for a bite of Utah's global trade apple, Deseret News (Sep. 26, 2020), available at https://www.deseret.com/utah/2020/9/26/21445644/news-rural-counties-salt-lake-city-inland-port-authority-fossil-fuel-coal-crude-oil-emery-carbon.

[89] *Id.*

[90] R.L. Banks & Associates, Inc, Pre-Feasibility Study of a Prospective Railroad Connecting the Uinta Basin to the National Rail Network – Submission to Sever County Infrastructure Coalition (August 2018) at xv.

[91] *Id.* at 16; *see also id.* at vii, xi, xiii and 56.

> To assess the impacts of increased oil and gas development as part of the cumulative analysis, OEA estimated the number of oil wells that would need to be constructed and operated to satisfy the expected increased oil production volume scenarios of 130,000 or 350,000 barrels per day, respectively.

DEIS at 3.15-4. Thus, it appears that for its cumulative impact analysis, OEA estimates only reasonably foreseeable oil production and did not include reasonably foreseeable gas production. It is true that the rail line is projected to carry crude oil and not gas. That does not mean, however, that there will be no increase in future emissions from newly developed and reasonably foreseeable gas wells and the activities associated with this development, such as road construction and truck trips. Because the agency does not address future gas well development, OEA's cumulative impact analysis is inadequate.

Further, OEA repeatedly claims that because the number of reasonably foreseeable **oil** wells is fewer than the number of wells modeled by the Monument Butte analysis, the Monument Butte analysis necessarily overestimates the cumulative air quality impacts associated with the rail line project. *E.g.* DEIS at 3.15-31 to 34. However, because OEA is only relating future oil wells to the Monument Butte analysis, its claims are not meaningful, and reliance on the Monument Butte modeling that much more dubious. As a result, OEA cannot assert that the Monument Butte modeling somehow accurately represents – or rather somehow accurately overestimates -- the impact of reasonably foreseeable oil and gas development in the Uinta Basin.

G. OEA's Calculation of Construction Emissions is Not Supported by the Record

As explained below, for several reasons, OEA's brief discussion of construction emissions and its vague supporting analysis found in Appendix M, does not support the agency's assertion that it is exempt from a conformity demonstration. For these same reasons, OEA's NEPA review of the construction emissions from the rail line project is not adequate.

H. OEA Failed to Consider Present and Reasonably Foreseeable Actions that Have a Cumulative Impact on Air Quality

There are currently about 9,000 oil and gas wells in the Uinta Basin.[92] OEA insists that a reasonably foreseeable development scenario would involve development of 1,245 to 3,330 new **oil** wells producing 130,000 to 350,000 additional barrels per day of crude oil in the Basin. DEIS at 3.15-5 to 6. Importantly, this estimate does not include reasonably foreseeable new **gas** wells or oil shale and tar sands development.[93] As a result, the cumulative impact analysis is not sufficiently rigorous.

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[92] Foster 2019.

[93] OEA states "[a]lthough this assessment focuses on oil development because crude oil is the primary product that would be transported on the proposed rail line, the wells in the cumulative impacts study area also may produce natural gas. The construction and operation of infrastructure to process and transport the gas also would contribute to cumulative impacts." DEIS at 3.15-27. However, the agency makes no effort to determine the air quality impacts of gas wells. This demonstrates a failure to take a hard look at the cumulative impacts of the proposed project.

As explained elsewhere, there is no question that the development of oil shale and tar sands – activities that will result in significant emissions of criteria pollutants – in the Uinta Basin are reasonably foreseeable future actions that would be facilitated by the proposed action. Oil shale and tar sands development in the Basin would entail such emissions generating activities as blasting and strip mining, crushing and retort, the use of nonroad mobile sources, power generation, truck trips, the construction and use of roads, and the use of other fuel combustion sources.[94] Therefore, the environmental impacts of this development on air quality must be considered as indirect and cumulative consequences of the proposed rail line. Because the DEIS did not undertake this analysis, the NEPA evaluation is legally insufficient.

Further, the OEA fails to include in its cumulative impact analysis other reasonably foreseeable emission sources. For example, in the Enefit EIS, BLM lists not only existing and reasonably foreseeable oil shale and tar sands projects, but also existing and reasonably foreseeable projects, emissions from which were not accounted for in the Monument Butte modeling effort and which must otherwise be considered in OEA's cumulative impact analysis.[95]

I. OEA Did Not Address the Direct, Indirect or Cumulative Impacts of the Proposed Project on Meeting Regional Haze Objectives

The Regional Haze Rule requires that states develop and implement comprehensive plans to reduce human-caused regional haze in designated areas. States also must calculate and work towards interim, short-term progress goals, with a long-term goal of returning targeted areas to their natural visibility conditions by 2064. To this end, the Rule establishes a comprehensive visibility protection program for Class I areas and requires states to set reasonable progress goals (RPGs) towards achieving natural visibility conditions in all Class I areas by 2064. EPA released guidance outlining the methods by which states should develop their State Implementation Plans (SIPs) for the second planning period (2018-2028), which is now underway. The guidance includes methods previously not allowed in the first planning period. There are five Class I areas in Utah: Arches National Park, Bryce Canyon National Park, Canyonlands National Park, Capitol Reef National Park, and Zion National Park.

Emissions from the oil and gas sector have a significant impact on Utah's national parks and other regional class I areas. According to the 2017 National Emissions Inventory, Utah's oil and gas industry produces 5,633 tons of visibility impairing pollutants from point sources and 84,101 tons of visibility impairing pollutants from nonpoint sources each year.[96] More specifically, OEA predicts – and as explained elsewhere underestimates -- direct, indirect and cumulative increase of something like 5,679 tons per year of VOCs, 4,384 tons per year of NO_X, 1842 tons per year of PM_{10} and 483 tons per year of $PM_{2.5}$ in the Basin as a result of, facilitated by or in tandem with the proposed project. DEIS at 3.15-32. Thus, it is plain that the direct, indirect and cumulative impacts of the proposed project will exacerbate regional haze and impede efforts by state and federal agencies to assure reasonable progress toward returning Class I areas to their natural visibility conditions by 2064. To meet the requirements of NEPA, OEV

[94] *E.g.* Enefit FEIS at 4-170 to 4-175.
[95] Enefit FEIS at Table 4-19 and 4-20.
[96] As noted elsewhere, the 2017 inventory underestimates emissions from Utah's oil and gas sector.

must take a hard look at these impacts and explain how its actions will or will not comply with environmental laws and policies. 40 C.F.R. § 1508.27(b) (stating federal agencies must consider "[w]hether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment"); *see also id.* § 1502.2(d) ("Environmental impact statements shall state how alternatives considered in it and decisions based on it will or will not achieve the requirements of [NEPA] and other environmental laws and policies.").

J. OEA Failed to Take a Hard Look at Cumulative Impacts to $PM_{2.5}$ Concentrations

As explained above, OEA relies on the Monument Butte modeling to "assess the cumulative impacts of the proposed rail line and the projected oil and gas development" on air quality. DEIS at 3.15-31. As explained elsewhere, the Monument Butte modeling effort is not an accurate representation of the cumulative effects of the proposed project and necessarily underestimates increases in criteria and hazardous air pollutants that would result from oil wells in the Uinta Basin.

That said, OEA admits that the Monument Butte modeling shows exceedances of the short-term $PM_{2.5}$ national standard:

> Total 24-hour $PM_{2.5}$ levels would be less than the NAAQS and Utah AAQS at all sites except one. Because the high oil production scenario that OEA analyzed would involve a smaller number of wells than were considered in the Monument Butte project, OEA concludes that cumulative PM_{10} and $PM_{2.5}$ concentrations from the proposed rail line and potential future oil and gas development would be less than concentrations described for the Monument Butte EIS.

DEIS at 3.15-33. However, rather than addressing this critical finding that the Monument Butte development would violate NAAQS, OEA simply waves away the problem by claiming that cumulative emissions from the rail line and reasonably foreseeable new oil wells would be less than emissions predicted by the Monument Butte modeling. This does not constitute a hard look at the issue of compliance with air quality standards and is not supported by record evidence. At a minimum, OEA is obligated to quantify, based on evidence in the record, the difference between the $PM_{2.5}$ concentrations projected by the Monument Butte modeling and what OEA considers to be an accurate calculation of cumulative $PM_{2.5}$ concentrations. Further, OEA also ignores the impacts of increased levels of $PM_{2.5}$ on public health and the environment, which occur at levels below the NAAQS,[97] and on regional haze.

Moreover, as argued elsewhere, because OEA fails to include other important reasonably foreseeable emission sources in its cumulative impact analysis, including new gas wells and oil shale and tar sands development, the agency underestimates the cumulative impacts of the rail line project on air quality. Similarly, reliance on the Monument Butte modeling at all is highly problematic. Therefore, OEA's assessment of the cumulative impacts of the proposed project on

[97] *E.g.* Western Resource Advocates et al., Comments on Docket ID No. EPA-HQ-OAR-2015-0072: EPA proposed rule to maintain the current National Ambient Air Quality Standards (NAAQS) for particulate matter (PM) (June 29, 2020).

$PM_{2.5}$ concentrations and the resulting consequences for public health, the environment and regional haze is inadequate.

K. OEA Failed to Take a Hard Look at Cumulative Impacts to PSD Increments and AQRVs

OEA acknowledges that "PSD increments can be used as a guide to compare results and to provide context for evaluating air quality impacts" and that "increments can be used to compare potential impacts for purposes of information." DEIS at 3.15-34. OEA then claims that the Monument Butte project analysis predicted no exceedances of the applicable PSD increment. Therefore, the agency reasoned:

> Because the oil production scenarios that OEA analyzed would involve smaller numbers of wells than were considered in the Monument Butte project, OEA concludes that cumulative impacts of the proposed rail line and potential oil and gas development would also be within the applicable PSD increments.

DEIS at 3.15-34. However, as explained throughout these comments, the Monument Butte modeling is not reliable and OEA's direct, indirect and cumulative impact analysis is not sufficiently rigorous. As a result, OEA's claims about PSD increments are not supported by the record.

Similarly, OEA confirms that:

> Under the Clean Air Act, acidic deposition is an AQRV of concern for Class I areas. The Monument Butte project modeling estimated that the nitrogen deposition analysis threshold (DAT) was exceeded in some areas but the sulfur DAT was not exceeded in any area.

DEIS at 3.15-34. However, the agency rationalizes that:

> Because the oil production scenarios that OEA analyzed would involve smaller numbers of wells than were considered in the Monument Butte project, OEA concludes that cumulative impacts of the proposed rail line and potential oil and gas development relative to acidic deposition would be less than estimated for the Monument Butte project.

This does not constitute a hard look at the issue of acid deposition. At a minimum, OEA is obligated to quantify, based on evidence in the record, the difference between the nitrogen deposition projected by the Monument Butte modeling and what OEA considers to be an accurate calculation of nitrogen deposition.

Further, as argued elsewhere, because OEA fails to include other important reasonably foreseeable emission sources in its cumulative impact analysis, including new gas wells and oil shale and tar sands development, the agency necessarily underestimates the cumulative impacts of the rail line project on AQRVs. Similarly, reliance on the Monument Butte modeling at all is

highly problematic. Therefore, OEA's assessment of the cumulative impacts of the proposed project on acid deposition is inadequate.

L. OEA Fails to Address the Cumulative Air Quality Impacts of the Sources of Other Rail Line Freight

The DEIS "estimates that between 0 and 110 loaded frac sand trains would enter the Basin each year using the proposed rail line, to support oil mining in the Basin**.**" DEIS at 2-35. In addition, the DEIS explains that "[s]hippers could also use the proposed rail line to transport other commodities" in addition to oil and frac sands and estimates that "24 carloads per day to 36 carloads per day, on average, including loaded and empty rail cars" would be needed to transport these commodities. *Id.*

Initially, the OEA does not explain where these frac sands would be mined and processed or address the direct, indirect and cumulative impacts of this mining and processing on air quality. Mining and processing frac sands creates considerable emissions, including PM_{10} and $PM_{2.5}$. Mining and processing also causes silica to become airborne, thereby exposing individuals to a known carcinogen.

Similarly, the DEIS neglects to consider the direct, indirect and cumulative air quality impacts of the past, present and reasonably foreseeable production of commodities. Indeed, the Colorado Department of Public Health and the Environment likewise calls attention to the need for OEA to address the air quality impacts the proposed rail line, including emission increases in frac mining and agricultural activity:

> [A]ccording to the Uinta Basin Railway Project website, the proposed action may result in increased oil and gas, agriculture, and mining activity. Emissions from these activities can travel great distances, affecting air quality and public health including in the Denver/North Front Range ozone nonattainment area.[98]

Therefore, as Colorado points out and as NEPA requires, OEA must expand its hard look to include an assessment of the direct, indirect and cumulative impacts of frac sand mining operations and transportation and other commodity production and transportation on air quality.

M. Despite its Contentions Otherwise, OEA Has Failed to Establish that Emissions from Construction of the Proposed Rail Line Fall Below Conformity Thresholds

OEA claims that the estimated emissions from construction of the proposed rail line and its alternatives are below thresholds that trigger further analysis of conformity. DEIS at 3.7-20 (asserting that Table 3.7-9 "demonstrates that the estimated construction emissions in each area are less than the conformity thresholds. Therefore, the General Conformity Rule does not require further evaluation of conformity."). However, the DEIS does not support this contention.

[98] Colorado Department of Public Health and Environment's Preliminary Comments on the Proposed Uinta Rail Line (May 9, 2019) at 2.

Indeed, for several reasons, OEA's brief discussion of construction emissions and its vague supporting analysis found in Appendix M, do not support the agency's assertion that it is exempt from a conformity demonstration.

First, in discussing exhaust emissions during construction, OEA states that

> [m]uch of NO_X and particulate emissions during construction would be associated with constructing surface track, which would account for between 46 and 53 percent of NO_X emissions, and between 61 and 63 percent of particulate matter emissions during construction, depending on the Action Alternative.

DEIS at 3.7-10. OEA goes on to recount various "voluntary" mitigation measures that it suggests would reduce emissions from construction equipment. DEIS at 3.7-10 to 11. OEA concludes that "[i]f these mitigation measures are implemented, OEA does not expect that the exhaust emissions from construction activities would significantly affect air quality." DEIS at 3.7-11; *see also* DEIS at 3.7-32 ("With implementation of the Coalition's voluntary mitigation measure and OEA's recommended mitigation measures, (Chapter 4, Mitigation), OEA concludes that impacts related to air quality and GHG emissions would not be significant if those mitigation measures were implemented.").

However, none of the material cited in support of this contention, including Subsection 3.7.3.2 or Appendix M, appear to explain whether these mitigation measures were factored into the emissions calculations. Because the measures are voluntary, the emission calculations may not do so. Therefore, OEA's calculations cannot be relied on to claim that further conformity analysis is not necessary. This is particularly because, for example, yearly NO_X emissions associated with the preferred alignment, the Whitmore Alternative, have been calculated to be 97.1 tons per year – only 2.9 tons per year less than the threshold. DEIS at 3.7-20. Alternatively, if any mitigation measures are relied on to determine construction emissions, the record must be clear how those measures are to be implemented and how adoption of these measures is reflected in the emissions calculations. Only in this way can the OEA and its partner agencies make well informed decisions and the public make meaningful comments on these crucial determinations and calculations.

Similarly, OEA suggests and makes claims about voluntary mitigation measures relative to fugitive dust. DEIS at 3.7-11 ("Because fugitive dust emissions from construction activities would be temporary and would move over time, OEA does not expect that those emissions would significantly affect air quality if the Coalition implemented its voluntary mitigation."). Again, none of the material cited in support of this contention, Subsection 3.7.3.2 or Appendix M appear to explain whether these mitigation measures were factored into the emissions calculations. Because the measures are voluntary, the emission calculations may not do so. Therefore, OEA's calculations cannot be relied on to claim that further conformity analysis is not necessary. Alternatively, if any mitigation measures are relied on to determine construction emissions, the record must be clear how those measures are to be implemented and how adoption of these measures is reflected in the emissions calculations. Only in this way can the OEA and its partner agencies make well informed decisions and the public make meaningful comments on these crucial determinations and calculations.

Second, there appears to be no analysis that supports important aspects of OEA's construction emission calculations. For example, the DEIS and appendices do not seem to cite emission factors, the types of nonroad equipment to be used, the engines, pollution controls and other technology on that equipment or otherwise justify how the agency derived its estimates of construction emissions. This fundamental information is critical good decision making and meaningful public review of the agency's determinations.

For example, in 2004, EPA developed the Control of Emissions of Air Pollution from Nonroad Diesel Engine and Fuel (Tier 4 standards) to reduce emissions from nonroad diesel engines by combining engine and fuel controls as a system to increase emissions reductions. The 2004 standards apply to land-based diesel engines, which are typically used in construction, agricultural, and industrial equipment. Yet, there is no guarantee that any construction equipment used to build the proposed rail line will adhere to these standards.[99] A realistic estimate of emissions must address the construction equipment to be used on site.

Third, OEA makes important assumptions about the pace and location of construction on the various alignments. These assumptions are critical, as OEA claims that the annual construction emissions totals inside the nonattainment areas are low enough that the agency need not complete further conformity analysis. DEIS at 3.7-20. To derive these totals, OEA calculates construction emissions both inside and outside the nonattainment areas. *E.g.* Appendix M at unnumbered 14 -15.

However, there is no basis in the record to support the apparent underlying contention that a certain proportion of construction activities will occur outside the nonattainment areas and another proportion inside the nonattainment areas each year. Given that the intensity of the construction activity inside or outside the nonattainment areas over a year dictates the emission totals for that year, postulations about where construction activities take place must be explained and justified in the record.

The same can be said for the pace of construction. Again, the record apparently fails to support the yearly pace of construction, which in turn determines the yearly emissions from construction activities. Given that the pace of the construction activity inside or outside the nonattainment areas over a year dictates the emission totals for that year, assumptions about the rate of construction activities must be explained and justified in the record. Because there is an apparent lack of record support for these critical assumptions – the location and pace of construction – the OEA's conclusion that it need not undertake further conformity analysis is not legally adequate.

[99] As the Office of the Inspector General wrote in 2006, "[t]here are approximately 5 million nonroad diesel engines in use in the United States today. Many of these are not subject to any EPA diesel engine emissions standards. Because diesel engines are durable and likely to continue operating over the next 20 years or more, high levels of pollution from these engines will persist throughout the life of these engines." U.S. Environmental Protection Agency, Progress Report on EPA's Nonroad Mobile Source Emissions Reduction Strategies Report No. 2006-P-00039, September 27, 2006, available at https://www.epa.gov/sites/production/files/2015-11/documents/20060927-2006-p-00039.pdf.

N. BLM and the Forest Service Must Complete "General Conformity" Analysis

The General Conformity Rule ensures that federally funded or supported actions taken by federal agencies and departments, including the BLM and Forest Service, meet national standards for air quality in federal nonattainment and maintenance areas. OEA determined that the General Conformity Rule applies to the proposed project.

> In consultation with USEPA, OEA has determined that construction of the proposed rail line in the Uinta Basin Ozone Nonattainment Area and the Utah County PM_{10} Maintenance Area is subject to the USEPA General Conformity Rule.

DEIS at 3.7-20.

However, OEA claimed that it had authority only over the construction of the proposed rail line and therefore that for the purposes of General Conformity, relevant emissions were only those that would occur in conjunction with the construction of the rail line. As these fell below the applicable threshold, OEA claimed it did not need to undergo further conformity analysis. DEIS at 3.7-20.

1. BLM and the Forest Service Have Legal Authority and Control Over the Granting of Rights-of-Way and Oil and Gas Leasing, Exploration, Development and Enforcement

OEA's analysis does not apply to BLM and the Forest Service. There is no question that the BLM and Forest Service must undertake one or more federal actions in order for the proposed project to proceed. Likewise, there is no doubt that the agencies have ongoing obligations to comply with the Clean Air Act and manage activities on their lands – including in permitting oil and gas exploration and development – to ensure, *inter alia*, that these activities protect and improve air quality and do not cause or contribute to a violation of the NAAQS.

First, BLM manages the Federal government's onshore subsurface mineral estate – about 700 million acres (30% of the United States) held by the BLM, Forest Service and other Federal agencies and surface owners – including through leasing, permitting and enforcement.[100] BLM manages not only oil and gas, but also coal, oil shale, tar sands, and increasingly, renewable sources of energy such as wind, solar and geothermal. The Forest Service manages the surface-disturbing aspects of oil and gas leasing and operations on national forests and grasslands.[101] The agency must ensure that development of subsurface resources is carried out in a manner that will minimize the impact on these surface resources. In managing these oil and gas exploration, leasing and operations, both BLM and the Forest Service must protect air quality and resource values from air pollution, minimize emissions of air pollutants, and guarantee that these activities comply with the Clean Air Act and other statutes and regulations intended to protect resources values from the adverse impacts of air pollution.

[100] Mineral Leasing Act of 1920, 30 U.S.C. 181, et seq.
[101] Federal Onshore Oil and Gas Leasing Reform Act of 1987.

Second, pursuant to the Clean Air Act, the Forest Service and BLM are required to comply with all applicable air quality laws, regulations, standards and implementation plans:

> Each department, agency, and instrumentality of the executive, legislative, and judicial branches of the Federal Government
>
> (1) having jurisdiction over any property or facility, or
>
> (2) engaged in any activity resulting, or which may result, in the discharge of air pollutants . . . shall be subject to, and comply with, all Federal, State, interstate, and local requirements, administrative authority, and process and sanctions respecting the control and abatement of air pollution in the same manner, and to the same extent as any nongovernmental entity.

42 U.S.C. § 7418(a). Importantly, the requirements of 42 U.S.C. § 7418(a)(1) and (a)(2) apply "to the exercise of any Federal, State, or local administrative authority[.]" 42 U.S.C. § 7418(a)(2)(C).

More specifically, the Federal Land Policy and Management Act Section 202 requires the BLM to provide for compliance with applicable air pollution control laws. 43 U.S.C. 1712(c)(8). Section 176(c) of the Clean Air Act (CAA) requires Federal agencies' actions to conform to any applicable State, Tribal or Federal implementation plans for attaining and maintaining the National Ambient Air Quality Standards (NAAQS). 42 U.S.C. 7506(c). Where actions are not specifically exempted, the BLM must complete a conformity determination before engaging in or authorizing any actions in designated nonattainment or maintenance areas.

BLM must also safeguard air quality by 1) ensuring that lease stipulations that reflect additional reasonable measures and restrictions required to comply with the law and minimize adverse impacts to resource values, 43 C.F.R. §§ 3101.1-2, 3161.2; 2) undertake appropriate environmental analysis in order to determine adequate terms and conditions of any APDs, 43 C.F.R. §§ 3162.5-1(a), 3161.2; 3) guarantee that operations will be conducted in a manner that protects natural resources and environmental quality, 43 C.F.R. §§ 3162.5-1(a), 3161.2; 4) require that operations be carried out according to applicable laws, regulations, lease terms and conditions, and the approved drilling plan or subsequent operations plan," 43 C.F.R. §§ 3162.5-1(a); 3161.2; and, 5) prevent the maximum allowable concentration of air pollutants in the Uinta Basin from exceeding the relevant NAAQS. *E.g.* 42 U.S.C. §§ 7473(b)(4); 7418(a). BLM has further acknowledged its obligations under the Clean Air Act. For example, the State Director must assure "appropriate stipulations and conditions of approval are included in BLM use authorizations to ensure air pollution emission control, protection methods, and ambient air quality levels are addressed." BLM Manual at 7300.04(C)(4).

Similarly, the National Forest Management Act requires the Forest Service to protect and, where appropriate, improve the quality of…air resources. 16 U.S.C. §1602(5)(C). To this end, the Forest Service must, *inter alia*: 1) minimize air pollution impacts, *e.g.* Forest Plan; 16 U.S.C. § 1604(i); 36 C.F.R. §§ 228.102(e), 228.107(a)(2); 2) maintain air quality at a level that protects Forest resources, meets or is below the NAAQS and safeguards PSD increments, *e.g.* Forest Plan; 16 U.S.C. §1604(i); 36 C.F.R. §§ 219.27(a)(12), 228.102(e), 228.107(a)(2); 3) minimize

effects on surface resources – including air quality, 36 C.F.R. § 228.108(a); 4) comply with applicable NAAQS and PSD requirements, 36 C.F.R. §§ 228.112(c)(1), 228.112(e); and, 5) prevent the concentrations of air pollutants in the Uinta Basin from exceeding the relevant NAAQS. *E.g.* 42 U.S.C. § 7473(b)(4), § 7418(a).

The Forest Service must ensure that any Surface Use Plan of Operations (SUPO) is consistent with "applicable Federal law." 36 C.F.R. § 228.107(a)(1). In addition, under 36 C.F.R. § 228.108, the Forest Service must require an operator to "minimize" the effects of oil and gas operations on "surface resources," including air quality. The Forest Service is also tasked with requiring an operator to comply with applicable "Federal and State air quality standards, including the requirements of the Clean Air Act[.]" 36 C.F.R. § 228.112(c)(1).

The 1986 Forest Plan for the Ashley National Forest directs that the Forest Service "will assure that implementation [of the Plan] is in compliance with the…goals and objectives of…36 C.F.R. § 219.27." 36 C.F.R. § 219.27(a)(12) provides "[t]he minimum specific management requirements to be met in accomplishing goals and objectives for the National Forest System" and states that "[a]ll management prescriptions shall…[b]e consistent with maintaining air quality at a level that is adequate for the protection and use of National Forest System resources and that meets or exceeds applicable Federal, State and/or local standards or regulations."

