Yukon River Inter-Tribal Watershed Council[1] ● Alaska Community Action on Toxics ● Alaskans for Wildlife ● Alaska Soles, Great Old Broads for Wilderness ● Alaska Wilderness League ● Alaska Wildlife Alliance ● All About Adventure ● Audubon Alaska ● Brooks Range Council ● Center for Biological Diversity ● Coalition to Protect America's National Parks ● Earthworks ● National Parks Conservation Association ● Northern Alaska Environmental Center ● Patagonia ● Sierra Club ● The Wilderness Society ● Trustees for Alaska ● Wilderness Watch ● Wildlife Conservation Society ● Winter Wildlands Alliance

Sent via E-Planning

December 22, 2023

Stacie McIntosh
Bureau of Land Management
222 W. 7th Ave., Stop #13
Anchorage, AK 99513
s05mcint@blm.gov

Re: Comments for the Supplemental Draft Environmental Impact Statement for the Proposed Ambler Mining District Industrial Access Road

Dear Ms. McIntosh:

On behalf of the above-listed organizations and our members, we provide the attached comments on the Bureau of Land Management's (BLM) Draft Supplemental Environmental Impact Statement (SEIS) for the Proposed Ambler Mining District Industrial Access Road (Ambler Road). As detailed in the attached comments, countless aspects of this project and permitting process — from the lack of key project and baseline information, to the cascading range of serious impacts likely to occur from the project, to the legal problems with the authorizations and reviews to date — point to the need for the agencies to rescind the prior authorizations and adopt the no action alternative.

This complex and far-reaching infrastructure proposal will have significant impacts across a broad region and is contrary to the public interest. The proposed Road would cross a vast roadless area in the southern Brooks Range, cut across the country's second largest national park, and disrupt an area relied upon by many rural communities to sustain their way of life. Each year, 152,000 Western Arctic caribou migrate across the wild landscape, covering 2,700 miles a year on one of the Earth's longest land migrations — the distance from Seattle to New York. Here, the land stretches for hundreds of miles uncrossed by roads, railways, or any sign of the industrial world. People have lived in the Brooks Range for thousands of years, and still

[1] The Yukon River Inter-Tribal Watershed Council is a treaty organization comprised of 74 tribes and First Nations extending from one end of the Yukon River to the other.

depend upon hunting for caribou and moose, fishing for salmon and sheefish, and carefully balance human need with healthy sustainable wildlife populations.

Many of the impacts of this project, as well as appropriate mitigation measures, were not adequately considered as part of the previous authorizations for this project. As a result, there are two pending lawsuits challenging those authorizations.[2] Those lawsuits underscore the wide range of legal violations that occurred in the federal permitting process for the Ambler Road, including violations of the National Environmental Policy Act (NEPA), the Clean Water Act (CWA), the Alaska National Interest Lands Conservation Act (ANILCA), the Federal Land Policy and Management Act (FLPMA), and the National Historic Preservation Act (NHPA). The Department of the Interior previously acknowledged some of the legal errors with the process to date with respect to the NHPA analysis and the ANILCA Section 810 subsistence analysis.[3] However, there are still far broader, fundamental problems with the authorizations for this project.

The continuing lack of key information about the Ambler Road's design and baseline information about the resources in the region alone are fatal flaws. AIDEA is still incapable of providing sufficient information about this project and resources in the project area to inform a meaningful analysis of both the impacts and necessary mitigation measures. This does not allow the agencies to engage in the robust analysis required by NEPA and other statutes, and is particularly concerning for a project of this magnitude. The scale of this project is not an excuse for allowing AIDEA to provide inadequate project designs and information or for moving forward with project authorizations without complete information. The agencies' analyses to date have been hamstrung by AIDEA's failure to provide sufficient site-specific information about the project proposal and project area. The last administration approved this project without that key information, instead allowing AIDEA to submit that information at some unspecified point in the future. But it is contrary to NEPA for the agencies to consider information after-the-fact; the purpose of NEPA is to ensure the agencies consider relevant information *prior* to making a decision. That lack of key information necessitates rescission of the prior authorizations and adoption of the no action alternative.

Our organizations are also deeply concerned about the direct, indirect, and cumulative effects of the proposed road, development of the Ambler mining district, and the lack of analysis done to date of the full range of likely impacts. Building this road will create heavy truck traffic though a large, wild area that will result in noise pollution and dust, impair wilderness recreation, disturb wildlife, destroy wetlands, permanently alter rural lifestyles dependent on traditional food resources like fish and caribou, and potentially cause population-level impacts to caribou and fish, as acknowledged in the SEIS. The Western Arctic Caribou Herd, a vital subsistence resource for numerous communities, has already experienced significant declines in its

[2] *N. Alaska Envtl. Ctr. v. Haaland*, Case No. 3:20-cv-00187-SLG (Alaska D. Ct. Feb. 22, 2022); *Alatna Vill. Council v. Heinlein*, Case No. 3:20-cv-00253-SLG (Alaska D. Ct. Feb. 22, 2022).

[3] Defs.' Mot. for Voluntary Remand, *N. Alaska Envtl. Ctr. v. Haaland*, Case No. 3:20-cv-00187-SLG (Alaska D. Ct. Feb. 22, 2022) (ECF No. 113) [hereinafter NAEC Remand Mot.]; Defs.' Mot. for Voluntary Remand, *Alatna Vill. Council v. Heinlein* Case No. 3:20-cv-00253-SLG (Alaska D. Ct. Feb. 22, 2022) (ECF No. 111) [hereinafter AVC Remand Mot.].

population in recent years. Those impacts will be severely exacerbated if this project moves forward. BLM, NPS, and the Corps previously failed to consider widespread public opposition to this project and the full range of negative environmental impacts. In addition, the previous authorizations did not include a sufficient range of mitigation measures to avoid and minimize impacts to important historical and ecological resources, particularly wetlands. While the SEIS takes steps in the right direction for acknowledging the serious impacts to subsistence likely to occur from this project, there are still numerous relevant resource issues that have either not been addressed or have been inadequately addressed.

As the lead agency, BLM must ensure this process complies with NEPA, FLPMA, and other legal and permitting requirements. BLM should proceed cautiously, ensuring that the agency takes sufficient time to engage the public, the scientific community, and communities who will be most impacted by this decision. The federal agencies must ensure there is ample outreach occurring to local communities so the individuals who will be most impacted by this process have meaningful opportunities to understand and weigh in on this highly damaging project. A core purpose of NEPA is to ensure public participation and involvement in agency decisions.[4] The timeline for this process should be driven by the goal of ensuring robust public input, allowing time for meaningful government-to-government consultation, and recognition of the need to use the best scientific information — not by politically driven, rushed timelines that could lead to the agencies repeating the mistakes of the past.

It is also important for the Corps and NPS to revisit their decisions as part of this process. The Corps has yet to engage in any obvious way in this remand process. It is also unclear how NPS plans to address the legal issues with the separate Environmental and Economic Analysis, despite acknowledging there were legal flaws with the subsistence analysis. Given the seriousness of the legal problems with this project, all of the agencies should rescind their prior authorizations, including the BLM and NPS rights-of-way and the CWA 404 permit. As a threshold issue, the agencies previously authorized two very different versions of the project, due to AIDEA submitting a substantially modified permit application to the Corps part way through the process. The agencies should not authorize this project when the project applicant has failed to comply with even the basic legal requirements under ANILCA and other statutes.

Finally, although road proponents tout the project as necessary to access extensive critical minerals, the mineral resource reports and economic feasibility studies associated with the major mineral deposits in the Ambler Mining District dispel those claims. As explained in this letter, there is still significant uncertainty about the mineral deposits in the region and there is no indication they will ensure U.S. mineral independence or resolve domestic supply chain issues with regard to critical minerals.

In sum, this project is likely to have far-reaching, negative impacts to subsistence, wildlife, vegetation, permafrost conditions, and water resources across a vast region. Despite this, AIDEA has still not provided sufficient information for BLM and other agencies, as well as the public, to fully assess and understand the proposed project. As a result, the analyses done to date and the prior authorizations lacked information critical to fully analyze this project and comply with numerous statutory requirements. Because of the broad range of issues with this

[4] 40 C.F.R. §§ 1500.2(d), 1506.6.

project, BLM should adopt the no action alternative and the agencies should rescind the prior authorizations.

If you have any questions or wish to clarify anything in our comments, please do not hesitate to contact Suzanne Bostrom at (907) 433-2015 or by e-mail at sbostrom@trustees.org. Thank you for your prompt attention to our comments.

Sincerely,

Theresa Clark, Executive Director
Yukon River Inter-Tribal Watershed Council

Pamela Miller, Executive Director
Alaska Community Action on Toxics

Frank Maxwell, President
Alaskans for Wildlife

Kathleen O'Reilly-Doyle and Loren J. Karro, Co-Leaders
Alaska Soles, Great Old Broads for Wilderness

Maddie Halloran, Alaska State Director
Alaska Wilderness League

Nicole Schmitt, Executive Director
Alaska Wildlife Alliance

Ronald Yarnell
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David Krause, Interim Executive Director
Audubon Alaska

John Gaedeke, Chairman
Brooks Range Council

Cooper Freeman, Alaska Representative / Senior Advocate
Center for Biological Diversity

Michael B. Murray, Chair
Coalition to Protect America's National Parks

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Alex Johnson, Arctic and Interior Alaska Campaign Director
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Kevin Proescholdt, Conservation Director
Wilderness Watch

Dr. Martin Robards, Regional Director, Beringia Program
Wildlife Conservation Society

Hilary Eisen, Policy Director
Winter Wildlands Alliance

ENCLOSURES[5]

CC:
Tracy Stone-Manning, Director, Bureau of Land Management
Steve Cohn, Alaska State Director, Bureau of Land Management
Laura Daniel-Davis, Acting Deputy Secretary, Department of the Interior
Chuck Sams, Director, National Park Service
Sarah Creachbaum, Alaska Regional Director, National Park Service
Mark Dowdle, Gates of the Arctic National Park and Preserve Superintendent, National Park Service
Colonel Jeffrey Palazzini, U.S. Army Corps of Engineers
Sarah Longan, U.S. Army Corps of Engineers
Clinton Scott, U.S. Coast Guard

[5] Two expert reports are included as attachments to these comments. Groups are also concurrently mailing a thumb drive with additional references cited in these comments to the BLM Fairbanks Field Office and Stacie McIntosh for inclusion in the administrative record.

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ATTACHMENTS

- **Attachment 1:** Siobhan Fennessy, Ph.D., PWS, Comments on the Ambler Road Supplemental Draft Environmental Impact Statement (Dec. 15, 2023)
- **Attachment 2**: Annette Watson, Ph.D., Expert Analysis Regarding the Supplemental EIS (SEIS) for the Ambler Road and Mining District (Dec. 18, 2023)

THERE ARE STILL NUMEROUS LEGAL AND SUBSTANTIVE PROBLEMS THAT NEED TO BE ADDRESSED AND THAT WARRANT ADOPTION OF THE NO ACTION ALTERNATIVE.

I. THE AMBLER PERMITTING PROCESS TO DATE HAS BEEN DEEPLY FLAWED.

The southern Brooks Range and Gates of the Arctic National Park and Preserve (Gates of the Arctic or Gates) are iconic areas of Alaskan wilderness. The region and its rivers provide habitat for numerous fish and wildlife species, including salmon, sheefish, caribou, birds, and moose. The region is home to the Western Arctic Caribou Herd, the largest herd in Alaska. Caribou are an important component of the ecosystem of Gates of the Arctic, and for subsistence users across Western Alaska. Fisheries are highly important to the area's ecosystem and communities, with salmon and other species using both large rivers and small tributaries. The area is home to rural communities and also offers exceptional wilderness recreation experiences.

Mining companies have explored the Ambler Mining District for decades. There are known mineral deposits in the region, as well as mining claims along the Ambler Road corridor. Ambler Metals and its predecessors have been conducting exploration and intend to develop a mine in the Ambler Mining District that it would access via the Ambler Road. Ambler Metals' parent company, Trilogy Metals, previously indicated they planned to move forward imminently with their CWA Section 404 permit and the permitting process for the first major mine in the region at the Upper Kobuk Mineral Deposit.[6] Other companies, such as Valhalla Metals, are also working to advance additional mines in the region.[7]

In 2015, pursuant to Title XI of ANILCA, AIDEA submitted a consolidated application to BLM, NPS, the Corps, and the U.S. Coast Guard for the Ambler Road.[8] AIDEA requested authorizations to construct and operate an all-season, industrial-access road for exploration and development of the Ambler Mining District, which it proposed to construct in three phases.[9] The road would permanently fill over 2,000 acres of wetlands and cross over 2,900 waterbodies. It would require 29 bridges, with 11 large bridges crossing major rivers, including the Kobuk Wild and Scenic River. The project would discharge between 8.4–11 million cubic yards of fill into wetlands permanently, and over 47 miles (250,000 feet) of stream channels would be permanently impacted.

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[6] Trilogy Metals, Inc., News Release: Trilogy Metals Announces the 2022 Program and Budget for the Upper Kobuk Mineral Projects and Provides Update on Arctic Permitting (Jan. 11, 2022), *available at* https://trilogymetals.com/site/assets/files/5772/2022-01-11_tmqpr_2022_ambler_metals_budget_-_final.pdf.

[7] Shane Lasley, *Alaska-Focused Valhalla Metals Lists on TSX-V, Raises C$10.2M*, North of 60 Mining News (Sept. 20, 2022), https://www.miningnewsnorth.com/story/2022/09/23/news/van-nieuwenhuyse-welcome-to-valhalla/7569.html (last visited Oct. 5, 2022).

[8] AIDEA, Ambler Mining District Industrial Access Project Corridor SF299 Supplemental Narrative 1–2 (2015) [hereinafter 2015 SF299 Application].

[9] 1 Bureau of Land Mgmt., Dep't of the Interior, Ambler Road: Final Environmental Impact Statement 1-2 to -3 (2020) [hereinafter FEIS].

The agencies initially deemed AIDEA's application incomplete under their respective statutory requirements.[10] AIDEA submitted a Revised Application in 2016.[11] The Revised Application still lacked detailed, site-specific information about the design or location of the Ambler Road, or baseline information about hydrology, wetlands, air quality, permafrost, and other resources because AIDEA had done little design work or field studies.[12] Despite this, the agencies moved forward with their environmental review processes. In February 2017, BLM began the NEPA process for the Ambler Road.[13] NPS also began developing an Environmental and Economic Analysis (EEA) for the portion of the road crossing Gates of the Arctic, as required by ANILCA.[14]

AIDEA proposes to construct the road in three phases over several years.[15] Phase I would be a seasonal gravel "pioneer road" that would be upgraded in Phase II to a single-lane, gravel-surface road with year-round access.[16] Phase III would expand the single-lane gravel road into a two-lane gravel road.[17] AIDEA's application seeks to construct all three phases, identifying Phase III as the completed project.[18] The road would require over 40 gravel mines (also referred to as material sites) — some of which may contain naturally occurring asbestos — to provide the material for the road, as well as airstrips, maintenance stations, and camps.[19]

In August 2019, BLM released the draft environmental impact statement (DEIS) for the project,[20] the Corps publicly noticed the 404 permit,[21] and NPS released its draft EEA.[22] BLM's draft EIS considered a no-action alternative and three action alternatives: Alternatives A (AIDEA's proposal), B (nearly identical to A, but with a southern route through Gates), and C

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[10] SF299 Deficiency Letter from BLM 1–4 (Jan. 21, 2016); SF299 Deficiency Letter from NPS 1–7 (Jan. 22, 2016).

[11] AIDEA, Ambler Mining District Industrial Access Project Revised SF299 Consolidated Application (2016) [hereinafter 2016 AIDEA Application].

[12] *See, e.g.*, Alaska Industrial Dev. & Export Auth., Ambler Access Project Pre-Construction Phase Plan 1–5 (Mar. 2021) [hereinafter Pre-Construction Plan].

[13] Notice of Intent, 82 Fed. Reg. 12119 (Feb. 28, 2017).

[14] Extension of Time for Preparation of an Environmental and Economic Analysis, Gates of the Arctic National Preserve, 82 Fed. Reg. 12121 (Feb. 28, 2017); ANILCA § 201(4)(d), Pub. L. No. 96-487, 94 Stat. 2371 (Dec. 2, 1980).

[15] 2016 AIDEA Application at 3–6.

[16] *Id.* at 3–5.

[17] *Id.* at 4.

[18] *Id.* at 6.

[19] 1 Bureau of Land Mgmt., Dep't of the Interior, Ambler Road: Draft Environmental Impact Statement 2-4, 2-9 (2019) [hereinafter DEIS]; 1 *id*. App. E at E-16.

[20] 1 DEIS (cover page).

[21] U.S. Army Corps of Eng'rs, Public Notice of Application for Permit POA-2013-00396, at 1 (Sept. 13, 2019).

[22] Nat'l Park Serv., U.S. Dep't of the Interior, Ambler Mining District Access Project at Gate of the Arctic National Park and Preserve: Environmental and Economic Analysis (August 2019) [hereinafter Draft EEA].

(road routed south around Gates).[23] The action alternatives all followed AIDEA's phased approach, with construction of Phase III as the final stage.[24]

In comments on the DEIS, numerous organizations and individuals, including the signatories to this letter, criticized the agencies' failure to adequately analyze the full range of impacts from the project.[25] Groups explained that AIDEA's application lacked critical information, including project design and location details, and that the DEIS failed to adequately analyze AIDEA's phased construction approach.[26] Groups also criticized the EIS's failure to obtain or consider baseline information necessary to analyze the direct, indirect, and cumulative impacts.[27] Multiple commenters, including the Environmental Protection Agency (EPA), noted there was also insufficient information for the Corps to do its analysis under the CWA.[28]

In March 2020, BLM issued the final EIS (FEIS) in cooperation with the Corps.[29] The FEIS stated the agencies would do additional studies, data collection, and design work after project approvals as part of an unspecified "design/permitting" phase.[30] This to-be-determined information included "documenting the road location and construction details."[31] The FEIS focused on Phase III for its impacts analysis.[32]

In July 2020, BLM and the Corps issued a joint Record of Decision (JROD) approving the right-of-way and 404 permit.[33] The same day, NPS released its final EEA and approved the right-of-way through Gates.[34] BLM's and NPS's decisions approve AIDEA's proposed action

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[23] 1 DEIS at 2-3 to -4.

[24] *Id.* at 2-3 to -5.

[25] *See, e.g.*, Letter from Alaska Community Action on Toxics et al., to Tina McMaster-Goering, BLM, re: Comments on the Ambler Mining District Industrial Access Road Draft Environmental Impact Statement (Oct. 29, 2019) [hereinafter Coalition DEIS Comments]; Letter from Tanana Chiefs Conference to Tina McMaster-Goering, BLM, re: Comments on Draft EIS, Preliminary ANILCA Section 810 Evaluation, Health Impact Assessment, NHPA 106 Consultation, and Draft EEA for the Proposed Ambler Road Project (Oct. 29, 2019).

[26] Coalition DEIS Comments at 5–7.

[27] *Id.* at 24–29.

[28] *See, e.g.*, Envtl. Prot. Agency, Comments on PN POA-2013-00396 (Oct. 29, 2019) [hereinafter 2019 EPA Comments].

[29] Notice of Availability of the FEIS, 85 Fed. Reg. 17353 (Mar. 27, 2020).

[30] *See, e.g.*, 3 FEIS App. Q at Q-11, Q-13, Q-24; *id.* App. N at N-30, N-32.

[31] 3 *Id*. App. N at N-5.