As part of their NEPA obligations, both the Forest Service and BLM must explain how their actions will or will not comply with environmental laws and policies. 40 C.F.R. §§ 1508.27(b); 1502.2(d).

Third, the proposed project and its alternatives require BLM and the Forest Service to take federal actions necessary to the implementation of the project. According to OEA, "[p]rojects crossing state or federal lands require right-of-way grants, special use permits, easements, or other authorizations." DEIS at 3.11-5. More particularly, the preferred alternative, the Whitmore alignment, and Wells alternatives cross BLM land. *Id.* The Whitmore and Indian Canyon alignments cross the Ashley National Forest. Therefore, each of the action alternatives necessitates that the BLM and/or the Forest Service grant the rail line proponents a right-of-way over public lands. DEIS at 3.11-3. As a result, there is no alternative before the OEA and its cooperating agencies that could be realized without securing a right-of-way over BLM or Forest Service lands from the relevant federal land manager.

2. Because Approval of the Proposed Rights-of-Way for the Rail Line Project are Federal Actions, the Forest Service and BLM Must Undertake an Applicability Analysis

Turning to the regulations that specify when and how agencies must comply with the General Conformity Rule show that BLM and the Forest Service must undertake a conformity applicability analysis.

General conformity applies to all federal actions in nonattainment/maintenance areas. Already OEA has determined that General Conformity applies to the proposed rail line because it

will take place and generate emissions in the Utah County PM_{10} maintenance area and the Uinta Basin ozone nonattainment area.

A federal action refers to any activity directly engaged in by a department or agency of the Federal government. It also refers to any activity that a department or agency supports in any way, which includes providing financial assistance, licenses, permits or formal approval. 40 C.F.R. 93.152.[102] Thus, the authorization of the rail line project, including the necessary grants of rights-of-ways, is a federal action for the purposes of conformity.

Specifically, both the BLM and the Forest Service must undertake a federal action – at a minimum, an approval of a right-of-way[103] – as an integral part of the rail line proposal. As a result, the agencies must complete a conformity applicability analysis for the Uinta Basin ozone nonattainment area.[104]

3. Because the Direct and Indirect Emissions from the Proposed Rail Line Will Exceed the Thresholds, BLM and/or the Forest Service Must Undertake a Conformity Demonstration

BLM and the Forest Service must complete a conformity demonstration because the direct and indirect emissions from the rail line project in the Uinta Basin nonattainment area will exceed the relevant thresholds.

A conformity demonstration is required

> for each criteria pollutant or precursor where the total of direct and indirect emissions of the criteria pollutant or precursor in a nonattainment or maintenance area caused by a Federal action would equal or exceed any of the rates in paragraphs (b)(1) or (2) of this section.

40 C.F.R. 93.153(b).

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[102] "Federal action means any activity engaged in by a department, agency, or instrumentality of the Federal government, or any activity that a department, agency or instrumentality of the Federal government supports in any way, provides financial assistance for, licenses, permits, or approves, other than activities related to transportation plans, programs, and projects developed, funded, or approved under title 23 U.S.C. or the Federal Transit Act (49 U.S.C. 1601 et seq.). Where the Federal action is a permit, license, or other approval for some aspect of a non-Federal undertaking, the relevant activity is the part, portion, or phase of the non-Federal undertaking that requires the Federal permit, license, or approval."

[103] It appears that BLM and the Forest Service may have to undertake additional federal actions that are integral parts of the rail line project. For example, before the rail line project can be realized, BLM and the Forest Service may have to amend their land use plans. These too are federal actions for the purposes of conformity and the direct and indirect emissions from the rail line project are caused by these actions.

[104] While it does not seem likely that BLM and the Forest Service will need to complete a conformity demonstration for the Utah County PM_{10} Maintenance Area, the DEIS should still undertake an applicability analysis.

Determining the total direct and indirect emissions caused by the federal action implicates the following 40 C.F.R. 93.152 definitions:

> Caused by, as used in the terms "direct emissions" and "indirect emissions," means emissions that would not otherwise occur in the absence of the Federal action.
>
> Direct emissions means those emissions of a criteria pollutant or its precursors that are caused or initiated by the Federal action and originate in a nonattainment or maintenance area and occur at the same time and place as the action and are reasonably foreseeable.
>
> Indirect emissions means those emissions of a criteria pollutant or its precursors:
>
> > (1) That are caused or initiated by the Federal action and originate in the same nonattainment or maintenance area but occur at a different time or place as the action;
> > (2) That are reasonably foreseeable;
> > (3) That the agency can practically control; and
> > (4) For which the agency has continuing program responsibility.
>
> For the purposes of this definition, even if a Federal licensing, rulemaking or other approving action is a required initial step for a subsequent activity that causes emissions, such initial steps do not mean that a Federal agency can practically control any resulting emissions.

First, a proper understanding of the emissions "caused by" the BLM and Forest Service federal actions confirms that all the direct and indirect emissions from the rail line project in the ozone nonattainment area are "caused by" the agencies' right-of-way approvals and any land use plan amendments. This is because the rail line project and its direct and indirect emissions "would not otherwise occur in the absence," 40 C.F.R. 93.152 (definition of "caused by"), of the approvals and amendments. After all, without the right-of-way approvals and any required plan amendments, the rail project could not proceed. The proposed project simply cannot be built unless it follows one of the identified alignments, all of which require one or more right-a-way approvals and the required changes to land management plans.

Second, as established above, the emissions caused by the right-of-way approvals and plan amendments are the same emissions caused by the rail line. *See* 40 C.F.R. 93.152 (definition of "caused by"). More specifically, the "direct" emissions caused by the rail line relevant to conformity are those that "originate in a nonattainment or maintenance area and occur at the same time and place as the action and are reasonably foreseeable." 40 C.F.R. 93.152 (definition of "direct emissions").

Already OEA has made an initial effort to calculate the direct emissions from the proposed rail line project, restricting its analysis to emissions from construction. DEIS at 3.7-20. However, as noted elsewhere, these calculations of direct emissions are not supported by the record. That same analysis applies equally to a determination of direct emissions for the purposes of assessing whether BLM and the Forest Service must complete a conformity demonstration. As

a result, it is critical that OEA quantify direct emissions from the rail line proposal based on record evidence and in sufficient detail to allow for meaningful public review and comment. This is particularly important because the estimates of construction emissions are very close to the 40 C.F.R. 93.153 thresholds. *Id.*

Third, in addition to direct emissions from the rail line project, a conformity analysis must calculate "indirect" emissions as defined by 40 C.F.R. 93.152. Initially, like direct emissions, indirect emissions are those "caused or initiated by the Federal action" and that "originate in the same nonattainment or maintenance area but occur at a different time or place as the action[.]" Given this definition, it is evident that, at a minimum, indirect emissions caused or initiated by the rail line project include emissions from increased oil production in that part of the Uinta Basin encompassed by the Uinta Basin ozone nonattainment area. This is because the new oil production would not otherwise occur in the absence of by the rail line project or is "initiated"[105] by the project.[106]

Most fundamentally, there are currently about 9,000 oil and gas wells in the Uinta Basin[107] producing approximately 90,000 barrels of crude per day. DEIS at 3.15 ("OEA used 90,000 barrels per day as a conservative baseline level of production, which is slightly lower than the maximum historical production from the Basin of 94,000 barrels per day."). At the same time, "the total volume of oil that would be transported on the proposed rail line would range from 130,000 to 350,000 barrels per day, on average." DEIS at 2-35. Therefore, the entire feasibility and design of the rail line project is dependent on and will result in an increase in oil production in the Uinta Basin of at least 40,000 barrels per day.[108] It is evident, then, that the rail line project will cause or initiate an increase in oil production in the Uinta Basin ozone nonattainment area.

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[105] Merriam-Webster defines "initiate" as "to cause or facilitate the beginning of: set going."
[106] This point is well established throughout these comments. Those arguments apply equally here.
[107] Foster 2019.
[108] To the extent that it is relevant, neither a pipeline nor increased highway infrastructure would solve this transportation limit on production in Uinta Basin. This is because a pipeline – necessarily heated because Uinta crude is waxy – and trucks would still be confined to existing roadways and transporting crude to the refineries in Salt Lake City and the capacity at these cannot be expanded sufficiently. *E.g.* UDOT *et al*., Final Report: Uinta Basin Energy and Transportation Study (April 2013) at 2; *see also id.* at 16. ("Transportation to markets outside of Salt Lake City (SLC), where higher crude prices may be realized, is highly desirable and could attract incremental investment. Currently, trucking to other locations is not common, since the cost to re-heat the solidified crude oil must be considered."); *id.* at 4 ("Existing pipelines are already at or near capacity, and the nature of the crude oil produced in the Uinta Basin, described as black wax or waxy crude due to its high paraffin content, limits the effectiveness of pipelines for its transportation—it must be kept warm (above 110 degrees Fahrenheit) or it hardens to the consistency of candle wax."). Further, in determining that "[t]ransportation constraints on oil and gas production in the Uinta Basin are material," UDOT assumed "a certain level of ongoing investment in the Uinta Basin" roadway infrastructure. *Id.* at 64. However, the "capacity shortfalls" the agency determined would exist "are above and beyond these planned investments." *Id.* Thus, even with upgrades, the existing roadway capacity would not be able to handle the increased production that the rail line would initiate. *Id.* at 64-71 & 111. These analyses show that the increase in oil production in the Uinta Basin ozone nonattainment area would not occur without construction of the rail line project.

That the rail line will cause or initiate increased oil production in the basin is underscored by other sources. For example, a study led by the Utah Department of Transportation (UDOT) found that $30 billion worth of oil and gas would remain undeveloped in the basin during the next 30 years because of transportation constraints.[109] The study concluded that:

- Transportation constraints on oil and gas production in the Uinta Basin are material.
- Opportunity costs to the State and local economy associated with transportation-induced production losses are likely to exceed $10 billion over the next 30 years (in present-value terms).[110]

Essentially, the study found that even with investments, due to economic and feasibility constraints, the existing infrastructure in the Uinta Basin would cap oil production levels in the Uinta Basin at a level representing 8 billion to 29 billion dollars in lost production:[111]

> As shown in the traffic projection simulation results, many of the transportation corridors serving the Uinta Basin will face severe constraints given the projection of oil and gas–related traffic. The current constraints therefore reduce the overall oil and gas production opportunity for the Uinta Basin and the State.[112]

Thus, by providing a new way to transport oil from the Uinta Basin, the proposed rail line will necessarily raise this cap by at least 40,000 barrels per day, if not considerably more. In any case, there will be some substantial increase in oil production in the Uinta Basin nonattainment area as a result of or initiated by the rail line.

These findings were echoed by Mike McKee, executive director of the Seven County Infrastructure Coalition, in statement to the Utah Transportation Commission. Mr. McKee explained that Uinta Basin producers can produce and ship only about 80,000 barrels of crude a day to Salt Lake area oil refineries because of air quality issues in and around Salt Lake City.[113] "That's pretty much the maximum amount because of air quality issues," Mr. McKee stated.[114] The Executive Director argued that "oil companies report they could produce and sell up to 400,000 barrels a day in the Uinta Basin if they had a way to economically transport it to other markets, too."[115] Again, proponents of the rail line emphasize that as a consequence of the rail line, oil production in the Basin, once limited to shipping 80,000 barrels of oil to the Salt Lake area in trucks, will balloon to levels up to 400,000 barrels a day. This would not happen, according to proponents, without the rail line.

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[109] UDOT *et al*., Final Report: Uinta Basin Energy and Transportation Study (April 2013) at 2.
[110] *Id.*
[111] *Id.* at 111.
[112] *Id.* at 79; *see also id.* at 74-75 ("Under current constraints, a significant portion of conventional and unconventional energy traffic that would otherwise be generated by producers cannot be carried, resulting in a shortfall of production.").
[113] Davidson, Lee, Promoters of $1.4 billion railroad in Utah's oil country want state help, Salt Lake Tribune, October 12, 2018, available at https://www.sltrib.com/news/2018/10/12/promoters-billion/.
[114] *Id.*
[115] *Id.*

Thus, according to a variety of sources, the rail line project will cause or initiate some substantial, quantifiable increase in oil production in the Uinta Basin ozone nonattainment area.[116] Furthermore, it is evident that this increase and the emissions that would result is reasonably foreseeable. *E.g.* DEIS at 3.15-3 to 6.

Fourth, it is evident that the increases in oil production caused or initiated by the rail line will result in emissions of ozone precursors that the BLM and Forest Service "can practically control" and "[f]or which the agenc[ies] ha[ve] continuing program responsibility." 40 C.F.R. 93.152 (definition of "indirect emissions"). As established in detail above, both the BLM and Forest Service must authorize and permit any oil and gas activities on the lands under their jurisdictions. This oversight, authorization and permitting is done pursuant to statutes and regulations that impose substantive requirements that the agencies protect and improve air quality, limit emissions of air pollutants, safeguard plants, water quality, soils, scenic vistas, recreation, wildlife and public health from air pollution and comply with the Clean Air Act and other environmental statutes that otherwise protect natural resources from air pollution, including ozone precursors. [117] Both BLM and the Forest Service also have significant, continuing enforcement and administrative responsibilities relating to oil and gas activities on the lands under their jurisdictions.[118]

Finally, some substantial, quantifiable portion of the increased oil development caused or initiated by the rail line proposal will occur on BLM and Forest Service land within the Uinta Basin ozone nonattainment area.[119] These activities will necessarily result in emissions of ozone precursors. These emissions are direct or indirect emissions caused by the rail line project and so must be considered as part of a conformity applicability analysis. *See* 40 C.F.R. 93.153(b). As these emissions, when added to the annual emissions associated with the construction of the rail line, will exceed the relevant thresholds, the BLM and Forest Service must complete a conformity demonstration as part of the environmental review process for the proposed project. *Id.*

IX. The Draft EIS's Discussion of Greenhouse Gases and Climate Change Fails to Satisfy NEPA's Hard Look Requirement

A. The Draft EIS Fails to Consider Recent Climate Science

[116] Any suggestion that some or all the resulting increase in oil production would occur outside the Uinta Basin ozone nonattainment area would be ill-conceived.
[117] *E.g.* 42 U.S.C. § 7418(a); 43 U.S.C. 1712(c)(8); 42 U.S.C. 7506(c); 43 C.F.R. §§ 3101.1-2, 3161.2; 43 C.F.R. §§ 3162.5-1(a), 3161.2; 43 C.F.R. §§ 3162.5-1(a), 3161.2; 43 C.F.R. §§ 3162.5-1(a); 3161.2; 42 U.S.C. § 7473(b)(4); BLM Manual at 7300.04(C)(4); 16 U.S.C. §1602(5)(C); 16 U.S.C. § 1604(i); 36 C.F.R. §§ 228.102(e), 228.107(a)(2); 2; 36 C.F.R. §§ 219.27(a)(12), 228.102(e), 228.107(a)(2); 36 C.F.R. § 228.108(a); 36 C.F.R. §§ 228.112(c)(1), 228.112(e); 36 C.F.R. § 228.107(a)(1); 36 C.F.R. § 228.108; 36 C.F.R. § 228.112(c)(1).
[118] *E.g.* 43 C.F.R. §§ 3102.5 & 3163; 36 C.F.R. § 288.7.
[119] BLM has authority over subsurface oil and gas activities on Forest Service lands.

NEPA requires OEA to consider "high quality information" and "accurate scientific analysis" in its decision-making process. 40 CFR § 1500.1 (b). Thus, OEA must consider recent climate science and analyze climate change impacts in its final EIS.

The Intergovernmental Panel on Climate Change (IPCC) was established in 1988, and provides policymakers with regular assessments of climate change science, climate change impacts, future risks, and options for adaptation and mitigation.[120] The IPCC produces reports that provide key input and a scientific basis for governments to develop climate related policies. These reports are written by leading scientists and enlist hundreds of other experts as contributing authors. The reports undergo several rounds of drafting and review to ensure they are comprehensive, objective, and representative of the full range of views held by the scientific community.[121]

In 2018, the IPCC released *Global warming of 1.5°C: A Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* (IPCC Special Report), a groundbreaking report that highlights the importance of preventing global temperatures from rising more than 1.5°C, or 2.7°F, above preindustrial levels.[122] To date, the average global temperature has risen approximately 1.0°C above pre-industrial levels, and is likely to reach 1.5°C as early as 2030.[123] To stay below this threshold will require aggressive action as a global community to reduce emissions by 45% from 2010 levels by the year 2030, and to bring the planet to net-zero emissions by 2050.[124]

The U.S. Global Change Research Program (USGCRP) is a science-based organization led by NOAA and composed of hundreds of scientists and technical experts from federal agencies, states, tribes, local governments, universities, and nonprofits. It is a federal program mandated by Congress to coordinate federal research and investments in understanding the forces shaping the global environment, both human and natural, and their impacts on society.[125] In 2018, the USGCRP released *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II* (Fourth National Climate Assessment). While the IPCC Special Report focuses on the global impacts of climate change, in addition to providing updated

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[120] The Intergovernmental Panel on Climate Change, IPCC Factsheet: What is the IPCC? (2013) *at* 1.
[121] *Id.*
[122] The Intergovernmental Panel on Climate Change, 2018: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)] 2018 ("IPCC Special Report 2018") *at* 79.
[123] Intergovernmental Panel on Climate Change, Special Report: Global Warming of 1.5°C (2018) ("IPCC SR15, Summary for Policymakers") https://www.ipcc.ch/sr15/, *at* 1, 6.
[124] IPCC SR15, Summary for Policymakers *at* p. 26; IPCC Special Report 2018, Technical Summary *at* p. 33; IPCC Special Report 2018, Chapter 2 Executive Summary *at* p. 95; IPCC Special Report 2018, Chapter 2 *at* 116.
[125] U.S. Global Change Research Program, About USGCRP, GlobalChange.gov, https://www.globalchange.gov/about (last accessed Jan. 26, 2021).

scientific assessment of global and national impacts and risks associated with climate change, the Fourth National Climate Assessment provides a more granular look at the impacts on a regional scale across the country.

Notably, the Fourth National Climate Assessment highlights how incredibly susceptible the Southwest is to the impacts of climate change. Parts of the Southwest already reach some of the hottest temperatures on Earth,[126] and these temperatures are projected to rise along with the number of heat-associated deaths and illnesses.[127] Increased temperatures are significantly impacting the water cycle in the region, resulting in decreased snowpack and streamflow, and increases in the proportion of rain to snow.[128] Water shortages and loss of ecosystem integrity are already occurring, while drought and wildfires are increasing.[129] Trees are dying, bark beetle infestations are increasing, and wildfires are burning more acreage, leading to increased erosion and damage to communities in fire-prone areas.[130] And the cultural resources and spiritual wellbeing of Indigenous peoples in the region are being affected by all of the above.[131] Drought from climate change in the Southwest has caused declines in Indigenous peoples' traditional staple foods and culturally significant crops, and threatens water supplies in an already water-scarce region.[132] For these reasons and more, it is imperative that climate science and climate change impacts are considered in every project that will result in direct, indirect, or cumulative greenhouse gas emissions. The EIS for the Uinta Basin Railway, however, fails to do so, and lacks any discussion of the problem of climate change and how this project may contribute to worsening of climate change effects. By failing to consider and analyze the many reports listed above, the draft EIS does not comply with NEPA and its implementing regulations. Additional information on the most recent climate science is provided in the attached Climate Change Science Summary, provided in Attachment B.

In addition, the DEIS must rely on the most recent climate science in estimating GHG emissions or CO2 equivalent. According to the U.S. Environmental Protection Agency and IPCC, methane is 28 to 36 times more potent than carbon dioxide over 100 years.[133] The OEA must update the project's GHG emission projections using this widely accepted global warming potential range, rather than the outdated and scientifically unjustified global warming potential of 25 over 100 years.[134] Methane's warming effects over 20 years is 84 to 87 times more powerful than carbon dioxide, but the DEIS fails to reveal these more potent GHG effects.[135] Given the short time frame that the world has to drastically cut emissions to avoid the worst effects of

[126] Gonzalez, P. et al., 2018: Southwest. Chapter 25 in *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II*, U.S. Global Change Research Program (2018) ("USGCRP Southwest 2018"), https://nca2018.globalchange.gov/chapter/25/, *at* p. 1108.
[127] *Id.* at 1143.
[128] *Id.* at 1112.
[129] *Id*. at 1110.
[130] *Id.* at 1115-1116.
[131] *Id. at* 1137.
[132] *Id. at* 1121-1122.
[133] U.S. Environmental Protection Agency, Understanding Global Warming Potentials (Sept. 9, 2020), available at https://www.epa.gov/ghgemissions/understanding-global-warming-potentials ("EPA GWP") (discussing more recent IPCC reports).
[134] DEIS at 3.7-13.
[135] EPA GWP.

climate change, the EIS should analyze and disclose the project's short-term and long-term warming effects, over the 20-year and 100-year time periods.

B. The Draft EIS Fails to Analyze the Railway's Indirect Greenhouse Gas Emissions

The EIS must fully quantify all reasonably foreseeable greenhouse gas emissions that would result from development of the proposed rail. It is unclear whether the draft EIS quantifies the full scope of emissions that would result from rail operations. The draft EIS fails to explain how it calculates rail operation emissions and whether emissions along the entire route were considered. The emissions inventories in Appendix M only calculate GHG emissions from rail operations between the Uinta Basin and Denver nonattainment area and does not appear to include GHG emissions from all segments along this route.[136] Emissions from transporting oil to the Gulf Coast refineries and other destinations must be calculated.

Further, as explained in section II, the DEIS fails to acknowledge that the project will spur increased oil and gas development in the Uinta Basin. As a result, it fails to fully disclose the project's indirect GHG emissions, including emissions from well construction and drilling, local oil tanker/truck transport to the rail terminal, and refining and burning the extracted product. These emissions are "indirect effects," which are "caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable." 40 C.F.R. § 1508.8. The DEIS erroneously treats these emissions as "cumulative effects." Even the cumulative effects analysis does not perform a complete inventory of emissions from oil transported on the railway, omitting emissions from refining the extracted product.

C. The Draft EIS Fails to Analyze the Cumulative Air Quality and Greenhouse Gas Effects from Other Projects and Actions

While the draft EIS quantifies the emissions generated from producing the oil expected to be transported on the railway, albeit treating those emissions as cumulative and not indirect effects, it underestimates those emissions. The draft EIS relies on outdated data from the Monument Butte project. As explained in the section on criteria air pollutants, new information since BLM's Monument Butte EIS reveals that oil and gas production pollutes higher amounts of methane than previously thought. Further, the Monument Butte EIS does not appear to have accounted for emissions from transporting oil outside the project area, including greenhouse gas and criteria air pollutants from trucking oil to shipping facilities and/or refineries.[137] While the DEIS states that these emissions were analyzed as part of the cumulative effects analysis,[138] that section does not discuss or specifically quantify these emissions.[139] The DEIS must disclose total emissions for truck trips and explain its underlying assumptions.

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[136] DEIS, Appendix at PDF 454-458, 460.

[137] U.S. Bureau of Land Management, Final Environmental Impact Statement, Monument Butte Oil & Gas Development Project, vol. 2 (Aug. 2016) *at* 4-4 - 4-9, available at https://eplanning.blm.gov/public_projects/nepa/62904/75396/83266/FEIS_2_Chapter_4_thru_Attachment_2.pdf. *See also* DEIS, Appendix M at PDF 497.

[138] DEIS at 3.7-12.

[139] DEIS 3.15-27 – 31. *See also* DEIS, Appendix M at PDF 523 (providing only emissions factors and vehicle miles traveled for "haul trips" but not total emissions).

In addition, OEA failed to quantitatively or qualitatively analyze the emissions from other reasonably foreseeable actions in the cumulative impacts study area in connection with the project's total greenhouse gas emissions and emissions from oil and gas production. "To the extent other … actions in the region—such as other lease sales—are reasonably foreseeable when an EA is issued," the agency "must discuss them as well." *WildEarth Guardians v. Zinke*, 368 F. Supp. 3d 41, 77 (D.D.C. 2019).

For example, an Estonian-owned company named Enefit has plans for the Uinta Basin to build the nation's first commercial-scale oil shale mine and processing plant. Enefit plans to construct an oil-shale processing plant sprawling over half of a square mile, to mine up to 9,000 acres of surrounding land, and to run the mined oil shale through the plant to produce 50,000 barrels of processed crude oil every day for more than 30 years.[140] Enefit's project would roughly double the entire Uinta Basin's current oil output, which potentially would double the entire Basin's emissions of greenhouse gases, ozone-precursors, and other pollutants.[141] The U.S. Bureau of Land Management has determined that Enefit's project is a reasonably foreseeable future action.[142] The draft EIS's cumulative impacts section, however, fails to analyze the massive amount of greenhouse gases that will be emitted during the mining and processing of oil shale at Enefit's Uinta Basin facility. Likewise, the draft EIS's cumulative impacts section fails to discuss other reasonably foreseeable oil and gas projects, such as lease sales within the Uinta Basin and elsewhere in the cumulative impacts study areas. Among foreseeable oil and gas projects, the proposed Uintah Advantage Refinery should be taken into consideration when measuring cumulative impacts.[143] In its final EIS, OEA must analyze all reasonably foreseeable actions within the cumulative impact study areas as part of its cumulative impact analysis of the railway's emissions.

D. The Draft EIS Fails to Analyze the Climate Change Impacts Resulting from Direct, Indirect, and Cumulative Greenhouse Gas Emissions

In addition to quantifying the railway's direct, indirect, and cumulative greenhouse gas emissions, NEPA also requires OEA to analyze the emissions' impacts—its consequences—on climate change. Even if there is uncertainty about climate change impacts, NEPA requires the agency to evaluate "such impacts based upon theoretical approaches or research methods generally accepted in the scientific community." 40 C.F.R. § 1502.22(b)(3)-(4). The draft EIS failed to quantitatively—or even qualitatively—analyze the railway's direct, indirect, and cumulative emissions impacts on climate change. The draft EIS offers only bare emissions volume numbers—and incomplete ones at that—which do not give the decisionmaker or the public an understanding of the scale of the project's "ecological," "economic," and "social" impacts, or their significance, nor does it permit a meaningful comparison among alternatives, as NEPA requires. 40 C.F.R. §§ 1508.8(b), 1502.16(b).

In addition, the DEIS's merely comparing the project's emissions to statewide, national, and global GHG emissions does not comply with the agency's obligation under NEPA to assess

[140] Enefit FEIS Vol. I 2018 *at* ES-1.
[141] *Id.* at 4-105.
[142] *Id.* at 4-92.
[143] R.L. Banks Study.

climate change effects.[144] The Council on Environmental Quality (CEQ) explains in its 2016 "Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews"*:*

> Climate change results from the incremental addition of GHG emissions from millions of individual sources, which collectively have a large impact on a global scale. CEQ recognizes that the totality of climate change impacts is not attributable to any single action but is exacerbated by a series of actions including actions taken pursuant to decisions of the Federal Government. Therefore, a statement that emissions from a proposed Federal action represent only a small fraction of global emissions is essentially a statement about the nature of the climate change challenge, and is not an appropriate basis for deciding whether or not to what extent to consider climate change impacts under NEPA. Moreover, these comparisons are also not an appropriate method for characterizing the potential impacts associated with a proposed action and its alternatives and mitigations because this approach does not reveal anything beyond the nature of the climate change challenge itself: the fact that diverse individual sources of emissions each make a relatively small addition to global atmospheric GHG concentrations that collectively have a large impact.[145]

Two scientific methodologies in particular are widely accepted tools for analyzing a project's climate change impacts—carbon budgeting and the social cost of carbon—neither of which the OEA utilized in the draft EIS. OEA should apply these methodologies in the final EIS to assess the railway's direct, indirect, and cumulative climate change impacts.

1. OEA failed to use carbon budgeting as a tool to assess the railway's climate impacts

The final EIS should calculate the project's total carbon direct and indirect emissions (including emissions from increased oil and gas production spurred by development of the railway) and take these emissions into account in relation to the global carbon budget. A carbon budget is the cumulative amount of carbon dioxide emissions permitted over a period of time to keep global temperatures below a certain threshold.[146] Carbon budgeting is a valuable tool for

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[144] *See* DEIS at 3.7-21 – 22., 3.7-33.

[145] Council on Environmental Quality, Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews (81 Fed. Reg. 51866) August 5, 2016 ("2016 Final Guidance") *at* 10–11. On January 20, 2021, President Biden ordered that the CEQ rescind its Draft National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions (84 Fed. Reg. 30097) June 26 2019 ("2019 Draft Guidance"); Biden, President Joseph R., Executive Order on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis, The White House (Jan. 20, 2021), https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/20/executive-order-protecting-public-health-and-environment-and-restoring-science-to-tackle-climate-crisis/ ("Biden Health and Climate Crisis EO 2021") *at* section 7(c). If finalized, the Draft 2019 Guidance would have replaced the 2016 Final Guidance. President Biden's order now directs the CEQ to review, revise, and update the 2016 Final Guidance. *Id*.

[146] Carbon Tracker Initiative, Carbon Budgets Explained (Feb. 2018), https://carbontracker.org/carbon-budgets-explained/.

assessing the significance of GHG emissions. However, OEA failed to use this tool to inform its decision-making. According to the *IPCC Special Report*, for a 66 percent probability of limiting global warming to 1.5°C, the revised global carbon budget is estimated at 420 $GtCO_2$ and 57 $GtCO_2$ depending on the temperature dataset used from January 2018 onward.[147] The *IPCC Special Report* also highlights that this carbon budget is being depleted at a rate of about 42 $GtCO_2$ per year.[148] At this rate, the global carbon budget would be expended in just 10 to 14 years, highlighting the need for global action to transition away from fossil fuel energy.[149]

To put this into perspective, the United States is currently the world's second highest emitter on an annual per capita basis.[150] And from 2005-2014, federal fossil fuel production accounted for 23.7% of national CO_2 emissions.[151] Again, this further highlights the need to transition away from fossil fuel energy, and to be especially cautious about moving forward with carbon intensive projects such as the Uinta Basin Railway.

In light of the *IPCC Special Report* warning that global warming must be limited to 1.5°C, carbon budgeting is a valuable and necessary tool that OEA should utilize in its decision-making process.

In January of 2019, a report released by Oil Change International determined that there is in fact no room for new fossil fuel extraction if the planet is to stay within the 1.5°C threshold for further warming.[152] The report found that carbon emissions from burning fossil fuels in already operating or under-construction oil fields or mines would push the world far beyond warming of 1.5°C.[153] Additionally, to avoid exceeding the remaining carbon budget, "[1] Governments should cease issuing licenses, leases, and permits for new fossil fuel projects…. [2] Stopping new projects alone will not be enough to keep warming well below 2°C. Governments must also phase out a significant number of existing projects ahead of schedule."[154] The report also found that:

- "Between now and 2030, the United States is on track to account for 60 percent of world growth in oil and gas production, expanding extraction at least four times more than any other country. This is the time period over which climate scientists say global carbon dioxide (CO_2) emissions should be roughly halved to stay in line with the 1.5°C target in the Paris Agreement."[155]

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[147] IPCC SR15, Summary for Policymakers *at* SPM 12.
[148] *Id.*
[149] Calculation used to determine years left for carbon budget: $420GtCO_2/42GtCO_2 = 10$ years and $570GtCO_2/42GtCO_2 = 13.57$ years.
[150] Global Carbon Atlas, CO2 Emissions, "Time Series" & "Chart View", http://www.globalcarbonatlas.org/en/CO2-emissions (last accessed Jan. 4, 2020).
[151] *See* Merrill, M.D. et al., Federal Lands Greenhouse Gas Emissions and Sequestration in the United States—Estimates for 2005–14, USGS Scientific Investigations Report 2018-5131 (2018), https://pubs.er.usgs.gov/publication/sir20185131 *at* 6.
[152] Oil Change International, Drilling Toward Disaster: Why U.S. Oil and Gas Expansion Is Incompatible with Emissions Limits (2019) *at* 11.
[153] *Id.* at 11.
[154] *Id.* at 11.
[155] *Id.* at 6.

- "Between 2018 and 2050, the United States is set to unleash the world's largest burst of CO_2 emissions from new oil and gas development (Figure ES-2). U.S. drilling into new oil and gas reserves – primarily shale – could unlock 120 billion metric tons of CO_2 emissions, which is equivalent to the lifetime CO_2 emissions of nearly 1,000 coal-fired power plants."[156]

- "If not curtailed, U.S. oil and gas expansion will impede the rest of the world's ability to manage a climate-safe, equitable decline of oil and gas production. We find that, under an illustrative 1.5°C pathway for oil and gas taken from the IPCC, U.S. production would exhaust nearly 50 percent of the world's total allowance for oil and gas by 2030 and exhaust more than 90 percent by 2050."[157]

The possibility of keeping the globe under 1.5°C, and therefore avoiding even more severe impacts from climate change is rapidly dwindling. Carbon budgeting represents a valuable tool to assess how the railway will contribute to the global climate crisis. Since carbon budget analysis would contribute to informed decision-making, OEA should utilize this tool in its assessment of the impacts of the proposed railway.

2. OEA failed to use the social cost of carbon as a tool to analyze the railway's climate impacts

The social cost of carbon is a tool that can provide meaningful analysis of the actual harm associated with carbon pollution. *Mont. Envtl. Info. Ctr. v. U.S. Office of Surface Mining,* 274 F. Supp. 3d 1074, 1097-98 (D. Mont. 2017); *High Country Conservation Advocates v. U.S. Forest Serv.,* 52 F. Supp. 3d. 1174, 1195-98 (D. Colo. 2014); and *WildEarth Guardians v. Zinke,* 2019 WL 2404860, at *10-12... As climate change causes devastating impacts such as extreme weather events, increased food insecurity, increased wildfire, and will ultimately result in billions of dollars of economic harm, the social cost of carbon is a tool to measure the economic harm from those impacts.[158] The Proceedings of the National Academy of Sciences of the United States of America (PNAS) has acknowledged that "[t]he most important single economic concept in the economics of climate change is the social cost of carbon (SCC)."[159] The social cost of carbon "is a measure, in dollars, of the long-term damage done by a ton of carbon dioxide (CO_2) emissions in a given year. This dollar figure also represents the value of damages avoided for a small emission reduction (i.e., the benefits of a CO_2 reduction)."[160]

The social cost of carbon is a simple tool that is easy for federal agencies to use and easy for the public to understand. Putting a dollar figure on each ton of carbon dioxide emitted as a result of a federal project places climate impacts in a context that both decision makers and the public can readily comprehend. It is backed by years of peer reviewed scientific and economic research, it is designed to be updated to reflect the most up-to-date information, and it has

[156] *Id.* at 6.
[157] *Id.* at 6.
[158] Environmental Defense Fund, The true cost of carbon pollution (2020), https://www.edf.org/true-cost-carbon-pollution.
[159] Nordhaus, William D., Revisiting the Social Cost of Carbon, 114 PNAS 7 (2017) *at* p. 1.
[160] U.S. Environmental Protection Agency (EPA), Fact Sheet: Social Cost of Carbon (2016) ("USEPA SCC Fact Sheet") *at* p. 1.

already been used by federal agencies in both rulemaking decisions and project-level reviews under NEPA. Accordingly, OEA should utilize the social cost of carbon in order to analyze the climate impacts caused by the railway's direct, indirect, and cumulative emissions.

In 2009, the Interagency Working Group on the Social Cost of Carbon was convened "to develop government-wide estimates of the social cost of carbon for federal agencies to use in conducting regulatory impact analyses for rulemaking."[161] The first estimates were finalized in 2010, and have since been revised several times.[162] The latest revision (see Table 1 below)[163] shows that depending on the discount rate, between 2020 and 2025, the social cost of one metric ton of carbon ranges from between $12-$14 all the way to $123-$138. And while the Trump administration tried to reduce the social cost of carbon from between $7 and $8 per metric ton between 2020-2030,[164] there is ample scientific evidence demonstrating that the methodology behind that assessment is inadequate.

When considering the social cost of carbon, the OEA should use the protocol developed under the Obama administration, which reflects a more accurate and comprehensive look at the impacts from one metric ton of carbon emitted into the atmosphere. Under the Obama era measurement, the current social cost of carbon is between $42-$46 per metric ton.[165] Federal agencies are not instructed as to which discount rate to use when determining the social cost of carbon, and suggests that the 3 percent discount rate ($46 per ton of carbon dioxide for 2025) as the "central value," but further emphasizes "the importance and value of including all four SCC values [;]" i.e., that the agency should use the range of values in developing NEPA alternatives.[166] Under any discount rate, the total climate impacts of the railway must be disclosed to the public and decision makers.

[161] U.S. Government Accountability Office, Social Cost of Carbon: Identifying a Federal Entity to Address the National Academies' Recommendations Could Strengthen Regulatory Analysis (June 2020) ("USGAO SCC 2020") *at* pp. 2-3.
[162] *Id.*
[163] USEPA SCC Fact Sheet *at* p.4.
[164] USGAO SCC 2020 *at* p. 23.
[165] USEPA SCC Fact Sheet *at* p.4.
[166] U.S. Government Interagency Working Group, Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866 (2013, updated 2016) *at* 12.

Table 1

Social Cost of CO_2, 2015-2050 [a] (in 2007 dollars per metric ton CO_2)
Source: Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866 (May 2013, Revised August 2016)

	Discount Rate and Statistic			
Year	5% Average	**3% Average**	2.5% Average	High Impact (3% 95th percentile)
2015	$11	**$36**	$56	$105
2020	$12	**$42**	$62	$123
2025	$14	**$46**	$68	$138
2030	$16	**$50**	$73	$152
2035	$18	**$55**	$78	$168
2040	$21	**$60**	$84	$183
2045	$23	**$64**	$89	$197
2050	$26	**$69**	$95	$212

[a] The SC-CO_2 values are dollar-year and emissions-year specific.

There is ample evidence that shows that the social cost of carbon presents a conservative estimate of economic damages associated with environmental impacts of climate change: "The models used to develop SC-CO2 estimates do not currently include all of the important physical, ecological, and economic impacts of climate change recognized in the climate change literature because of a lack of precise information on the nature of damages and because the science incorporated into these models naturally lags behind the most recent research."[167] As such, OEA should at a minimum take into consideration the social cost of carbon referenced above, and is encouraged to use more aggressive models.

Moreover, OEA must use the social cost of carbon to analyze the railway's climate change impacts because the draft EIS quantified and monetized the benefits of constructing and operating the railway.[168] It is arbitrary and capricious for an agency to quantify the benefits but not the costs of a project, for such an approach functionally assumes that the costs associated with greenhouse gas emissions are zero. *High Country*, 52 F. Supp. 3d at 1190-91. *See also MEIC*, 274 F. Supp. 3d at 1098-99 (arbitrary and capricious for the agency to "quantify socioeconomic benefits while failing to quantify costs"); *WildEarth Guardians*, 2019 WL 2404860, at *10-12 ("[b]ecause [the agency] quantified the benefits of the proposed action, it must also quantify the associated costs or offer non-arbitrary reasons for its decision not to").

On January 21, 2021, President Biden issued an Executive Order forming and directing the Interagency Working Group on the Social Cost of Greenhouse Gases to "publish an interim [social cost of carbon, social cost of nitrous oxide, and social cost of methane tool] within 30

[167] USEPA SCC Fact Sheet *at* p.1.
[168] Draft EIS, pp. 3.13-26 to 27; 3.13-30 to 31.

days . . . which agencies shall use when monetizing the value of changes in greenhouse gas emissions resulting from regulations and other relevant agency actions until final values are published.[169] In its final EIS, OEA should utilize the these tools to quantify the railway's climate change costs.

E. The DEIS Must Take a Hard Look at Carbon "Lock-in"

Avoiding the approval of new fossil fuel production and infrastructure is critical for preventing "carbon lock-in," where approvals and investments made now can lock in decades-worth of fossil fuel extraction that we cannot afford. New approvals for wells, mines, and fossil fuel infrastructure—such as pipelines and marine and rail import and export terminals—require upfront investments that provide financial incentives for companies to continue production for decades into the future.[170] As summarized by Green and Denniss (2018):

> When production processes require a large, upfront investment in fixed costs, such as the construction of a port, pipeline or coalmine, future production will take place even when the market price of the resultant product is lower than the long-run opportunity cost of production. This is because rational producers will ignore 'sunk costs' and continue to produce as long as the market price is sufficient to cover the marginal cost (but not the average cost) of production. This is known as 'lock-in.'"[171]

Given the long-lived nature of fossil fuel projects, ending the approval of new fossil fuel projects is necessary to avoid the lock-in of decades of fossil fuel production and associated emissions.

A 2019 study highlighted the importance of immediately halting all new fossil fuel infrastructure projects to preserve a livable planet. The study found that phasing out all fossil fuel infrastructure at the end of its design lifetime, starting immediately, preserves a 64 percent chance of keeping peak global mean temperature rise below 1.5°C.[172] This means replacing fossil fuel power plants, cars, aircraft, ships, and industrial infrastructure with zero carbon alternatives at the end of their lifespans, starting now. The study found that delaying mitigation until 2030 reduces the likelihood that 1.5 °C would be attainable to below 50 percent, even if the rate of fossil fuel retirement were accelerated. In other words, every year of delay in phasing out fossil fuel infrastructure makes "lock-in" more difficult to escape and the possibility of keeping global temperature rise below 1.5°C less likely. The study concluded that although difficult, "1.5 °C remains possible and is attainable with ambitious and immediate emission reduction across all sectors."

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[169] Biden Health and Climate Crisis EO 2021 *at* section 5(b)(ii)(A).

[170] Davis, Steven J. and Robert H. Socolow, Commitment accounting of CO_2 emissions, 9 Environmental Research Letters 084018 (2014); Erickson, Peter et al., Assessing carbon lock-in, 10 Environmental Research Letters 084023 (2015); Erickson, Peter et al., Carbon lock-in from fossil fuel supply infrastructure, Stockholm Environment Institute, Discussion Brief (2015); Seto, Karen C. et al., Carbon Lock-In: Types, Causes, and Policy Implications, 41 Annual Review of Environmental Resources 425 (2016); Green, Fergus and Richard Denniss, Cutting with both arms of the scissors: the economic and political case for restrictive supply-side climate policies, 150 Climatic Change 73 (2018).

[171] *Id.* at 78.

[172] Smith, Christopher J. et al., Current fossil fuel infrastructure does not yet commit us to 1.5°C warming, Nature Communications (2019), doi.org/10.1038/s41467-018-07999-w.

The EIS should take a hard look at the problem of carbon lock-in, which would result from building the railway, and should weigh the no-action alternative and other action alternatives in light of this issue.

X. OEA Fails to Adequately Address Environmental Justice and Racism Issues Elicited by the Proposed Project

NEPA requires federal agencies to consider the "environmental justice" impacts of their proposed actions. Executive Order 12898 requires federal agencies that are complying with NEPA to consider the effects of the proposed project on the public health and economic and social well-being of minority and low-income populations and Indian tribes and indigenous communities. Because the rail line project has the potential to have disproportional adverse impacts on low income and minority communities and persons, the DEIS must take a hard look at these impacts and should follow the methods outlined in the Environmental Justice Interagency Working Group's *Promising Practices for EJ Methodologies in NEPA Reviews*.[173]

These methodologies include the meaningful engagement of impacted communities; appropriately defining the affected environment; consideration of the unique conditions of the potentially affected minority populations and low-income populations; and, the creation and implementation of one or more alternatives that address and mitigate impacts to minority populations and low-income populations and Indian tribes and indigenous communities.[174]

A. The Scope of the Evaluation of Environmental Justice and Racism Is Too Narrow

As established elsewhere, the scope of the DEIS – and so the scope of OEA's environmental justice analysis – is too narrow. For example, Colorado has confirmed that emissions of ozone precursors and ozone from Utah adversely impact air quality in Colorado.[175] Indeed, in scoping comments on the proposed project, the Colorado Department of Public Health and the Environment states:

> [A]ccording to the Uinta Basin Railway Project website, the proposed action may result in increased oil and gas, agriculture, and mining activity. Emissions from these activities can travel great distances, affecting air quality and public health including in the Denver/North Front Range ozone nonattainment area.[176]

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[173] U.S. Environmental Protection Agency, Promising Practices for EJ Methodologies in NEPA Reviews, March 2016, available at https://www.epa.gov/sites/production/files/201608/documents/nepa_promising_practices_document_2016.pdf.

[174] *Id.*

[175] Parsons, Zack and Steven Arnold, Ozone Transport in the West An Exploratory Study, July 2004, available at https://www.colorado.gov/pacific/sites/default/files/AP_PO_Ozone-Transport-in-the-West.pdf.

[176] Colorado Department of Public Health and Environment's Preliminary Comments on the Proposed Uinta Rail Line (May 9, 2019) at 2.

Thus, OEA must undertake environmental justice analysis to address the potential adverse project impacts on any low income and minority communities in Colorado impacted by the proposed rail line. In addition to assessing the impacts of emissions generated in Utah on Colorado neighborhoods, this analysis should include the direct, indirect and cumulative consequences of operations and activities in Colorado along the route(s) traveled by rail cars carrying products bound to and from the Uinta Basin.[177]

Similarly, OEA fails to address adverse impacts from the proposed rail line on low income and minority communities in and around Salt Lake City and Carbon County. After all, according to Carbon County Commissioner Hopes, who helped spearhead the proposed project, a goal of the Uinta Railroad, and certainly a cumulative impact of the plan, is to ship more Uinta Basin crude through Carbon County to a hub and then ultimately to the Salt Lake City Inland Port.[178] In addition, the financial analysis of the proposed rail line indicates that increased shipping of crude and other commodities to Salt Lake City oil refineries and other destinations is potentially feasible.[179] As a result, the environmental justice analysis should also address impacts on any effected low-income and minority communities in the Salt Lake City area and in Carbon County.[180]

Given that the Salt Lake City metropolitan area is a serious nonattainment area for the 2006 short-term $PM_{2.5}$ NAAQS and a marginal, soon to be moderate ozone nonattainment area, the adverse impacts of proposed project may be significant indeed. Shipping crude through these areas will increase harms, such as those from criteria and hazardous air pollution, truck and rail traffic, noise, community disruptions, chances for toxic spills, and light pollution.

Finally, there is no doubt that the proponents base the financial viability of the rail line project on shipping much – if not all – of the increased production of crude oil in the Uinta Basis to Gulf Coast refineries. For example, the rail line feasibility study states with regard to a range of forecasts that

> [i]n both the Higher and Lower cases, railroad volumes were assumed to ramp up in the early years of the forecast, driven by increased production of crude oil in the Basin and the inputs that enable same, as well as greater and greater acceptance of the Basin's crudes at various refineries, primarily located in Gulf Coast states.[181]

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[177] OEA does undertake perfunctory environmental justice analysis of impacts to communities in the Denver/North Front Range. DEIS at 3.14-11 to 12.

[178] Castle Country Broadcast, May 22, 2019, http://www.castlecountryradio.com/2019/05/22/commissioner-casey-hopes-talks-about-the-uinta-basin-railway/; *see also* Rural counties vying for a bite of Utah's global trade apple, Deseret News (Sep. 27, 2020).

[179] R.L. Banks & Associates, Inc, Pre-Feasibility Study of a Prospective Railroad Connecting the Uinta Basin to the National Rail Network – Submission to Sever County Infrastructure Coalition (August 2018) at xv.

[180] *Id.*

[181] *Id.* at 16; *see also id.* at vii, xi, xiii and 56.

It is common knowledge that the areas around the Gulf Coast oil refineries are some of the most polluted in the nation and that nearby low-income and minority communities are already disproportionately plagued by high levels of toxic and criteria pollutants. Yet, the OEA makes no effort to assess the reasonably foreseeable cumulative impacts of the rail line and its freight of 350,000 barrels or more per year aimed largely for the Gulf Coast refineries. As a result, the DEIS is not in keeping with NEPA's hard look mandate.

For example, many Louisiana refineries, including those referenced specifically by the feasibility study,[182] are located along the Mississippi River and the areas around them are some of the poorest, slowest-growing sections of the state. This area of Louisiana is consistently ranked highest in the nation in toxic environmental releases and waste generation. Many communities of African Americans and other people of color are hemmed in by these oil refineries petrochemical plants and experience significantly higher adverse health impacts than the U.S. population as a whole.[183]

Port Arthur, Texas, another destination for the Uinta Basin crude[184] is a Gulf Coast city of 55,000 and home to a high number of industrial polluters and the largest oil refinery in the country. The area around Port Arthur hosts one of the highest concentrations of facilities in Texas that must report toxics release inventory (TRI) data. The city is predominantly inhabited by people of color. People living in this area are disproportionately impacted by industrial pollution:

> The heavy presence of industry—a common theme among poor and mostly black and brown communities across the country—may be one reason residents of Port Arthur, in a region once dubbed "the cancer belt," have higher rates of cancer, asthma and cardiovascular disease when compared to state averages, according to a 2016 report from Southeast Nonprofit Development Center.[185]

Given that the aim of project proponents is to ship up to 350,000 barrels of Uinta crude to the Gulf Coast refineries for processing, and given that the low-income and minority communities around these refineries are already burdened by unduly high levels of pollution, it is incumbent on OEA to extend its environmental justice analysis to these neighborhoods. Ultimately, OEA's environmental justice analysis must detail specific impacts to specific communities – along with a thorough understanding of baseline conditions in those communities – from the rail traffic carrying products in and out of the Uinta Basin to their ultimate destinations.

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[182] *Id.* at xi and xiii.
[183] Baurick, Tristan et al., Welcome to "Cancer Alley," Where Toxic Air Is About to Get Worse, ProPublica, Oct. 30, 2019, available at https://www.propublica.org/article/welcome-to-cancer-alley-where-toxic-air-is-about-to-get-worse.
[184] R.L. Banks, Pre-Feasibility Study at xi and xiii.
[185] Tigue, Kristoffer, Covid-19 and Climate Change Threats Compound in Minority Communities, Inside Climate News, April 17, 2020, available at https://insideclimatenews.org/news/17042020/coronavirus-climate-environmental-justice-oil-refinery-hurricanes-port-arthur-texas/

B. OEA Fails to Take a Hard Look at Critical Environmental Justice and Racism Factors

After identifying low-income, minority and tribal communities in the study area, OEA merely describes in the most general terms, the adverse impacts that the proposed project may have on these communities. DEIS at 3.14-11 to 17. In doing so, OEA does not address environmental justice issues at all, but rather resorts to listing impacts without any reference to the communities that must bear the burden of these impacts. As a result, the OEA environmental justice analysis falls seriously short.