[32] 1 FEIS at 3-2.

[33] U.S. Dep't of the Interior, Bureau of Land Mgmt., & U.S. Army Corps of Eng'rs, Joint Record of Decision: Ambler Road Environmental Impact Statement 1–19 (July 2020) [hereinafter JROD].

[34] Nat'l Park Serv., U.S. Dep't of the Interior & U.S. Dep't of Transp., Record of Decision: Ambler Mining District Access Project at Gate of the Arctic National Park and Preserve: Environmental and Economic Analysis (July 2020) [hereinafter EEA ROD] (adopting the Northern Alignment as described in the EEA for the Proposed Amber Mining District Industrial Access Project).

(Alternative A), authorizing the northern route through Gates with buildout to Phase III.[35] BLM deferred approving the gravel mines, airstrips, and other facilities because AIDEA did not provide site-specific plans for those project components.[36]

The JROD disclosed that AIDEA submitted another revised permit application to the Corps in February 2020 — after publication of the DEIS, but before issuance of the FEIS.[37] The Corps never released that revised application for public review or comment. AIDEA substantially modified its project proposal in the revised application, which proposed to construct the road to Phase II, but not Phase III.[38] The revised application also modified AIDEA's proposal to request approval of only 15 gravel mines, despite the acknowledged need for over 40 mines, as well as access roads, 4 maintenance stations, 12 communication towers, 3 aircraft landing strips, and a fiberoptic cable.[39] The Corps approved the revised project in the JROD,[40] and issued its 404 permit consistent with that decision.[41]

In contrast, BLM and NPS issued rights-of-way for Alternative A as described in the FEIS and AIDEA's 2016 permit application and without the updates considered and adopted by the Corps.[42] As a result, BLM's and the Corps' decisions within the JROD were not consistent and the agencies ultimately authorized two very different versions of the project. In January 2021, BLM issued a 50-year right-of-way to AIDEA authorizing construction of Phases I through III.[43] It did not authorize construction of any gravel mines, construction camps, or maintenance stations.[44] BLM's right-of-way allows AIDEA to submit future "plans of development" to BLM before constructing the various phases.[45] These yet-to-be-developed plans would "describe in detail the construction, operation, maintenance, and termination of the right-of-way."[46] BLM's right-of-way allows AIDEA to defer its submittal of significant, additional baseline and other information long after the NEPA process concludes.[47] NPS also issued a right-of-way to AIDEA authorizing the Ambler Road.[48] The NPS right-of-way authorizes all three construction phases, similar to the BLM right-of-way, despite the Corps only authorizing a more

[35] JROD Introduction at 11; EEA ROD at 10.

[36] JROD at 13 (Decision Summary); *id.* at 25; Bureau of Land Mgmt., Right-of-Way Grant: F-97112 (Jan. 5, 2021) [hereinafter BLM ROW].

[37] JROD at F-3

[38] *Id.*

[39] *Id.* at F-3 to -4.

[40] *Id.* at 20–21.

[41] U.S. Army Corps of Eng'rs, Department of the Army Permit No. POA-2013-00396, at 1 (2020) [hereinafter 404 Permit].

[42] JROD at 19–20, 32; EEA ROD at 6.

[43] BLM ROW at 1–2.

[44] *Id.*

[45] *Id.* at 6–7.

[46] *Id.* at 6.

[47] *See, e.g.*, BLM ROW at 5, 8–11.

[48] Nat'l Park Serv., U.S. Dep't of the Interior, Right-of-Way Permit for Alaska Industrial Development & Export Authority, Right-of-Way Permit No. RW GAAR-21-001, at 1–8 (Jan. 5, 2021) [hereinafter NPS ROW].

limited version of the project.[49] The NPS right-of-way contains terms similar to BLM's right-of-way, deferring the submission of extensive amounts of baseline and other project information to the future.[50]

Two lawsuits were filed challenging those prior authorizations — one on behalf of 11 conservation organizations (many of whom are signatories to this letter) and the other on behalf of Tanana Chiefs Conference and multiple tribal councils.[51] Those lawsuits underscore the wide range of legal violations that occurred in the federal permitting process for the project, including violations of NEPA, the Clean Water Act, ANILCA, FLPMA, and the NHPA.

On February 22, 2022, the federal government filed motions with the federal District Court acknowledging some of the legal errors with the process to date and requesting that the court remand BLM's and NPS's decisions to the agencies to correct deficiencies with the NHPA analysis and the ANILCA Section 810 subsistence analysis. Those acknowledged deficiencies included problems with the adequacy of the agencies' analysis of impacts to subsistence and other resources, such as aquatic resources and caribou. BLM and NPS also indicated they would prepare a supplemental NEPA analysis to address the deficiencies in the prior environmental review.[52] The court ultimately granted BLM's and NPS's motion for voluntary remand.

While BLM and NPS acknowledged they would address at least some of the legal problems on remand, there are also far broader, fundamental problems with the authorizations to date for this project than what they previously acknowledged. To date, the Corps also has not provided any indication whether and how they will engage in the remand process, despite the serious legal problems that extend to their decision and the supporting NEPA analysis. As detailed in these comments, all of the agencies — including the Corps — need to carefully consider and address the substantial gaps and problems with the prior analyses and decisions for this complex project as part of this remand process.

II. THERE ARE STILL NUMEROUS PROBLEMS WITH THE DECISIONS TO DATE THAT HAVE NOT BEEN ADDRESSED ON REMAND.

To achieve NEPA's goals, the statute requires federal agencies to "[e]ncourage and facilitate public involvement in decisions which affect the quality of the human environment."[53] To help guarantee public participation and informed decisions, the language of an EIS must be "clear," "be written in plain language," and be presented in a way that "the public can readily understand."[54] It must also be "supported by evidence that the agency has made the necessary

[49] *Id.* at 3, 5.

[50] NPS ROW Ex. C at 1–22.

[51] *N. Alaska Envtl. Ctr.*, Case No. 3:20-cv-00187-SLG; *Alatna Vill. Council*, Case No. 3:20-cv-00253-SLG.

[52] NAEC Remand Mot.; AVC Remand Mot.

[53] 40 C.F.R. § 1500.2(d).

[54] *Earth Island Inst. v. U.S. Forest Serv.*, 442 F.3d 1147, 1160 (9th Cir. 2006); 40 C.F.R. § 1502.8; *see also Or. Envtl. Council v. Kunzman*, 817 F.2d 484, 493 (9th Cir. 1987) ("An EIS must be organized and written so as to be readily understandable by governmental

environmental analyses."[55] "The information must be of high quality" because "[a]ccurate scientific analysis . . . and public scrutiny are essential to implementing NEPA."[56] An EIS that fails to enable meaningful public review and understanding of the agency's proposal, methodology, and analysis of environmental consequences violates NEPA.[57]

BLM and NPS acknowledged in their remand motions in both of the pending lawsuits that there were problems with the subsistence analysis done to date, including the analysis of caribou and aquatic impacts, as well as issues with the agencies' compliance with the NHPA. However, the problems with the prior authorizations and analyses extend far beyond those acknowledgements. As outlined throughout these comments, there were deep, fundamental problems with the prior process and analysis that have not yet been addressed as part of this remand process — not least of which is the Corps' continuing failure to engage in this remand process, despite the serious issues related to their permit and the same underlying NEPA analysis.

These problems with the prior permitting process included, but were not limited to, the fact that the prior EIS failed to include key information about the project, failed to analyze a reasonable range of alternatives, and failed to take a hard look at the impacts of the proposed project. First, the prior EIS was missing key information about the proposal. There were numerous gaps in information and analysis that hindered the public's and agencies' ability to review this project. Certain highly significant issues that affect important resources and uses of the project area, such as quantitative impacts to air quality, water quality, and wetlands functions, were largely missing from the prior EIS. Many issues, such as impacts to wetlands, wildlife, wilderness and recreation, vegetation and permafrost, public health, archaeological resources both from the road itself and the associated mines in the Ambler District, were only partially addressed, with key elements of the EIS analysis missing, incomplete, inaccurate, inconsistent with the best available science, or otherwise inadequate. Our comments address these and numerous other serious deficiencies. The significant and numerous information and analytical gaps render BLM's prior EIS "so inadequate as to preclude meaningful analysis" and review by the public.[58] These lingering problems, which have yet to be addressed, warrant rescission of the prior permits and adoption of the no action alternative.

The federal government, in its latest status report in the pending lawsuits, indicated it anticipates issuing a final SEIS in the first quarter of 2024 and a Record of Decision in the second quarter of 2024. However, as detailed throughout these comments, there is vital project design and baseline information that has yet to even be developed or provided to the agencies. Finalization of the SEIS on that timeline would not be consistent with the broader need to

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decisionmakers and by interested non-professional laypersons likely to be affected by actions taken under the EIS.").

[55] 40 C.F.R. § 1502.1; *see also id.* at § 1502.8.

[56] *Id*. at § 1500.1(b).

[57] *See, e.g.*, *Cal. ex rel. Lockyer v. U.S. Forest Serv.*, 465 F. Supp. 2d 942, 948-50 (N.D. Cal. 2006) (finding a national monument management plan "incomprehensible" and that the corresponding EIS violated NEPA where it contained conflicting and confusing statements regarding applicable management standards).

[58] *See* 40 C.F.R. § 1502.9(a).

address those information gaps on remand. The agencies either need to ensure they have that information and are in a position to address the numerous information gaps as part of this remand process or the agencies need to adopt the no action alternative and rescind the prior authorizations for this project to ensure AIDEA does not move forward with this project based on incomplete information and analysis. Groups appreciate that BLM has taken greater strides to provide for public comment and community outreach as part of the public process for the SEIS. However, not having complete information about this project and its impacts has not only deprived the public of the full ability to understand this project, but also does not support the agency's adoption of anything but the no action alternative here.

There were also inconsistencies in what the agencies ultimately authorized since AIDEA submitted a revised permit application to only the Corps, which resulted in the Corps authorizing a different version of the project from the other agencies. This fundamental inconsistency, as well as the broader lack of information about the project and what was being proposed, necessitates the submission of a new unified permit application from AIDEA, consistent with ANILCA. The agencies need to rescind the prior inconsistent authorizations as a first step to addressing these inconsistencies.

NEPA dictates that BLM take a "hard look" at the environmental consequences of a proposed action, including its direct, indirect, and cumulative effects.[59] The required hard look encompasses effects that are "ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative."[60] As detailed in these comments, the numerous and significant gaps in information, analysis, and alternatives rendered the prior EIS impacts analysis invalid and have not been addressed to date in this remand process. In particular, the lack of adequate baseline and project information should be fatal to this project since it does not allow the agencies to meet their obligations under multiple statutes. As the Ninth Circuit has explained, "without establishing the baseline conditions . . . , there is simply no way to determine what effect the proposed [action] will have on the environment and, consequently, no way to comply with NEPA."[61] There is a troubling, continuing lack of information about this project. As reflected by AIDEA's most recent fieldwork applications, much of the key baseline information necessary to understand the impacts of this project has yet to even be gathered and AIDEA has yet to design this project to a stage that is sufficient to truly understand what is being proposed. All of this reflects that this project never should have been authorized in the first place. Many other elements of the impacts analysis in the NEPA analyses to date are incomplete, unsupported by the best available science, or otherwise inadequate, as explained in detail below. The agencies should not reauthorize this project when they still have inadequate baseline and other information about the project to engage in a meaningful analysis of those impacts.

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[59] *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 348 (1989); 42 U.S.C. § 4332(2)(C); 40 C.F.R. §§ 1502.16, 1508.7, 1508.8.

[60] 40 C.F.R. § 1508.8.

[61] Half Moon Bay Fisherman's Mktg. Ass'n v. Carlucci, 857 F.2d 505, 510 (9th Cir. 1988).

The agency must also review all comments received during this NEPA process. We understand that the agency has previously made statements suggesting that only "substantive" comments would be reviewed and considered as part of the process; however, all comments from the public must be reviewed to ensure BLM is considering all input, including any statements of opposition to this project, which reflect on the agency's obligation to consider the no-action alternative. While BLM may only provide responses to substantive comments, this does not alter the agency's obligation to review all comments received. We would also strongly discourage the agency from making such representations to the public, as it tends to discourage public participation in what can already feel like a very technical process.

In addition, the purpose of an EIS is to "provide full and fair discussion of significant environmental impacts and [to] inform decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment."[62] However, BLM previously adhered to arbitrary page limits and incorporated numerous documents by reference or into appendices, resulting in a disjointed analysis that was hard for the public to follow. Many important facts about the project that bear on its environmental impacts are buried in appendices. This approach resulted in less transparency in the analysis, more mistakes, and missing key data and analysis, as explained in detail below. BLM has also referred to or incorporated by reference numerous documents into its current analysis as a way of further truncating its analysis in the final EIS. However, BLM often did so without any clear indication of how the analysis in the previous document applied in the context of the current proposal before the agency. This was improper and deprived the public of the ability to fully understand and comment on BLM's analysis and the potential impacts of the proposed road.

III. THE AGENCIES STILL LACK SUFFICIENT INFORMATION TO SATISFY PERMITTING REQUIREMENTS.

A. The Agencies Still Lack Necessary Information About This Project.

The process to date has not been sufficient to support the authorizations for such a massive, damaging proposal. As an initial matter, there is still insufficient and at times conflicting information about how the proposed road will be constructed and operated to support issuance of the permits. Despite the fact that this would be a massive infrastructure project, the draft SEIS still provides little information about the project design and almost zero site-specific information about the proposal and how it could impact a wide range of resources along the road corridor.

In the draft SEIS, BLM acknowledges the significant uncertainty in being able to analyze the impacts of this project due to the lack of underlying information about the project. BLM explains that, "[w]ithout on-the-ground surveys, the layout, staging, and sequencing of construction actions are not fully known, and impacts are approximate."[63] BLM highlights that there are still "[u]nknown ground conditions such as depth of permafrost or presence of clay/silt

[62] 40 C.F.R. § 1502.1.
[63] 1 SEIS at 2-12.

lenses underlying the area" that have still not been "verified and could cause construability issues (e.g., settlement)."[64] The SEIS also identifies numerous other unknown conditions with regard to bridges, foundation requirements, hydraulics, ice flow designs, permafrost, soil conditions underlying the roadbed, and the volume of materials needed for construction and maintenance.[65] Material site sources are also still "untested and locations unknown," so the "availability of appropriate types, quality, and volumes of mineral materials is unknown."[66] There are also still "[l]imited specifications regarding road engineering design and associated mine development," and there is still no information about reclamation and its associated harm.[67] These acknowledged deficiencies and information gaps indicate the agencies cannot possibly meet their legal obligations to properly analyze and permit this project pursuant to NEPA, the CWA, FLPMA, ANILCA, and other laws. All of these significant gaps and problems indicate the agencies need to adopt the no action alternative.

As BLM itself acknowledged, AIDEA has not — even still — designed the project to a level where there is adequate information about the site-specific locations of various infrastructure elements to engage in a robust analysis for purposes of NEPA. Even as part of this remand process, AIDEA did not submit a new application or address the problems that have carried over; AIDEA and the agencies are still relying on AIDEA's proposal as described in the 2016 application.[68] This is happening despite the fact that AIDEA acknowledged its 2016 application was still only a "conceptual level of design and development" for this project.[69] Estimates at the time indicated AIDEA's construction plans for the project were only around 7–10% complete.[70] Information about the project is still severely lacking, which is why the agencies should not allow the authorizations for this project to go forward.

The face of the rights-of-way further reflect the severe lack of information about the project at the time it was authorized. BLM's right-of-way requires the submission of a broad range of baseline and project design information at a future point in time since so much information was not previously provided as part of the permitting process.[71] BLM only required AIDEA to complete its plan of development and submit information on key resources and design elements at an unspecified later point in time.[72] Similarly, NPS's right-of-way grant is for a "Conceptual Alignment" that will need to be narrowed down at a later point in time because the actual corridor "ha[d] not yet been identified."[73] Similar to BLM's right-of-way, NPS also required the later submission of complete information about the project and impacted resources, including on permafrost, stream crossings, air quality, culverts, NHPA Section 106 plans, and

[64] Id.
[65] Id.
[66] Id.
[67] Id.
[68] *Id.* at 1-3.
[69] Ltr. from AIDEA to Tim. LaMarr, BLM (Apr. 16, 2019).
[70] *See, e.g.*, Email from Adam Freeburg, Archeologist, NPS, to Crystal Glassburn (Aug. 8, 2019).
[71] BLM ROW.
[72] *Id.* at ex. A at 6–7.
[73] NPS ROW.

more.[74] As discussed in the following section, there was also extensive baseline information necessary to inform the design and impacts analysis for the project that AIDEA did not provide prior to the agencies authorizing this project; AIDEA is only now trying to gather that information and to conduct studies that should have occurred prior to the agencies issuing any authorizations. The agencies should rescind the prior authorizations and adopt the no action alternative since they do not have adequate information about the project to adequately analyze the impacts and ways to address them in the SEIS.

There were also conflicting versions of the permit application that were submitted to the agencies, with the Corps later receiving a modified application for the project. This made it fundamentally unclear what precisely was authorized by the agencies as part of the prior process. Both from a common-sense perspective, and to comply with ANILCA, the agencies need to require a uniform application from AIDEA to ensure they are reviewing consistent versions of the project.

There are numerous gaps in information about the project in the FEIS that have still not been adequately addressed in the SEIS or this process. AIDEA's proposed construction phases are mentioned in the SEIS, but the information provided is brief and vague. As described in more detail below, BLM also lacks key baseline information, which in turn has led to a wholly lacking baseline analysis in the FEIS and SEIS. The prior EIS essentially indicated that because the project's impacts are so massive, spread out over so many miles, and impact so many resources, the agency did not complete an adequate baseline analysis for the affected resources. But the significance and scale of the Ambler Road and its impacts warrant the agencies providing more information and analysis to the public — not less. This information is essential to BLM's and other agencies' abilities to fully analyze this project and comply with NEPA. Because BLM has not been able to obtain this missing information and include an adequate baseline analysis of the full project and project area, it should reject AIDEA's proposal and adopt the no action alternative.

For instance, the SEIS still provides no clear indication of the timeline or material sources for the project and indicates there may even be overlap between different phases. Later changes to the road size, and changes to the sizes of culverts to account for AIDEA's phased approach, could significantly degrade the environment and have severe adverse impacts to the hydrology of the region. Details regarding this phased approach are still lacking. As a result, BLM and other agencies have failed to analyze the actual impacts of this project. This is contrary to NEPA and raises serious questions about the prior authorizations for this project.

There are a still number of additional, substantial gaps in what BLM has considered in the SEIS and basic information about the road proposal and corridor. For instance, there is no explanation regarding when AIDEA will consider using insulation, which would reduce the amount of gravel needed for the project by more than half, or any analysis of the impacts of different types of insulation.[75] This is a significant concern, given the risks of permafrost

[74] *Id.* ex. C at 7–8.

[75] *See* Eng'g Evaluation of the Ambler Road draft Envtl. Impact Statement (EIS) prepared for Trustees for Alaska 1 (Oct. 17, 2019) [hereinafter 2019 Engineering Report] (previously submitted).

degradation, particularly from Phase I of the project. Those permafrost impacts, as well as ways to mitigate those impacts, have not been adequately addressed to date. BLM needs to analyze the actual design proposal and effectiveness of any mitigation measures at this stage. The NEPA analyses also lack critical information on the location and sizing of culverts, quantitative impacts on fill in wetlands, and contains no wetlands delineation for Alternative Route C, making a complete assessment of the three alternatives impossible.

AIDEA's application and the SEIS also lack important information about quantity or quality of gravel available for the project[76] and the types of soil along the right-of-way,[77] which are important basic considerations for the road design. To the extent AIDEA's application identified potential gravel mine sites, it is clear from AIDEA's subsequent baseline study work that AIDEA had yet to do the sampling required to determine the correct locations of those proposed gravel mines. That complete lack of site-specific information about the gravel mine locations is in part why there was a significant disconnect between BLM's and the Corps' authorizations for this project. BLM did not authorize gravel mines in the prior decision because of the lack of site-specific information, but the Corps authorized them despite the lack of site-specific information. BLM and the Corps need to obtain complete site-specific information about the proposed gravel mines and analyze them as a connected action.

BLM must analyze the impacts of all the potential gravel mines, and impacts from ongoing construction efforts during the gradual "build-out" contemplated. Neither the SEIS nor the prior NEPA analysis did that. The SEIS states that an additional 2 inches of gravel will be added over the entire road length annually for the 50-year life of the road.[78] This is an enormous amount of gravel, but continued gravel mining operations are barely mentioned in the NEPA analyses to date. Continual gravel mining and road maintenance means long-term disturbance, as blasting will need to occur every year, and laying and grading gravel will involve the use of heavy equipment traversing the road. This will continue for the entire road length for the life of the road. BLM needs additional site-specific information on where the gravel mines will be located, their size, and order of development. BLM should ensure that the locations are not merely hypothetical and that the agency adequately analyzes the impacts from gravel mining as a connected action. No authorizations should be allowed to move forward without this important information and an appropriate NEPA analysis in advance of any authorizations occurring.

There is no information on how much water will be necessary for the proposed project. Presumably, AIDEA must use ice roads to transport materials, however, a description of these activities and ice road construction and maintenance is wholly absent from the application. There is no information in the project description regarding ice roads during the duration of construction for the project, nor on the length, location, or timing of these ice roads. In fact, there is no quantification of water use whatsoever in the EIS. The SEIS merely states:

> [w]ater access points would be located along the routes at rivers and lakes to provide water for construction activities, maintenance (dust control), and

[76] *Id*. at 6.
[77] *Id*. at 3.
[78] *See* 1 SEIS at 2-10.

> potable water supply for maintenance or fueling stations. … Water for construction and maintenance of any ice roads (stream and river crossings) and pads, and domestic use at the construction camps during construction activities would be withdrawn from lakes or large rivers near the construction activities.[79]

This project should not have been permitted without this critical information regarding the quantities of water that will be required, under any alternative.

Additionally, the SEIS states that AIDEA will construct an unknown number of airstrips, and only provides vague statements regarding the number of flights anticipated during construction.[80] There is no site-specific information on the specific airstrips and how they might impact the specific areas where they are being proposed, no information on how many flights are anticipated during operation and maintenance, and no information on how these airstrips will be utilized or impacts after construction.[81] To properly evaluate environmental and social impacts, BLM must know the location and projected amount of aircraft traffic at the new airstrips being contemplated. Aircraft may have negative impacts on wildlife and subsistence in a broad geographic area. All this information is critical to determining impacts and needs to be obtained and analyzed as part of the SEIS.

Furthermore, BLM should provide accurate projected levels of traffic on the road throughout the project life to adequately assess impacts from the road. The SEIS does not provide this needed information, stating that the "annual average daily traffic during peak years could be 168 trips per day, year round, when other mines are in production. Double-trailer ore loads on the Ambler Road would be split and become single-trailer loads for transport on the Dalton Highway and other public roads."[82] BLM refers to Appendix H to provide road and vehicle use information, but then does not actually describe how BLM or AIDEA obtained these vehicle numbers. Moreover, there appears to be no calculation of traffic related to construction efforts.

The lack of substantive information in AIDEA's permit application, FEIS, and supporting documents reflect the serious legal problems with the prior authorizations, which have carried forward into the SEIS. Those prior authorizations should be rescinded and the agencies should adopt the no action alternative since they cannot meet their legal obligations to adequately analyze and mitigate the impacts this project in light of the deficient information provided to date.

B. The Agencies Previously Failed to Obtain Necessary Baseline Information.

NEPA requires that agencies analyze a project's impacts before it is approved. The purpose of NEPA's requirement that an EIS be prepared for any action that may significantly affect the environment is to obviate the need for speculation, and to ensure that available data is

[79] *Id*. at 3-37.
[80] *Id*. at 2-10.
[81] *Id*.
[82] *Id*. at 2-8.

gathered and analyzed prior to the implementation of the proposed action.[83] The agencies failed to obtain and analyze necessary baseline information prior to authorizing the project. Under NEPA, the agencies must "describe the environment of the area(s) to be affected … by the alternatives under consideration."[84] "Without establishing the baseline conditions … there is simply no way to determine what effect the [action] will have on the environment, and consequently, no way to comply with NEPA."[85] The lack of an adequate baseline assessment is fatal under NEPA: "[O]nce a project begins, the pre-project environment becomes a thing of the past and evaluation of the project's effect becomes simply impossible."[86] The duty to fully analyze all baseline conditions applies to all potentially affected resources. This includes but is not limited to surface and groundwater, air quality, wildlife, recreation, cultural, and economic resources. BLM cannot meet its NEPA obligations by foregoing collection of baseline data, and, instead, "anticipat[ing]" that the impacts of a proposed decision will be insignificant.[87]

Here, the agencies pointed to future, yet-to-be-conducted baseline studies for multiple resources instead of obtaining that information to inform their NEPA analysis now. For example, although the SEIS states that the project will require over 40 gravel mines and associated infrastructure, those sites have not been identified yet and there is still no baseline assessment of these sites.[88] The field studies and exploration work necessary to determine the design and gravel needs has yet to occur. Although AIDEA claimed it identified potential gravel mine sites, it in fact has yet to conduct "[g]eotechnical investigations … on the specific sizes, grades, and actual quantities" to verify those sites would in fact be the locations of the actual gravel mines.[89]

BLM acknowledged it was unknown whether there were sufficient volumes of asbestos-free gravel along the corridor and that potential sites would be tested in the future.[90] The SEIS discusses the high likelihood of encountering naturally occurring asbestos (NOA): "The potential for encountering NOA exists for all of the proposed action alternatives," but "the exact details of the amounts and locations of NOA are not known."[91] The SEIS still relies on undefined mitigation measures to assert that there will be little risk from asbestos releases.[92] The agencies also previously allowed AIDEA to defer identifying areas of potential acid rock drainage (ARD) at these potential mine sites and along the route, and nothing has shifted with regard to AIDEA thus far failing to identify such sites.[93] These field studies and investigations are the exact type of

[83] *LaFlamme v. FERC*, 852 F.2d 389, 400 (9th Cir. 1988).

[84] 40 C.F.R. § 1502.15.

[85] *Carlucci*, 857 F.2d at 510; *see alsoOr. Nat. Desert Ass'n v. Jewell*, 840 F.3d 562, 568–71 (9th Cir. 2016).

[86] *N. Plains Res. Council, Inc. v. Surface Transp. Bd.* (*N. Plains*), 668 F.3d 1067, 1083 (9th Cir. 2011) (internal quotations omitted).

[87] *Carlucci*, 857 F.2d at 510.

[88] 1 SEIS App. E at E-14 tbl.16; 1 SEIS at 2-12.

[89] *Id*. at 3-15.

[90] *Id*.

[91] *Id*. at 3-10.

[92] *Id*. at 3-10 to -11.

[93] *Id.* at 3-11; JROD App. F at F-13–14.

critical information that should have been collected in a baseline assessment and considered in the prior EIS.[94]

The agencies previously approved the Ambler Road despite acknowledging that future baseline studies were needed to assess impacts to numerous resources. The agencies stated that "[g]eotechnical field studies and detailed thermal modeling would be completed" to identify the "presence, extent and stability" of permafrost, and that information would then be used to determine the project design and location in the future — after the agencies approved the rights-of-way and 404 permit.[95] The agencies also required AIDEA to identify rare plants at a later time.[96] For archaeological, historical, and cultural resources, the agencies relied on future baseline studies and surveys to determine the locations of those resources.[97] These information gaps have still not been addressed or filled during this remand process.

Further field studies are also still needed "to identify all streams and other aquatic habitats in the study area and to determine potential fish use."[98] Because of these information gaps, BLM has a mitigation measure to document fish and wildlife conditions prior to construction to establish a baseline.[99] However, doing that baseline study work after the fact is inconsistent with NEPA and does not allow for a meaningful analysis of alternatives and mitigation measures at this stage.

AIDEA is only now attempting to fill these significant data gaps — after the agencies conducted their initial NEPA review and issued their approvals — as evidenced by AIDEA's subsequent fieldwork proposals for its "pre-construction phase."[100] In AIDEA's 2021 fieldwork plan, AIDEA acknowledged it still needs to collect environmental, geologic, topographic, meteorological, hydrologic, biological, and cultural resources data to complete the project's engineering and design.[101] Similarly, in 2022 AIDEA again proposed to conduct a substantial fieldwork program for the purposes of gathering additional baseline data to inform the design of

[94] *See N. Plains*, 668 F.3d at 1083.

[95] JROD App. C at C-3; 3 FEIS App. Q at Q-11; 1 FEIS at 2-10; 1 FEIS at 3-5; 1 FEIS at 3-16 ("Locations of [gravel mines] and access roads should be chosen and designed based on site-specific geotechnical explorations …."); SEIS at 2-13.

[96] 3 FEIS App. N at N-25; 1 SEIS at 3-65.

[97] 1 FEIS at 3-160.

[98] 1 SEIS at 3-83; *see also* 1 FEIS at 3-67 (needing additional data collection to document all streams); *id.* at 3-80 (requiring additional surveys documenting fish presence); *id.* at 3-87 (stating AIDEA would collect additional information for the fen).

[99] 3 SEIS App. N at N-30.

[100] Pre-Construction Plan at 1–5.

[101] *Id.* at 1; *id*. at 2 (noting the number, locations, sizes, and footprints of gravel mines and their access roads are to-be-determined); *id.* (determining areas of thaw-sensitive permafrost); *id.* at 3 (describing fish habitat studies because "[m]ost of the rivers and streams within the easternmost 50 miles of the Project have little or no data regarding fish habitat and water quality, fish species present, or critical spawning areas"); *id.* at 2–3 (indicating AIDEA would obtain data necessary to design waterway crossings); *id.* at 4 (describing cultural resource studies because "[l]arge portions of the Project have not been inventoried").

the project. That program was slated to include additional cultural resource surveys; geotechnical investigations to determine subsurface conditions and soil characteristics along the alignment; surveys to assess the viability of material sites; hydrology investigations to assess drainage, culvert placement, and bridge design; stream studies at bridge sites, land surveying; surveys to analyze fish habitat, water quality, species presence, or critical spawning area data; and wetland investigations.[102] AIDEA also indicated it would be doing work to "[e]stablish project design criteria" and "advance preliminary engineering to 35% design."[103]

The agencies should not rely on post-EIS, future studies to satisfy their assessment of baseline conditions. The agencies either need to address these serious gaps as part of this remand and SEIS process or they need to disapprove AIDEA's permit application and adopt the no action alternative. The agencies should not prepare a final SEIS to evaluate the Ambler Road until studies like those described in AIDEA's fieldwork plans are completed and the agencies have sufficient baseline data and project design information to evaluate this project.

In the SEIS, BLM still relies on future, yet-to-be determined mitigation measures (such as the collection of additional information or future design work for the project) to downplay the impacts of the project and excuse the agencies' lack of baseline data at the outset. But such future mitigation or promises that the project will be designed in the future to account for yet-to-be collected data cannot excuse the lack of detailed baseline information and analysis. Mitigation measures, while necessary, were not alone sufficient to meet the BLM's NEPA obligations to determine the projected extent of the environmental harm to enumerated resources *before* this project is approved. Mitigation measures may help alleviate an impact *after* construction, but do not help to evaluate and understand the impact before construction. Baseline information before approval is required so that the agency "can understand the adverse environment effects *ab initio*."[104]

Further, the SEIS still fails to clearly identify where information is missing, as required by NEPA. For the purpose of evaluating significant impacts in the EIS, if there is incomplete information relevant to reasonably foreseeable significant adverse impacts and the information is "essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant," the information must be gathered and included in the EIS.[105] If information essential to reasoned choice is unavailable or if the costs of obtaining it are exorbitant (excessive or beyond reason), BLM must make a statement to this effect in the EIS. BLM must discuss what effect the missing information may have the agency's ability to predict impacts to the particular resource. If the information relevant to reasonably foreseeable significant adverse impacts cannot be obtained because the overall costs of obtaining it is exorbitant or the means to obtain it are not known, BLM must include within the EIS: (1) a statement that such information is incomplete or unavailable; (2) a statement of the relevance of the incomplete or unavailable information to

[102] AIDEA, PowerPoint Presentation re: Ambler Access Project Update (Mar. 17, 2022); AIDEA, Ambler Access Project: Draft 2022 Annual Work Plan (Feb. 2022) [hereinafter 2022 Field Work Plan].

[103] *Id*.

[104] *Gifford Pinchot Task Force v. Perez*, 2014 WL 3019165 (D. Or. 2014).

[105] 40 C.F.R. § 1502.22(a); *see also* 43 C.F.R. § 46.125.

evaluating reasonably foreseeable significant adverse impacts on the human environment; (3) a summary of existing credible scientific evidence which is relevant to evaluating the reasonably foreseeable significant adverse impacts on the human environment, and (4) the agency's evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community.[106] For the purposes of this section, "reasonably foreseeable" includes impacts that could 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.[107]

This requirement helps "insure the professional integrity, including scientific integrity, of the discussions and analyses" in an EIS.[108] It also ensures that the agency has necessary information before it makes a decision, preventing the agency from acting on "incomplete information, only to regret its decision after it is too late to correct."[109] "[T]he very purpose of NEPA's requirement that an EIS be prepared for all actions that may significantly affect the environment is to obviate the need for [] speculation by insuring that available data is gathered and analyzed prior to the implementation of the proposed action."[110] Accordingly, NEPA's missing information regulation "clearly contemplates original research if necessary."[111]

Groups previously identified a substantial amount of baseline data that was missing or out of date and that BLM needed to obtain and address before the agency could meaningfully evaluate and comply with DOI's numerous statutory mandates for permitting this project. Additional information is still required in many critical areas to fully evaluate the impacts of the proposed road and develop necessary mitigation measures and should be gathered prior to the agencies authorizing this project. These areas include, but are not limited to:

- Baseline air quality data for the project area;
- The anticipated amount of water required for construction, operation and maintenance of the project;
- A survey of cultural resources along the entire project route;
- Site-specific information on the full range of water resources that will be impacted, including information on water quality and water patterns (water inflows and outflows; base, flood, and peak flows; annual and seasonal cycles, and water temperatures for surface and groundwater) for all the rivers, streams, and wetlands;
- Site-specific baseline information on permafrost, soil conditions, groundwater flows, and other geotechnical information across the full length of the project;
- Site-specific information about fish species presence across the project area; and

[106] 40 C.F.R. § 1502.22.
[107] *Id.* § 1502.22(b).
[108] *Id.* § 1502.24.
[109] *Churchill Cnty. v. Norton*, 276 F.3d 1060, 1072–73 (9th Cir. 2001) (quoting *Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1216 (9th Cir. 1998)).
[110] Found. for N. Am. Wild Sheep v. U.S. Dep't of Agric., 681 F.2d 1172, 1179 (9th Cir. 1982).
[111] *Save Our Ecosystems v. Clark*, 747 F.2d 1240, 1249 (9th Cir. 1984).

- Site-specific information about the material sites that will be used for building the project.

In an attempt to justify its failure to obtain and analyze baseline date for potentially affected resources, the SEIS states for a number of affected resources that key baseline information is not essential to making a reasoned choice among alternatives. The SEIS made these statements and/or deferred or declined to obtain data for a broad range of resources, including but not limited to: asbestos (SEIS at 3-10); surface and groundwater resources and water quality (SEIS at 3-28); rare plants and ecosystems (SEIS at 3-65); fish data (SEIS at 3-99); birds and other wildlife species (SEIS at 3-113); caribou (SEIS at 3-125); moose (SEIS at 3-131); and bears (SEIS at 3-131 to -132). In the SEIS, BLM makes a generalized statement that:

> Where information was relevant and essential and the costs were not exorbitant, that information was collected (e.g., wetland delineation, updated engineering for Alternative C, economic analysis, etc.). As required by 40 CFR 1502.22, this EIS makes clear to the reader where information is lacking, explains the relevance of the information, and summarizes the existing credible scientific evidence that does exist and is relevant to evaluating reasonably foreseeable significant adverse impacts on the human environment.[112]

However, this is not the case for the many resource areas listed above and described in more detail below in our resource-specific comments. BLM cannot rely on conclusory statements to avoid the requirements of 40 C.F.R. § 1502.22. We also note that the SEIS eliminates Appendix R: Analysis of Data Availability per 40 CFR 1502.22, which was contained in the FEIS. This portion of the FEIS contained a nearly 40-page long table listing myriad data gaps about affected resources in the region.[113] It is unclear why BLM removed this appendix despite the fact that these data gaps have not been rectified from the prior process.

BLM cannot simply say, without any evidentiary support, that baseline data/analysis is not essential to making a reasoned choice among alternatives. Nor can BLM simply say that doing the required studies would be "exorbitant" without providing any cost figures or evidentiary support. BLM's position is that because the length of the Ambler Road, and the massive extent of its impacts, are so large, this somehow justifies the refusal to consider the baseline conditions (and impacts, as noted herein). Yet the fact that the impacts from the Road are so significant, and adversely affect so many critical resources, requires BLM to fully understand all of the environmental ramifications of the project — not use the massive size of the project as an excuse to limit its analysis.

The agencies' decisions to forego collecting this data as somehow being unnecessary are also directly contradicted by the decisions themselves and AIDEA's efforts to collect much of this information after-the-fact to further design the project. As noted above, AIDEA is only now trying to collect much of this information to inform what the project design will actually be and has acknowledged the project even now is far from fully designed. Even the rights-of-way from BLM and NPS require the submission of extensive amounts of additional information and a

[112] 1 SEIS at 3-3.
[113] 3 FEIS, App. R. at R-5 to -42.

complete plan of development at a later point in time since that information — which was actually essential to the agencies' ability to analyze this project — was missing. There simply was not enough baseline and project information to meaningfully inform the prior analysis, and the agencies never should have authorized this project without that key information. Because of these serious problems, the prior authorizations for this project should be rescinded and the agencies should require submission of a complete project application and baseline information prior to authorizing this project. If the agencies are not able to obtain that information at this point, they should adopt the no action alternative and rescind the prior authorizations to ensure they are not acting on incomplete information.

The lack of any analysis or detail about many of the supposed mitigation measures to protect these resources only further underscores how BLM arbitrarily dismissed the need for all this information at this stage. Many of these mitigation measures require additional information about the baseline and site-specific conditions of the project for their design and for an adequate analysis of whether they will be effective enough to prevent serious degradation.[114] BLM itself acknowledged the significant gaps in information about this project and how those gaps have created significant uncertainties about the project and its impacts.[115] The agencies should either obtain that missing project and baseline information at this stage to inform their analysis or adopt the no action alternative; the agencies should not wait until some unclear point in a future design/permitting phase to design the mitigation measures related to a slew of potential impacts and project elements, including permafrost mitigation measures, culverts, bridges, other measures to minimize aquatic and fish impacts, and more.[116] Because authorization of this project would constitute an irretrievable commitment of resources, BLM cannot defer obtaining this information, which is necessary to analyze the impacts of this project and to develop appropriate mitigation measures.