For example, environmental justice analysis must reflect an understanding that minority populations and low-income populations and Indian tribes and indigenous communities may have increased or unique vulnerabilities from cumulative impacts and must evaluate these vulnerabilities as well as design alternatives to address them.[186] Agencies should be "mindful that minority populations and low-income populations in the affected environment may be differently affected by past, present, or reasonably foreseeable future impacts than the general population."[187] Yet, OEA does not address any ways in which minority and low-income populations and Indian tribes and indigenous communities may be differently affected by the individual and cumulative impacts of the rail line project than the general population will be impacted.[188]

More specially, OEA should

> consider the degree to which any of the following seven factors could amplify identified impacts. Factors that can potentially amplify an impact to minority populations and low-income populations in the affected environment include, but are not limited to, the following:
>
> > a. Proximity and exposure to chemical and other adverse stressors, e.g., impacts commonly experienced by fence-line communities;
> > b. Vulnerable populations, e.g., minority and low-income children, pregnant women, elderly, or groups with high asthma rates;
> > c. Unique exposure pathways, e.g., subsistence fishing, hunting, or gathering in minority and low-income populations;
> > d. Multiple or cumulative impacts, e.g., exposure to several sources of pollutions or pollutants from single or multiple sources;
> > e. Ability to participate in the decision-making process, e.g., lack of education or language barriers in minority and low-income populations;
> > f. Physical infrastructure, e.g., inadequate housing, roads, or water supplies in communities; and

[186] U.S. Environmental Protection Agency, Promising Practices for EJ Methodologies in NEPA Reviews, March 2016 at 30-32.
[187] *Id.* at 30.
[188] *Id.* at 38

> g. Non-chemical stressors, e.g., chronic stress related to environmental or socio-economic impacts.[189]

None of this analysis is undertaken by OEA. Instead, as has been noted already, OEA says nothing about the communities it identifies as containing significant low-income and minority populations and Indian tribes and indigenous communities or the specific ways in which community members are already burdened and may be additionally burdened by pollution, socio-economic impacts, stress and other factors. Rather, the agency makes general and vague statements about impacts to these communities without saying anything specific about the impacts communities might endure or the communities themselves.

That such analysis is necessary is evident. For example, low-income and minority communities may be disproportionately burdened by air pollution **and** may be particularly vulnerable or sensitive to air pollution.[190] As the American Lung Association reports:

> The burden of air pollution is not evenly shared. Poorer people and some racial and ethnic groups are among those who often face higher exposure to pollutants and who may experience greater responses to such pollution. Many studies have explored the differences in harm from air pollution to racial or ethnic groups and people who are in a low socioeconomic position, have less education, or live nearer to major sources of pollution, including a workshop the American Lung Association held in 2001 that focused on urban air pollution and health inequities. The most recent EPA review of the research on the health effects of particle pollution concluded that nonwhite populations, especially blacks, faced higher risk from particle pollution.[191]

Other factors relevant to considering the impacts of direct, indirect and cumulative emissions on low-income and minority communities include institutional racism and a community's access to health care.

Low-income and minority communities are disproportionately exposed to pollution and toxins on the job, at school, and in their homes. NEPA protects these communities by requiring the OEA to disclose the rail line's potential environmental, economic, and public health impacts on low-income, minority, and rural communities. Because OEA's environmental justice analysis fails to consider the unique conditions of the potentially affected minority, low-income and tribal populations, the DEIS is inadequate. Similarly, because OEA does not create or consider one or more alternatives that address and mitigate impacts to minority populations and low-income

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[189] *Id.* at 43. While OEA is not compelled to address environmental justice and racism in just this way, it is required under NEPA to look at the direct, indirect and cumulative impacts of the proposed project

[190] Importantly, all our comments pointing out the short comings of OEA's air quality analysis apply equally to OEA's analysis of air quality impacts to low income and minority communities.

[191] American Lung Association, Disparities in the Impact of Air Pollution, available at https://www.lung.org/clean-air/outdoors/who-is-at-risk/disparities (last updated April 20, 2020). We hereby reference and incorporate the analysis and citations included on this American Lung Association webpage that establish that minority and low-income communities are at greater risk for premature death, disease and adverse health impacts from air pollution than the general population.

populations and Indian tribes and indigenous communities, the agency's environmental justice analysis falls short of NEPA's hard look mandate.

C. OEA Has Failed to Provide Opportunities for Meaningful Input from Affected Communities

NEPA promotes environmental justice by: 1) requiring federal agencies to study and disclose a proposed project's potential environmental, economic, and public health impacts on low-income, minority, and tribal communities; and, 2) providing opportunities for meaningful input from those affected communities.

According to the DEIS, beyond consultation with the Ute Indian Tribe, OEA has not made the effort necessary to reach out to the low-income and minority communities that will feel the direct, indirect and cumulative impacts of the proposed rail line project. Yet, OEA has identified low-income and minority community beyond those of the Ute Indian Tribe and, as established above, OEA's environmental justice analysis should extend to other impacted communities. Because OEA has not given these communities a meaningful chance to understand the impacts of and provide input on the proposed rail line, OEA's environmental justice efforts are not adequate.

XI. The DEIS's Analysis of Impacts on Listed and Sensitive Plant Species Is Deficient

According to the DEIS, construction of the preferred alternative would destroy hundreds of acres of "suitable habitat" for four plant species listed as threatened or endangered under the Endangered Species Act (ESA), including Barneby ridge-cress, Pariette cactus, Uintah Basin hookless cactus, and Ute's ladies-tresses.[192]

The DEIS, however, fails to conduct baseline analysis of existing populations in the project area, or analyze the potential impact on existing populations for these extremely rare plants. The DEIS also proposes inadequate mitigation to avoid harm to listed plants and vegetation generally.

A. The DEIS Fails to Disclose Impacts to ESA-Listed and Sensitive Plants

1. Occurrence of listed plants in the project area must be documented

The EIS notes that "field evaluations" were performed to document the existence of "suitable habitat" for the four ESA-listed plant species in the project area.[193] However it does not address whether, where, and to what extent the listed plants occur in the project area. It appears that this information would not be collected until *after* the project is approved. The Biological Assessment proposes conducting preconstruction surveys after final engineering of the approved alternative is completed:

[192] DEIS, Section 3.4, p.45-46.
[193] Barneby Ridgecress has been documented near the rail route, according to data from iNaturalist. Center for Biological Diversity, Map of Barneby Ridgecress Occurrences and Plant Collections (2019).

> MM-1: The Coalition shall conduct preconstruction surveys of federally listed plants (Barneby ridge-cress, Pariette cactus, Uinta Basin hookless cactus, and Ute ladies'-tresses) along the Action Alternative licensed by the Board and after final engineering of that Action Alternative is complete. The Coalition shall design and implement preconstruction surveys in consultation with OEA and USFWS and shall follow the procedures that OEA and USFWS approve.[194]

But baseline conditions, including population occurrences and habitat use, should *inform* the selection of the action alternative and final engineering plans and therefore must be disclosed in the EIS. For example, in *Northern Plains Resource Council v. Surface Transportation Board*—a NEPA challenge to the STB's approval of a railroad in Montana—the EIS merely assessed "the number of acres of *potential* sage grouse habitat within the 200-foot railroad right of way" rather than documenting the extent of sage-grouse habitat use and activity throughout the entire area that sage-grouse could be harmed. *See N. Plains Res. Council, Inc. v. Surface Transp. Bd*., 668 F.3d 1067, 1084 (9th Cir. 2011) (emphasis added). As a condition of project approval, the STB adopted a mitigation measure requiring "pre-construction surveys . . . to determine the extent of sage grouse habitats and activity in the project area." *Id*. The Ninth Circuit held that the failure to gather this baseline data prior to approving the railroad fell short of NEPA's "hard look" requirement, because "without this [baseline] data, an agency cannot carefully consider information about significant environment impacts." *Id*. at 1085. Likewise, the court held unlawful the STB's postponement of plant field surveys until after project approval. *Id*. at 1084-85.

Merely documenting "suitable habitat" in the EIS is insufficient. The EIS must disclose whether and where occupied habitat exists within the project area, and the total number of plant occurrences and health of these populations. Suitable habitat is not an adequate proxy. Suitable habitat could contain a species' entire population or no individual plant occurrences. Documenting whether plant populations occur within or without proposed areas of disturbance and how far from these areas is important to assessing the extent to which the project would harm *existing* populations and the severity of these effects. *See Idaho Conserv'n. League v. U.S. Forest Serv.*, No. 1:16-CV-0025-EJL, 2016 U.S. Dist. LEXIS 90371, at *29, *25 (D. Idaho July 11, 2016) ("Without accurate baseline data before the Project begins, it is impossible to know whether and to what extent the Project's activities will impact [rare bitterroot plant]," including "how many plants will be destroyed" or "how much habitat fragmentation will occur").

The STB must therefore conduct field surveys of the four listed plant species and disclose the project area's baseline population levels or plant occurrences in the EIS. The timing of these surveys is critically important.[195] For example, for the ESA-listed Barneby ridge-cress (*Lepidium barnebyanum*), the Fish and Wildlife Services protocol calls for May-June surveys for that

[194] DEIS, Appendix I, Draft Biological Assessment at 7-1.

[195] If the SCIC conducted plant surveys at the same time it conducted suitable habitat "field evaluations," these searches occurred outside the proper survey window and were flawed because they could not have detected the listed species. *See* DEIS, Appendix I, Biological Assessment at 4-7. (field evaluation for Barneby ridge-cress and Ute ladies' tresses occurred on July 17, 2020 and June 22-July 1, 2020, respectively).

species, when it is flowering.[196] By late May to early June the flower is done and the plant is virtually impossible to detect.

The survey window for Ute's ladies-tresses (*Spiranthes diluvialis*) would be roughly July 15 to Aug. 15. It is a species that cannot be reliably found in the same place from year to year and has a narrow survey window.

For the highly imperiled Pariette cactus (*Sclerocactus brevispinus*), surveys must be done by the end of April to early May. It is otherwise very hard to find this plant when it isn't flowering.

Surveys should also be conducted over at least two consecutive seasons given extreme drought conditions. 2020 was a very bad drought year in Utah in general. Many plants growing in xeric places are "boom and bust" species with significant population declines during drought.

Field surveys must also be conducted along the entire route. According to FWS, Barneby ridgecress "habitat occurs at an elevation of 6,200 to 6,500 feet on poorly developed soils derived from marly shales in a zone of interbedding geologic strata from the Uinta and Green River Formations."[197] Thus, the occurrence of the species could span the entire rail length.

2. The EIS must analyze the loss of pollinator and seed bank habitat

The DEIS also fails to acknowledge potential impacts to listed plants beyond the loss of "suitable habitat." Areas without extant plants could still contain seeds (i.e. seed bank) and could easily provide habitat for pollinators, even if not the type of habitat that the plants grow in. Most rare plant pollinators live elsewhere outside occupied habitat. This includes bees, which often live in the ground, and so are greatly vulnerable to any type of impact. The EIS must disclose that habitat essential to the listed plants includes pollinator habitat and not just occupied habitat or "suitable" habitat. It must assess the extent to which pollinator habitat and pollinators would be lost or disturbed, and any resulting effects on listed plant species.

3. Sensitive Plant Species Must Be Addressed in the EIS

As we noted in our scoping comments, the EIS must analyze the impacts to sensitive plant species in the project area, including Argyle Canyon phacelia (*Phacelia argylensis*), which is a BLM sensitive species that has been documented along the Wells Draw route. In addition, the following species may occur in the project area: Graham's beardtongue (*Penstemon grahamii*), White River beardtongue (*Penstemon scariosus albifluvis*), horseshoe milk-vetch (*Astragalus equisolensis*), Hamilton milk-vetch (*Astragalus hamiltonii*), Barneby catseye (*Cryptantha barnebyi*), Graham catseye (*Cryptantha grahamii*), *Erigeron untermannii*,

[196] U.S. Fish and Wildlife Service, Utah Field Office Guidelines for Conducting and Reporting Botanical Inventories and Monitoring of Federally Listed, Proposed and Candidate Plants (Aug. 31, 2011) *at* p. 8; U.S. Fish and Wildlife Service, Utah Field Office Guidelines for Inventory and Monitoring PowerPoint (no date), http://www.fws.gov/utahfieldoffice/surveyor.php.
[197] U.S. Fish and Wildlife Service, Barneby ridge-cress (*Lepidium barnebyanum*), https://ecos.fws.gov/ecp/species/3736 (last accessed Jan. 26, 2021).

Hymenoxys lapidicola, Goodrich's blazingstar (*Mentzelia goodrichii*), *Thelesperma caespitosum*, sterile yucca (*Yucca sterilis*), *Boechera duchesnensis*, Duchesne penstemon (*Penstemon duchesnensis*), and *Penstemon flowersii*.

The DEIS, however, merely lists species found within the project area without describing the current condition and population numbers of these species in the project area and how their population viability in this locale would be impacted. DEIS at 3.4-11 (citing Appendix E of Final Biological Resources Baseline Report), 3.4-41 The EIS must more thoroughly analyze the project's impacts on sensitive plants.

B. Proposed Buffer and Disturbance Zones to Protect Listed Plants Are Inadequate

For all four listed plant species the mitigation strategy is described as: "The Coalition shall conduct ground disturbing activities that require removal of vegetation to be located a minimum distance of 300 feet from individual plants and/or populations, to the extent practicable."[198]

As an initial matter, that buffer zones should be used "to the extent practicable" does not provide adequate assurance that the listed plants will be sufficiently buffered. Under what conditions would buffering be impracticable and who would make this determination? What would happen if the plants are located in the right of way?

In addition, best practice requires that the appropriate buffer/disturbance zone be tailored to each plant species. Using 300 feet for all species is not supported by science. A Red Butte Garden Conservation Department study conducted in 2020 relating to *Penstemon grahamii* looking at roads and pollinator distance recommendations, identified 200 meters (656 feet) as the needed buffer for that species.[199] Similarly, for a plant similar to Barneby ridgecress that occurs solely in Colorado, *Physaria rollinsii*, best management practices have established 200-meter buffers for that species.[200]

Colorado has developed different distances for different species but uses a generic recommendation that is much more generous and happens to also be 200 meters:

> The Best Management Practices are recommendations for voluntary use during the project planning, pre-ground disturbance field work, project implementation, revegetation, and post-project monitoring phases. Examples of specific recommendations include: gather mapped location information from CNHP for

[198] DEIS, Appendix I, Biological Assessment at 7-2, 7-4, (measures BRC-10, ULT-12, SCL-1).
[199] Barlow, Susan E. & Bruce M. Pavlik, Red Butte Garden and Arboretum, University of Utah, Understanding the Relationships Between Roads, Pollinator Visitation and Reproductive Output of White River Penstemon (*Penstemon albifluvis*) and Graham's Penstemon (*P. grahamii*), Final Report (Dec. 2020).
[200] Panjabi, S.S. & G. Smith, Recommended best management practices for Rollins' twinpod (*Physaria rollinsii*): practices developed to reduce the impacts of road maintenance activities to plants of concern. Colorado Natural Heritage Program (2014).

> plants of concern, conduct field surveys to map plants prior to disturbance, and have an *avoidance buffer of 656 feet (200 meters)*.[201]

The 300-feet buffer zones referred to in the DEIS are inadequate for all referenced plant species. Baseline surveys should use a minimum of 200 meters absent specific studies indicating a different buffer zone.

Plant species potentially have different buffer zones requirements because of their reproductive biology. Rare plant species generally require cross pollination and typically (although certainly not always) by bees. Thus, the appropriate buffer zone depends on the pollinator size and their flying distances as well as where they live in proximity to the plant in question. Some plants can only be pollinated by pollinators/bees of a certain size. Some require large pollinators that have more strength (like bumblebees i.e. Bombus) or that are a special size that can effectively bring about pollination, or in some cases that are relatively small. First you must know what the effective pollinators (not just floral visitors) are, to make that determination. To our knowledge no pollinator research has occurred with respect to Barneby ridge-cress (*Lepidium barnebyanum*).

The typical homing and forage distances of bees varies greatly based on the size of the bee. For smaller to mid-sized bees, it can be 0.1 miles to 2.5 miles roughly. For larger bees it can be over 2.5 miles up to 5.5 miles or even much more. The pollinators typically don't live where the plants grow. So the larger average sizes of the effective pollinators should be correlated to larger buffer sizes around the plants, to allow them to travel between the flowering plant and their home (typically in the ground, sometimes in wood logs, etc.):

> The size of the buffer zone that should be left around rare plant occurrences that rely exclusively on insect pollination depends on how far bees fly to obtain their resources (Tepedino 1996). For insecticide spraying, Tepedino (1996) recommended a provisional, best guess buffer zone of 4.8 kilometers (km) (3 miles (mi)) around rare plant occurrences. Smaller buffers of 200 m (656 ft) or less are employed for most oil and gas development and other activities subject to Section 7 consultation because there is no available information regarding the effects of these activities on pollinators.[202]

Another reason for varied buffer zones relates to the very different types of habitat that the plants may grow in. For example, wetland plants need buffer strips in adjoining upland/dry areas in addition to protection of all of their wetland habitat in view of the fact the wetland habitat types are the most 'threatened' types of habitat and in light of climate change and drought (like we find ourselves in now).

Wetland plants live in a very fragile association that can be easily disrupted when their habitats are infringed upon. And because they are flat, they tend to be built over or otherwise

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[201] Neely, B. et al., Colorado Rare Plant Conservation Strategy, Colorado Rare Plant Conservation Initiative, The Nature Conservancy (2009) *at* p. 39.

[202] U.S. Fish and Wildlife Service, Dudley Bluffs Bladderpod (*Lesquerella congesta* or *Physaria congesta*) and Dudley Bluffs Twinpod (*Physaria obcordata*) 5-Year Review Summary and Evaluation, Western Colorado Field Office Grand Junction, Colorado (June 2008) *at* p. 8.

easily impacted. Thus, Ute's ladies'-tresses habitat shouldn't be infringed on at all and wetland/wet meadow delineations need to be strictly observed.

Larger buffer zones may also be needed to protect plants from farming areas where pesticide drift could be an issue and dust and vehicle pollution from roads

In Colorado recommendations vary from 250 meters to up to 1000 meters for two species in the same plant family as *Lepidium barnebyanum* (two species of *Physaria*, also in the Mustard family), the recommendation is 600 meters. And, the recommendation for Ute's ladies'-tresses is 800 meters.[203]

However, we are unaware of any reproductive biology work that has been done for *Lepidium barnebyanum*. Without this analysis proper buffer zones for the impacts that would be caused by the proposed railway cannot be determined, and thus the project should be deferred until that work can be done.

C. The SCIC's Revegetation Mitigation Plan Is Inadequate

The DEIS identifies 1,430.5 acres of vegetation that will be "permanently impacted" by railway construction and 3,087.9 acres that will be "temporarily impacted" under the preferred Whitmore Park, alternative.[204] The reality is that some "temporary" impacts could last for decades. Some temporary impacts could even be permanent—for example, if a bulldozer were to scrape off the upper soil horizons down to subsurface horizons where there are no soil nutrients or mycorrhizae. The DEIS should specifically identify how long "temporary" effects would last. The duration could vary among different areas, depending on the vegetation community, soil type, or disturbance level.

The DEIS states that "temporary footprints would be reclaimed and revegetated" but revegetation efforts without adequate planning and follow-up are not likely to be successful.[205] Further, without a revegetation plan based on best practices, the effort to revegetate the "temporarily impacted" areas will likely fail. The description of the Coalition's voluntary mitigation plan is extremely vague,[206] and when combined with acknowledgement of the potential spread of invasive species through construction and operation is cause for concern.[207]

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[203] U.S. Fish and Wildlife Western Ecological Services Offices, Draft Guidance for Section 7 Consultations that Include Plants within the State of Colorado (Mar. 6, 2013).
[204] DEIS Section 3.4, p. 45-46.
[205] *Id.*, Appendix H, p. 6
[206] *See* DEIS at 4-5 ("VM-22: The Coalition will revegetate disturbed areas, where practical and in consultation with the Ute Indian Tribe as applicable, when construction is completed. The goal of reclamation will be the rapid and permanent re-establishment of native groundcover on disturbed areas to prevent soil erosion, where feasible. If weather or seasonal conditions prevent vegetation from being quickly re-established, the Coalition will use measures such as mulching, erosion-control blankets, or dust-control palliatives to prevent erosion until vegetative cover is established. The Coalition will monitor reclaimed areas for 3 years. For areas where efforts to establish vegetative cover have been unsuccessful after 1 year, the Coalition will reseed annually for up to 3 years as needed.").
[207] *Id.*, Section 3.4 at p. 36

Revegetation plans identifying concrete measures and specific success criteria should be included for public review and comment in the EIS.

A number of best practices should be included in each revegetation plan, as more fully explained in Attachment C.[208] For example, planning and collection of seeds in advance of soil disturbance should occur. The planting palette should include seeds appropriate to the environment and climate conditions. Only local native plant propagules should be used and the plantings/seedings should be administered in an ecologically successional way – introducing early successional species first, followed sequentially over a multiple year process with mid-successional species and finally late-successional species. A frequent weeding schedule particularly during the growing season (removal before seeds are produced is best) should be implemented, particularly in the first three years to reduce non-native and invasive species from proliferating, which would doom revegetation efforts.

Revegetation plans should include short-term and frequent "establishment" criteria, so that problems can be identified and remedied early (e.g., protection from herbivory, adequate soil moisture, stopping weed invasions before they start). Long-term success criteria should also be included (e.g., monitoring shows that the revegetation site is statistically similar to a reference (undisturbed) site by looking at cover, density, diversity). The project developer should be held to all revegetation plan requirements and success criteria. Otherwise, revegetation is unlikely to be successfully implemented. The DEIS does not specify whether and how the STB would monitor compliance.

Proposed revegetation periods and the proposed three-year monitoring period in the Coalition's mitigation plan falls short of what's needed to be successful, as more fully explained in Attachment C.[209] Most agencies require five years of monitoring with the last two years not having any "interventions" (no additional irrigation, weed removal, augmentation of revegetation). If additional remediation/revegetation is required, then the clock should restart in those areas with five more years of monitoring. For example, if most of the revegetation is meeting success criteria, but one area is not meeting the success criteria, then additional revegetation augmentation should be done in the "unsuccessful" area and the monitoring should continue for five years after the augmentation, which is typically standard.

The better practice, however, would be to require long-term monitoring up to ten years (with a reduced monitoring schedule in years 6-10 – once every 2 years) until the success criteria are met. Because not much data exists on the long-term outcomes of revegetation, long-term monitoring would be advisable.

Finally, the DEIS asserts that compliance with conditions required by the Biological Opinion for the project, which does not appear to have been finalized or released with the DEIS, would "minimize" the Project's impacts. DEIS at 3.4-42. The EIS must specify the specific measures under consideration by Fish and Wildlife Service and allow the public the opportunity to comment on these measures before certifying the final EIS.

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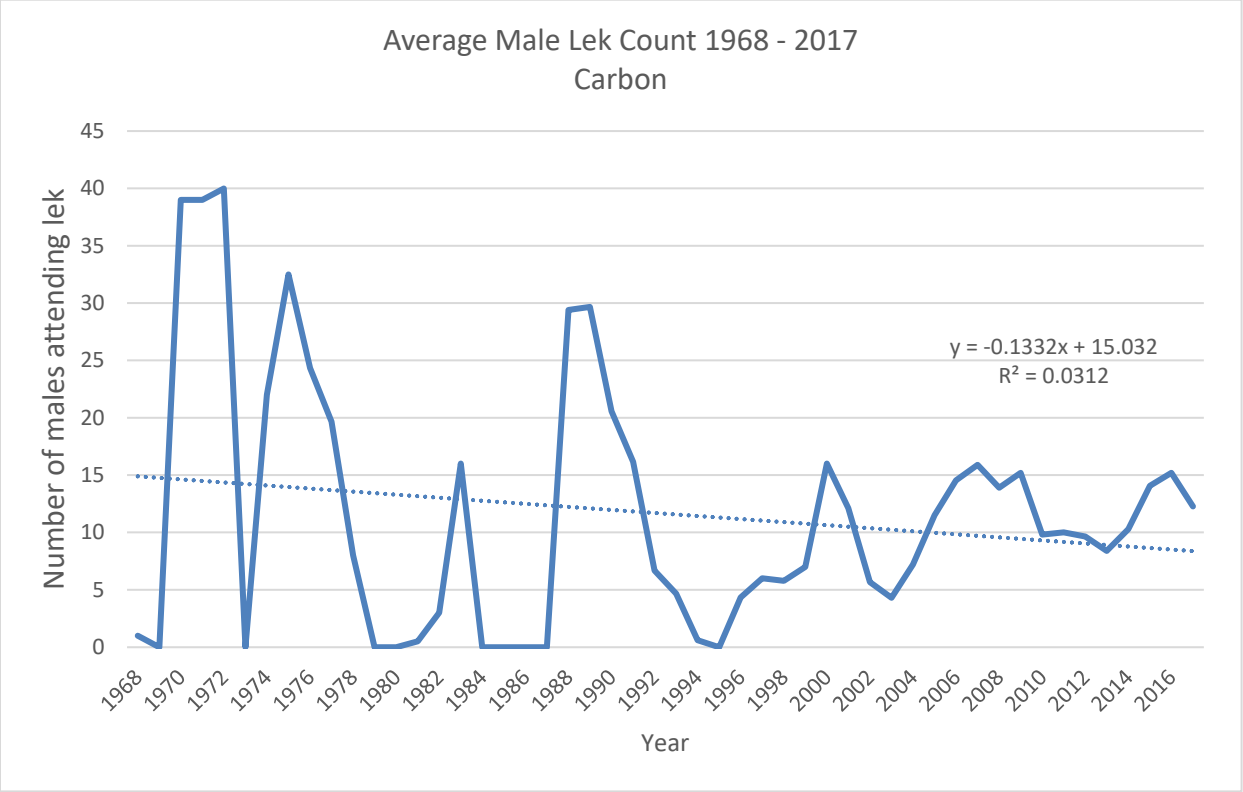
[208] *See* Attachment C, Center for Biological Diversity, Recommendations of Plant Biologist Ileene Anderson (Feb. 5, 2021).
[209] *Id*.