The agencies' prior failure to obtain baseline and project information that was clearly necessary to analyze the impacts of this project and inform potential project designs and mitigation measures was directly contrary to NEPA. That information was critical to ensure the agencies complied with all legal requirements, including the Corps' obligations under the CWA, minimized all adverse environmental impacts and impacts on subsistence uses as required by ANILCA Section 810, and was in the public interest under FLPMA and the CWA. On remand, the agencies should rescind the prior authorizations for this project in light of these significant deficiencies and should adopt the no action alternative since there is insufficient information on which to base a decision and comply with the law.

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[114] *See, e.g.*, 1 SEIS at 2-14, 3-12, 3-15 (indicating additional geotechnical information and studies during unspecified, later "design phases" would be needed to identify and avoid areas particularly sensitive to thaw settlement); *id*. 3-83 (indicating field studies would be necessary to identify all streams and aquatic habitats in the project area).

[115] *Id.* at 2-12.

[116] *See, e.g.*, *id*. at 2-12 to -19 (indicating for mitigation of impacts to water resources, groundwater, permafrost, fish, and multiple other resources that design features will be designed at a later time); 3 *id.* App. N at N-32.

IV. NPS STILL NEEDS TO ADDRESS THE PROBLEMS WITH ITS EAA AND RIGHT-OF-WAY AUTHORIZATION.

NPS acknowledged in its motion for remand that there were problems related to the subsistence analysis and suspended its own right-of-way authorization. However, it is still unclear if NPS plans to update the prior EEA to account for the analytical and other information gaps that are reflected in it. Because the problems with the prior process relate not only to problems with the subsistence analysis, but more deeply to the overall information and analysis of the project, NPS should reopen its EEA process, update its analysis to address problems with the prior decision, and ensure it is acting on complete information about this project.

The EEA suffers from many of the same problems as the EIS. NPS is not exempt from having to comply with the requirements of Title XI of ANILCA, as well as the statutory provisions specific to any right-of-way that might be granted across Gates of the Arctic.[117] Those provisions require NPS analyze the environmental, social, and economic impact of the right-of-way, including the impact on wildlife, fish, and their habitat, and rural and traditional lifestyles including subsistence activities, as well as measures that should be instituted to avoid or minimize negative impacts and enhance positive impacts.[118] Despite that, the EEA failed to adequately address a wide range of impacts or ways to minimize those impacts, including but not limited to impacts to caribou and other wildlife, fish, wetlands and water resources, subsistence, cultural and archaeological resources, and recreation. Contrary to ANILCA, the EEA also failed to include a robust economic analysis that also accounts for socioeconomic harms to the communities.

NPS also failed to include adequate terms and conditions in the right-of-way across Gates of the Arctic, in violation of ANILCA. The lack of project design or other baseline information adequate to support a decision is reflected on the face of the right-of-way. NPS failed to incorporate requirements designed to prevent damage to the environment, "including the minimum necessary width."[119] In the right-of-way, NPS indicated that AIDEA is still "in the pre-construction stage of the project, with field studies, engineering, and design to be undertaken next."[120] Because AIDEA had yet to identify the actual location of the road corridor, NPS authorized a "Conceptual Alignment," which it defined as a 250- to 400-foot corridor.[121] NPS indicated the constructed road corridor would be 100 feet wide and located somewhere within the Conceptual Alignment.[122] NPS also authorized all three phases of the road,[123] despite AIDEA's amended Corps application that removed Phase III to reduce impacts.[124]

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[117] 16 U.S.C. § 410hh(4)(a); 16 U.S.C. § 3164.
[118] *Id.* § 410hh(4)(a).
[119] *Id.* § 3167(a)(4).
[120] NPS ROW at 2.
[121] *Id.*; EEA ROD at 5
[122] NPS ROW at 2.
[123] *Id.* at 3–4.
[124] Alaska Industrial Dev. & Export Auth., U.S. Army Corps of Engineers Application for Dep't of the Army Permit (Jan. 5, 2020) [hereinafter Revised 404 Permit Application].

NPS's authorization of an extremely wide "conceptual" right-of-way corridor did not meet ANILCA's requirement for the agency to issue rights-of-way for the minimum necessary width. As written, the right-of-way provides AIDEA with an open-ended pass to determine and modify the location of the road within a broad area and without the agency ensuring in advance that it has only authorized the minimum necessary width. It is unclear how NPS determined the Conceptual Alignment corridor was the minimum footprint or was sufficient to protect resources when AIDEA has yet to do the field work to identify the road location and project design. The fact that the Corps only authorized Phase II of the project indicates that NPS should have also only authorized Phase II — and therefore potentially a narrower and less impactful right-of-way.[125] NPS's failure to incorporate requirements to minimize the footprint of the right-of-way and impacts on Gates of the Arctic is contrary to ANILCA.

NPS also failed to incorporate adequate terms more broadly into the right-of-way to control or prevent damage to the environment or ensure the right-of-way would be compatible with the purposes of Gates of the Arctic "to the maximum extent feasible."[126] Gates of the Arctic's purposes include maintaining wilderness values, providing for continuing recreation opportunities, and protecting habitat for fish and wildlife.[127] Rather than incorporating adequate terms in the right-of-way to protect these purposes, NPS included an open-ended provision for AIDEA to complete its plan of development for each phase, and provide information for at least 27 subject areas, at a later point in time.[128] The right-of-way stated AIDEA would need to submit plans for construction, operation, maintenance, and termination of the right-of-way and related facilities for each road phase after right-of-way issuance.[129] This illustrates AIDEA had yet to complete its project designs or gather baseline information for permafrost, stream crossings, asbestos, air quality, and more.[130] The right-of-way also only requires AIDEA to "take reasonable efforts" to ensure facilities are built and operated in a way that protects scenic, cultural, fish, and wildlife values.[131]

Listing future plans and calling them "terms and conditions" does not satisfy ANILCA's requirement that NPS include enforceable terms and conditions in its right-of-way for restoration and reclamation, to ensure activities will not violate air and water quality standards, or to ensure the protection of the environment and Gates of the Arctic's purposes.[132] ANILCA does not mandate NPS grant unfettered access across Gates of the Arctic — far from it, NPS is required to put in place terms and conditions that ensure the protection of the Preserve. NPS should rescind the right-of-way authorization, ensure it has adequate information about the project to analyze the impacts and necessary mitigation measures, and redo the EEA and its analysis prior to

[125] *See* 16 U.S.C. § 3161(c) (explaining intent "to minimize adverse impacts" of siting TSUs).

[126] *Id.* § 3167.

[127] ANILCA § 201(4)(a).

[128] NPS ROW, Ex. C at 7.

[129] *Id.*

[130] *Id.*; *cf. Or. Nat. Desert Ass'n v. Jewell*, 840 F.3d 562, 571 (9th Cir. 2016) (stating agency could not do analysis without baseline information).

[131] NPS ROW, Ex. C at 4.

[132] 16 U.S.C. § 3167.

making a new decision. Absent that, NPS should not approve the right-of-way authorization across Gates of the Arctic.

V. THE PROPOSED AMBLER ROAD DOES NOT ADVANCE U.S. MINERAL INDEPENDENCE OR RESOLVE DOMESTIC SUPPLY CHAIN ISSUES.

Although the road proponents have repeatedly touted the Ambler Road as necessary to access extensive critical minerals for domestic supply chain needs,[133] the mineral resource reports and economic feasibility studies associated with the major mineral deposits in the Ambler District dispel these claims. There are currently no mining operations in the Ambler District. There are four major mineral deposits in the Ambler District (Arctic, Bornite, Sun and Smucker), and all of these deposits are in various stages of exploration.[134] None of the companies have submitted an application to mine, and an economic feasibility study has been completed for only one of the four deposits: the Arctic Deposit.[135]

In terms of the minerals that are present in the Ambler Mining District, copper has been identified in several deposits, but copper is not a critical mineral.[136] In May 2023, the U.S. Geological Survey (USGS) reaffirmed that copper is not a critical mineral, stating that, "[t]he U.S. has significant domestic copper production and a diversity of foreign supply sources," and "[t]he United States supplied about a third of its domestic copper consumption requirements from recycling in 2022, a good example of the potential for secondary production to mitigate supply chain risks."[137]

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[133] AIDEA, Press Release: AIDEA Statement on Bureau of Land Management Suspension for Ambler Access Project Right-of-Way on Federal Land" (Mar. 11, 2022), https://www.aidea.org/Portals/0/PressReleases/AIDEA%20AAP%20ROW%20Suspension_final.pdf?ver=4DsJzFIy6cQhlIZFi5Kjjw%3d%3d; AIDEA, Public Notice: Helicopter Landing Zone Preparation (2022), https://ambleraccess.org/Portals/ambler/20220510_AAP_HelicopterLZs_Eblast.pdf.

[134] Michael Gustin, Mine Development Assoc., Technical Report on the Sun Project; Brooks Range, Alaska, USA (2022), https://valhallametals.com/wp-content/uploads/2023/06/Sun_43-101_2022_v2.pdf; Press Release: Valhalla Metals Initiates Maiden Drill Program at Flagship Sun Project in Alaska (July 19, 2023), https://www.juniorminingnetwork.com/junior-miner-news/press-releases/1077-tsx-venture/vmxx/145138-valhalla-metals-initiates-maiden-drill-program-at-its-flagship-sun-project.html.

[135] AUSENCO ENGINEERING CANADA, INC., ARCTIC PROJECT: NI-43-101 TECHNICAL REPORT AND FEASIBILITY STUDY (Jan. 20, 2023) [hereinafter Arctic Technical Report], *available at* https://trilogymetals.com/site/assets/files/6136/arctic_ni_43-101.pdf. It identifies probable mineral reserves, but no proven mineral reserves.

[136] U.S. Dep't of the Interior, U.S. Geological Survey, National News Release: US Geological Survey Releases 2022 List of Critical Minerals (Feb. 22, 2022), *available at* https://www.usgs.gov/news/national-news-release/us-geological-survey-releases-2022-list-critical- minerals.

[137] David Applegate, Dir., U.S. Geological Survey, Letter to the Honorable Kyrsten Sinema re Copper as a Critical Mineral (Apr. 13, 2023), *available at*

Cobalt is a critical mineral, but it has been identified in just one deposit, the Bornite deposit. There is no proven economic deposit of cobalt at Bornite. In fact, the company's 2023 technical report removed cobalt from the mineral resource estimate altogether.[138] The only mineral resource identified at the Bornite deposit is copper, and it is an "inferred" resource,[139] meaning that the grade and size of the deposit is estimated on the basis of limited geological evidence and sampling. Because an inferred resource has the "lowest level of geological confidence" an inferred mineral resource "may not be considered when assessing the economic viability of a mining project."[140]

The mining company recently announced the *potential* for germanium as a by-product at the Bornite deposit.[141] Once again, this is highly uncertain. Germanium is not identified as mineral resource at Bornite,[142] and no economic feasibility studies have been completed to demonstrate that the Bornite deposit is economic to develop.

Zinc is a critical mineral that has been identified in the Ambler District in the Arctic and Sun deposits. However, the Arctic deposit is the only deposit that has completed an economic feasibility report. If the Arctic deposit were permitted for development, the feasibility study predicts that it would be in production for just 13 years.[143] More importantly, the feasibility study states that the ore concentrate will be shipped out of the U.S. to be sold for refining in the Pacific Asia region.[144] This does nothing to ensure U.S. mineral independence or resolve domestic supply chain issues because once the concentrate is sold to a foreign refinery, there is no guarantee that the refined product will be sold back to the U.S. for manufacturing purposes.

Because of the uncertainty and questionable basis for any of the claims that these mines would be a source of critical minerals, this administration should not advance this project on that

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https://subscriber.politicopro.com/eenews/f/eenews/?id=00000188-4953-d998-ab8f-fb5f223b0000.

[138] The company's technical report states, "The proposed operations will produce copper, zinc and lead concentrates from the Arctic deposit on site, which will then be transported to be sold in the Asia Pacific area." *See* Arctic Technical Report, *supra*.

[139] WOOD CANADA LTD., TECHNICAL REPORT SUMMARY ON THE INITIAL ASSESSMENT OF THE BORNITE MINERAL RESOURCE, NORTHWEST ALASKA, ON BEHALF OF TRILOGY METALS, INC. (Jan. 26, 2023) [hereinafter 2023 Bornite Report], *available at* https://trilogymetals.com/site/assets/files/6056/bornite_s-k_1300.pdf.

[140] PR Newswire, Trilogy Metals Announces Potential for By-product Germanium at the Bornite Cobalt Project, Alaska" (Sept. 7, 2023), https://www.prnewswire.com/news-releases/trilogy-metals-announces-potential-for-by-product-germanium-at-the-bornite-copper-cobalt-project-alaska-301919948.html.

[141] *Id.*

[142] 2023 Bornite Report, *supra*.

[143] Arctic Technical Report, *supra*.

[144] *Id.* The technical report states, "The proposed operations will produce copper, zinc and lead concentrates from the Arctic deposit on site, which will then be transported to be sold in the Asia Pacific area." *Id.*

basis. This is especially true when taking into account the legal problems with the project and the broad range of significant impacts that would cascade across the region from the Road and mines moving forward. This project is simply not in the public interest.

VI. THE SEIS STILL FAILS TO COMPLY WITH NEPA.

NEPA is "our basic national charter for protection of the environment."[145] NEPA's analysis and disclosure goals are two-fold: (1) to ensure informed agency decision making, and (2) to ensure public involvement.[146] NEPA requires that federal agencies prepare a detailed EIS for any major Federal action that may significantly affect the quality of the human environment.[147] By focusing the agency's attention on the environmental consequences of its proposed action, NEPA "ensures that important effects will not be overlooked or underestimated only to be discovered after resources have been committed or the die otherwise cast."[148] NEPA "is not designed to postpone analysis of an environmental consequence to the last possible moment"; it is "designed to require such analysis as soon as it can reasonably be done."[149]

BLM and the Corps failed to comply with NEPA in multiple respects in the prior decision-making process and many of these issues have not been corrected in the SEIS. As discussed above, BLM and the Corps still lack the site-specific information about the project and the baseline conditions necessary for the agencies to engage in a meaningful site-specific review of the impacts and any potential mitigation measures. The agencies need to obtain that information prior to making any new decisions. There are also other major problems with the NEPA analyses to date, including the agencies' failure to conduct a site-specific analysis of the Ambler Road's impacts; failure to consider a reasonable range of alternatives; failure to consider connected actions; failure to adequately analyze the project's direct, indirect and cumulative impacts; and failure to properly evaluate mitigation measures.

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[145] 40 C.F.R. § 1500.1(a).

[146] *Robertson*, 490 U.S. at 349.

[147] 42 U.S.C. § 4332; 40 C.F.R. § 1508.18(b)(4). It is unclear what NEPA regulations BLM is applying to this SEIS process. Consistent with Secretarial Order No. 3399, BLM should apply the 1978 Council on Environmental Quality (CEQ) NEPA regulations and the Department of the Interior's 2008 NEPA regulations at 43 C.F.R. part 46 to the SEIS because it represents an ongoing activity begun before the effective date of the 2020 CEQ NEPA regulations. While CEQ has finalized its "Phase 1" NEPA rule restoring certain elements of the 1978 regulations and issued a proposed "Phase 2" rule that will, if finalized, make further changes to the NEPA regulations, including restoring additional elements of the 1978 regulations, retaining certain elements of the 2020 regulations, and implementing the Fiscal Responsibility Act's amendments to NEPA, these actions should not impact this particular SEIS process. 87 Fed. Reg. 23453 (April 20, 2022); 88 Fed. Reg. 49924 (July 31, 2023). The final SEIS should clarify that BLM is applying the 1978 regulations, as well as the 2008 departmental regulations that remain in full force and effect. For purposes of these comments, citations are to the 1978 CEQ regulations.

[148] See also Marsh v. Or. Nat. Res. Council, 490 U.S. 360, 371 (1989).

[149] *Kern v. U.S. Bureau of Land Mgmt.*, 284 F.3d 1062, 1072 (9th Cir. 2002).

A. BLM Failed to Conduct an Adequate Site-Specific Evaluation of This Project.

NEPA emphasizes "coherent and comprehensive up-front environmental analysis to ensure informed decision making" and that "the agency will not act on incomplete information, only to regret its decision after it is too late to correct."[150] NEPA requires that agencies evaluate the environmental consequences of a project at an early stage of the planning process.[151] While agencies can "defer detailed analysis until a concrete development proposal crystallizes the dimensions of a project's probable environmental consequences,"[152] agencies are required to undertake site-specific analysis prior to making an irretrievable commitment of resources. There are some contexts, such as planning processes, where an agency may be able to do a programmatic-level analysis and defer conducting a site-specific analysis; however, the agency cannot do that it is going to make an irretrievable commitment of resources. As the Ninth Circuit explained, the key inquiry is not "*whether* the project's site-specific impact should be evaluated in detail, but *when* such detailed evaluation should occur."[153] Agencies are required to fully evaluate site-specific impacts once "a critical decision has been made to act on site development."[154] An agency reaches the threshold triggering site-specific review when it "proposes to make an irreversible and irretrievable commitment of the availability of resources to a project at a particular site."[155]

The SEIS acknowledges that the decisions on this project will constitute an irretrievable commitment of resources.[156] Despite that, the agencies failed to conduct a site-specific analysis of the impacts of this project prior to granting the rights-of-way and the CWA 404 permit. As discussed throughout these comments, BLM did not previously identify or address the significant gaps in baseline information about the region; did not have complete information about the design and plan of construction for this project; did not analyze with any level of specificity the full range of impacts this project will have on land, water, wildlife, subsistence, recreation, or other values; did not analyzed a reasonable range of alternatives; and did not adequately evaluate mitigation measures for this project.

Rather than engaging in a meaningful site-specific analysis of the project impacts and potential mitigation measures, the SEIS still appears to endorse waiting until an unspecified, future "design/permitting phase" to develop many of the mitigation measures for this project.[157]

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[150] *Blue Mountains Biodiversity Project*, 161 F.3d at 1216 (quoting *Marsh*, 490 U.S. at 371).

[151] *Id.*

[152] *Block*, 690 F.2d at 761.

[153] *Id.* (emphasis added).

[154] *Friends of Yosemite Valley v. Norton*, 348 F.3d 789, 800 (9th Cir. 2003) (quoting *N. Alaska Envtl. Ctr. v. Lujan* (*NAEC*), 961 F.2d 886, 890–91 (9th Cir. 1992)); *State of Cal. v. Block*, 690 F.2d 753, 761 (9th Cir. 1982) ("The standards normally applied to assess an EIS require further refinement when a largely programmatic EIS is reviewed.").

[155] *Block*, 690 F.2d at 761.

[156] 1 SEIS at 3-252.

[157] *See, e.g.*, *id.* at 2-12 to -19; 3 *id.* at App. N at N-32.

The rights-of-way themselves reflect the substantial site-specific information gaps the agencies did not address prior to approving this project. BLM's right-of-way requires the submission of a broad range of baseline and project design information at a future point in time since so much information was not previously provided as part of the permitting process.[158] Allowing AIDEA to complete its plan of development and submit information on key resources and design elements at an unspecified later point in time is contrary to FLPMA.[159]

BLM and the other agencies never should have approved this project without conducting a site-specific analysis. The prior EIS is not sufficient to support BLM's or any other agencies' NEPA obligations for this proposal. Because BLM is still lacking sufficient information to conduct a site-specific analysis and because of the substantial gaps in AIDEA's application, baseline information, and other information, BLM and the other agencies should rescind the prior authorizations and adopt the no action alternative.