XII. The DEIS Fails to Take Hard Look at the Railway's Harm to Greater Sage-Grouse Populations

A. Status of the Local Sage-Grouse Populations

There are two local populations of greater sage-grouse that will be potentially affected by one or more of the three alternatives presented in the Uinta Rail-Line DEIS. One is a meta-population of grouse that uses a string of 11 leks that follow along (from West to East), Price Canyon, the terminus of all three proposed rail-lines, Emma Park, Summit Creek and Whitmore Park.[210] This population likely intermingles and moves among and between these 11 leks from year to year. Importantly, and as is referenced many times in the DEIS and emphasized below, all three alternatives have multiple instances in which the proposed rail-line comes within one mile of some of these leks.

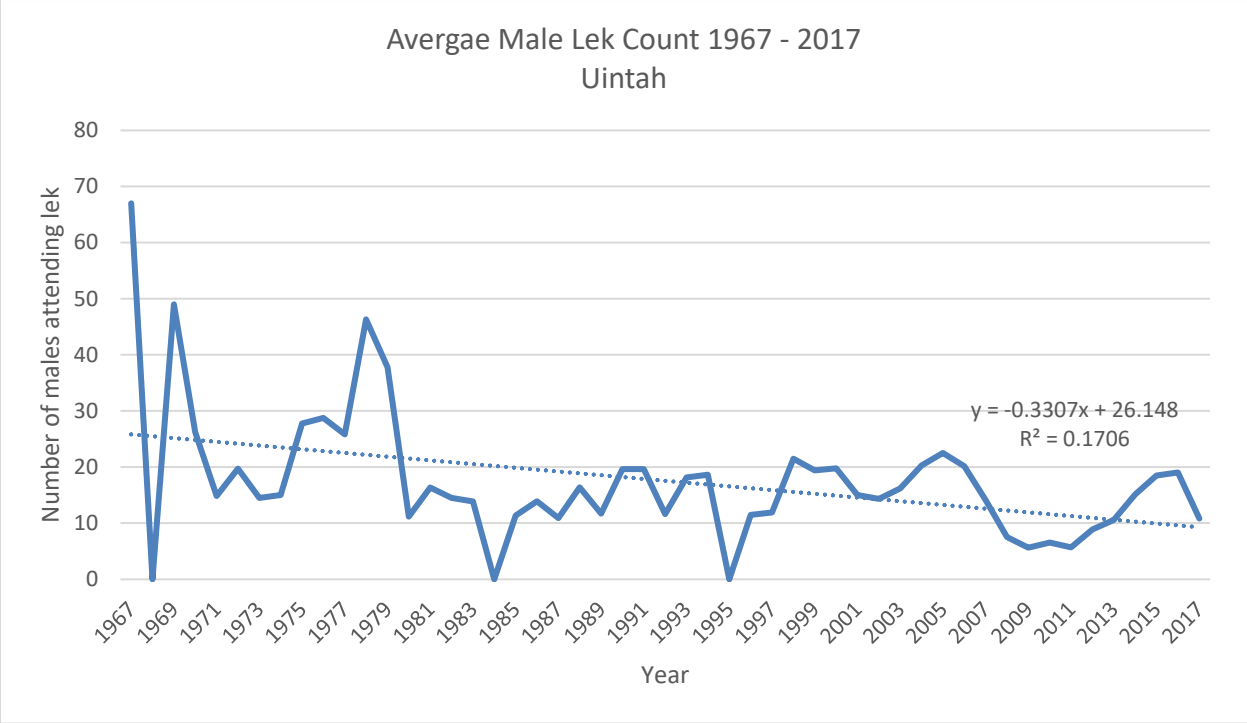
The Emma park meta-population of sage-grouse is part of the Carbon Sage-grouse Management Area (SGMA), as defined by the Utah State Sage-grouse Conservation Plan. A chart below summarizes a regression model of over 50 years of lek data from the late 1960's to near present day for the Carbon SGMA. This chart illustrates that on the whole, the average number of grouse seen on leks in the Carbon SGMA has been steadily declining over the past 50 years.



[210] Center for Biological Diversity, Map of Sage-Grouse Management Areas (2021).

Lek data provided by the Utah Division of Wildlife Resources indicate that the negative trend for the Emma Park sage-grouse meta population continues for the years 2017 through 2020 (the years after the above chart was created), with the 2020 lek count across the 11 leks down over 40% compared to the 2017 count.

There is another meta-population of sage-grouse in the study area that is scarcely mentioned in the DEIS, which is the Anthro Mountain sage-grouse population.[211] This population would be potentially impacted by the Wells Draw alternative, and is within the Uinta Sage-grouse Management Area (SGMA), as defined by the Utah State Sage-grouse Conservation Plan. A chart below summarizes a regression model of over 50 years of lek data from the late 1960's to near present day for the Uinta SGMA. This chart illustrates that on the whole, the average number of grouse seen on leks in the Uinta SGMA has been steadily declining over the past 50 years.



Lek data provided by the Utah Division of Wildlife Resources indicate that the negative trend for the Anthro Mountain population of the Uinta SGMA continues for the years 2017 through 2020 (the years after the above chart was created), with the 2020 lek count across the seven leks down over 44% compared to the 2017 count.

The charts and data above clearly show that both of the sage-grouse meta populations that stand to be impacted by the new rail-line have been in a steady rate of decline for as long as records have been kept, and the trend apparently is continuing - right through last year. This is no time to be playing fast and loose with these two meta-populations of sage-grouse. Below, we detail how the DEIS is careless with its analysis of how the three alternatives could potentially

[211] *See id.*

affect these two sage-grouse populations. In short, there are inadequacies in the DEIS analysis regarding sage-grouse, as described further below.

B. The DEIS Makes Light of Impacts of Rail-line Construction and Long-term Impacts of Rail Line Operations on Local Sage-Grouse Populations

Impacts of intermittent train noise on sage-grouse population. Of paramount importance regarding the adequacy of the DEIS's analysis of potential impacts to sage-grouse, is that all alternatives come within one mile of sage-grouse leks (Tables 1 and 2 below). For all three rail line alternatives, seven leks within the Emma Park (Cabin Spring, Matt's Summit, Horse Creek, Moynier Meadows, Whitmore Park, Houston, and Antone Creek) would be within 5 miles of the line, with particular concern the Cabin Spring, Matt's Summit, Horse Creek and Whitmore Park leks which would only be one mile or less from the preferred alternative (Table 1). The Wells Draw Alternative would come within 5 miles of seven leks of the Anthro Mountain sage-grouse population (Table 2).

Table 1. Named leks of the sage-grouse Emma Park meta population within 10 miles of any of the rail line alternatives

Lek_Name	Near_Mile
Cabin Spring	0
Matt's Summit	0.044338
Horse Creek	0.142045
Moynier Meadows	0.308953
Whitmore Park	1.049255
Houston	3.21204
Antone Creek	4.10496
Brook Meadow	6.274477
Dry Pond	7.409897
Scofield	8.442351
Clay Banks	8.755693
Lost Creek	9.224071
Iriart Pond	9.379642
Jap Point	9.798685

Table 2. Named leks of the sage-grouse Anthro mountain population within 5 miles of the Wells Draw alternatives

Lek_Name	Near_Mile
Cracker Grove	2.044814
Drill Hole	2.194304
Alkali	2.199633
Jeep Trail	3.262104
Nutters Ridge	3.435275
Wire Fence	3.536228
Alkali North	4.118104

In terms of long-term impacts of the operational rail line to the local sage-grouse population, the DEIS states that once operational there will be anywhere from 3 to 11 trains a

day, with usually over 100 tank cars, running 365 days a year. One inadequacy of the DEIS's analysis regarding sage-grouse is the assumption that sage-grouse would be indifferent to a train coming through their habitat if it is more than 350 feet away.

The DEIS cites scientific literature that would enable it to make a conservative estimate of the extent that train noise (distance from line) might impact the local sage-grouse population. In section 3.4.3.1, page 3.4-41 of the DEIS, it states that "development activities adversely affect greater sage-grouse populations due to habitat loss, presence of humans and infrastructure, and noise" (citing Aldridge and Boyce 2007; Aldridge 2005; Doherty et al. 2008; Holloran 2005; Lyon and Anderson 2003; Walker et al. 2007). There is also evidence suggesting that greater sage-grouse avoid noise from human activities independent of disturbance, associated infrastructure, and habitat fragmentation and that intermittent noise, such as traffic noise, has a larger effect on greater sage-grouse than continuous noise (citing Blickley et al. 2012a). In spite of this, in section 3.4.1 on page 3.4-1 of the DEIS it states, "The noise disturbance study area is the area in which wildlife could be affected by train noise. This area is defined by the 100 A-weighted decibel (dBA) sound exposure level (SEL), the noise level at which studies have shown animals (domestic and wild) exhibit a response to train noise (citing FRA 2005)… Based on noise modeling for the proposed rail line, the **100-dBA SEL is estimated to extend 350 feet** from the rail line for wayside (locomotive engine and wheel on rail) noise and 460 feet for horn noise at grade crossings."

The DEIS punts justification for this 100-dBA SEL/350 ft. buffer for sage-grouse to Appendix A of FRA 2005, which states in Section 1.5.2 page A-23 and A-24 (*emphasis added*):

> A noise descriptor for noise effects on wildlife has not been universally adopted, but recent research indicates the sound exposure level (SEL) is the most useful predictor of responses. **Characteristic of the bulk of research to date has been lack of systematic documentation of the source noise event. Many studies report "sound levels" without specifying the frequency spectrum or duration. A notable exception is a study sponsored by U.S. Air Force that identifies SEL as the best descriptor for response of domestic turkey poults to low-altitude aircraft overflights** (ref. 21). **Another report questions whether an A-weighted sound level used in the SEL for aircraft overflights is appropriate for animals since their hearing differs from humans (ref. 20). However, since no weighting has been established for representing the hearing characteristics of wild animals, the A-weighted sound level continues to be used….**Most studies have focused on identifying a noise level associated with disturbance effects, even if the type of noise event varied considerably from study to study. In the well-documented study that recommended SEL as the preferred descriptor, **a threshold of response for disturbance ("100 percent rate of crowding") of domestic turkeys was identified as SEL = 100 dB** (ref. 21). Even if the descriptors are not the same, many studies report levels in the vicinity of 100 dB as associated with an observable effect, as shown in **Table A-1**. The information in this table is taken from an extensive survey on **aircraft noise effects. Until more definitive information on thresholds can be developed, an interim criterion of SEL = 100 dB will be used for disturbance by high-speed train operations**…. There is evidence that some animals demonstrate reduced response to noise after prior exposure, but that a few

species never become accustomed to, or habituate, to high noise levels. Researchers found that for turkeys, previous exposure to sound levels below the 100 dB threshold was sufficient to eliminate panic responses to higher level sounds (ref. 21). On the other hand, some animals and birds, such as the grizzly bear, Dall sheep, and least tern, have not been observed to habituate (ref. 20). **Since habituation is found to be species-dependent, a general criterion cannot be developed at this time**." (**Table A-1 referenced above reproduced below**)

Table A-1 Summary of Noise Levels Associated with Effects on Animals and Birds (from App A of FRA 2005)

Animal Category	**Species**	**Noise Level and Type (if known) Associated with Effect**	**Effect**
Domestic Mammals	Dairy Cow	105 dB	Reduction in milk production
		97 dB	Changes in blood composition
		110 dB, 1 kHz	Changes in blood composition
	Swine	108-120 dB	Hormonal changes
		93 dB	Hormonal changes
		120-135 dB	Increased heart rate
	Sheep	100 dB "white noise"	Increased heart rate, respiration
		90 dB"white noise"	Decreased thyroid activity
		100 dB	Increase in number of lambs per ewe
Wild Mammals	Reindeer	Sonic booms	Startle
	Caribou	Aircraft	Startle, panic running
	Pronghorn antelope	77 dBA, helicopter	Running
Domestic Birds	Chicken	100 dB	Blood composition
		115 dB	Interrupt brooding
Wild Birds	**Quail**	**80 dB**	Accelerated hatching
	Canary	95-100 dB	Hearing loss
	Seabirds (general)	Sonic boom	Startle, flush from nest
	Tern	Sonic boom, frequent	Reduced reproduction
	California condor	Blasting, drilling, etc.	Flush from nest; abandon area
	Raptors	Sonic booms	Alarm

The above discussion excerpted from Appendix A of FRA (2005) is not adequate justification to claim that sage-grouse are not impacted by an SEL of less than 100 dB, that the sphere of potential noise impacts of trains on sage-grouse are only felt by individuals within 350 ft. of the tracks, or that sage-grouse might become "habituated" to 3 to 11 trains running through their occupied habitat every day. Based on the conclusions reached in Appendix A of FRA 2005, which the DEIS hangs its hat on to make the above claims, readers are expected to believe that because an effect of "100% crowding" with domestic turkeys reacting to plane overflights with an SEL of 100dB, that this means that sage-grouse will negatively react to an SEL of 100 dB (no less) and this is only felt at a distance of 350 ft. from the line and not further. Yet Appendix A features the above (extracted) table, which indicates that wild quail, presumably more similar to sage-grouse than turkey poults because they are both wild and both in the order *Galliformes*, negatively react to an SEL of 80 dB. Why isn't this threshold extrapolated to sage-grouse for the DEIS? We believe many wildlife biologists, especially those familiar with the literature of the effects of other, loud, human activities (such as oil and gas drilling and development), on sage-grouse would find the conclusions reached in the DEIS in regards to train impacts on sage-grouse to be problematic and largely unsupported. We more thoroughly explore literature (largely absent from the DEIS) on the impacts of anthropogenic noise on sage-grouse below.

Section 3.4.3.1, page 3.4-41 of the DEIS states "The noise associated with construction of the proposed rail line could cause greater sage-grouse to avoid or abandon….leks if construction were to take place during the breeding season." While this is true, it is important that the Final EIS explicitly state that it is also true that the noise associated with running trains on the built rail-line (any of the alternatives) could cause greater sage-grouse to avoid or abandon those leks within 1 mile of the tracks (5 or 6 leks, depending on which alternative is built) if trains were to run during the breeding season, which of course they will.

One reason sage-grouse in particular are sensitive to anthropogenic noise is because they rely on acoustic communication to find and court mates. As such, noise above and beyond typical ambient back-ground levels could negatively interact with the ability of individuals to pick up on these auditory natural history cues. (Blickley et al. 2012a and 2012b) examined whether energy-development noise *alone* impacted sage-grouse, controlling for other disturbances associated with development in a long-term experiment, introducing recorded noise from natural gas development (from roads and drilling) on treatment leks and control leks over three consecutive breeding seasons. At the population level, they found a dramatic decline in male attendance on experimental-noise leks, and a trend toward lower female attendance (Blickley et al. 2012a). They also found that fecal stress-hormones (glucocorticoids) were elevated on noise leks compared to controls, suggesting that noise has a physiological impact on sage-grouse (Blickley et al. 2012b). Using recordings from a microphone array, they also examined the potential of noise from energy development to mask the sounds produced by lekking sage-grouse (Blickley and Patricelli 2012). Based on this prior research (Blickley et al. 2012a, 2012b), Patricelli et al. (2013) recommended that (1) noise-management objectives be set relative to typical ambient noise levels in sage-grouse habitat before development (**with the best currently available measurement of residual noise levels in undisturbed sage-grouse habitat suggesting an ambient level of 16 to 20 dBA**); (2) an increase in median noise levels of 10 dBA above ambient be allowed but note more than that; (3) management strategies be expanded to protect the soundscape in areas critical for mating, foraging, nesting, and brood-

rearing activities of sage-grouse, rather than protecting the lek area alone; and (4) management strategies be focused on the siting of roads or limiting of traffic volumes during crucial times of the day (0600 to 0900 hours) and season (i.e., breeding season), rather than setting targets for vehicle noise exposure.

The FRA 2005 Appendix summarized above makes it clear that there are not enough studies on the impacts of noise on wildlife (aside from the noise studies on sage-grouse by Patricelli et al. summarized above), let alone the effects of train noise on wildlife, in order to make predictions of whether wildlife will or will not be able to habituate to long-term train noise over time. However, in section 3.4.3.1, page 3.4-29 of the DEIS, it states "**OEA anticipates that <u>most wildlife</u> would become used to, or habituate to, the noise of an operating train and maintenance equipment and would likely avoid the area for the short period that a train or equipment is present.** Research indicates that different species of animals habituate to noise differently; **some animals habituate to noise after several repetitions of exposure, while other species do not become accustomed to high noise levels**."

OEA is making a very serious assumption that "most wildlife" (and it is clear they are including sage-grouse in this assumption) would habituate to the trains traveling through the study area. The next sentence (bolded above) states that some animals habituate to noise, and some do not; how exactly does the DEIS conclude that sage-grouse are included in the subset of animals that would habituate to loud, frequent noise introduced into their habitats? The DEIS makes a blanket assumption about "most wildlife" habituating to the trains, and then is silent on the specifics of whether sage-grouse is one of the wildlife species the DEIS assumes will habituate to trains. By saying that "most species" would habituate, and then being silent on sage-grouse, readers are left to assume that "most" would include sage-grouse. This gross oversight and problematic assumption must be corrected in the FEIS. Moreover, even if it is true that sage-grouse might avoid the area within a certain distance of the tracks "for the short period that a train is present" and then move back to the preferred habitat near the tracks, it is extremely unlikely that an individual would perform this action 3 to 11 times a day, 365 days a year. Thus, this significant indirect impact of the rail-line causing sage-grouse to actually permanently abandon areas within, for example 3 miles of the rail line (see discussion below) needs to be addressed in the FEIS.

One critical error made in the DEIS is the assumption that noise levels of more than 10 dBA above ambient levels would impact sage-grouse (which is a fine assumption to make based on the scientific literature), but then the DEIS does not measure ambient noise levels on leks. In section 3.4.3.2, page 3.4-52 of the DEIS it states that "the estimated equivalent sound level (Leq) [from trains] could exceed 66 dBA at the Cabin Spring and the Matt's Summit leks under either the Indian Canyon Alternative or the Wells Draw Alternative…..**although OEA did not conduct ambient noise monitoring in the Emma Park area, ambient noise elsewhere in the study area ranged from 33 dBA to 56 dBA**[212], which suggests that those two leks could experience an increase in noise of at least 10 dBA…" Moreover, in section 3.4.3.2, page 3.4-54

[212] We remind the OEA that Patricelli et al. (2013), who has perhaps done the most work with noise impacts on sage-grouse, states that the best currently available measurement of residual noise levels in undisturbed sage-grouse habitat suggesting an ambient level of 16 to 20 dBA.

of the DEIS it states that "For both the Indian Canyon Alternative and Wells Draw Alternative, the 10-decibel threshold would be exceeded for at least two leks and **could be exceeded for up to five leks, depending on current ambient noise levels**" (which we stress **the OEA does not know precisely**). With all the biological studies conducted in the Study Area and reported in the *Biological Resources Baseline Environment Technical Memorandum*, what precluded OEA from measuring ambient noise right in the lek sites closest to the train line? A 33 dBA to 56 dBA range of ambient noise "in the Study Area" (a very large area) is a large one on which to base predictions of whether or not trains will impact certain leks. And to not even measure ambient noise in the Emma Park area is inexcusable. **Before the FEIS is published there must be measurements of ambient noise at all potentially affected leks,** for this part of the analysis to hold any weight.

While the DEIS does cite the USGS 2014 sage-grouse buffer report (USGS 2014), there is additional information in this comprehensive report to inform the estimated distances from human activity and noise that sage-grouse would be expected to respond to. In fact, when reading this report, or other summaries of sage-grouse natural history and impacts to sage-grouse (e.g., Sage-grouse National Technical Team report, SGNTT 2011, or the Conservation Objectives Team report, USFWS 2013) there is one statistic that comes up frequently as these three reports summarize results of other scientific studies investigating impacts to sage-grouse, which is the 3.1-mile (5km) buffer around leks. The literature is clear that the majority of nests in any given area (up to 95%) will be within this 3.1mile buffer, and that these nesting hens and other sage-grouse within this occupied habitat are sensitive to various human-created disturbances. Moreover, the USGS buffer report (USGS 2014) describes how assessment of lek trends in proximity to a large, interstate highway (I-80) indicated that all formerly recorded lek sites within 2 km (1.25 mi) of the highway were unoccupied, and leks within 7.5 km (4.7 mi) of the highway had declining attendance (citing Connelly et al. 2004). The USGS buffer report further relates that, since the 3.1-mile buffer is becoming widely accepted in the scientific literature, the State of Nevada is requiring a 3-mile lek buffer from geothermal energy facilities for reducing noise effects on sage-grouse (citing the Nevada Governor's Sage-Grouse Conservation Team, 2010).

In summary, the DEIS's analysis of the impacts of trains and train noise on the local sage-grouse population does not abide by the best published science, nor the Precautionary Principle. This principle suggests that it is more favorable to err on the side of being overly protective rather than risk too little protection. With ecological analysis needed to inform subsequent conservation actions, this principle is often invoked against a backdrop of uncertainty and incomplete data. The Precautionary Principle leads us to act in a manner that accounts for uncertainty by trying to avoid results that preclude future options. Basically, the less we know, the more cautious we need to be. As scientists and practitioners who acknowledge the inherently stochastic nature of the communities and systems we are studying, we underscore that resource planners and managers need to make every effort to err on the side of caution, and incorporate wide margins of safety to guard against loss of wildlife populations and their habitats, most especially with the looming uncertainty of the implications of climate change to all wildlife and habitat.

As such, and based on the above discussion and literature, we propose the FEIS re-do its noise analysis vis-à-vis sage-grouse, and analyze two alternative buffer distances from the rail-

line to better document and summarize potential impacts to the local sage-grouse population, to more adequately capture the area of influence of train noise that is reasonably discernable by sage-grouse on either side of the tracks. These two distances should be the 1mi. buffer (as proposed by Patricelli et al. 2013) and the 3.1-mile buffer (widely cited in the literature as summarized by SGNTT 2011, USFWS 2013, USGS 2014).

Impacts of road construction on sage-grouse population. Section 2.3.2, page 2-28 of the DEIS states that "all Action Alternatives would require constructing temporary and permanent access roads. The Coalition would construct temporary access roads that would provide access to the rail embankment, tunnel portals, and bridge and drainage structure locations during construction. The Coalition would also construct several permanent access roads to provide access to rail sidings and long tunnels during rail operations." The DEIS is never very clear as to exactly how many temporary and permanent roads will be constructed in the study area, let alone the parts of the study area that overlap with occupied sage-grouse habitat. In addition, there will be many instances of road relocations with all three alternatives; namely 11.8 miles of road relocation under the Indian Canyon Alternative and 13.8 miles and 13.7 miles, respectively, with the Whitmore Park and Wells Draw alternatives. The scientific literature is filled with evidence of the significant impacts roads and road density have on sage-grouse populations, including roads within 6.2 miles (10 km) of leks (e.g., numerous studies cited in SGNTT 2011, USFWS 2013, USGS 2014). These reports, and the literature cited within them regarding known road and road density impacts on sage-grouse, should be brought into a suitable effects analysis in the FEIS of the proposed rail line and concomitant increases in road building on sage-grouse.

Impacts of construction staging area impacts on sage-grouse population. Section 3.4.3.1, page 27 of the DEIS states, "the effects of habitat clearing on wildlife would be permanent in areas where permanent rail components (e.g., railbed) would be placed and would be temporary in areas where habitat would be restored (e.g., construction staging areas)." This is a grossly inadequate means of analyzing the potential effect of "temporary" rail construction staging impacts on the local sage-grouse population. Among other things, the "temporary" impacts would last years; in section 2.3.12 on page 2-34 of the DEIS, it states, "the Coalition anticipates that construction of the Indian Canyon Alternative or the Whitmore Park Alternative would take approximately 2 years, but this time frame could range from 20 to 28 months depending on weather conditions. The Coalition expects that construction of the Wells Draw Alternative would take approximately 3 years, but could range from 32 to 48 months depending on weather conditions." The truth is that staging and construction impacts of this length could lead to sage-grouse permanently abandoning the site, and this needs to be acknowledged in the Final EIS. Moreover, the DEIS fails to acknowledge that big sagebrush (*Artemesia tridentata)* requires 25 to over 100 years to naturally recover after removal (Connelly et al., 2000; Welch 2005; Kitchen and McArthur 2007).

Impacts of increased risk of wildfire on sage-grouse population. Section 3.4.3.1, page 3.4-29 of the DEIS states, "Rail operations could temporarily and permanently affect wildlife by…changing the likelihood and spread of wildfires…" and on page 3.4-38, that "Trains can contribute to wildfires by providing an ignition source." The FEIS needs to go into greater detail on how increased fire frequency possibly brought about by train activity could impact sage-grouse. The problems associated with increased fire in sage-grouse habitat is a topic that has been well researched. In big sagebrush (*Artemisia tridentate*) communities fire cycles historically

ranged from 100 to over 300 years, depending on climate, topography, plant composition, and ecological site characteristics (// and Bailey 2982; Baker 2011; Bukowski and Baker 2013). However, the spread of highly flammable nonnative plants, especially cheatgrass, has drastically altered the natural fire regime throughout much of the sagebrush steppe (Baker 2011). Wildfires now burn larger, hotter, and more frequently in lower elevation basin and Wyoming big sagebrush habitats. Little remains in the wake of these fires, and burned areas are often vulnerable to reinvasion by cheatgrass, which can completely occupy a burned site (Chambers et al. 2007; Brooks et al. 2004). Fires, prescribed and natural, have long-term effects (>10 yr) and sage-grouse may continue to avoid burned areas even after sagebrush has recovered (Nelle et al. 2000). Sagebrush may return to preburn occurrence within 15 to 20 years after fire if conditions are favorable (e.g., proximate seed sources, quick seedling establishment, conducive weather, etc.). If not, various sagebrush varieties may require between 30 to 50 years to re-occupy a burned site (Baker 2006; Knick et al. 2005). While small, infrequent fires can maintain a mosaic of successional habitats that benefit sage-grouse, ecological modeling indicates that frequent, large fires in sagebrush steppe can lead to lek abandonment and with too many, very large fires, may even lead to extirpation of the species in some areas (Aldridge et al. 2005). The possible effects of increased fire frequencies due to the proposed rail-line needs to be incorporated into a more thorough cumulative effects analysis for sage-grouse in the FEIS (see next section).

Impacts on sage-grouse populations downline of the project. The DEIS does not acknowledge occupied sage-grouse habitat downline of the project area, which trains would also traverse on their way to Colorado.[213] The effect of increased rail operations along this route on sage-grouse habitat must also be analyzed.

The proposed mitigation plan is unproven in its ability to boost sage-grouse population numbers. Though it is not an official mitigation plan yet, the DEIS's *Draft Mitigation Strategies Memo* lays out the general strategy for mitigation efforts that will be attempted to make up for effective sage-grouse habitat losses due to the rail line that cannot be avoided. Basically, it is thought that by building 400 Beaver Dam Analogs in the study area, this will grow the sage-grouse population enough to make up for losses in the population due to the rail line. While there has been some limited research indicating correlations between some forms of sage-grouse habitat improvement such as juniper removal and population level effects, this is not the case with Beaver Dam Analogs. There are yet to be conclusive studies demonstrating that raising water tables in sagebrush systems leads to increased viability rates or any other measures of population growth in sage-grouse. If the FEIS cannot produce such studies to hang its hat on, this mitigation plan should be considered at best ineffective, and at worst a very risky bet to make up for population level negative effects sure to be triggered by the built rail line. It would be far more responsible to re-route the preferred alternative so that no leks are within 3 miles of the line (as the science argues for above), rather than gamble on such an unproven strategy to mitigate for habitat and population losses that are sure to come with the rail line. The DEIS should consider alternatives to avoid these leks by at least three miles.

[213] Center for Biological Diversity, Map of Downline Route and Sage-Grouse Habitat to Tennessee Pass Line (2021).

C. The DEIS Analysis Is Lacking in Terms of Cumulative Effects Specifically Tailored to Sage-Grouse

The cumulative effects analysis in the DEIS is grossly inadequate in terms of potential cumulative effects of the new rail-line, combined with past, current and foreseeable future impacts of human activities and both human and natural disturbance, including climate change, on the Uinta Basin and Carbon SGMA sage-grouse populations. The Cumulative Effects analysis in the DEIS only mentions sage-grouse four times. As such, a new section of the Cumulative Effects analysis needs to be written in the FEIS for sage-grouse. In addition to more thoroughly analyzing whether fire regimes in this portion of the Uinta Basin have already been altered by the predominance of exotic annuals like cheatgrass (addressed above and how the current fire regime and fire cycle might be affected by increased chance of fires caused by the rail-line, the new cumulative impacts analysis for sage-grouse should also consider past and future anticipated oil and gas development in the area, West Nile Virus, livestock grazing, vegetation treatments, roads, utility corridors, wind energy development and invasive plants (and the increased likelihood of cheatgrass invasions triggered by the rail line construction). We address a few of these impacts that can act cumulatively on sage-grouse, below.

Section 3.4.2, page 3.4-4 of the DEIS states that "the existing habitat in the vicinity of the proposed rail line has been fragmented by previous construction of highway corridors and smaller roads and conversion of land for agricultural, residential, commercial, and industrial uses…Smaller paved and dirt roads provide access to homes, businesses, and oil well pads. These land use changes have disrupted the continuity of the original wildlife habitat." This language offers a start at summarizing the potential cumulative effects already acting on the local sage-grouse population in the Study Area, but as we demonstrate below, still misses the mark.

The new cumulative effects analysis for sage-grouse in the FEIS also needs to address the fact that this rail-line will likely lead to increased oil and gas development within sage-grouse habitat in the Uinta Basin, and these effects should also be addressed as indirect effects of the project. As discussed in section II above, the railway is intended to spur increased oil and gas development in the Uinta Basin. There is perhaps no other topic in relation to sage-grouse that has been studied more thoroughly than the impacts of oil and gas development on this species. The individual synergistic and cumulative effects of expanded oil and gas development and related effects, such as surface disturbance, noise, and creation and use of access roads, continue to fragment, degrade and eliminate sage-grouse habitat across its range (Connelly et al. 2011). The Sage Grouse National Technical Team's (SGNTT 2011) report and Salvo (2015) thoroughly review the effects of fluid mineral development on sage-grouse and this analysis should be brought into a sage-grouse specific cumulative effects analysis in the FEIS.

A relatively recent example of a good cumulative effects analysis of fluid mineral development on a local sage grouse population is a study commissioned by the Bureau of Land Management in the Powder River Basin, Wyoming, which exposed major difficulties with the agency's current approach to sage-grouse conservation in the Basin, a region that is heavily developed for gas and oil. The study indicated that an increasing density of both coalbed methane wells and conventional oil and gas wells coupled with an outbreak of West Nile virus could cause "functional extinction" of sage-grouse in the Powder River Basin. Under such a

scenario, modeling predicts that the 370 active leks known in the Basin would be reduced to only six (Taylor et al. 2012). The authors estimated that 27 percent of the pre-development sage-grouse population had already been lost as a result of prior heavy coalbed methane and conventional drilling in the Powder River Basin, and predicted that only 39 percent of the original population will remain when coalbed methane is fully developed (with up to eight wells per section) in the Basin, even in the absence of a West Nile virus outbreak (Taylor et al. 2012). The study also found that sage-grouse censused at large leks would be expected to decline by 70 percent from pre-development numbers as well spacing reaches 4 wells per square mile.

The DEIS similarly does a poor job adequately analyzing the effects of additional power lines, communication towers, and transmission lines on sage-grouse and how the addition of these new influences interact with other current stresses to sage-grouse in the study area. Section 3.4.3.1, page 3.4-30 of the DEIS merely states "Rail line infrastructure could affect species survival and reproductive success. Power distribution lines, communications towers, and fences associated with the proposed rail line would provide perches for predatory birds, facilitating predation on ground-nesting birds and other small wildlife." The possible effects of additional power lines and communication towers associated with the rail line (or other power and communication lines that come to follow this convenient pathway in the future) combined with other current and potential future impacts to the sage-grouse population needs to be more thoroughly addressed in the FEIS, including total acreage of this and all other current and potential future infrastructure in the study area (and see discussion on revisiting the sage-grouse habitat disturbance cap analysis below). In addition, as the United States transitions from fossil fuels to renewable energy sources, there will likely be a need for additional long-distance transmission lines across the West. For example, it looks as if both TransWest Express and Energy Gateway South, both in the planning stages now, will cross somewhere through the Uinta Basin and it would not be unreasonable to also include these future potentially major impacts in the Uinta Basin in a cumulative effects analysis for sage-grouse for the project.

The new sage-grouse cumulative effects analysis that needs to be written for the FEIS would be a good place to reassess the disturbance cap analysis performed in the DEIS for sage-grouse. The DEIS already acknowledges that seven leks are within the 1-mile buffer of the proposed rail-lines. In this part of the study area in particular, the disturbance cap analysis may need to be re-assessed. The Whitmore Park study area disturbance cap analysis by the BLM (including current and anticipated disturbance caused by the rail-line) was found to be 2.66% surface disturbance, worrisomely close to the 3% disturbance cap required by both the BLM and the Utah State Sage-grouse Conservation Plan. It would only take a small amount of additional impacts not foreseen by the DEIS in the study area to put the cumulative disturbances over 3%. Again, this seems like it is not abiding by the Precautionary Principle and should be revisited in light of a sage-grouse specific cumulative effects analysis.

Lastly, an adequate cumulative effects analysis for sage-grouse needs to also address the population viability issue. The Uinta Basin SGMA population and Emma Park meta-population of the Carbon SGMA are likely connected, with some travel in some years of birds between the leks of both of these populations. In addition, the Emma Park meta population is almost certainly connected with the meta-population within the Carbon SGMA that uses the leks north of Scofield reservoir (UDWR 2019). The DEIS does not address the potential cumulative, direct and indirect impacts of the proposed rail line on sage-grouse population viability, including

potential population decline and extirpation because of the rail line. The viability of these populations is likely to decline over time after the rail-line is built, due to lek abandonment and fragmentation of occupied sage-grouse habitat. A proper cumulative effects analysis should address the long-term likelihood of the habitat that links these various populations to remain intact enough for them to retain some element of connectivity, thus promoting long-term viability of all the meta populations that are potentially linked through and beyond the Uinta Basin Rail Line study area.

In conclusion, the scientific literature is conclusive that sage-grouse are highly sensitive to development. We fear that if this rail line is built, the local sage-grouse population and most especially the Emma Park population could be severely impacted. As we point out at the beginning of this section, this sage-grouse population has already been in slow and steady decline for decades, and that trend is continuing, even without the rail line being built. As virtually all of the Emma Park leks lie within 3 miles of the preferred route, further population declines due to construction and train operation are virtually certain as leks and surrounding nest/brood habitat are abandoned. In fact we feel that extirpation of this population is a distinct possibility of this rail line is built. And, if the connection to the Uinta Basin or Scofield populations are eventually lost, there can be no rescue effect from these nearby populations. This project throws the Precautionary Principle out the window and plays fast and loose with a small and vulnerable population of greater sage-grouse.

XIII. The DEIS Must Take a Hard Look at the Impacts of the Rail Line on Big Game Populations

The DEIS does not analyze how big game populations and their habitat will be impacted by the proposed railway and resulting oil and gas development in the Uinta Basin. Its analysis of the project's potential impacts on wildlife is incomplete and cursory. Because the project area crosses several areas identified as big game range, including crucial areas, it is extremely important for the DEIS to identify impacts and adopt mitigation to avoid and reduce those impacts.[214] It is well-documented that human development causes direct habitat loss and fragmentation, and indirect habitat loss through big game avoidance of infrastructure and related activities; these consequences likely reduce the carrying capacity of the landscape.[215]

It is clear from the DEIS that the proposed railway and increased oil and gas development will permanently harm ungulates in and near the project area. The DEIS notes the potential for permanent habitat loss: "[H]abitat clearing on wildlife would be permanent in areas where permanent rail components would be placed . . . ."[216] The DEIS also states, "abrupt change in habitat type could lead to a permanent change in the types of species present in the area because some species of wildlife avoid herbaceous and low shrub habitats. . . ."[217]

Because of the potential permanency of habitat loss from this project, the EIS must fully quantify the potential direct and indirect loss of migratory, winter, and crucial big game habitat

[214] DEIS at 3.4-5.
[215] Johnson, H.E., et al., Increases in residential and energy development are associated with reductions in recruitment for a large ungulate, Global Change Biology (2016), https://doi.org/10.1111/gcb.13385.
[216] DEIS at 3.4-27.
[217] *Id.*

from construction and evaluate the resulting impacts on big game populations. The EIS must also detail mitigation measures to protect big game habitat and their effectiveness, which it currently does not.

A. The DEIS Must Fully Analyze Direct, Indirect, and Cumulative Impacts on Big Game Species

Construction of the railway and resulting increased oil and gas development in the Uinta Basin could have significant impacts on big game populations. Table 3.4-11 shows "the area of big-game habitat that construction of each Action Alternative would permanently remove or temporarily disturb."[218] The DEIS does not state how the acreage estimates were calculated and the reliability of those estimates. The EIS should explain how these estimates were calculated.

The DEIS does not mention whether staging areas or access roads are included in the project area footprint. The EIS must explain what types of ground disturbance are included in the big game habitat disturbance figures.

The DEIS also fails to quantify *indirect* habitat loss resulting from habitat fragmentation, *i.e.*, habitat loss resulting from big game avoidance of rail and well infrastructure. As further explained below, the development of human infrastructure, including oil and gas infrastructure, leads to avoidance of prime habitat by mule deer and indirect loss of habitat.

The DEIS fails to identify whether migration corridors are within the project area and identify their location. The EIS must analyze the effect the rail and oil and gas development will have on migration corridors within and near the project area. The Whitmore Canyon alignment, along with the other alternative actions, pass through areas that the state identified as big game migration corridor priority areas on their western end and through crucial and winter habitat (*See* Uinta Basin Railway Map attached). The EIS must examine the dangers and potential impacts the railway and increased oil and gas production in the project area will have on migration of big game species.

A significant amount of crucial habitat will be lost due to the project. "Crucial-value habitat is defined as habitat on which the local population of a wildlife species depends for survival because there are no alternate ranges or habitats available."[219] The EIS should disclose the total acreage of big game crucial habitat disturbed by the proposed alignments as follows: [220]

[218] *Id.*at 3.4-44.
[219] DEIS at 3.4-5.
[220] Utah Division of Wildlife Resources, Index of Available GIS Data, https://dwrcdc.nr.utah.gov/ucdc/DownloadGIS/disclaim.htm (last accessed Jan. 26, 2021).

Indian Canyon alignment	Wells Draw alignment	Whitmore Canyon alignment
Permanent disturbance: 1053.3 out of 1390.2 acres	**Permanent disturbance:** 1569.3 out of 2625.4 acres	**Permanent disturbance:** 1152.7 out of 1490.6 acres
Temporary disturbance: 1770 out of 2550 acres	**Temporary disturbance:** 3077.7 out of 5316.3 acres	**Temporary disturbance:** 2358.4 out of 3180.5 acres

The DEIS should also evaluate the population levels, population trend, and habitat needs of each big game species within the project area, as further detailed below.

1. Mule Deer (*Odocoileus hemionus*)

The EIS must analyze how mule deer will be impacted by the Project, and especially how mule deer migration will be harmed. Mule deer often migrate from high mountainous areas in the summer to lower elevations in the winter to avoid deep snow."[221] Priority migration corridor areas surround the western end of the proposed Whitmore Park route.

Mule deer have crucial habitat in the study areas along the western half of the Whitmore Park route.[222] Mule deer "habitat is nearly always characterized by areas of thick brush or trees interspersed with small openings. The thick brush and trees are used for escape cover, whereas the small openings provide forage and feeding areas."[223] Mule deer populations in several management units of the Uinta Basin and/or project area, including Nine Mile, South Slope Diamond Mountain/Vernal South Slope Yellowstone, and Wasatch Mountains Avintaquin,[224] are already on the decline, and the railway project would exacerbate population losses, but the EIS fails to acknowledge this potential loss. "The size and condition of mule deer populations are primarily determined by the quantity and quality of these habitats as they provide the necessary nutrition to sustain deer throughout the year."[225] The proposed oil railway and resulting oil and gas development would destroy and fragment habitat, resulting in both direct and indirect loss of cover and foraging areas (and priority migratory and crucial winter and summer habitat). Further, as explained below, the restoration of habitat is unlikely to be successful and will take many years. The EIS does not adequately show how the project will mitigate the loss and degradation to mule deer habitat.

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[221] State of Utah Natural Resources Division of Wildlife Resources, Utah Conservation Data Center, available at https://dwrcdc.nr.utah.gov/ucdc/default.asp ("UCDC").
[222] Final Biological Resources Baseline Environment Technical Memorandum, Appendix F, Habitat Maps for Big-game Species, available at https://icfbiometrics.blob.core.windows.net/uinta-basin/Final_Bio_Resources_Baseline_Env_Tech_Memorandum.zip.
[223] Utah Division of Wildlife Resources, Utah Mule Deer Statewide Management Plan (2014) ("Mule Deer Management Plan") *at* 6.
[224] Bernales, Heather H. et al., Draft Utah Big Game Annual Report 2019, State of Utah Department of Natural Resources Division of Wildlife Resources (2019) ("2019 Draft Big Game Report") *at* 38.
[225] Mule Deer Management Plan at 7.

Current population levels for mule deer already fall far short of the state population objectives. The mule deer statewide objective for 2015-2019 was 440,100, and the 2019 population estimate was 321,150.[226] Over the past four years the population estimates have declined by 27 percent. The railway will only worsen this declining trend. The EIS must disclose this impact, the potential magnitude of population losses, and how long it will take to restore populations to existing levels.

2. Pronghorn (*Antilocapra americana*)

Pronghorn in Utah "primarily occurs in desert, grassland, and sagebrush habitats."[227] In 2019, the statewide population estimate was 17,000 animals.[228] Pronghorn populations in the following management units of the Uinta Basin and/or project area are on the decline: Nine Mile, Anthro; Nine Mile, Range Creek; South Slope, Bonanza/Diamond Mountain; and South Slope, Vernal.[229] Oil and gas development and the proposed railway will increase stresses and will contribute to further population decline.

Pronghorn have crucial habitat on the eastern end of the Whitmore Park alignment.[230] "Pronghorn populations occur in much of the suitable habitat found in Utah, but often at relatively low densities."[231] "The size and productivity of pronghorn populations are primarily determined by the quantity and quality of habitats available to meet nutritional needs throughout the year."[232] "A critical limiting factor in some of Utah's pronghorn habitat is the lack of succulent forbs on spring/summer ranges."[233]

"[T]he majority of pronghorn populations occur in shrub-steppe habitat. Large expanses of open, rolling or flat terrain characterize the topography of most occupied habitats."[234] Pronghorn must have a forb component in the vegetative mix to sustain populations because forbs are essential for lactating females and fawn survival.[235]

The destruction and fragmentation of these limited habitats would cause population losses, which are already in decline. The EIS must disclose this impact.

3. Elk (*Cervus elaphus*)

The current statewide elk winter population is estimated at approximately 79,000 animals.[236] The elk statewide objective for 2015-2019 was 78,215, the 2019 population estimate

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[226] 2019 Draft Big Game Report *at* 38.
[227] UCDC.
[228] 2019 Draft Big Game Report *at* 146.
[229] *Id. at* 153, 154, 158.
[230] Final Biological Resources Baseline Environment Technical Memorandum, Appendix F, Habitat Maps for Big-game Species.
[231] Utah Division of Wildlife Resources Department of Natural Resources, Utah Pronghorn Statewide Management Plan (No Date) ("Pronghorn Management Plan") *at* 4.
[232] *Id.* at 5.
[233] *Id.*
[234] Pronghorn Management Plan at 4.
[235] *Id.*
[236] 2019 Draft Big Game Report at 107.

was 79,090.[237] While statewide elk populations are currently healthy and appear to be meeting state objectives, the construction and operation of the railway will certainly lead to population losses, which the EIS must disclose. Elk populations in the Nine Mile, Range Creek management unit failed to reach the current objective for five years.[238] Nine Mile, Range Creek elk populations are already on the decline, and the railway project would exacerbate population losses in this management unit and others near the project area.

Elk have summer and winter crucial habitat in the study areas along the western half of the Whitmore Park route.[239] "Elk are common in most mountainous regions of Utah, where they can be found in mountain meadows and forests during the summer, and in foothills and valley grasslands during the winter. The seasonal changes in elevation allow elk to avoid deep snow and find food year-round."[240] "Many crucial elk habitats throughout the state are privately owned, and some of those private rangelands have been converted to housing developments, recreational properties, or other uses that result in a loss of elk habitat."[241]

"Elk in Utah are more closely tied to aspen than any other habitat type. Aspen stands provide both forage and cover for elk during the summer months and are used for calving in spring."[242] Throughout the West, there has been a decline in aspen due to overgrazing, lack of disturbance, and extended drought.[243] "If the declines in aspen continue, it will reduce the amount of potentially suitable habitat available for elk and…reduce the number of elk those habitats can support."[244]

4. Moose (*Alces alces*)

"In Utah, the species can be found in the mountains of the northern and northeastern portion of the state. Moose prefer forest habitats, especially those locations with a mixture of wooded areas and open areas near lakes or wetlands."[245] "[M]oose generally live at higher elevations throughout the year, although some moose are observed at lower elevation habitats even in summer."[246] "The primary limiting factor for moose in Utah and across their range is the availability of suitable habitat. Moose are primarily browsers and depend on shrubs and young deciduous trees for food during much of the year."[247]

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[237] 2019 Draft Big Game Report at 108.
[238] *Id.* at 108.
[239] Final Biological Resources Baseline Environment Technical Memorandum, Appendix F, Habitat Maps for Big-game Species.
[240] UCDC.
[241] Utah Division of Wildlife Resources Department of Natural Resources, Utah Elk Statewide Management Plan (No Date) ("Elk Management Plan") at 9.
[242] Elk Management Plan at 4.
[243] *Id.*
[244] *Id.*
[245] UCDC.
[246] Utah Division of Wildlife Resources Department of Natural Resources, Utah Moose Statewide Management Plan (No Date) ("Moose Management Plan") at 6.
[247] Moose Management Plan at 5.

For the past 100 years, Utah's Shiras moose population has fluctuated, peaking at 3,500 in 2005. The number has now stabilized at about 2,700.[248]

B. Mitigation Measures for Big Game Habitat Loss Are Inadequate

The EIS does not describe any concrete measures to mitigate big game habitat loss. "To minimize impacts related to the clearing of habitat, the Coalition has proposed voluntary mitigation that would commit the Coalition to limit ground clearing to only the areas necessary for project-related construction and to restore and revegetate temporarily cleared areas using native vegetation (VM-16, VM-22)."[249] The DEIS does not specifically state the locations or dimensions of these areas. "[O]nly the areas necessary" is vague and needs explanation.

To mitigate ground disturbance the DEIS proposes revegetation and monitoring of disturbed areas for three years.[250] But as explained above in section XI(C), this mitigation plan is inadequate, because it is sparse in details regarding how the revegetation plan would be implemented, and the monitoring period is too short.

C. The DEIS Fails to Analyze the Impacts of Increased Oil and Gas Development on Big Game

Research clearly shows certain ungulate species, (i.e. pronghorn, mule deer) are likely to avoid areas of energy development. According to one study, "[e]nergy development drove considerable alterations to deer habitat selection patterns, with the most substantial impacts manifested as avoidance of well pads with active drilling to a distance of at least 800 m."[251] Further, "energy development could sever migration corridors for pronghorn and influence the distribution of pronghorn on winter ranges. These changes in distribution could alter the capacity of those ranges to support pronghorn."[252] However, the DEIS does not discuss the potential for reduction in range capacity and the implications it will have on big game populations now and in the future.

"Disrupted migration could prevent herds from reaching high quality forage, which could result in physiological stresses and the expenditure of greater amounts of energy to reach resources beyond the project area."[253] Development in crucial winter range and migration routes could also eliminate a herd's migration memory and break the tradition of migration to the most suitable winter habitats.[254] It is important for the EIS to analyze range capacity and the consequences of reducing these ranges and changing the distribution of big game in the basin.

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[248] Leavitt, Shauna, Monitoring Utah Moose And Their Calves on Wild About Utah, Utah Public Radio Utah State University (June 18, 2018).
[249] DEIS at 3.4-27
[250] *Id.* at 4-5.
[251] Northrup, J. M. et al., Quantifying spatial habitat loss from hydrocarbon development through assessing habitat selection patterns of mule deer, Global Change Biology (2015).
[252] Pronghorn Management Plan.
[253] U.S. Department of the Interior, Secretarial Order 3362: Improving Habitat Quality in Western Big-Game Winter Range and Migration Corridors (Feb. 9, 2018).
[254] Wyoming Game and Fish Department, Recommendations for Development of Oil and Gas Resources Within Important Wildlife Habitats (2010) at 13.

Furthermore, noise, vehicle traffic, and human presence associated with operations and maintenance of producing wells during the development and production periods would also contribute to overall potential disturbance of pronghorn and avoidance of areas with increased activity.

D. The EIS Must Analyze the Impacts of Rail Operations on Big Game

Another indirect impact of the rail line on big game species is mammal mortality due to train collisions.

"Train mortality can have large impacts on mammal populations, particularly for species that are already endangered, species with large home ranges and low density populations, and species with low reproductive rate. The highest mortality numbers are usually found at sections where rail lines intersect important mammal habitats or migration routes."[255] Some ungulate behavior can lead to high mortality rates on railways. For example, "[m]oose annually migrate from traditional summer areas to lower elevation winter areas…Wherever railways intercept and/or are parallel to areas occupied by moose, large concentrations of animals may "use the right-of-way of rails. Moreover, in winters with above average snowfall, moose use the railways as travelling routes more often, being more vulnerable to collisions."[256]

The DEIS fails to acknowledge the potential for large concentrations of big game to use the railway for migration and quantify the frequency and risk of collisions in migratory areas, and increased risk of collisions in winter. Further, while it notes that "Higher mortality rates would likely occur where the density of wildlife is higher," and "species that would use habitats adjacent to the rail line would have an increased chance of being killed by a collision,"[257] it fails to identify where along the rail line wildlife mortality is most likely to occur and which species would be at highest risk. It appears that the western half of the proposed Whitmore Park route, which crosses priority migration areas and winter crucial areas for mule deer, moose, and elk could result in the most significant risk of collisions. The EIS should consider mitigation in areas with high risk of wildlife collisions, such as reduced speed limits in these areas.