B. The Purpose and Need Statement Is Inconsistent and Incomplete.

BLM should not limit its consideration of alternatives based on an arbitrarily set purpose and need statement. An EIS must provide a description of the underlying need and purpose to which the agency is responding in proposing the alternatives and the proposed action.[160] The final EIS stated that "[t]he purpose of the BLM action is to issue a right-of-way grant which provides for: (1) technically and economically practical and feasible year-round industrial surface transportation access in support of mining exploration and development, and (2) construction, operation, and maintenance of facilities associated with that access."[161] The draft SEIS states that BLM made no substantive changes to this purpose and need, but the current purpose and need statement simply say that BLM's purpose is to respond to a ROW application under FLPMA "for year-round industrial surface transportation access across BLM-managed lands to the District."[162] The SEIS further states that the Corps purpose is "to provide year-round surface transportation access for mining exploration and development in the Ambler Mining District."[163] There are several issues with the statement as currently drafted, namely that BLM appears to have made several substantive changes and the agencies' statements are not aligned. Moreover, the purpose and need statement remains unreasonably narrow.

BLM removed "economically practical" as a requirement for its decision. This is proper, as there is no requirement under NEPA or FLPMA that a federal action to issue a right-of-way expressly consider economic practicability. The requirements for BLM under FLPMA are clear: BLM must not issue a ROW that will do unnecessary damage to the environment.[164] CEQ states that "[r]easonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint

[158] *See* BLM ROW.
[159] *Id.* at ex. A at 6–7.
[160] 40 C.F.R. § 1502.13.
[161] 1 FEIS at 1-3.
[162] 1 SEIS at 1-5.
[163] *Id*.
[164] *See generally* 43 U.S.C. § 1764 (1996).

of the applicant."[165] While economics are a consideration in the alternatives analysis, it should not be the main driver behind the BLM's purpose and need statement. Therefore, by removing economic practicability, the purpose and need statement better complies with applicable legal requirements. However, BLM's range of alternatives has not shifted from the final SEIS to account for such a change in the purpose and need statement. By having a purpose and need that was so focused toward economic factors, BLM may have previously rejected reasonable alternatives that are more protective of the environment because they are less economically desirable to the applicant. BLM should have reconsidered all potential alternatives that it previously eliminated to give effect to the SEIS's purpose and need statement.

Similarly, it is appropriate that BLM removed "facilities" associated with access to the Ambler Mining District from its purpose and need statement for its right-of-way. But again, BLM's analysis has not shifted to account for this change in the purpose and need and it is unclear precisely what BLM is authorizing at this stage. As discussed in more detail below, BLM has independent legal obligations for any authorizations of gravel mines, which are part of the facilities for this project and should be analyzed in the SEIS as connected actions. Despite that, it is unclear if BLM is considering authorizing associated facilities as part of this authorization; that should be express and clarified in the final SEIS.

BLM also removed "exploration" as a purpose of its right-of-way grant. This is also an appropriate change, given that exploration has occurred in the District for years without the need for a permanent road. Moreover, the justification for the Ambler Road — and its purported economic benefits — is development of minerals in the District, not to simply make additional exploration more cost-effective for industry. It is therefore troubling that the Corps' purpose still includes exploration. The agencies must be consistent in determining their purposes in the joint SEIS.

In sum, there are at least three substantive changes in the purpose and need statement from the final EIS, and BLM should clarify that for the sake of transparency, as well as explain whether and how the updated purpose and need statement altered its consideration of alternatives.

As a separate matter, there is no reason why access to the Ambler mining district must be "year-round industrial surface transportation." This purpose and need statement needlessly precludes access via ice road, aircraft or barge, which might otherwise be reasonable and less environmentally damaging. Indeed, the SEIS fails to consider any alternative other than a gravel road extending east from the Ambler Mining District, constructed in two or three phases. The SEIS should have included a broader purpose and need to allow the agency to consider other means of access to the Ambler Mining District for purposes of development. Further, we note that it is not clear how AIDEA's proposed action — to build and maintain a *seasonal* pioneer road for an indeterminate amount of time prior to constructing Phase III — can meet BLM's purpose and need for "year-round industrial surface transportation access."

[165] Forty Most Asked Questions.

BLM's failure to properly define the Ambler road's purpose and need necessarily precludes consideration of a reasonable range of alternatives. The SEIS must give "full and meaningful consideration to all reasonable alternatives" to the action.[166] The alternatives considered should not be entirely driven by AIDEA's preferences.[167] BLM must use its independent judgment to define the purpose and need for the project and should not limit its consideration of alternatives based on an arbitrarily set purpose and need statement. This requires BLM to critically evaluate the purpose and need.[168]

BLM should recraft its purpose and need statement in the SEIS to more closely reflect the requirements under FLPMA and NEPA, to ensure that it does not rule out potential alternatives or important mitigation measures based on an overly restrictive purpose and need statement, and to ensure consistency with the Corps.

C. BLM's Alternatives Analysis Is Inadequate.

The SEIS fails to meet BLM's legal obligation — and NEPA's core mandate — to study reasonable alternatives in depth and disclose the environmental consequences of those alternatives to AIDEA's preferred course of action. NEPA requires that an EIS include "alternatives to the proposed action."[169] The analysis of alternatives is the "heart" of an EIS.[170] An agency must "[r]igorously explore and objectively evaluate all reasonable alternatives" to a proposed action.[171] The purpose of the alternatives requirement is to analyze a variety of impacts and present a range of choices to the decision maker.[172] The "touchstone" of the inquiry is "whether an EIS's selection and discussion of alternatives fosters informed decision-making and informed public participation."[173] Accordingly, an EIS must include an evaluation of "all reasonable alternatives" and provide the decision maker with a "range of alternatives" from which to choose.[174] Consistent with NEPA's basic policy objective to protect the environment, this includes more environmentally protective alternatives.[175] It also includes reasonable

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[166] 42 U.S.C. § 4332(2)(E); 40 C.F.R. § 1508.9(b).

[167] *See* Forty Most Asked Questions, at Question 2a. ("[T]he emphasis is on what is 'reasonable' rather than on whether the proponent or applicant likes or is itself capable of carrying out the particular alternative.").

[168] *See Friends of the Earth v. Hintz*, 800 F.2d 822, 835–36 (9th Cir. 1986) (recognizing the agency must rely on information provided by the applicant but must not do so "uncritically").

[169] 42 U.S.C. § 4332(2)(C)(iii).

[170] 40 C.F.R. § 1502.14.

[171] *Id*. § 1502.14(a).

[172] *Id*. §§ 1502.14, 1505.1(e).

[173] *Block*, 690 F.2d at 767 (citation omitted).

[174] 40 C.F.R. §§ 1502.14(a), 1505.1(e).

[175] *Id*. § 1500.2(e) (agencies must "[u]se the NEPA process to identify and assess reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment"); *see also, e.g.*, *Kootenai Tribe of Idaho*, 313 F.3d at 1121-22 (citing cases), *abrogated on other grounds by The Wilderness Soc'y v. U.S. Forest Serv.*, 630 F.3d 1173, 1178-80 (9th Cir. 2011) (en banc).

alternatives submitted by the public at scoping.[176] "The existence of a viable but unexamined alternative renders an [EIS] inadequate."[177] In defining what is a "reasonable" range of alternatives, NEPA requires consideration of alternatives "that are practical or feasible" and not just "whether the proponent or applicant likes or is itself capable of carrying out a particular alternative"; in fact, "[a]n alternative that is outside the legal jurisdiction of the lead agency must still be analyzed in the EIS if it is reasonable."[178]

The range of alternatives in the final EIS was inadequate, and the SEIS repeats the same errors. The SEIS's range of reasonable and practicable alternatives includes the no action alternative and three action alternatives. However, the action alternatives only differ on the specific route for the road. All three alternatives are simply versions of where to lay gravel in order to connect the Ambler Mining District to the Dalton Highway. Two alternatives provide for a nearly identical road route, with the only difference being where the road passes through Gates of the Arctic. Alternative C, the diagonal route to the Elliott Highway, would extend from the Elliott Highway and would head northwest toward Hughes, Hogatza, and Kobuk and enter the Ambler Mining District from the south. No alternative considers rail, air, or water transport options or routes that would not ultimately connect to the Dalton Highway.

As threshold matter, BLM acknowledges uncertainties regarding the alternatives because there are no on-the-ground surveys, and therefore the layout, staging, and sequencing of construction activities, as well as information regarding permafrost conditions, river crossing conditions, material sources and availability, soil conditions, and road reclamation and the associated harms remain unknown.[179] BLM does not explain how it could meaningfully consider a reasonable range of alternatives given that AIDEA has not adequately designed the project or explained its construction plans, nor gathered adequate baseline information. Due to this lack of basic information, BLM's alternative development process is fatally flawed and the only defensible option it can select is the no action alternative.

As explained in the sections below, BLM used its "screening process" to improperly eliminate alternatives in advance of doing an adequate NEPA analysis. BLM improperly relied on the Alternatives Memo as part of the SEIS remand process and should have started from scratch. Additionally, BLM's inclusion of a "combined phasing option" alternative does not cure its failure to consider a reasonable range of alternatives, and its approach to this alternative raises more analytical questions than it answers. Further, BLM fails to consider a number of reasonable options raised by the public in scoping comments, including a proposed tribal alternative, and should include a broader consideration of alternatives in the SEIS. Finally, because the description of the no action alternative does adequately characterize the environmental baseline for comparison, there is no meaningful comparison point for evaluating the action alternatives. BLM failed to comply with its legal obligations under NEPA to consider a reasonable range of

[176] *See* 40 C.F.R. §§ 1501.7, 1502.1.

[177] *Mont. Wilderness Ass'n*, 725 F.3d at 1004 (quotations and citation omitted).

[178] Forty Most Asked Questions, at Questions 2A, 2B; *see also* 40 C.F.R. §§ 1502.14, 1506.2(d).

[179] 1 SEIS at 2-12.

alternatives in the SEIS and failed to address the prior deficiencies with its alternative analysis as part of this remand process.

1. BLM's Alternatives Screening Process Was Flawed.

BLM asserts that it reconsidered the environmental tradeoffs of the various alternatives as part of a new screening process during the remand, but rejected the alternatives proposed in the original EIS because BLM's prior screening EIS remains valid.[180] It is clear from BLM's Alternatives Memo that the agency improperly weighed the costs to the applicant, and thus avoided consideration of alternatives that may be less environmentally damaging.[181] While BLM touts its new screening process in the SEIS and claims it re-examined alternatives, the agency states in the Alternatives Memo that it retained all of its prior screening criteria from the earlier EIS process, so it is unclear how deep or meaningful that re-analysis actually was.[182]

As noted above, the project purpose cannot be defined in a manner that "unduly restrict[s] a reasonable search for potential practicable alternatives."[183] Because the agencies previously defined the purpose for this project too narrowly, the range of alternatives unduly restricted the agencies' consideration of other potential reasonable and practicable alternatives. Despite removing economic feasibility from its purpose and need statement, BLM retained it for purposes of screening alternatives in the SEIS.[184] By restricting its consideration of alternatives to only those that AIDEA would consider "economically practicable," BLM improperly eliminated alternatives that should have been analyzed. This is especially alarming given the flaws in the cost projections for AIDEA's Proposed Route. AIDEA's cost estimates for even its preferred alternative have been highly misleading and have been skewed in favor of that preference, as discussed later in these comments. Thus, BLM should have taken a broader view of what alternatives are practicable to ensure it was considering a range of options with the potential to reduce this project's impacts. The agency's failure to do so violates NEPA.

In the original decision-making process and again in the SEIS, BLM failed to adequately consider alternatives to AIDEA's proposed routes and instead relied on outdated alternatives considered by the Alaska Department of Transportation and Public Facilities (DOT&PF)

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[180] 1 SEIS at 2-4.

[181] *See generally* 2 *id.* App. G. ("U.S. DOI BLM, Ambler Road Environmental Impact Statement Alternatives Development Memorandum," revised 2023).

[182] "The screening criteria used for the Draft EIS were discussed during the cooperating agencies' alternatives development workshop in May 2023, and no new information or changed circumstances warranted changes to the existing screening criteria were identified. Therefore, these screening criteria remain valid for the Supplemental EIS." *Id.* at G-6.

[183] *See Sierra Club v. Flowers*, 423 F. Supp. 2d 1273, 1353 (S.D. Fla. 2006) (citing *Old Cutler Bay* Permit 404(q) Elevation (Sept. 13, 1990)); *Sylvester v. U.S. Army Corps of Eng'rs*, 882 F.2d 407, 409 (9th Cir. 1989) ("[A]n applicant cannot define a project in order to preclude the existence of any alternative sites and thus make what is practicable appear impracticable.").

[184] 2 SEIS App. G at G-5.

conducted in approximately 2011.[185] Alaska DOT&PF had examined multiple routes (corridors) before the project was transferred to AIDEA.[186] This work consisted of identifying corridors, but BLM does not provide any information on the process DOT&PF undertook to evaluate the environmental trade-offs of these routes. The alternatives DOT&PF examined, as described in BLM's Alternatives Memo, were the following:

- Original Brooks East Corridor – Road
- Kanuti Flats Corridor – Road
- Elliott Highway Corridor – Road
- Parks Highway Railroad Corridor – Rail
- Delong Mountain Transportation System Port Corridor – Road or Rail
- Cape Blossom Corridor – Road or Rail
- Selawik Flats Corridor – Road or Rail
- Cape Darby Corridor – Road or Rail[187]

To the extent BLM "reconsidered" and rejected the Selawik Flats Corridor option for a western route to Nome, its reasoning is largely conclusory.[188] BLM explains it rejected any alternative other than an eastbound road towards the Dalton Highway because of environmental impacts, especially to subsistence resources, caribou, and marine mammals, as well as high cost and practicality concerns.[189] BLM also stated that "it was determined there was no need to carry a variation forward as a separate alternative for analysis because the suggested routing was substantially similar to the Selawik and Cape Darby routes."[190] But as explained throughout these comments, BLM lacks sufficient data to assess impacts to subsistence and wildlife, and to establish the practicability of any road route, including AIDEA's proposed route. BLM's elimination of any westbound route led to the agencies considering three action alternatives that are nearly the same.

To be clear, BLM has insufficient information to screen out these alternatives at this stage. In particular, the Alternatives Memo expressly states that "[a]vailable wetlands data was reviewed and determined by the BLM and the Corps to be insufficient for screening purposes due to its coarseness and inaccuracy."[191] It is not clear how BLM was able to weigh the environmental tradeoffs of these potential alternatives in the absence of data that would have been critical to evaluate the wetland impacts. This also raises questions as to whether any of the alternatives considered in the SEIS can qualify as the Least Environmentally Damaging Practicable Alternative for purposes of the Corps' 404 permit, discussed further below.

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[185] *Id*. at G-13.
[186] *Id*.
[187] *Id*.
[188] 1 SEIS at 2-5; 2 *id.* App. G at G-37.
[189] 1 *id.* at 2-5 to -6; 2 *id.* App. G at G-37.
[190] 2 *id.* at G-37.
[191] *Id.* at G-24 n.5.

2. *BLM's "Combined Phasing Alternative" Is Not Sufficiently Explained or Analyzed.*

BLM appropriately added an alternative component that would require AIDEA to build the road to Phase II at the outset. While this is an improvement, several problems remain with the SEIS's analysis regarding phased construction of the Ambler Road.

Groups previously asked BLM to require AIDEA to construct the road in one phase instead of three or otherwise limit the scale of the road that would be authorized, e.g., by eliminating Phase III in its entirety, as the Corps did in its decision. Eliminating Phase III entirely is a viable option that was included in AIDEA's revised permit application submitted to only the Corps — indicating it is a viable option for consideration in the SEIS. It is deeply confusing that BLM failed to consider an alternative that only allows for the construction of what is now Phase II of the Ambler Road, given the Corps' 404 permit that remains in place. AIDEA should have submitted new, consistent applications to all of the agencies, as required by ANILCA, and clarified that it is only seeking to construct the project to Phase II standards.

Relatedly, BLM points to the Corps' permit requirement regarding construction to Phase II standards in thaw-sensitive permafrost to downplay the extent to which this "combined phasing" alternatives would reduce impacts. The SEIS states that "[t]he difference between the USACE's special condition and the combining of Phases 1 and 2 as proposed is that combining Phases 1 and 2 would apply to the entire route and would not be limited to areas with thaw-sensitive permafrost soils or emergent wetlands."[192] In the SEIS's impacts analysis, BLM presumes that the majority of the route would have already been subject to the Corps' permafrost-related conditions, such that construction of only 40% of the road route would change under this alternative.[193] But as the SEIS admits, there is limited information available to justify this assumption, noting that "as additional studies are completed during future design *phases to identify areas with high risk of permafrost degradation*, additional design measures would be incorporated."[194] Without information regarding thaw-sensitive permafrost, the agencies cannot presume that this alternative would have functionally applied for the majority of the road route, absent BLM considering it and selecting it in a ROD. Assuming it would functionally apply is also not the same as actually requiring it apply across the length of the road.

Further, the SEIS's analysis appears to focus on the negative impacts of construction of Phase II for some resources,[195] or otherwise provides only cursory and conclusory statements regarding the difference in impacts for this alternative.[196] But AIDEA's proposal to build and

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[192] *Id.* at G-19.

[193] "Approximately 60 percent of the Alternative A alignment is estimated to be in in areas with thaw-sensitive permafrost soils or emergent wetlands, so the combined phasing option would be directly applicable to the remaining 40 percent of the alignment." 1 *id.* at 3-42.

[194] *Id*. at 2-14 (emphasis added).

[195] *Id*. at 3-43.

[196] "The combined phasing option would shorten the construction time period and lessen the construction-related impacts. Initial construction of the road to Phase 2 standards (e.g., increased embankment depth) would reduce indirect impacts to vegetation and wetlands by

operate a pioneer road would likely have significant environmental impacts that could be avoided only by requiring AIDEA to fully build out the road in one stage instead of two or three progressively larger phases. The seasonal nature of the pioneer road, which is likely to be highly susceptible to annual flooding and other degradation problems, will have major impacts to hydrological systems in the area. Changes to the road width and maintenance to account for AIDEA's phased approach could have severe adverse impacts to the hydrology of the region and thus significantly degrade the environment.[197] AIDEA has not clarified how long it intends to leave the pioneer road in place, which could lead to long-term use of a seasonal, insulation-free gravel road, and associated dust impacts and permafrost degradation, across a vast, environmentally sensitive area. Additionally, the temporal and geographic impacts would be very different if the road were built out to its full embankments in a linear fashion, as AIDEA would operate in discrete geographic areas at different times, which could change how wildlife are impacted by allowing them to avoid industrial activity in localized areas. Requiring AIDEA to build the road without using AIDEA's proposed phased approach may yield significant environmental benefits. As recognized by one engineering expert, the benefits of requiring AIDEA to forego construction of its environmentally damaging Pioneer Road to minimize impacts to permafrost and tundra should have been fully analyzed.[198] These "combined phasing" benefits should have been fully considered in the various resource sections considering differences among alternatives, but were not.

Thus, while the inclusion of an alternative requiring AIDEA to construct the road to Phase II at the outset is certainly an improvement from the prior EIS, the federal agencies must all consider the same version of the Ambler Road for purposes of permitting, and the SEIS should have fully analyzed the tradeoffs and benefits of such an approach.