If the speed and trajectory of a train cannot be changed to avoid collisions, mitigation measures "must rely almost entirely on preventing the animals from entering or remaining on the train tracks."[258] " [C]rossing structures contribute to mitigation both mortality and barrier effects of linear infrastructures, their main role has been focused on barrier effects, ensuring connectivity through the landscapes crossed by railways and roads."[259] There are many ways the EIS could implement structures that would restrict wildlife access to the railway, for example, sound signaling and sound-barriers. "Sound signaling consists of warning animals of approaching trains while sound barriers are mostly intended to keep animals off the railway."[260]

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[255] Santos, Sara M. et al., Chapter 2 Current Knowledge on Wildlife Mortality in Railways, Railway Ecology (2017) at 12 ("Railway Ecology").
[256] *Id.* at 13.
[257] DEIS at 3.4-29.
[258] Railway Ecology at 31.
[259] *Id.*
[260] *Id.* at 34.

Another possibility is flashing light signals from an oncoming train may provide wildlife with a faster response to get off the train tracks.[261]

E. The DEIS Fails to Analyze the Danger of Fencing in Big Game Habitats

The DEIS acknowledges that fencing could be used along the rail line or near the project area by private landowners.[262] Fencing near wildlife habitat and migration corridors is a "connectivity issue—one that can create additional challenges for big game in areas where their migration routes are already fragmented by roads and other obstacles."[263] "Woven wire fences are almost impossible for wildlife to pass through. When these are combined with a barbed top wire, it is a lethal and impenetrable combination considered the most detrimental to wildlife."[264] Big game species are not adapted to fences across their once open spaces, which is why they may get their horns or antlers tangled in fences, leading to suffering and death. Young game are more vulnerable and make up a large percentage of big game animals killed by fences. In addition, "[f]ences can be a major problem on pronghorn ranges. Certain types of fences create barriers to movement of pronghorn between seasonal ranges and water of feeding areas…Fencing specifications most compatible with pronghorn movement consist of a smooth bottom wire 40-46 cm (16-18 inches) above the ground."[265] Railway fencing also creates a physical and behavioral barrier between wildlife and their habitat.[266] "Barriers to movement could affect the ability of wildlife to disperse into other areas to feed, shelter, or breed, which could affect population-level genetics by restricting gene flow."[267]

Along with creating barriers to movement and causing accidental deaths, fencing could also interrupt migration patterns, which the DEIS fails to acknowledge. "Animal migrations arise through a combination of learned behavior and genetically inherited neurological, morphological, physiological, and behavioral traits."[268] "Recent research in Wyoming has confirmed what wildlife biologists and managers have suspected for decades, that ungulate migration is a learned behavior passed on from generation to generation. Evidence from bighorn sheep and moose populations suggests that once migration corridors are lost, it will take approximately 100 years for the population to redevelop migration."[269] The DEIS, however, fails to identify specific migration corridors that could be obstructed by private landowner fencing. The EIS must identify these areas.

To minimize the impacts of fencing, the DEIS states that the Coalition is "committed to working with UDWR, the Ute Indian Tribe, and adjacent landowners to define areas of the right-of-way that can be left without fences to maintain big game migration corridors and to installing

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[261] *Id.* at 35.
[262] DEIS at 3.4-29.
[263] Arnett, Ed, How Mending Fences Makes a Difference for Migrating Big Game, Theodore Roosevelt Conservation Partnership (June 5, 2020) (Arnett 2020).
[264] *Id.*
[265] Pronghorn Management Plan at 5-6.
[266] DEIS at 3.4-28.
[267] *Id.* at 3.4-28-3.4-29.
[56] Edmunds, Daly, Support for Designation of Migration Corridors for Sublette Pronghorn and Wyoming Range Mule Deer, Wyoming Chapter—The Wildlife Society, May 1, 2019 at 3.
[269] *Id*.

wildlife-safe fences to confine livestock within grazing allotments where practical and necessary (VM-40, VM-41)."[270] A voluntary commitment to working with landowners to avoid fencing does not provide adequate assurance that landowners or the rail will avoid fencing. The DEIS should specifically identify what migratory areas will be targeted for avoidance of fencing. At a minimum, these areas should include the migratory corridor priority areas identified in the attached map.[271]

The DEIS should also clarify whether the installation of fences to confine livestock would create a barrier to big game migration, which seems incompatible with the DEIS's commitment to generally *avoid* fencing in migratory areas. To the extent that wildlife-friendly fencing to confine livestock will not create a barrier to movement, the DEIS should specifically consider fences that have (1) "a smooth wire at the top no higher than 42 inches from the ground, (2) a smooth wire at the bottom at least 18 inches above the ground, and (3) built with no stays on the fence and posts at least 16 feet part," or otherwise identify the specifications for wildlife friendly fencing.[272] The EIS should also consider and analyze wildlife overpasses for ungulates as an alternative to allow free movement of big game around the railway. "Overpasses [are] designed to maintain landscape connectivity. Overpasses are often…facilitating the movement of a greater number of species, and they maintain ambient conditions more easily throughout the year."[273] "[C]rossing structures can strongly contribute to reducing the mortality of non-flying animals."[274] The DEIS's conclusion that mitigation measures to address fencing impacts are adequate to avoid significant impacts on big game is unsupported.

F. The DEIS's Analysis of Cumulative Impacts Is Inadequate

The DEIS downplays cumulative impacts by narrowly focusing on activities within the immediate vicinity of the proposed railway. The DEIS states: "[T]he proposed rail line's contributing impacts on wildlife are not anticipated to be extensive due to the limited overlap of the proposed rail line cumulative impacts study area…"[275] In addition, with respect to oil and gas development it states,"[t]he extent of potential cumulative impacts would depend on the location of the oil and gas development relative to the proposed rail line, with a greater potential for a cumulative impact if the activity is closer to the proposed rail line. The proposed rail line impact area and oil and gas development impact area must overlap for there to be a cumulative impact."[276]

However, given the migratory nature of big game populations and their large ranges, a single population or a single herd could be impacted by other projects or activities that are not necessarily within the same location as the rail but still contribute to the overall loss, fragmentation, and degradation of the herd or population's habitat. The EIS should correct these erroneous statements and acknowledge that big game traveling over a large area are likely to

[270] DEIS at 3.4-29.
[271] Center for Biological Diversity, Uinta Basin Railway Big Game Habitat Map (2021).
[272] Arnett 2020.
[273] Railway Ecology at 32.
[274] *Id.*
[275] DEIS at 3.15-20.
[276] *Id.* at 3.15-9.

experience cumulative impacts from the rail in connection with other projects that do not overlap with the rail (including the rail terminal, oil and gas projects).

In conclusion, we are deeply concerned about the large geographic scope of the proposed rail line and the serious impact this project will have on ungulates and their habitat. The EIS must thoroughly analyze the direct impacts of constructing and operating the rail line, the indirect impacts of increased oil and gas production in the Uinta Basin (including indirect habitat loss from well avoidance), and the project's cumulative impacts in connection with other threats to the species.

XIV. The DEIS Fails to Adequately Describe and Analyze the Direct, Indirect and Cumulative Impacts of the Railway on Water Resources

The DEIS fails to disclose and analyze all reasonably foreseeable impacts to the water resources from the construction and operation of the Railway. Under NEPA, the DEIS must take a "hard look" at the significance of direct, indirect, and cumulative impacts from all proposed activity.[277] In the case of water, a hard look requires that the agency examine "the current state of water, potential risks associated with its . . . decision, mitigation measures, and prospective monitoring of water quality."[278]

As noted in the DEIS, the construction, operation and maintenance of the Uinta Railway will have "unavoidable" direct, indirect, and cumulative impacts on the water resources in the project area.[279] Notably, the project will permanently impact 13.6 acres of surface waters, 5.9 acres of floodplains, 3.6 acres of wetlands, two groundwater springs, and the project will require 55 total stream realignments and over 400 stream crossings under the preferred Whitmore Park alternative.[280] However, the DEIS fails to take a "hard look" at these "major" water impacts, including their severity and significance.

Additionally, the DEIS fails to provide a quantitative assessment of likely impacts to water resources. NEPA requires the agency to ensure the "scientific integrity" of the EIS,[281] and ensure that it is "supported by evidence that agencies have made the necessary environmental analyses."[282] The DEIS does not analyze impacts using available scientific tools. The EIS should rely on the best available science when possible. However, despite the "major impacts" to water resources, the DEIS avoids providing quantitative assessments of the current state of each individual water resource and relevant watershed or water system. Nor does it quantitatively forecast effects on water quality from likely impacts like contamination, erosion, and loss of stream biodiversity and wetland productivity.

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[277] *Baltimore Gas & Electric Company v. Natural Resources Defense Council*, 462 U.S. 87, 97 (1983*)*; *See* 40 C.F.R. § 1508.7 (defining cumulative impacts); 40 C.F.R. § 1508.8 (defining direct and indirect impacts).
[278] *San Juan Citizens Alliance v. United States Bureau of Land Management*, 326 F.Supp.3d 1227, 1255 (D.N.M 2018).
[279] DEIS at S7, 3.15-18.
[280] DEIS at 2-38-2-39 (Summary of Impacts).
[281] 40 C.F.R. § 1500.1(b).
[282] 40 C.F.R. § 1502.2.

A. The DEIS Fails to Adequately Describe and Analyze Likely Impacts to Water Quality from Contamination

Contamination of Utah waterways from both the construction and the operation of the Uinta railway is foreseeable and would harm water quality in the Basin. Therefore, these impacts should be fully analyzed in the DEIS.[283] This includes contamination from chemical and oil spills and contamination from sediment.[284]

1. Contamination from the release of chemicals into the water from oil spills and leakage

The DEIS notes that chemicals may be released into waterways (either through surface water or groundwater) through potential oil spills,[285] leaks and spills from maintenance,[286] the use of herbicides,[287] through rail-induced wildfires,[288] and drippings from openings on bridges and trestles.[289] The DEIS points out that petroleum and pollutants known as polycyclic aromatic hydrocarbons (PAHs), found in asphalt, oil, coal and creosote, and fluids used in the operation and maintenance of railroads, are the major sources of water degradation likely to be associated with the project.[290]

The DEIS notes that contamination from oil spills as a result of transporting via rail is a possible impact to waterways.[291] The DEIS further states that the impacts of spilling the waxy crude oil of the Uinta Basin is less environmentally damaging because it is "cleanup friendly."[292] While waxy crudes may have a lower chemical toxicity to the environment, they "may persist in the environment longer than non-waxy crudes."[293] Plus, the time of exposure has been shown to be an important factor in how an oil spill would impact a fresh water environment.[294] However, the DEIS is silent about the longevity of waxy crude oil and the potential impacts that a spill would have as a result of this longevity.

Additionally, the planned railway will not only carry waxy crudes in and out of the Basin. Along with crude oils, commodities likely to be transported via the Uinta Railway include shale oil, refined oil, and fly ash,[295] along with tar sands, and chemicals related to hydraulic fracturing

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[283] See 40 C.F.R. §§ 1508.8, 1508.7 (definition of both indirect and cumulative impacts includes the impacts that are "foreseeable")
[284] See DEIS at 3.3-26
[285] DEIS at 3.3-26.
[286] DEIS at 3.3-28
[287] *Id.*
[288] *Id.*
[289] *Id.*
[290] *Id.*
[291] DEIS at 3.3-29.
[292] *Id.*
[293] Boufadel, M. et al., The Behaviour and Environmental Impacts of Crude Oil Released in Aqueous Environments, The Royal Society of Canada Expert Panel (2015) ("RSC Panel 2015") at 71.
[294] Great Lakes Science Advisory Board, Potential Ecological Impacts of Crude Oil Transport in the Great Lakes Basin, at 23 (Oct. 2018) ("Great Lakes Science Advisory Board 2018").
[295] R.L. Banks Study *at* 17-28.

in the Basin. If spilled, these products would cause environmental impacts to fresh water systems. For instance, tar sands, both through increased production and through direct contamination, have the potential to harm water quality in the Uinta Basin.[296] The introduction of tar sands into an aquatic environment can increase the acidity of the waterway.[297] The impacts of a spill of oil in water systems has been shown to impact the entire ecosystem, starting with microbes and plankton to larger vertebrates like amphibians and birds. For instance, after the Deepwater Horizon oil spill, studies revealed a permanent decrease in the diversity of bacteria species present, which impacts the health of the entire water system.[298] Additionally, oil spills have a great impact on levels of metallic components in the waterway. However, much still needs to be researched and understood about the impacts of oil spills on freshwater environments.[299] The DEIS should quantitatively assess baseline markers of aquatic health like bacteria levels and diversity, metallic components, and resiliency of aquatic organisms before the construction of the rail to better understand the likely impacts that could arise from a potential oil spill or chemical leaks in the project area.

Damage to water systems can be mitigated by reducing the likelihood of oil spills in the first place. Notably, spills from train derailment have been on the rise and the results can be catastrophic. Spills from train derailment have been on the rise, with a higher volume of oil spilled from 2013-2015 than had occurred in the 37 years previous.[300] In fact, a total of 1.13 million gallons of oil spilled as a result of train derailments in 2013 alone.[301] Individual train derailments can result in the release of large amounts of oil. Recent major spills include a 2013 spill of approximately 750,000 gallons of crude oil in Alabama, a 2014 spill of 400,000 gallons of crude oil in North Dakota, and a 2014 spill of 50,000 gallons spilled in Virginia.[302] In many cases derailments can result in fire.[303] Cleanup costs of individual spills can reach 25 million dollars.[304] Despite these obvious risks, the DEIS does not disclose them or consider mitigation measures to reduce the likelihood or severity of train derailment. For instance, train derailments are frequently a result of broken rails and welds.[305] A study examining train derailments and mitigating oil spills from Zurich suggests additional inspections than what is required under the Federal Railroad Administration requires to reduce the likelihood of oil spills, including two annual high-tech track geometry inspections.[306] Also, the Zurich study suggests the use of predictive technology when a rail is carrying 20 cars of crude oil or more including track-side heat detectors that can predict potential future failures.[307] None of these additional precautions

[296] Struzik, Ed, With Tar Sands Development, Growing Concern on Water Use, Yale Environment 360 (2013) ("Struzik 2013").
[297] *Id.*
[298] Great Lakes Science Advisory Board 2018 at 25.
[299] *Id.*
[300] RSC Panel 2015 at 41.
[301] Edwards, Andrea, Mitigating the Risk of Crude Oil Transport by Rail, Zurich (no date) ("Zurich Mitigating Crude Oil Transport Report") at 2.
[302] Zurich Mitigating Crude Oil Transport Report at 2.
[303] RSC Panel 2015 at 41.
[304] Zurich Mitigating Crude Oil Transport Report at 2.
[305] *Id.* at 5; *see also* Federal Railway Administration, Train Accident Reports (no date).
[306] Zurich Mitigating Crude Oil Transport Report at 5.
[307] *Id*.

intended to reduce the unique risks associated with transporting oil by rail and reducing contamination of the waterways are examined by the DEIS.

Besides the release of oil and chemicals that could result from a potential train derailment, chemicals routinely leak and/or runoff into water bodies as a result of construction activities and operation of the railway. The DEIS notes that PAHs "could leak or drip directly into surface waters through openings on bridges and trestles and could also be deposited on the rail bed," which could make its way into water bodies from rainfall or stormflow.[308] Although the DEIS notes this contamination could occur, it does not quantify or discuss baseline PAHs in the soil and/or surrounding water bodies, how much PAHs would likely be emitted into water resources, or the possible impacts from PAH contamination. Studies have shown that PAHs are omnipresent in the soil and even found in plant life around railways.[309] As was done in these studies, collecting soil samples of soil around the water system prior to construction and considering the known increase levels associated with train activity could help the Surface Transportation Board develop a model for evaluating the potential contamination from the railway. In terms of their impact to water resources, PAHs are generally insoluble in water and are usually absorbed by particulate matter at the bottom of streams.[310] This class of chemical is know to have a middling to high toxicity impact on aquatic life, including impacts to reproduction and the development of young.[311] PAHs are known to bioaccumulate, meaning that they remain in the food cycle over time.[312] The DEIS should disclose these impacts and set forth mitigation to reduce leakage of PAHs and plan for the cleanup of contaminated soils. Additionally, PAHs are well studied and there are known methods to reduce contamination.[313] However, the cleanup process can be a lengthy and can sometimes result in even worse contamination.[314] The DEIS should consider these cleanup methods and find the most effective method.

2. Contamination from sediment and invasive species through construction and erosion

Construction of the railway would introduce sediment and create conditions that introduce invasive species into the aquatic environment.

As noted in the DEIS, clearing, excavation, and fill-placement activities would likely result in erosion that deposits sediment in the water system and would ultimately have an impact

[308] DEIS at 3.3-28.
[309] Wilkomirski, B. et. al., Railway Transport as a Serious Source of Organic and Inorganic Contamination, 218 Water Air Soil Pollut. 333 (2011) at 347.
[310] Ukaogo, P.O. et al, Environmental Effects of Polycyclic Aromatic Hydrocarbons, 5 Journal of Natural Sciences Research, 117 (2015) ("Ukaogo 2015") at 121.
[311] *Id.*
[312] Guarino, Carmine et. al., Investigation and Assessment for an Effective Approach to the Reclamation of Polycyclic Aromatic Hydrocarbon (PAH) Contaminated Site, Nature Scientific Reports (Jan. 30 2019) at 1.
[313] Amolegbe, Sara, PAH Cleanup May Worsen Toxicity (Oct. 2018), https://factor.niehs.nih.gov/2018/10/science-highlights/pah/index.htm.
[314] *Id.*

on the stream morphology and flow.[315] Mitigation measures include designing stream crossings to maintain drainage patterns and flow conditions, constructing stream crossings at low flow periods, and developing supporting structures to mitigate erosion.[316] However, despite identifying the issue and establishing some mitigation measures, the DEIS fails to quantify the likely impacts of erosion. The overall effect of the project cannot be fully known without a "relatively complete picture of each construction activity."[317] The EIS must describe engineering plans, quantitative pictures of the status of affected waterways and how severely they could be impacted.

In addition, the EIS should propose erosion monitoring throughout the construction period. For instance, the STB could require the use of erosion pins or photo-electronic erosion pins. [318] These sensors are burrowed into the bank face to track the rate of erosion. This is especially important when considering the "naturally erosive soil" present in the project area.[319]

One potential impact of erosion is an increase of the already elevated levels of minerals in the water system as a result of soils being deposited in streams and rivers. Currently, the Colorado River watershed does not meet the water quality standards for selenium and deposits of the mineral must comply with a total maximum daily load (TMDL).[320] Additionally, the Price River has high concentrations of total dissolved solids (TDS) and are also subject to TMDLs.[321] However, the DEIS fails to address the likelihood that erosion and sediments will likely result in new deposits of selenium and TDS in these already encumbered waterways and quantify potential sediment and mineral loads at the individual stream or watershed level.

Besides sediment, the construction of the railway has the potential to introduce invasive species in the stream environment. Construction creates an environment conducive to the introduction of invasive species.[322] Despite this risk, the DEIS fails to address the increased likelihood of invasive species in streams because of construction practices. Nor does it establish sufficient mitigation or monitoring programs to weed out the invasive species before they can have a debilitating impact on the aquatic environment. The DEIS proposes dust control to prevent the spread of invasive species.[323] However, invasive species can be introduced in a variety of ways through the construction period. According to the California Invasive Species Council, some of the best ways to prevent the spread of invasive species from construction are planning, maintaining equipment to avoid moving invasive species from site to site, reducing soil

[315] DEIS at 3.3-24.
[316] DEIS at 3.3-25.
[317] Darnell, Rezneat, Impacts of Construction Activities in Wetlands of the United States, at 75A (Apr. 1976).
[318] Zaimes, George N. et. al., Riparian Land-Use Impacts on Stream Banks and Gully Erosion in Agricultural Watersheds: What We Have Learned, 11 Water (June 2019) at 5.
[319] DEIS at 3.3-12.
[320] Utah Division of Environmental Quality Division of Water Quality, TDML for Selenium in the Colorado River Watershed (June 14, 2014) at 1.
[321] *Id.*
[322] California Invasive Plant Council, Preventing the Spread of Invasive Species: Best Management Practices (2012) at 2.
[323] DEIS at 3.3-33.

disturbance, maintaining native plant species, and early detection and monitoring.[324] The DEIS should consider and analyze these mitigation strategies.

The effect of any contamination in one part of the water system could have far reaching impacts throughout the region from traveling downstream.[325] There are methods to quantify the connectivity of water systems and thereby determine the likely downstream impact from contamination.[326] For instance, analyzing the movement of nontoxic chemical concentrations upstream and downstream can help develop a better picture of the region's hydrology.[327] However, there is no attempt in the DEIS to quantify the indirect downstream impacts of contamination upstream and establish the reach of the environmental impact.

B. The DEIS Fails to Describe and Analyze Likely Impacts to Aquatic Life from Stream Realignment, Crossings and Culverts

Stream realignments and crossings can have deeply consequential impacts on aquatic environments, and, yet, the DEIS fails to quantify impacts to waters systems from these drastic changes. Under the preferred alternative, there will be 55 stream realignments,[328] 30 rail bridges, and 423 culverts.[329] However, the DEIS fails to quantify the likely impacts and, therefore, does not provide a full picture of the project's impacts.

Stream realignment will require designing a new channel for the water to follow and filling the naturally flowing water.[330] The only mitigation for the effects of this drastic change considered in the DEIS is a consultation with the Army Corps of Engineers in order to obtain a 404 permit.[331] Stream realignments, along with crossings and culverts, can drastically impact the quality of water flow and impact the lifeforms present in the aquatic environment. Culverts in particular have been shown to have dramatic impact on fish movement and population. For instance, a study of 10,000 culverts revealed that at least 26 percent of these restricted the movement of fish, often restricting spawning migration.[332] The impact of this disruption could result in not only a restriction of movement but a restriction of the gene pool.[333] However, the DEIS fails to address these potential impacts and fails to mitigate the possible effects on fish populations. In addition to larger species like fish, culverts have known impacts on macroinvertebrates.[334] Because macroinvertebrates are a food source for fish, amphibians, birds,

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[324] *Id.* at 4.
[325] Leibowitz, Scott G. et. al., Connectivity of Streams and Wetlands to Downstream Water: An Integrated Systems Framework, 54 Journal of American Water Resources Association 298 (Aug. 2018) ("Leibowitz 2018") at 302.
[326] *Id.* at 312-15.
[327] *Id.* at 313.
[328] DEIS at S-14.
[329] DEIS at table 2-3.
[330] DEIS at 3.3-25.
[331] *Id.*
[332] Huser, Daniel, Local Effects of Culverts on Habitat Features and Fish Assemblages in Blue Ridge Streams (2009) at 1.
[333] *Id.* at 2.
[334] Vaughan, D. Mace, Potential Impact of Road-Stream Crossings (Culverts) on the Upstream Passage of Aquatic Macroinvertebrates, US Forest Service Report (Mar. 21, 2002) ("Vaughn 2002") at 2; NWT

bats, and mammals, they are important members of stream ecosystems and a good indicator of stream health.[335] Culverts, particularly if they are not designed in a proper form, may severely impact macroinvertebrate species, They disrupt their movement which reduces available habitats and can isolate species and restrict gene flow.[336] In addition, culverts can channelize streams increasing the likelihood of erosion and increase the temperature of the water; both effects can impact macroinvertebrates.[337] The result is often changes in the composition of macroinvertebrates, favoring hardier species.[338]

Accordingly, to determine the impact of stream realignments, stream crossings, and culverts on local water bodies and the larger watershed, the DEIS should evaluate the project's impact on the diversity of biological resources present in the stream ecosystem, such as macroinvertebrates, as an indicator of overall stream health. The diversity of macroinvertebrate species is a good indicator of aquatic health because aquatic lifeforms follow a biotic structure where the composition of species at one level of the ecosystem are determined by the composition of species at the preceding level.[339] The DEIS should evaluate baseline macroinvertebrate diversity and quantify potential reductions in this aquatic health indicator for each stream for the "no action" and for each action alternative.[340] The DEIS must also discuss the design of culverts and specifically describe how they can be made to mitigate harm to macroinvertebrate species and protect stream quality, and how effective proposed designs would be.

C. The DEIS Fails to Describe and Analyze Likely Impacts to Wetlands and Adjacent Water Bodies

Wetlands would be severely impacted from fill required to complete the project as planned.[341] Wetlands are "among the most productive ecosystems in the world" because they produce habitat and great volumes of food for a variety of species, prevent flooding, removing pollutants from the water, and provide nutrients throughout the entire water system.[342] Filling a wetland would deny the ecosystem of these benefits. Despite this fact, the DEIS fails to propose and analyze adequate mitigation measures or alternatives to prevent fill, fails to describe all likely impacts, and fails to meaningfully quantify and analyze the severity of impacts.

Water Stewardship, How is Aquatic Ecosystem Health Measured? https://www.nwtwaterstewardship.ca/en/how-aquatic-ecosystem-health-measured (last accessed Jan. 27, 2021).

[335] Vaughn 2002 at 2.

[336] *Id.*

[337] *Id.*

[338] *Id.* at 3.

[339] Maloney, Eric M., How Do We Take the Pulse of an Aquatic Ecosystem? Current and Historical Approaches to Measuring Ecosystem Integrity, 38 Environmental Toxicology and Chemistry 289 (May 23, 2018) at 290.