3. BLM Should Consider a Broader Range of Alternatives in the SEIS.

The alternatives analysis is utterly lacking because it functionally only has two action alternatives — one action alternative with differences in routing through Gates of the Arctic, and one other with a southern route. This does not satisfy NEPA's requirements for a reasonable range of alternatives.[199] A reasonable range of alternatives must include more than just a few minor variants on where the Ambler Road is ultimately placed. The agencies should have more fully evaluated a range of alternatives, including TCC's tribal alternative; rail access; seasonal ice road access; aircraft access; barge access; and other alignments coming from the west.

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protecting thaw sensitive permafrost soils, the degradation of which could cause thermokarsting, erosion, and siltation in adjacent wetlands and waterbodies." *Id*. at 3-77.

[197] *See*, for example, the reports by Fennessy and Frissell submitted for the record and discuss the serious impacts likely to occur from building and essentially rebuilding the stream crossings as part of AIDEA's proposed phased approach to construction.

[198] *See* 2019 Engineering Report at 6-8.

[199] *Muckleshoot Indian Tribe v. U.S. Forest Serv*., 177 F.3d 800, 814 (9th Cir. 1999) (finding that the review of two virtually identical action alternatives and a no action alternative was not sufficient under NEPA).

Groups support the inclusion of TCC's tribal alternative for consideration in the SEIS process. The SEIS describes the TCC alternative as one that would minimize reliance on unproven mitigation measures and modify the road route to adequately protect subsistence and cultural resources.[200] BLM implies that consideration of this alternative is essentially precluded by ANILCA Section 810's procedural requirements, but such an explanation turns ANILCA's substantive requirements on its head.[201] Section 810 requires agencies evaluate "other alternatives which would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes," in addition to evaluating the effects of a project and the availability of other lands.[202] Thus, Section 810 imposes procedural and substantive requirements on an agency to consider alternatives based on the mandate to protect subsistence. BLM's failure to do so violates both NEPA and ANILCA. BLM further asserts that it rejected consideration of the TCC alternative in part because it could not be mapped for purposes of assessing technical and economic feasibility.[203] The mere fact that an alternative proposal cannot be recreated on a map is not a legitimate reason for dismissing that alternative out of hand, refusing to consider its environmental tradeoffs, or refusing to gather the information that would be necessary to inform such an alternative. Nor does it preclude BLM from ascertaining whether such an alternative is lawful. Indeed, the TCC alternative essentially describes an alternative that would comply with BLM's ANILCA 810 obligations, FLPMA obligations, and the Corps' CWA obligations. If such an alternative is not — as BLM implies — feasible or consistent with the project purpose, then BLM has no choice but to select the No Action alternative and refuse to permit the Ambler Road. However, BLM never even got far enough into exploring this option to draw such a conclusion.

BLM also failed to consider reasonable alternatives such as rail transportation. BLM acknowledged that, based on input from its cooperating agencies, alternatives involving the use of rail modes appeared to be reasonable for further consideration, and that rail access to the Dalton Highway may be difficult to screen out as an alternative.[204] Regarding standard rail transportation, BLM further acknowledged that rail access could provide a "technically feasible surface transportation method that could satisfy the project purpose and need, depending upon the route" and could be "effective at hauling heavy loads for long distances in support of mining operations around the country, including Alaska."[205] BLM agreed that rail access "is a proven technology in Alaska's northern climate."[206] In the recent feasibility study AIDEA commissioned to look at the full supply chain corridor for the Ambler Road, including the

[200] 2 SEIS App. G at G-24.

[201] *Id*. ("[T]he ANILCA Section 810 analysis cannot be completed for an alternative route prior to the alternative route being identified, as it would not have a frame of reference for the analysis, nor can it be completed outside the EIS process because Section 810(b) of ANILCA requires that the Section 810 analysis be completed as part of the EIS.").

[202] 16 U.S.C. § 3120(a).

[203] 1 SEIS at 2-6 ("[T]he alternative did not specify a route (meaning, a description or depiction of the course to be taken from a starting point to an ending point). Because the Tribal Alternative did not describe a route, it could not be properly screened to determine whether it is technically or economically feasible, or whether it meets the stated purpose and need.").

[204] 2 *id.* App. G at G-24.

[205] *Id*. at G-28.

[206] *Id*.

transportation of materials from the Ambler Road to a port for export, even AIDEA is exploring the use of rail.[207]

BLM nevertheless refused to analyze the use of rail transportation as an alternative in the SEIS. BLM justifies this failure by stating that the alternative was "not practical due to substantial handling inefficiencies (and therefore increased operating costs)."[208] BLM tries to further justify its pre-decisional determination by reciting the costs and technical challenges associated with transporting ore and freight via rail, namely the need to transfer cargo and ore at the terminus points. This is not impracticable, and there is no explanation in the Alternatives Memo as to how these types of transfers are different from typical methods of transporting freight via rail. Given that AIDEA is already looking at rail as an option for the remainder of the supply chain corridor for this project — which should have been analyzed as a connected action to the road — it is beyond reason why rail could not have been considered in place of the road. BLM jettisoned a potentially viable alternative due to potentially higher costs, without considering the environmental benefits as required by NEPA. Moreover, AIDEA's artificially low-cost projections for construction, operation, and maintenance of the road mean that BLM was not in a position to meaningfully compare the costs of the road and a rail option to make such a determination.

Further, BLM arbitrarily assumed that "[t]here is likely little practical difference in impacts between the road and rail modes on this alignment."[209] The Alternatives Memo claims that the rail concept must include a single lane maintenance road alongside the tracks, so the possibility of public access would remain, among other impacts from a road.[210] There is no explanation or justification for BLM's assumption that a road must necessarily accompany a railway. Railroads operate efficiently without parallel roadways in Alaska and the rest of the United States. Indeed, the Alaska Railroad's main line stretches 470 miles to connect Seward to Fairbanks, through varied terrain, and much of that route lacks road access. BLM cannot arbitrarily determine that a road must parallel any potential railway to Ambler in order to make a rail alternative impracticable or to skew its assessment of the potential impacts.

Importantly, a rail would eliminate a host of additional impacts from road use and construction. For instance, there is no indication that a rail would require the same extent of annual maintenance and associated gravel mining and disturbance as the proposed three-phase road. Additionally, rail access would decrease road dust, eliminate air emissions from vehicles, and may create less of a barrier for the region's hydrology and wildlife to cross. However, BLM did not explore any of these potential environmental benefits because it eliminated a rail system without analyzing it as an alternative.

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[207] AIDEA, Press Release: Board Approves Funding to Study Trans-Alaska Supply Chain Corridor for Ambler Access Project (Apr. 20, 2022), *available at* https://www.aidea.org/Portals/0/PressReleases/042022%20AAP%20Corridor%20Feasibility%20PR_final.pdf?ver=bTgJft3EZIPSSnYrVyvUGA%3D%3D [2022 AIDEA Press Release].

[208] 2 SEIS App. G at G-30.

[209] *Id*. at G-31.

[210] *Id*.

In the Alternatives Memo, BLM also improperly refused to analyze any potential alternatives that "were vague or about process."[211] In reality, these "process" requirements refer to methods of construction and operation of a massive 211-mile long road through a wilderness area, and varied approaches to road design, construction, and operation would have significant environmental tradeoffs. Restrictions on traffic, requirements around construction methods and bridge designs, consideration of a buried pipeline to reduce traffic, and different road designs are important alternatives that BLM failed to consider as means to reduce impacts. BLM should have also considered a seasonal ice road, instead of a permanent gravel road, particularly since AIDEA's proposed Phase I road would be seasonal. The SEIS should also look at requiring mitigation measures to minimize impacts to permafrost, aquatic resources, and other resources up front. Under AIDEA's pioneer road, many such measures (such as proper road insulation) would not be implemented until later phases, leaving resources vulnerable to damage.

4. BLM's Analysis of the No Action Alternative in the SEIS is Inadequate.

BLM failed to rigorously analyze the no action alternative for resources in the project area. The SEIS merely repeats for each resource that, under the no action alternative, the road would not be built and thus impacts would not occur. However, as detailed elsewhere in these comments, BLM did not have sufficient information about the environmental baseline to conduct a meaningful analysis. Its cursory consideration of the no action alternative and the baseline conditions was insufficient. The SEIS states:

> [u]nder the No Action Alternative, the BLM would not grant land use authorizations, and no road would be constructed or operated to the District. A No Action Alternative is required to be included in a National Environmental Policy Act analysis. The No Action Alternative provides a baseline against which action alternative impacts can be compared.[212]

BLM's consideration of the no action alternative in the SEIS is cursory at best. The SEIS notes in a generalized way that the following impacts will occur from all action alternatives:

- Culverts would have impacts to the natural hydrology.
- Changes in water depth and velocity could result in changes in erosion or sedimentation, ponding, or channel migration.
- Construction could hasten thawing of permafrost in localized areas and could damage natural topography and alter water flows and vegetation patterns.
- All action alternatives cross areas of asbestos and rock that can generate acidic runoff when disturbed, which can be harmful to the environment and human health.
- All alternatives would produce emissions due to combustion for moving vehicles, heating maintenance camps and buildings, and generating power at maintenance camps and for communications facilities.

[211] *Id*. at G-21.
[212] 1 *id.* at 2-7.

- The project would lead to direct fill in wetland and vegetation habitat due to road construction, the areas near the road would be affected by road dust, noise, movement, and light or shading (at culverts and bridges), and potentially spills of pollutants from truck traffic.
- A road would fragment wildlife habitat and the presence of a road and road noise could affect caribou migration patterns and movements of other animals.
- Subsistence use would be permanently and significant altered by the presence of a road.
- Visual and noise impacts would affect recreation and tourism, which are closely related to wilderness values.[213]

Despite the list of significant environmental impacts that can be expected to result from AIDEA's proposed project, the SEIS does not actually consider the tradeoffs and differences for each resource or fully delineate the baseline conditions for purposes of the no action alternative. As a result, it is not possible to fully understand the baseline for those conditions or how the action alternatives might change those conditions. Although the resource sections provide a "No Action Alternative" heading, the content is meaningless. For example, for water quality, the SEIS merely states that "project development would not happen; therefore, no impacts to vegetation, wetlands, rare plants, ecosystems, wildfire ecology, and wildfire management from road development would occur. Ongoing impacts related to past and present development in the project area would continue to occur, including further spread and establishment of [invasive species] along the Dalton Highway and near locations of human development. Vegetation and wetland resources would continue to be impacted by changing climate conditions."[214]

Across all resources in the SEIS, BLM merely repeated that under the no action alternative, the road would not be built and thus there would be no associated impacts from AIDEA's road proposal, but mining in the Ambler District would continue.[215] BLM has entirely failed to provide a baseline against which action alternative impacts can be compared, and as a result has overlooked important environmental tradeoffs. This is particularly troubling for the agencies' consideration of subsistence, where BLM describes the No Action alternative as causing impacts such as increased air traffic, but fails to identify the myriad benefits that not constructing the Ambler Road would present.[216] For instance, when comparing households in villages within the Ambler project area to those along the existing road system in Alaska,

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[213] *See* 1 *id.* App. C at C-9 to -18.

[214] 1 *id.* at 3-67 (internal cross references omitted).

[215] *See, e.g.*, *id.* at 3-186 ("The No Action Alternative would not result in any changes to socioeconomic conditions in the study area communities and none of the potential economic benefits and adverse impacts of road construction and operations would occur."); *id*. at 3-41 ("Under the No Action Alternative, the proposed project would not be developed, and associated impacts on air quality would not occur. Ongoing mineral exploration supported by aircraft would continue under the No Action Alternative and would contribute to GHG emissions through fossil fuel combustion.").

[216] *Id.* at 3-214.

subsistence harvest was greater in villages located off the existing road system.[217] If subsistence harvest of those villages near the proposed road changed to mirror those villages on the current road system, it was estimated that the cost to replace those subsistence resources would be roughly equivalent to 33% of the average annual income in these villages.[218] BLM failed to fully consider the benefits of the no action alternative on subsistence and sociocultural systems in light of such studies, and its own findings in the SEIS regarding the impacts that the Ambler Road would cause to local communities. Further, BLM failed to consider the economic benefits of the no action alternative to both local communities and state taxpayers, among a host of other issues.

The SEIS needs to address these prior deficiencies by taking a hard look at the no action alternative, as NEPA requires. Doing so would allow permitting agencies to present a meaningful evaluation of impacts and to facilitate a reasoned choice among alternatives, including no action. As explained below, the BLM should not issue a right-of-way that fails to "protect the environment" as required by FLPMA or fails to comply with ANILCA Section 810's substantive requirements, and the Corps must select the least environmentally damaging practicable alternatives. Here, the only lawful choice is the no action alternative.

D. BLM and the Corps Failed to Consider and Adequately Analyze Connected Actions.

The NEPA regulations promulgated by the Council on Environmental Quality (CEQ) provide that when an agency decides to prepare an EIS for a major federal action, it must initiate a process for determining the scope of the EIS as soon as practicable.[219] The scope of the EIS is "the range of actions, alternatives, and impacts to be considered" in the document.[220] The EIS must consider actions that are connected with, or closely related to, the project in question.[221]

An agency preparing an EIS "may not 'segment' its analysis so as to conceal the environmental significance of the project or projects."[222] In determining the proper scope of an EIS, the agency is required to consider three types of actions and three types of impacts.[223] The three types of actions — besides single, unconnected actions — are connected actions, cumulative actions, and similar actions.[224] Actions are connected if they: (1) automatically trigger other actions which may require environmental impact statements; (2) cannot or will not proceed unless other actions are taken previously or simultaneously; or (3) are interdependent parts of a larger action and depend on the larger action for their justification.[225]

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[217] NAT'L PARK SERV., U.S. DEP'T OF THE INTERIOR, EVALUATING DIFFERENCES IN HOUSEHOLD SUBSISTENCE HARVEST PATTERNS BETWEEN THE AMBLER PROJECT AND NON-PROJECT ZONES 39 (Aug. 2016) [hereinafter NPS Subsistence Study].

[218] *Id*. at 41.

[219] 40 C.F.R. § 1501.7(a)(2).

[220] *Id.* § 1508.25.

[221] *Id.* § 1508.25(a)(1).

[222] *Hammond v. Norton*, 370 F. Supp. 2d 226, 244 (D.D.C. 2005).

[223] 40 C.F.R. § 1508.25.

[224] *Id.* § 1508.25(a).

[225] *Id.* § 1508.25(a)(1).

Cumulative actions are those "which when viewed with other proposed actions have cumulatively significant impacts . . . ."[226] Similar actions are those "which when viewed with other reasonably foreseeable or proposed agency actions, have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography."[227] NEPA requires that "connected actions" and "cumulative actions" be considered together in a single EIS, while an agency "may wish" to discuss similar actions together in the same EIS.[228]

BLM's and the Corps' failure to consider the gravel mines and other related project infrastructure in detail as connected actions to this project is contrary to NEPA. The SEIS also improperly failed to analyze the related hardrock mines as connected actions.

1. BLM and the Corps Improperly Segmented Their NEPA Analysis by Refusing to Consider the Gravel Mines and Other Project Components as Connected Actions.

The agencies made conflicting decisions about the gravel mines and other necessary project components (including airstrips, maintenance stations, and camps) in the FEIS and JROD. BLM deferred its analysis and approval of those elements until it received site-specific plans. Yet the Corps authorized 15 gravel mines and other components, despite the fact that the FEIS failed to take an adequate hard look at those components. The agencies did not acknowledge or explain these conflicting decisions. This disconnect and these problems have still not been rectified in the SEIS.

The Ambler Road will be a gravel road and the project will likely require over 40 gravel mines to supply at least 15 million cubic yards of gravel for construction, plus over 220,000 cubic yards of gravel annually for maintenance.[229] In addition to the gravel mines, the project will also require other components like construction camps, water treatment facilities, fuel storage tanks, maintenance stations, communications facilities, and access roads to the gravel mines.[230]

The gravel mines and project components are connected actions that needed to be fully considered in the SEIS. The gravel mines and project components serve no purpose but for supplying gravel and support infrastructure for the road, and the project could not be built but for the mined gravel — the very definition of "connected actions" under NEPA.[231] But the NEPA analyses to date have not reviewed these mines' site-specific impacts. The JROD stated that "BLM will evaluate site-specific [gravel] mining and reclamation plans submitted by the

[226] *Id.* § 1508.25(a)(2).
[227] *Id.* § 1508.25(a)(3).
[228] *Id.* § 1508.25.
[229] 1 SEIS App. C at C-2; 1 SEIS App. E at E-14; 4 FEIS Ch. 2 (showing potential gravel mine locations).
[230] *See, e.g.*, JROD App. F at F-53; JROD at 5.
[231] 40 C.F.R. § 1508.25(a)(1).

proponent" in the future.[232] At that time, BLM stated that it would "determine whether the FEIS for this Project is adequate, or whether additional site-specific NEPA is required based on potential issues" at that later time.[233] The SEIS has not addressed or fixed these problems; AIDEA still has yet to conduct the site-specific geotechnical work to identify the sites and has yet to provide site-specific information on which the agencies can base their NEPA analysis.[234] The SEIS acknowledges that the material site locations are still untested and unknown.[235] Deferring the analysis of these core project components violates NEPA.

The SEIS also does not analyze the impacts of other necessary project components. The JROD previously stated the locations of construction and maintenance camps "will be identified in site-specific plans as part of the Plan of Development" and that BLM will evaluate site-specific plans and impacts later.[236] There is no additional information in the SEIS on these other components, let alone an analysis of their foreseeable impacts. Deferring this analysis violates NEPA.[237]

In addition, BLM failed to adequately review the cumulative effects of the gravel mines and other components.[238] Agencies are required to take a hard look at "*all* actions that may combine with the action under consideration to affect the environment."[239] The gravel mines themselves are likely to cause significant impacts that needed to be evaluated, with gravel mines "up to 142 acres in size," permanently impacting hundreds of acres.[240] The associated maintenance stations, access roads, airstrips, and other infrastructure would also increase noise, fugitive dust, and air emissions, and require fill which would further amplify impacts of gravel mining.

The agencies previously attempted to justify its failure to analyze the impacts from the gravel mines and other project components by pledging to review and approve them later.[241] Although BLM omitted some of that express language from the SEIS, there's no indication that the agency has in fact fixed those problems or addressed the impacts from the gravel mines and

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[232] JROD at 15; *see also* BLM ROW at 7–8 ("[AIDEA] shall apply for any additional facilities ([gravel mines], construction camps, maintenance stations, communication sites[,] etc.) not covered under this right-of-way as soon as the plans of development have been approved….").

[233] JROD at 15.

[234] *See, e.g.*, 1 SEIS at 2-12, 3-16.

[235] 1 *id.* at 2-12.

[236] JROD at 3.

[237] *Thomas v. Peterson*, 753 F.2d 754, 758–60 (9th Cir. 1985).

[238] *See Great Basin Mine Watch v. Hankins*, 456 F.3d 955, 968–74 (9th Cir. 2006).

[239] *Great Basin Res. Watch v. U.S. Bureau of Land Mgmt.*, 844 F.3d 1095, 1104 (9th Cir. 2016) (citing *Te-Moak Tribe of W. Shoshone v. U.S. Dep't of Interior*, 608 F.3d 592, 603 (9th Cir. 2010)) (internal quotation omitted).

[240] JROD App. F at F-53.

[241] 1 FEIS at 3-3 ("The BLM may authorize portions of the project under separate permits, such as an authorization for the road [right-of-way] and separate authorizations for material extraction and sales.").

other project components. This is still contrary to NEPA. The agencies cannot segment their consideration of connected actions; the agencies needed to analyze them prior to authorizing this project.[242]

To make matters worse, the Corps — despite the EIS's acknowledged failure to consider the direct, indirect, and cumulative impacts of the gravel mines and other components — nevertheless authorized 15 gravel mines with access roads, 4 maintenance stations, 12 communications towers, 3 airstrips, and a fiber optic cable in its 404 permit.[243] That NEPA violation has also not been addressed as part of this remand process.

NEPA requires agencies to evaluate the site-specific impacts of an action before making an irreversible and irretrievable commitment of resources.[244] The agencies have not taken a hard look at the direct, indirect, and cumulative impacts specific to the gravel mines and other components they approved. As noted above, the agencies previously expressly deferred review of those impacts until a later time and nothing has shifted as part of this remand process to indicate anything has changed.[245] The NEPA analyses offer only cursory statements about generalized impacts from gravel mining and construction of other components, and rely instead on future permitting and potential mitigation measures.[246]

Even to the extent that BLM previously declined to authorize the gravel mines, that is still not proper for purposes of NEPA because the mines are connected actions and needed to be considered as part of this analysis in tandem with the rest of the project. The Corps also could not both defer analyzing the site-specific impacts from the gravel mines and other components in the EIS *and* make an irretrievable commitment of resources by issuing a 404 permit for some of them.[247] The Corps' authorization of those project components was particularly problematic given AIDEA's failure to verify the locations of gravel mines and other components. EPA raised serious concerns with AIDEA's failure to conduct field sampling to verify the locations for any gravel mines.[248] Because the gravel mine locations were only preliminarily mapped and studies were not done to determine their suitability, the actual mine site locations were not

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[242] *Thomas*, 753 F.2d at 758–60.

[243] 404 Permit.

[244] *Block*, 690 F.2d at 761–63; *Robertson*, 490 U.S. at 349 (stating NEPA requires an agency has "available, and will carefully consider, detailed information concerning significant environmental impacts"); *Se. Alaska Conservation Council v. U.S. Forest Serv.*, 443 F. Supp. 3d 995, 1007–12 (D. Alaska 2020) (explaining site-specific EIS must analyze impacts at project location).

[245] 1 FEIS at 3-3.

[246] *See, e.g.*, 1 SEIS at 2-12; JROD App. D, Attachment D 2, at 2-6 ("AIDEA would provide a detailed mineral materials (e.g., gravel) mining and reclamation plan to BLM for approval at least 90 days prior to beginning any mining operations.").

[247] 5 U.S.C. § 706(2)(A). To the extent the Corps did not approve, but acknowledges the need for, additional gravel mines and project components, JROD App. F at F-53, it improperly segmented its NEPA analysis.

[248] 2019 EPA Comments at 9–10.

determined.[249] To date, AIDEA still has yet to verify the mine site locations, leaving the agencies unable to meet their NEPA obligations to examine the site-specific impacts of those connected actions. Thus, the agencies do not have the necessary information to analyze those connected actions at a site-specific level. The agencies should rescind the prior authorizations and adopt the no action alternative to ensure that they are able to comply with their NEPA obligations.

2. BLM and the Corps Improperly Segmented Their NEPA Analysis by Refusing to Consider Hardrock Mining as a Connected Action.

Similar to the prior EIS, the SEIS still only considers future mining in the Ambler Mining District to be a cumulative effect and does not analyze any of the mines as connected actions. AIDEA has repeatedly stated that this road is intended to serve as a gateway for development to the District. The purpose and need for the project described above only further reinforces this fact — but for the applicants' purpose of facilitating mine development, the Ambler Road would not be needed. The Revised Permit Application states that "[t]he purpose of this project is to provide transportation access to the Ambler Mining District to support and encourage mineral exploration and development in this highly mineralized area."[250] Several of the Ambler Mining District's hardrock deposits are being actively explored without road access. The clear purpose of this industrial road is to build a road for mine development, making mine development a connected action that must be fully considered as part of the project's direct, indirect and cumulative effects. The analysis of generalized impacts from such mines as a "cumulative effect" of the Ambler Road is insufficient for purposes of NEPA.

The Revised Permit Application also states that "[t]he road would provide surface transportation access to the mining district to allow for expanded exploration, mine development, and mine operations at mineral prospects throughout the District."[251] There are several known large mining prospects whose development depends on the proposed road, including Arctic, Bornite, Sun, and Smucker. Exploration in the area has taken place without roads for decades, making it clear that this is meant to be a road for development and large-scale mining operations, not merely a one-lane pioneer road for exploration. AIDEA acknowledged in its application that mining in the Ambler district cannot and will not proceed unless this road is built, making it abundantly clear that this road and future mining are connected actions. As Rick Van Nieuwenhuyse, then chief executive of Trilogy Metals, succinctly stated, "You build a road, you've got a mine."[252] Because development cannot and will not proceed unless other actions are taken previously or simultaneously, mining development is a connected action and BLM is required to fully consider the impacts and infrastructure associated with development of the Ambler mining district as part of its EIS.

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[249] Id.

[250] Revised 404 Permit Application at 5.

[251] *Id.* sec. 2, at 1.

[252] Yereth Rosen, The Environmental Review Process Is Beginning for a Controversial New Road in Alaska's Arctic, ARCTIC NOW, Dec. 6, 2017; *see also* Julie Stricker, *Rich copper deposit yields 43 million tons of reserves*, FAIRBANKS DAILY NEWS-MINER, Jul. 21, 2019 ("We've said from the beginning, no road no mine.").

Further, the Ninth Circuit applies an "independent utility" test to determine "whether multiple actions are so connected as to mandate consideration in a single EIS."[253] The crux of the "independent utility" test is "whether '*each of two projects* would have taken place *with or without the other* and thus had independent utility.'"[254] Because development of the Ambler Mining District would not take place without construction of the proposed road, the independent utility test is met.

It is equally clear that without the presence of the Ambler Mining District, AIDEA would not be seeking to permit and construct the proposed road. The road is not intended to connect communities to the Dalton Highway or otherwise provide for local transportation. As the purpose and need statement make clear, the purpose of the BLM action is to issue a right-of-way grant which provides for year-round industrial surface transportation access in support of mining development.[255] Indeed, this is the sole purpose of the Ambler Road. As a result, BLM's failure to fully consider the direct, indirect, and cumulative impacts from mining development as a direct impact is contrary to NEPA.

At a minimum, BLM and the Corps need to consider Trilogy Metals' mine at the Upper Kobuk Mineral Deposit as a connected action. Trilogy Metals indicated they plan to move forward imminently with their CWA Section 404 permit and the permitting process for that mine, and Trilogy has been engaged in discussions with the Corps about permitting for that mine for years.[256]

As described later in these comments, even to the extent BLM has looked at hardrock mining impacts for purposes of the cumulative impacts analysis, that is also insufficient and does not fulfill the agency's obligations under NEPA to fully consider the impacts of hardrock mining.

E. BLM's Impacts Analysis Is Still Deficient in Several Regards.

1. The SEIS Must Adequately Describe the Direct and Indirect Impacts of the Proposed Road.

An EIS must discuss the direct, indirect, and cumulative effects of the proposed project on the human environment, as well as the means to mitigate adverse environmental impacts.[257] The effects and impacts to be analyzed include ecological, aesthetic, historical, cultural, economic, social, and health impacts.[258] Direct effects are those that are caused by the project

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[253] *Sierra Club v. U.S. Bureau of Land Mgmt.*, 786 F.3d 1219, 1226 (9th Cir. 2015).

[254] Id. (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) (as amended)).

[255] 1 SEIS at ES-2.

[256] Trilogy Metals News Release, *supra*; Letter from Cal Craig, Trilogy Metals, to Jason Berkner, U.S. Army Corps of Eng'rs, Alaska District (Jan. 15, 2020).

[257] 40 C.F.R. §§ 1502.16, 1508.25(c).

[258] *Id*. § 1508.8.

and that occur in the same time and place.[259] Indirect effects are those that are somewhat removed in time or distance from the project, but are nonetheless reasonably foreseeable.[260] As discussed below, the FEIS previously failed to adequately describe the direct and indirect effects from the proposed project. The agencies did not correct these problems in the SEIS, which continues to consider the project too narrowly. The proposed road would have far-reaching effects, both geographically and temporally, which NEPA requires the agencies consider. In the absence of a NEPA-compliant analysis of direct and indirect effects, the agencies must choose the no action alternative.

i. The SEIS Did Not Properly Define the Scope of the Impacts Analysis.

As an initial matter, BLM failed to clearly define the project area in the SEIS to allow the public to understand the agency's analysis. Clarity was needed because BLM provided an overly vague description of the project area in the FEIS, which was not updated in the SEIS. Specifically, the SEIS states:

> The project area . . . is generally defined as the area from the Brooks Range (same latitude as the northern edge of the Ambler Mining District [District]) south to the Yukon River and from the Dalton Highway corridor west to Kobuk Valley National Park (Volume 4, Map 1-1). The study area (also sometimes called the "scope of analysis") encompasses the area where direct, indirect, and cumulative impacts would be anticipated. The study area, however, may differ for each resource—from narrow areas limited to the proposed road corridors to more expansive areas defined by the movement of caribou, fish, or subsistence hunters.[261]

However, Map 1-1 continues to present only the road corridors under consideration, not the areas surrounding the corridor, associated gravel mines, airstrips, or other facilities. Further, the Ambler Mining District is noted on the map, but it is still not clear whether the entire mining district is being considered as part of the project area for purposes of BLM's analysis. BLM was notified that this vagueness makes reviewing the document a challenge, as it is difficult for the public to determine how BLM identified the geographic scope for its direct impact analysis or how it varied that analysis based on individual resources. BLM failed to update the project area description or provide a map with more detail, thus failing to meet the information-disclosure purpose of NEPA.

The SEIS acknowledges that construction may cause increased traffic along the Dalton Highway, but fails to analyze any impacts from that traffic, stating only that additional road maintenance may be required.[262] The SEIS states that mine operations would create increased

[259] *Id*. § 1508.8(a).
[260] *Id*. § 1508.8(b).
[261] 1 SEIS at 3-1.
[262] *Id*. at 3-164 to -65.

road, rail, aviation, and port activity from transporting ore, people, and supplies.[263] Despite acknowledging such impacts, the SEIS states that impacts cannot be predicted accurately because the "magnitude, duration, and spatial extent" of impacts will "largely depend on the location and extent of mining activity."[264] Because BLM is unable to fully analyze the significant impacts of its action in approving the Ambler Road, it should not be approving this project.

For instance, the SEIS acknowledges that mining could result in 24-hour-a-day traffic impacts, with up to 60 to 75% more traffic on the Dalton Highway, leading to increased vehicle collisions. The SEIS further notes that mining traffic could increase road maintenance costs 60 to 75% which "may impact DOT&PF's ability to fund other projects and would further strain already constrained road budgets."[265] This could present serious concerns for other communities dependent on the road network. But it is impossible to tell the extent of these impacts because the SEIS provides no further detail.

In addition to road traffic, the SEIS also estimates that rail traffic, commercial traffic to communities along the Ambler Road, air traffic, and marine traffic will all increase. Marine traffic may increase to the point that port facilities will need to be expanded to cope with ore deliveries by building new infrastructure and clearing land — impacts which are not analyzed in the SEIS.[266] Specifically, the Port of Alaska at Anchorage may need to be expanded to accommodate container staging areas, new infrastructure for lifting and dumping containers into ships, and handling train units.[267] These requirements could result in substantial impacts to the Port of Alaska and its marine environment, and on the people who rely on the Port for food and commercial goods delivery, as well as on wildlife populations like the endangered Cook Inlet Beluga whales. The SEIS fails to analyze any of these potential indirect impacts, noting only that "[r]esolution of this issue is undetermined, and impacts cannot be defined at this time."[268]

Regarding unauthorized or public use of the road, the SEIS fails to analyze impacts from unauthorized road use, relying on AIDEA's proposal to control access.[269] BLM cannot assume away its NEPA obligations in this manner, and instead should have undertaken a thorough analysis of the potential impacts of unauthorized users of the road. Similarly, BLM acknowledges that the road may legally become open to the public, and that open access would increase traffic on the Dalton, Elliott, and Steese Highways, and result in the construction of new trails, airstrips, and campsites and an increase in water traffic.[270] But BLM fails to analyze any of these impacts, only stating that they may occur. This fails to recognize the significant impacts to subsistence use if the lands and waters are suddenly opened to an influx of tourist traffic. In the absence of actual impacts analyses from increased traffic and human presence in this remote area, BLM cannot authorize the project.

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[263] *Id*. at 3-168.
[264] *Id*.
[265] *Id*.
[266] *Id*. at 3-170.
[267] 2 SEIS at H-23.
[268] *Id*. at H-24.
[269] 1 SEIS at 3-171.
[270] *Id*. at 3-172.

In addition, the SEIS must provide information regarding the scope of BLM's impact analysis for individual resources. Although the SEIS states that the scope of analysis for individual resources could be found in each resource section and in corresponding maps,[271] BLM's analysis for many resources contains no such information. For example, there is no map depicting the affected area for birds and the bird analysis section does not define the affected area.[272] This omission is particularly confounding because BLM provides precise acreage amounts of bird habitat that would be disturbed under the different alternatives. Without a map or a description of where these impacts would take place, commenters are unable to provide feedback to the agency, frustrating the purpose of NEPA.[273] Compounding the issue, the SEIS repeatedly refers to "localized impacts" without defining what is meant by this term in connection with numerous resources.[274] Without defining the geographic scope of impacts, the term "localized" is rendered meaningless for purposes of understanding the anticipated impact to resources such as air, fish, and migratory wildlife.[275] In the SEIS, BLM should have clearly defined the scope of the project area, and thus its geographic scope for the direct and indirect impacts from the proposed project, in order to fulfill its NEPA obligations. BLM's failure to do so violated its NEPA obligations and frustrated NEPA's purpose of enabling public input and evaluation of the impacts of the proposed project.

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[271] *Id*. at 3-1.

[272] *See, e.g., id*. at 3-119 (stating that impacts to birds "may extend large distances from the gravel footprint" of activities, but not defining the affected area).

[273] *Id*. at 3-121 (Alternative A would result in a loss or alteration of 13,775 acres of habitat, Alternative B would result in 15,713.4 acres lost, and Alternative C would result in a loss or alteration of 26,092.3 acres of habitat).

[274] *See, e.g.*, *id*. at 3-8 ("There would be localized changes to the geology and topology for any action alternative."); *id.* at 3-10 (unauthorized users of the road could cause "localized impacts due to off-road travel in thaw-sensitive areas"); *id.* at 3-14 (increased mining and commercial uses of the road would result in additional road construction, resulting in "additional localized changes to area geology, topography, and subsurface soils"); *id.* (burying fiber-optic lines along the roadbed "could have adverse localized impacts on soil and permafrost"); *id.* at 3-31 ("Gravel mining would create some localized dust that could be carried to water bodies and downstream."); *id.* at 3-55 ("localized air quality impacts may occur"); *id*. at 3-59 ("Alternative C would have localized air quality impacts. . . "); *id.* at 3-91 ("Replacing natural habitat with culverts and confining flow through culverts and bridges will create localized adverse impacts to fish habitat . . ."); *id*. at 3-117 ("The removal or alteration of uncommon [bird] habitat types would have a proportionately greater impact on the species that use them; however, the impact would be localized."); *id*. at 3-138 ("Impacts to WAH caribou during winter movements would be localized . . .").

[275] BLM comes close to acknowledging this in the SEIS. In discussing impacts to fish and aquatic life habitat from building culverts and mining in streams, BLM noted that, "[w]hile physical habitat alteration within a given stream may be fairly localized, the project would affect more than 1,000 mapped streams, so impacts would be widespread." 1 SEIS at 3-109. In the context of a project of this scale, describing any particular impact as "localized" is unhelpful and just obfuscates what the real impacts will be.

Finally, BLM should have accurately and fully described the temporal scope of the project and the magnitude and duration of impacts in the SEIS. Much of BLM's analysis in the SEIS mischaracterized or failed to fully explain how harmful and lasting the Ambler Road's impacts would be. For example, in the SEIS, BLM "address[ed] impacts for the activities based on the duration of the impact, often referring to temporary impacts associated with construction and long-term or permanent impacts related to the long-term presence of a road in the project area, including effects beyond the life of the project."[276] This suggestion — that impacts from many preliminary phases such as construction will be short-term — mischaracterizes the permanent nature of impacts resulting from all stages of the proposed project. Many resources, such as sensitive permafrost, tundra, and wetlands, will never recover from even the preliminary phases of the proposed project, even assuming the road is reclaimed at all, let alone in an adequate manner. Yet, BLM failed to address this reality in its analysis for numerous resources. For example, the SEIS indicates that permafrost thaw might occur during certain phases of the project and references the duration of each phase — without stating that the permafrost thaw *itself* would be permanent.[277] This is misleading. In the SEIS, BLM should revise its analysis to clearly indicate that many adverse impacts resulting from the project would be permanent with or without reclamation.

ii. The SEIS Must Consider Impacts from the Phased Approach to Construction.

BLM has still not adequately analyzed the impacts from AIDEA's phased construction approach. The SEIS states that it focuses on "the most impactful phase (i.e., the phase with the greatest potential for significant impacts)."[278] The SEIS indicates that for most resources, the analysis focuses on Phase 3 since it "would have the largest footprint and most traffic, and would be anticipated to operate for the largest number of years over the 50-year lease term."[279] The SEIS also purports to "identif[y] impacts that could be significant in Phases 1 and 2 that are different from those anticipated in Phase 3."[280] Finally, for purposes of the new combined phasing option, the SEIS states that it identifies differences between that option and the 3-phase option.

This approach is still inadequate because NEPA obligates BLM to analyze all impacts — and therefore all phases — of the project. The agency cannot avoid this requirement by arbitrarily labeling one phase the "most impactful." In order to fulfill the agency's NEPA obligations, BLM needed to account for all impacts resulting from all phases of the proposed road. This includes fully accounting for impacts associated with preliminary phases of the road.

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[276] 1 SEIS at 3-2.

[277] *Id*. at 3-9 ("Phased construction may accelerate subsurface soil temperature increases . . . [d]rainage changes occurring during Phase 1 (pioneer road) and Phase 2 (1-lane road) could impound water, warming subsurface soils along areas to be encompassed by the Phase 3 (2-lane) footprint. Should permafrost thaw issues occur during Phases 1 or 2, when the road width is narrower, shoulder rotations and embankment cracks could also impact the drivable surface . . . [t]he timing and duration of construction activities are estimated in Appendix H, Table 2-9.").

[278] 1 SEIS at 3-2.

[279] Id.

[280] *Id*. at 3-2.

Relatedly, the SEIS must correct BLM's assumption that Phase III will be more impactful than other proposed phases. As discussed elsewhere in these comments (e.g., in the permafrost section), AIDEA's Phase I road poses a significant risk that it will degrade hydrology and other conditions across a massive region and will ultimately pose a serious hazard to public safety and the environment. It is deeply troubling that the Phase I road will be used seasonally and not be built to withstand typical North Slope spring conditions or to account for the highly vulnerable permafrost resources that extend across 90% of the project area. This could have significant adverse environmental impacts, and present safety hazards for road travelers that exceed the impacts and hazards presented by Phase III. As designed, any use of the Phase I road could lead to significant road and environmental damage. Even if access is restricted during Phase I, water flooding over the road would likely lead to increased contamination from asbestos, increased hydrological impacts with the road acting as a dam, and decreased road integrity over time. During summer months when permafrost is most vulnerable, the road will likely be unstable and could lead to cascading problems with permafrost degradation well beyond the footprint of the road. Permitting such haphazard and careless construction would be an outright failure to protect property, economic interests, and other users of lands adjacent to the right-of-way, in violation of FLPMA. It would also be contrary to the Corps' obligation to prevent significant degradation. While commenters appreciate BLM's addition of the combined phasing option as a means for reducing these impacts, the agency is still obligated to fully analyze the impacts that would occur from AIDEA's phased proposal. Despite that, the SEIS still does not fully assess the differences between the phases to specific resources.