[340] *Id.*

[341] DEIS at 3.3-9.

[342] U.S. Environmental Protection Agency, Why are Wetlands Important?, https://www.epa.gov/wetlands/why-are-wetlands-important (last accessed Jan. 26, 2021).

The degradation of wetlands can have various impacts to the aquatic ecosystem not described in the EIS. For instance, plant life diversity in wetlands decreases when nearby land is used and indigenous plants decline while invasive species flourish.[343] Additionally, the development of wetlands has been shown to decrease the number of invertebrate and most vertebrate species, where the abundance decreases directly as the amount of development increases.[344]

The degradation of wetlands also results in a greater number of pollutants and sediment present in the water system, even compared with areas where there was an attempt to restore wetlands.[345] Wetlands can remove sediments such as phosphorous and nitrogen, which could ultimately reduce the likelihood of destructive occurrences elsewhere in the water system like algal blooms, anoxia, and fish kills.[346] Studies have demonstrated that watersheds with wetlands have about 90 percent less sediment than watersheds without wetlands[347]—which could be particularly important as sediment is likely to be deposited in the watershed as a result of this project. However, wetland restoration has not produced the same water quality that naturally occurring wetlands are able to produce.[348]

Despite these impacts, the DEIS fails to disclose the impact of the filling of these important ecosystems in the project area. First, there is no quantified analysis of the current quality of the wetlands in the project area nor any attempt to quantify the impacts to wetland function, much less at the site-specific level for each wetland that will be filled. Further, the DEIS claims that there is no way to determine how wetlands that are adjacent to the project area would be impacted by the project (either qualitatively or quantitively).[349] However, research in connectivity of wetlands has demonstrated this analysis is feasible,[350] and the DEIS should provide this analysis. Additionally, the DEIS fails to consider any alternative that would reduce the amount of fill in wetlands (or wetland loss) around Price River, as none of the alternatives limit the fill in this area. Finally, the DEIS fails to analyze all impacts likely to result from the loss of wetlands, including the exacerbation of sediment loads and other pollutants in the watershed as a result of the project.

D. Increased Oil and Gas Development Will Impact Water Quality and Quantity in the Region

The DEIS fails to adequately address the impacts to water quality or quantity that would result from the increase of oil and gas development in the Uinta Basin as a result of the railroad.

Oil and gas production has known negative impacts on water quality. Further, oil and gas production is likely to cause contamination of both surface water and groundwater. In a

[343] Center for Watershed Protection, Direct and Indirect Impacts of Urbanization on Wetland Quality (2006) at 51.
[344] *Id.* at 52-54.
[345] *Id.* at 7.
[346] *Id.* at 6.
[347] *Id.* at 6.
[348] *Id.* at 7 (table 7).
[349] DEIS at 3.3-9.
[350] Leibowitz 2018 at 302.

December 2016 report from the US EPA, the following factors specific to fracking were found to potentially impact water resources: (1) Water withdrawals for fracking in times or areas of low water availability; (2) Spills during the management of fracking fluids and chemicals or produced water; (3) Injection of fracking fluids into wells with inadequate mechanical integrity; (4) Injection of fracking fluids directly into groundwater resources; (5) Discharge of inadequately treated fracking wastewater to surface water resources; and (6) Disposal or storage of fracking wastewater in unlined pits. In fact, the compilation of this list was based on studies that found impacts to water resources from the listed activities.[351]

Fracking and related activities can impact drinking water when wells are located near or within sources of drinking water. Between 2000 and 2013, about 3,900 public water systems were estimated to have had at least one fracked well in one mile of their water source. These public water systems served more than 8.6 million people year-round in 2013. Another 3.6 million people were estimated to have gotten drinking water from non-public water supply wells with at least one fracked well.[352] This is of great concern given the harmful chemicals found associated with fracking. Many toxic chemicals used in fracking and oil and gas extraction are water soluble and pose a threat to the water we drink. For example, hydrochloric acid is used to initiate rock fractures, ethylene glycol is used to prevent scale deposits in pipes, and glutaraldehyde is used to eliminate bacteria from produced water.[353] There are also chemicals that are directly associated with fossil fuels and produced water, such as the BTEX chemicals. This suite of chemicals, both from fracking fluids and fossil fuels, poses threats to virtually all systems of the body including the sensory, gastrointestinal, immune, reproductive, cardiovascular, endocrine, and nervous systems.[354]

These chemicals can be introduced to the aqueous environment in a number of ways, one of which is spills. Several studies have noted spills of fracking fluids or additives, most of which were caused by equipment failure or human error. For instance, an EPA analysis characterized 151 spills of fracking fluids or additives on or near well sites in 11 states between January 2006 and April 2012. Of the total, 34% of the spills were due to equipment failure, 25% were due to human error, and more than 30% of the spills were from fluid storage units.[355] Similarly, in a study of spills reported to the Colorado Oil and Gas Conservation Commission, of 125 spills during well stimulation between January 2010 and August 2013, 51% were caused by human error, and 46% were caused by equipment failure. Furthermore, of the 151 spills analyzed by the EPA, the spill amount ranged from 5 gallons up to 19,320 gallons. Thirteen of the 151 spills reached a surface water body, with the largest spill volume reported reaching a water body being 7,350 gallons.[356] Also reported were spills polluting Pennsylvania surface waters between

[351] U.S. Environmental Protection Agency, Hydraulic fracturing for oil and gas: impacts from the hydraulic fracturing water cycle on drinking water resources in the United States – Executive Summary (Final Report) (2016)("EPA 2016 HF Study ES") at p. ES-3.
[352] EPA 2016 HF Study ES at p. ES-8.
[353] California Council on Science and Technology, Volume II, Potential Environmental Impacts of Hydraulic Fracturing and Acid Stimulations (2015) at 381.
[354] Yost, Erin et al., Estimating the Potential Toxicity of Chemicals Associated with Hydraulic Fracturing Operations Using Quantitative Structure-Activity Relationship Modeling, 50 Environmental Science and Technology 14 (2016).
[355] EPA 2016 HF Study ES, p. ES-22.
[356] *Id.* at ES-23.

January 2008 and June 2013 with volumes ranging from 3,400 gallons to 227,000 gallons.[357] The mobility of spills poses a threat to both surface and ground beneficial use waters. Similar threats are posed by spills of produced water as well.

Another way in which chemicals can be mobilized is through unintended flow pathways in the subsurface resulting from fracking. A well with insufficient mechanical integrity (e.g. due to well casing and tubing leaks, uncemented annulus, gaps in cement, gaps between casing and cement) can allow unintended fluid movement. Also, the fracture network produced during fracking could intersect sources of groundwater or surface water creating a conduit for fracking fluids to contaminate these water resources. There have also been instances where fracking one well has affected a nearby oil and gas well or its fracture network, resulting in spills from the nearby well.[358]

In Pennsylvania, where fracking rapidly expanded in a short time period, numerous instances of accidental spills or leaks have been reported. For example, an abandoned well in Pennsylvania produced a 30-foot geyser of brine and gas for more than a week after the fracking of a nearby gas well.[359] In another example, in 2009, shortly after drilling and fracking began in the Marcellus Shale, residents near the township of Dimock, Pennsylvania reported that natural gas was appearing or increasing in their water wells.[360] As of 2016, over 1,000 fracking water contamination complaints had been filed from 17 of 40 fracking counties in Pennsylvania.[361] Evidence of accidental fluid migration has been observed in many other settings, including the Raton Basin of Colorado and Parker County, Texas, posing risks to drinking water and ultimately public health.[362]

Poor baseline water quality monitoring has made it difficult to determine how significantly oil and gas development has contributed to groundwater contamination, particularly in the United States.[363] However, a recent study in Germany found that methane increased in groundwater near wells that engaged in fracking.[364] The EIS should consider the current state of groundwater in the region and likely impacts from increased oil and gas production, including fracking.

In addition to impacting the quality of water, increased oil and gas development would reduce the overall quantity of water in the region. The Western United States already faces a water scarcity problem that has only been exacerbated by the oil and gas industry.[365] The Uinta

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[357] *Id.* at ES-24.
[358] EPA 2016 HF Study ES.
[359] *Id.* at ES-32.
[360] EPA 2016 HF Study ES, p. 6-11.
[361] Peltier, Laurel, Pennsylvania Fracking Water Contamination Much Higher Than Reported, EcoWatch, (Feb. 4, 2016), https://www.ecowatch.com/pennsylvania-fracking-water-contamination-much-higher-than-reported-1882166816.html.
[362] EPA 2016 HF Study, p. ES-45.
[363] *Id.*
[364] *Id.*
[365] Kustin, Mary Ellen, U.S. Lacks Data Needed to Weigh Effects of Oil and Gas Production on Western Water Supply, Center for American Progress (June 27, 2019), https://www.americanprogress.org/issues/green/news/2019/06/27/471512/u-s-lacks-data-needed-weigh-effects-oil-gas-production-western-water-supply/ ("Kustin 2019").

Basin in particular has faced increasing water scarcity because of decreased stream flow from the Colorado River.[366] While monitoring of the oil and gas industry's water use is inconsistent, the industry is estimated to use 2.4 billion gallons of water in the United States per day.[367] Fracking, which is occurring in and growing throughout the Uinta Basin, has been a huge contributor over the years and the volume of water used by fracking operations continues to grow.[368] In the years between 2011-2016, the volume of water used by one hydraulically fractured well has increased 770 percent overall in shale basins.[369] These numbers are likely underestimated as reporting is often sporadic.[370] Additionally, the Utah Geological Survey reported nearly four million barrels of saline water per month in Uintah County and nearly two million barrels per month in Duchesne County were produced.[371] Over an average well's lifetime, around 2.5 million to five million gallons of water are used.[372] The DEIS must examine how many wells are likely to be added because of the railway and determine the overall impact on water quantity and the four endangered Colorado River fish.

E. The DEIS Fails to Address the Proposed Railway's Indirect Impacts on ESA Listed Fish Species

The DEIS fails to address the proposed railway's indirect impacts on four ESA listed species, the Colorado pikeminnow (*Ptychocheilus lucius*), humpback chub (*Gila cypha*) razorback sucker (*Xyrauchen texanus)* and bonytail (*Gila elegans*) (collectively, "endangered fish") and their critical habitat, in the route trains from the proposed Uinta Basin Railway will take going east.[373]

As trains from the proposed Uinta Basin Railway move east through Utah and Colorado, they will cross critical habitat for these endangered fish in the Colorado River. The increased risk of toxic spills and leaks from these trains and the impact on these endangered fish must be assessed. According to the USFWS, one of the most important habitats to the Colorado pikeminnow and the razorback sucker is the "15-mile Reach" of the Colorado River with Colorado's Grand Valley, which is the route through which these trains carrying oil and other toxic materials will travel.[374]

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[366] Milly, P.C.D. & K.A. Dunne, Colorado River flow dwindles as warming-driven loss of reflective snow energizes evaporation, 367 Science 1252, 1255 (Mar. 13, 2020).
[367] Kustin 2019.
[368] *Id.*
[369] Kondash, Andrew J. et. al., The intensification of the water footprint of hydraulic fracturing, 4 Sci. Advances (Aug. 15, 2018) at 1, 3.
[370] *Id.*
[371] Vanden Berg, Michael D., Saline Water Disposal in the Uinta Basin, Utah — Protecting fresh water while allowing for increased hydrocarbon production, Utah Geological Survey (May 2010), https://geology.utah.gov/map-pub/survey-notes/energy-news/energy-news-saline-water-disposal-in-the-uinta-basin-utah/.
[372] The Linde Group, A Day in the Life of a Barrel of Water (2018) at 2.
[373] Center for Biological Diversity, Map of Tennessee Pass Line and Critical Habitat of ESA listed fish species (2021).
[374] U.S. Fish and Wildlife Service, Final Programmatic Biological Opinion for the Bureau of Reclamation's Operations and Depletions, Other Depletions, and Funding and Implementation of

The risk of a catastrophic spill and potential for chronic leaks are especially concerning due to the fragile state of existing populations. Adult Colorado pikeminnow abundance in the Colorado River subbasin has declined since 2005, while adult abundance in the Green River subbasin has declined since 2000.[375] Further, in the Green River subbasin, recruitment of juveniles to adults has declined over the past 15 years and researchers now question if recruitment is sufficient to support a sustainable population – "recruitment appears insufficient to offset annual adult mortality."[376] Humpback chub populations in these subbasins generally appear to be at "low levels" or not well understood.[377] The risk of harm to endangered fish from spills and leaks in either of these subbasins is significant, given the precarious state of these populations.

In sum, the DEIS must analyze all impacts on water quality, water quantity, stream and wetland function, and listed fish that are likely to result from the project and identify specific mitigation measures and monitoring to reduce these impacts.

XV. The EIS Fails to Specify and Analyze Mitigation

The DEIS fails to specify mitigation measures with respect to numerous impacts. Instead, the DEIS merely provides that the SCIC in consultation with other entities or individuals will devise mitigation plans at some future unspecified time, with respect to various resources, including Greater sage-grouse, migratory big game species, vegetation, rail and public safety, invasive species control, water resources, and noise. *See* DEIS Chapter 4, VM-7 (spill control plan), VM-11 (emergency response plan), VM-21 (stormwater pollution prevention plan), VM-22 (vegetation), VM-27 (wetland compensatory mitigation plan), VM-35 (sage-grouse Mitigation Agreement), VM-38 (noxious weed control plan), VM-40 (fencing plan to mitigate big game impacts), BIO-MM-7 (wildfire management plan), NV-MM-1 (construction noise control plan).

However, the EIS must include a discussion of possible mitigation measures to avoid adverse environmental impacts. *See* 42 U.S.C. § 4332(C)(ii); 40 C.F.R. §§ 1502.14(f), 1502.16(h), 1508.14, 1508.25(b)(3). *See also* 40 C.F.R. § 1505.2(c) (record of decision must "[s]tate whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why they were not"). Such discussion must be "reasonably complete" in order to "properly evaluate the severity of the adverse effects" of a proposed project prior to making a final decision. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 352 (1989). "A mere listing of mitigation measures is insufficient to qualify as the reasoned discussion required by NEPA." *Neighbors of Cuddy Mountain v. United States Forest Service*, 137 F.3d 1372, 1380 (9th Cir. 1998). Rather, the EIS should provide "[d]etailed

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Recovery Program Actions in the Upper Colorado River above the Confluence with the Gunnison River, 25, 32, 45 (Dec. 1999), available at https://www.coloradoriverrecovery.org/documents-publications/section-7-consultation/15mile/FinalPBO.pdf.

[375] U.S. Fish & Wildlife Service, Final 2018-2019 Abbreviated Assessment of "Sufficient Progress" under the Upper Colorado River Endangered Fish Recovery Program in the Upper Colorado River Basin ((Feb. 7, 2020), available at https://www.coloradoriverrecovery.org/documents-publications/section-7-consultation/sufficientprogress/Final%202018-2019%20SufficientProgress_memo.pdf.

[376] *Id*. at 2, 6.

[377] *Id*. at 7.

quantitative assessments of possible mitigation measures" for a site-specific proposal, unless additional environmental assessments under NEPA will be conducted at the time of later site-specific approvals (also known as "tiering"). *See San Juan Citizens All. v. Stiles*, 654 F.3d 1038, 1054 (10th Cir. 2011). The mere commitment to devise mitigation plans in the future does not inform the public as to "possible mitigation measures," much less provide a quantitative assessment of those measures. The DEIS must be revised to specify mitigation measures and analyze their effectiveness in reducing impacts.

In addition, in various places the DEIS concludes that impacts "would not be significant" or would be "minor" (e.g., with respect to Greater sage-grouse, migratory big game species, rail safety risks, invasive species control) on the basis that unspecified mitigation measures will be adopted.[378] Such conclusory reasoning is unsupported when the plans themselves have yet to be formulated, and the DEIS does not set forth any performance standards or other success criteria that the mitigation plans must achieve, or commit to any monitoring plan or other adaptive management to ensure that mitigation is successful. Thus, the public has no way of evaluating the DEIS's conclusions that various adverse impacts will not be significant or will be minor. Such conclusions lack evidentiary support. *Cf. Dine Citizens Against Ruining Our Env't v. Klein*, 747 F. Supp. 2d 1234, 1258 (D. Colo. 2010) (where mining permit approval lacked "detailed mitigation plans upon which [agency] could have relied in making its finding of no significant impact," agency's "reliance on hypothetical mitigation measures is arbitrary and capricious"); *San Luis Valley Ecosystem Council v. U.S. Fish and Wildlife Serv.*, 657 F. Supp. 2d 1233, 1245 (D. Colo. 2009) ("("[A] perfunctory description or mere listing of mitigation measures, without supporting analytical data, is not sufficient to support a finding of no significant impact."); *Davis v. Mineta*, 302 F.3d 1104, 1125 (10th Cir. 2002) ("Mitigation measures may be relied upon to make a finding of no significant impact *only* if they are imposed by statute or regulation, or submitted by an applicant or agency as part of the original proposal.").

Along similar lines, the DEIS frequently states that mitigation measures will apply only if "possible," "practical," "practicable," or "reasonable." For example:

> **VM-38**. The Coalition will prepare a noxious and invasive weed control plan in consultation with the Ute Indian Tribe as applicable. ***Where practical***, the Coalition will include the policies and strategies in Utah's Strategic Plan for Managing Noxious and Invasive Weeds when designing response strategies for noxious and invasive weeds.
>
> **VM-22**. The Coalition will revegetate disturbed areas, ***where practical*** and in consultation with the Ute Indian Tribe as applicable, when construction is completed.
>
> **BIO-MM-13**. The Coalition shall abide by the BLM *Utah Greater Sage-Grouse Approved Resource Management Plan Amendment* for Action Alternatives that affect BLM land, and will follow the ***reasonable requirements*** of the *Utah Conservation Plan for Greater Sage-Grouse*.

[378] *See, e.g.*, DEIS at S-7, S-9 to S-11.

LUR-MM-7. Prior to project-related construction, the Coalition shall consult with BLM, the Forest Service, the Ute Indian Tribe, and SITLA, as appropriate, to develop a plan to limit, ***to the extent practicable***, impacts on recreational resources under those agencies' management or jurisdiction. The Coalition shall develop the plan prior to completing the final engineering plans for the proposed rail line and following the above-mentioned consultation to determine the location of all public roads used as access points to a recreation area that would be crossed by the proposed rail line. The plan shall designate temporary access points if main access routes must be obstructed during project-related construction. The plan shall also include the number and location of access points as decided during consultation with the applicable agencies.

WAT-MM-1. ***To the extent practicable***, the Coalition shall design culverts and bridges to maintain existing surface water drainage patterns, including hydrology for wetland areas, and not cause or exacerbate flooding. Project-related supporting structures (e.g., bridge piers) shall be designed to minimize scour (sediment removal) and increased flow velocity, ***to the extent practicable***. The Coalition shall consider use of multi-stage culvert designs in flood-prone areas, as appropriate.

WAT-MM-7. During project-related construction, the Coalition shall use temporary barricades, fencing, and/or flagging around sensitive habitats (e.g., wetlands, streams) to contain project-related impacts on the construction area. The Coalition shall locate staging areas in previously disturbed ***sites to the extent practicable***, avoiding sensitive habitat areas ***whenever possible***.

This open-ended mitigation does not adequately disclose the extent to which mitigation measures will apply to project activities and therefore cannot support a conclusion that the targeted effects will be "minor" or insignificant. *N.M. ex rel. Richardson v. BLM*, 565 F.3d 683, 715 (10th Cir. 2009) (agency "acted arbitrarily by concluding [in EIS] without apparent evidentiary support that impacts on the Aquifer would be minimal").

XVI. The EIS Must Analyze the Potential for Crude Oil Trains to Traverse the Tennessee Pass Line

On December 31, 2020, Colorado, Midland & Pacific Railway Company (CMPR)—a wholly owned subsidiary of Rio Grande Pacific, the proposed operator of the Uinta Basin Railway—proposed reactivation of the Tennessee Pass Line in Colorado and petitioned the Surface Transportation Board to exempt from environmental review operation of the line. The 163.1-mile Tennessee Pass Line segment between Parkdale and Sage, Colorado connects to the Uinta Basin Railway via a Union Pacific line between Kyune, Utah and Dotsero, Colorado. Thus, if the proposed oil railway is approved and the Tennessee Pass Line is reactivated, crude unit trains from the Uinta Basin could traverse the Tennessee Pass Line on their way to Gulf Coast refineries.

The Tennessee Pass Line closely parallels critical waterways, including the upper Arkansas River and the Eagle River. The dormant line is routed through numerous river and mountain oriented communities that place a high value on the recreational, ecological, cultural,

scenic, historical, and other values that exist within these river corridors. The segment of rail line in question has been dormant for over 24 years, and in that time, both the ecological and human environments have adapted and flourished to thrive in the absence of any rail traffic. Local communities make their livelihoods off of river recreation and outdoor tourism in the region and the public travels from throughout Colorado and from across the country to visit the unique characteristics of the area, including Browns Canyon National Monument which was recently designated in 2015.[379] This is further demonstrated by the significant economic impact of river recreation in the Arkansas River corridor. The Arkansas River sees over 40% of Colorado's total commercial rafting days and contributes close to $100 million to the local economy.[380]

The EIS must be revised to address the potential impacts of crude trains traveling through this highly sensitive area. The EIS should describe the following existing conditions and resources along the Tennessee Pass line and how oil train traffic would affect them:

- Population in the affected corridor has significantly increased since the rail line was last active. There are innumerable train crossings in developed, urban areas that intersect with state and county highways that have seen increased traffic in the last 24 years. The paving and reopening of Cottonwood Pass (Chaffee County Road 306 and Gunnison County Road 209) has led to significant increase in traffic in the Town of Buena Vista and specifically at a traffic intersection (Main Street and Hwy 24) that is within a hundred feet of a major rail line crossing.

- The Arkansas River corridor has numerous unique characteristics between Parkdale and Leadville, Colorado including Browns Canyon National Monument, Browns Canyon Area of Critical Environmental Concern, Browns Canyon Wilderness Study Area (7,451 acres adjacent to railroad tracks), multiple river segments determined "suitable" for inclusion in the National Wild and Scenic River System, a 102-mile Gold Medal Trout Fishery between Lake Fork Creek and Parkdale, and the Arkansas Headwaters Recreation Area, among others. The Browns Canyon Wilderness Study Area is included in H.R.2546 introduced by Rep. DeGette (D-CO-1), which would designate the WSA into the National Wilderness Preservation System.

- Local and regional economies are heavily dependent on the river corridor and healthy rivers that are accessible to the public.

Noise, air and water pollution, visual blight, and disturbance of wildlife could have significant impacts on the affected communities, quiet recreation, and tourism economy.

The risk of derailment of crude trains along the Tennessee Pass Line is another major concern, which must be addressed in the EIS:

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[379] Obama, Barack, Presidential Proclamation – Browns Canyon National Monument, The White House Office of the Secretary (Feb. 19, 2015), https://obamawhitehouse.archives.gov/the-press-office/2015/02/19/presidential-proclamation-browns-canyon-national-monument.
[380] Peterson, Eric, Outdoor Industries Report: Rafting Economy, ColoradoBiz (Apr. 1, 2019), https://www.cobizmag.com/outdoor-industries-report-rafting-economy/.

> [I]n the 1980s and 1990s . . . coal cars tumbled into the Arkansas River just below Browns Canyon. Another time a flash flood sent cars into the river near Cotopaxi. Trains also derailed on the steep grade just below Tennessee Pass near Camp Hale, including an accident in 1996 that killed two crew members and spilled sulphuric acid. Derailments played a role in Union Pacific's decision to mothball the Tennessee Pass line in 1997.[381]

In any event, the EIS should analyze the proposed reactivation of the Tennessee Pass Line and the Uinta Basin Railway's cumulative effects on air quality, climate change, rail safety, and any other resources that may be affected by both projects.

Given the very recent announcement of the potential reactivation of the Tennessee Pass Line, the EIS should be revised to address the project's direct, indirect, and cumulative effects on resources surrounding the Tennessee Pass Line, and recirculated for public comment to allow the public to weigh in on these issues.

XVII. Conclusion

We appreciate the opportunity to comment on the Uinta Basin Railway Project. Although the DEIS's environmental analysis is severely deficient, it is clear that the project would significantly harm air and water resources, irreversibly damage the climate, devastate wildlife habitat and public lands, and endanger residents of the Uinta Basin and downline communities. These serious harms heavily outweigh the project's claimed economic and public benefits, which are highly speculative.

We urge the Office of Environmental Analysis to recommend that the Surface Transportation Board choose the "no action" alternative, and respectfully request that the STB deny the SCIC's petition for exemption.

Thank you for considering our comments.

Sincerely,

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[381] Blevins, Jason, New plans for rail traffic over Colorado's Tennessee Pass spark protest from grain-hauling competitor, Colorado Sun (Jan. 8, 2021), https://coloradosun.com/2021/01/08/tennessee-pass-railroad-rio-grand-pacific-colorado-midland/; Wald, Matthew L., A Derailment in Colorado Kills Two, NY Times (Feb. 22, 1996), https://www.nytimes.com/1996/02/22/us/a-derailment-in-colorado-kills-two.html.

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Attachment A:
Fred Millar Comment on the Surface Transportation Board Oct. 30, 2020 Draft Environmental Impact Statement on the Uinta Basin Railway (Jan. 28, 2021)

Attachment B:
Center for Biological Diversity, Climate Change Science Summary (April 2019)

Attachment C:

Ileene Anderson's comment: Review of the DEIS Revegetation Mitigation and Monitoring (February 5, 2021)

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