Because AIDEA only submitted a revised permit application to the Corps, it is also still unclear what exactly AIDEA is proposing for the phased approach. In the revised Corps application, AIDEA proposed to stop construction at Phase II, abandoning Phase III of the road, which in turn led the Corps to authorize a different version of this project from BLM. The SEIS does not address this discrepancy in the versions of the project the agencies considered and approved. It is also apparent from the face of the right-of-way that BLM has yet to receive a complete plan of development mapping out AIDEA's actual plans for construction.[281] The ROW indicates AIDEA will submit complete plans of development detailing their plans for each phase of the project at a later point in time.[282] Without information at this stage on how AIDEA plans to implement its phased approach to construction, it is unclear how the agencies could have meaningfully analyzed AIDEA's purported plans. That information needs to be considered as part of a NEPA analysis and prior to any authorizations to ensure the agencies have considered the actual impacts and plans for this project — not some vague, conceptual description that lacks any of the details necessary for a meaningful analysis. Because the agencies still do not have that complete information, they should rescind the prior authorizations and adopt the no action alternative.

BLM's impacts analysis still does not adequately account for the fact that construction will be ongoing throughout all phases of the road. BLM's impacts analysis for numerous resources in the SEIS still appears to rely on the unfounded assumption that construction and operation of the road would occur at different times. This approach improperly downplays the

[281] BLM ROW.
[282] *Id.* Att. A at 6–7.

project's impacts. For example, the SEIS's air quality discussion distinguishes between emissions present during "active construction" and those present during "the operational phase (post-construction)."[283] This distinction is misleading. Due to AIDEA's proposed phased approach, there will be vehicle traffic on the road beginning at Phase I. This means AIDEA will be engaged in ongoing construction while road use is underway for Phase II and Phase III. The SEIS does not account for these overlapping impacts. There will also be significant impacts that will occur from the fact that two inches of gravel will be needed for annual road maintenance, which will result in ongoing gravel mining in addition to road construction. That has not been properly analyzed either. BLM must account for the fact that impacts from road use, construction, and maintenance will occur simultaneously and therefore have a compound effect. Further, in the SEIS, BLM still concludes that impacts from construction and operations would be the same for many resources, including water quantity and quality. BLM provides no basis for this conclusion and also failed to consider the potential cumulative effects from these types of activities occurring simultaneously on portions of the road.

Mining impacts could also occur concurrent with construction impacts, further exacerbating the impacts. BLM indicates in the SEIS that mining production would take place after Phase II of the proposed road is constructed.[284] The SEIS states Phase III may not begin until 2040, after Arctic and Bornite mines are already in production.[285] It is inappropriate for BLM to treat mining development as later in time than road construction when both are planned to take place simultaneously. The concurrent impact of mining would greatly increase impacts on the surrounding environment and communities. This issue has not been adequately addressed in the SEIS.

Overall, the continuing lack of information about the road design for purposes of all the phases, as well as detailed plans for how AIDEA will actually build the project, have severely hindered the agencies' ability to meet their NEPA obligations to analyze the impacts of any of the phases. Without that information, any such analysis is wholly hypothetical, cursory, and unlikely to align with reality. Because the agencies are still lacking key information necessary to meet their NEPA obligations to take a hard look at the impacts of the different phases, the agencies should rescind the prior authorizations and adopt the no action alternative.

iii. The SEIS Must Adequately Consider the Impacts of Reclamation.

BLM must describe how the road will be reclaimed and incorporate impacts from reclamation into its analysis of the direct and indirect impacts of the road. The SEIS indicates reclamation "would occur at the end of the 50-year ROW authorization, *or* when mineral exploration and development activities in the District conclude" but notes that "no detailed reclamation plan has been developed" and will not be until close to road closure, whenever that may be.[286] Given how little is known about the amount of mineral resources in the Ambler

[283] *See, e.g.*, 1 SEIS at 3-54.
[284] 2 SEIS App. H at H-24.
[285] 2 FEIS at H-22.
[286] 1 SEIS at 2-11 (emphasis added); *Id*. at 1-3.

Mining District, this statement is meaningless. BLM's supplemental analysis should have provided an intelligible timeframe for road reclamation.

The SEIS should have included a detailed description and analysis of the reclamation process and its impacts. Although AIDEA is only permitting this project as a "temporary" road, the SEIS provided almost no information about AIDEA's plans for reclamation of the project. The SEIS does not discuss basic information regarding how the road will be constructed, let alone how it will be reclaimed. Abandonment and reclamation of project facilities would involve reclaiming mine sites, and removing gravel roads, facility pads, bridges, culverts, and airstrips. Road abandonment and reclamation would impact a broad range of resources, particularly soils, permafrost, vegetation, wetlands, and hydrology. There would also be impacts to subsistence resources, hunting, and access. These and other impacts stemming from reclamation must be incorporated into BLM's supplemental analysis.

In addition, BLM's supplemental analysis for each affected resource and each alternative should have analyzed two scenarios: one in which the road is removed and reclaimed, and one in which the road remains in place permanently. Although AIDEA alleges the road will be reclaimed, many gravel roads have historically been left in place due to the continued use, cost, and the negative environmental effects of removal. Many commenters urged BLM to recognize this fact and consider impacts resulting from the road remaining in place permanently.[287] Indeed, the SEIS recognizes this as a distinct possibility. The SEIS states: "mining companies may request, from the underlying landowner(s), that some segments of the road within the District stay open and revert to mining company control to allow their continued access from the Dahl Creek airport or mining company airstrips to the mines for required water treatment and monitoring activities, to be conducted ***potentially in perpetuity***."[288] The SEIS also notes that AIDEA may not be able to pay for reclamation, because "the financing throughout the life of the project hinges on sufficient revenue from mining companies and is therefore vulnerable to the investment decisions of those entities."[289] In light of these statements — which clearly call into question BLM's assumption that reclamation will ever occur — the SEIS should have fully analyzed the project's impacts should the road remain in place. In the absence of such an analysis, BLM cannot approve the project and must choose the no action alternative.

2. The SEIS's Analysis of the Foreseeable Impacts from the Road Ultimately Becoming Open to the Public Is Inadequate.

In the SEIS, BLM acknowledges that public use of the proposed Ambler Road is reasonably foreseeable, but does not provide an adequate analysis of the impacts of the road becoming open to the public on the environment or the surrounding communities. To comply with its NEPA obligations, BLM must provide a more robust analysis of the potential impacts of the Ambler Road becoming legally open to the public. Absent such an analysis, BLM must deny AIDEA's application and select the no action alternative.

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[287] 3 FEIS at Q-22 to -24.
[288] 1 SEIS at 2-12 (emphasis added).
[289] *Id*. at 2-13.

It is reasonably foreseeable that the Ambler Road will ultimately be open to public use.[290] Like the Dalton Highway, the proposed Ambler Road is likely to eventually be opened to public use because it will be a publicly funded road crossing public land. BLM's analysis still largely relies on and points to AIDEA's claim that the Ambler Road would stay closed to the public and only be used as an industrial access road.[291] BLM's acceptance of this unsupported assertion is contrary to its own acknowledgments and cannot excuse the agency's failure to provide a robust analysis of impacts. AIDEA has not indicated how it plans to keep the road private, particularly over the long term. Nor have BLM, AIDEA, or the State of Alaska provided any legally binding basis for their position that the road would remain closed to public access. The lack of mechanism for keeping the road private is concerning because opening the Ambler Road to public access would exponentially increase the project's impacts on the communities and resources of the region. For example, public use of the road could greatly increase hunter access across the southern Brooks Range and introduce conflicts between urban and traditional subsistence hunters.

The SEIS contemplates the potential for the road to become public without providing sufficient analysis of the potential impacts a public road would have on water resources, wildlife, soundscapes, air quality, and climate change. For issues such as vegetation and wetlands, BLM provides only a cursory analysis of the potential impacts from a public road. For example, the SEIS notes that a public road would necessarily lead to an expansion of the road's footprint, "directly impacting vegetation and wetlands," and the increase in traffic would result in increased fugitive dust generation and sediment transport into waterways.[292] Merely giving a nod to the fact that making the road public would "impact" wetlands and waterways does not constitute the level of detailed analysis that is required under NEPA. For instance, BLM should have analyzed the scope of the expansion, how much more wetland acreage would be impacted by an expansion of the road, what level and intensity of public road use is anticipated, and timing/seasonality of public road use. This shallow level of analysis on such important considerations is similar throughout the sections discussing impacts to wildlife and soundscapes. BLM must provide a more robust analysis of the impacts a public road would have on the surrounding environment to comply with NEPA.

Concerningly, the potential for the road becoming public was not discussed at all in the air quality and climate sections. It is inevitable that opening the road to public access will lead to increased particulate matter pollution from fugitive dust generation as well as other criteria pollutants and HAP emissions from vehicles' tailpipe emissions. Elsewhere in the SEIS, BLM notes that opening the road to the public will lead to increased vehicle traffic,[293] particularly noting "significant traffic increases" from road users en route to Gates of the Arctic,[294] yet fails to acknowledge the impacts that the increased traffic would have on air quality. BLM must account for and analyze the impacts of the road becoming public on air quality around the project area.

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[290] *See* 1 SEIS at 3-235 to -236.
[291] 2 SEIS, App. H at H-31.
[292] 1 SEIS at 3-79.
[293] *Id.* at 3-112, 3-123, 3-171.
[294] *Id.* at 3-171 to -172.

Commenters previously noted concerns over AIDEA's ability to keep the road private and the potential impacts a public road would have on the surrounding communities and environment. In an attempt to address those concerns in the SEIS, BLM provides two examples of restricted access roads in northern Alaska: the Pogo Mine Road and the Delong Mountain Transportation System.[295] However, BLM does not discuss how either example is illustrative of how the Ambler Road would operate as a restricted access road or one that eventually becomes public. To the contrary, the SEIS acknowledges that "given the dearth of developed infrastructure in Alaska, and the value of the road and associated facilities, it is reasonably foreseeable that ultimately, efforts will be taken to convert the Ambler Road to a public-accessible road, not unlike opportunities contemplated for the [Delong Mountain Transportation System]."[296] Both roads are a fraction of the length of the proposed Ambler Road and differ from the Ambler Road in terms of land ownership underlying the roads and connectivity to the Dalton Highway.

In addition to the potential for the road to become public, the SEIS indicates the road would likely be used for commercial deliveries and other non-mining purposes. The SEIS states, in relevant part, "the road would be planned for industrial access, as well as with use of the road for commercial deliveries unrelated to the District but not general public access."[297] Even to the extent the SEIS acknowledges AIDEA has plans for broader use of the road that could involve uses beyond just mining access, the SEIS did not adequately analyze those likely impacts. The SEIS provides a stunted and confusing discussion of AIDEA's plans to use a vaguely conceived permit system for "commercial deliveries."[298] This analysis, tucked away in Appendix H, is problematic. First, BLM's adoption of AIDEA's questionable premise that road access will be limited by a permit system ignores considerable public comments indicating that the road is likely to be made fully public on a permanent basis. While the SEIS acknowledges that, "[O]nce communities are connected to the road for commercial purposes, it is unlikely that those commercial uses would be discontinued,"[299] BLM does not provide any discussion of what impacts permanent commercial use of the road would have. Second, as explained further below, AIDEA's proposed permit system is devoid of even basic details. The SEIS does not provide sufficient detail regarding AIDEA's potential permit system or address the highly likely scenario in which the road is eventually opened to public use. That is inadequate.

The lack of information about these additional road uses needs to be addressed in the final SEIS. In addressing AIDEA's proposed commercial delivery system, BLM must explain which users would be granted road access and for what purposes. BLM's discussion of commercial access in the SEIS amounts to AIDEA's vague "intentions" without providing basic details.[300] For instance, the SEIS states that during an April 2019 presentation to BLM, AIDEA indicated "agencies (with a permit) could have limited access on the road (e.g., for monitoring or

[295] 2 SEIS, App. H at H-32 to -33.
[296] *Id*. at H-33.
[297] 1 SEIS at 2-3.
[298] 2 SEIS, App. H at H-26.
[299] *Id.* at H-33.
[300] Id.

management activities)."[301] Another slide from AIDEA's presentation apparently "indicated that the road would have a 'limited access designation' and listed state and federal landowners, regional Alaska Native corporations, and '***others TBD***' as the groups apparently intended to have limited access."[302] There is no indication whatsoever regarding which agencies would have access, what user groups "others TBD" is meant to denote, or what "monitoring or management activities" are.[303] BLM also did not explain the circumstances under which Alaska Native corporations would be allowed access. Will access be limited to monitoring for resource damage on lands? Or will access be allowed for any purpose? In the final SEIS, BLM must clarify all these aspects of AIDEA's proposal and either provide AIDEA's presentation for public review or refrain from relying on or referencing these materials further.

One important aspect of AIDEA's limited access proposal that should have been addressed during this remand is how the provisions suggested by AIDEA would be enforced. Notably, the SEIS provides no solid legal basis for AIDEA's purported plan to keep the road closed to the public. It is therefore unclear what authority exists to preclude road use where the underlying landowner is, for example, a Native Corporation. Regarding the question of underlying landowners, the SEIS adds considerable confusion. The SEIS states:

> Owners of the land crossed by the road could decide whether to authorize other individual users under separate decision-making processes. For example, if another mine were proposed outside the District, access could be allowed, but *authorization would have to come through the underlying landowner(s) and not from AIDEA* or its road operator. Landowners issuing such authorization would do so in consultation with AIDEA and its road operator, though AIDEA *concurrence would not be required*, and all drivers would be required to follow AIDEA road safety and operations requirements.[304]

This alarming passage does not indicate what activities and uses landowners could authorize and appears to indicate that AIDEA lacks the authority to grant or deny any and all road use authorizations granted by "underlying landowners." It seems possible landowners — such as the State of Alaska — could permit use of the road for any reason, including but not limited to hunting, resource development, recreational off-road-vehicle use, etc. Such activities could have significant impacts to the region's wildlife, water, wetlands, and communities — none of which were adequately analyzed in the SEIS. Additionally, there would be no mechanism to prevent authorizations for vehicle use of the pioneer road during the spring when the pioneer road is not passable or intended for traffic. BLM is obligated to consult with and fully understand the plans and likely restrictions — or lack thereof — that other landowners would put on future use of the Ambler Road. BLM's failure to describe and fully evaluate all the intensely impactful uses that may be authorized by underlying landowners renders the SEIS's impacts analysis inadequate.

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[301] *Id*.
[302] *Id*.
[303] *Id*.
[304] *Id*. at H-27 (emphasis added).

The SEIS also fails to explain AIDEA's assertion that commercial access will not cause impacts beyond the ROW. The SEIS indicates that commercial deliveries to communities would "likely total less than one truck or bus per week" and that "[n]o additional work outside the approved ROW would occur to accommodate this."[305] This assertion is unfounded. Because the road does not directly connect to communities, footprints outside the ROW will be necessary to facilitate delivery of "fuel or freight to staging areas where the communities could access it."[306] However, the SEIS provides no detail regarding how many staging areas may be allowed, how far off of the ROW they will be allowed, or even whether they will be permitted year-round.[307] While BLM included a map entitled "Locations of Potential Commercial Delivery Access," the map merely indicates which communities are likely to be affected by commercial deliveries and provides no information regarding staging areas for these communities.[308] The final SEIS must describe the extent of disturbance outside the ROW that will be necessary to facilitate commercial deliveries to communities and analyze the impact staging areas will have.

The final SEIS must also provide a robust discussion regarding AIDEA's proposal to allow commercial deliveries to other landowners and users. The SEIS indicates that the road is likely to create demand for commercial deliveries for a variety of other users but provides scant information about this possibility. For example, BLM indicates that the road routes under Alternatives A and B would cross through and near several active mining claims, wilderness lodges, Native Allotments, and other areas for which "[i]t is reasonable to assume that there would be demand . . . for commercial deliveries of supplies, mostly for transport over snow from the road to the final destination."[309] This laundry list of potential users creates myriad questions regarding potential users, how a permitting system could be reliably established, and how "commercial deliveries" would be defined. Would commercial deliveries include the transport of personnel?[310] Although AIDEA proposes to limit deliveries to communities to once a week, there is no stated limit regarding the number of commercial deliveries that will be allowed for other landowners and users. Would there be limits to this use, or would each user group simply get a pass for carte blanche road access? BLM must have answers to these questions to analyze the potential cumulative impacts from road use in the final SEIS.

Additionally, the SEIS fails to provide any impacts analysis regarding the potential for more permanent road infrastructure to be placed around the project area. The SEIS notes, "[o]ver the 50-year life of the proposed road, . . . it is reasonable to assume that Bettles/Evansville, Shungnak, and/or Ambler would pursue additional permanent roads connecting to the road."[311] The SEIS further notes that the road from Bettles/Evansville would require a "large, expansive

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[305] *Id*. at H-26.

[306] *Id*.

[307] *Id*. (explaining "commercial transportation providers" could "deliver fuel or freight to staging areas where the communities could access it, *probably in the winter*.") (emphasis added).

[308] *Id*. at H-73.

[309] *Id*. at H-29 to -31.

[310] *Id*. at H-27 (indicating that transport of the "general public" would not be allowed).

[311] *Id.* at H-29.

bridge of 600 feet or more"[312] over the Koyukuk River, a Wild and Scenic River. Construction of permanent, public roads[313] from these communities will lead to significant environmental impacts that are not analyzed in the SEIS. BLM admits that it is reasonable to assume that these communities, in response to the Ambler Road, will pursue building permanent, public roads connecting to the Ambler Road, BLM must analyze the potential environmental impacts of those roads.

In sum, the final SEIS must provide substantially greater detail regarding AIDEA's proposed commercial delivery system and analyze the reasonably foreseeable outcome of the Ambler Road being open to the public. The likelihood of a road project as expansive as the one AIDEA has proposed remaining closed to public use and being reclaimed is exceedingly low. Because AIDEA has yet to provide any legally binding basis to keep the road closed, BLM needs to revise its analysis in the final SEIS to consider this and all other impacts likely to flow from public use of the proposed road. Adequate analysis of this outcome will require a full assessment of the direct, indirect, and cumulative impacts, including socioeconomic and subsistence impacts that could stem from the road being open to the public. Absent additional information and analysis of these impacts, BLM cannot complete a legally defensible analysis of the Ambler Road's impacts on the Southern Brooks Range and must select the no action Alternative.

3. BLM's Analysis of the Impacts of Hardrock Mining in the Ambler Mining District Is Insufficient.

As noted above, hardrock exploration and mining should have been considered as a connected action for purposes of the SEIS. Even to the extent the SEIS considered the effects of mineral exploration and development as part of the indirect and cumulative impacts analysis, that analysis was deficient. The SEIS fails to provide adequate baseline data to characterize the existing environment, or sufficient data or analysis on the potential impacts of additional exploration and development of the four major mineral deposits considered reasonably foreseeable, exploration or development in other areas along the proposed route and alternatives outside of the Ambler District, or the access roads that would connect the Ambler Road to mineral exploration and development. The agencies need to include a more robust analysis of the impacts of exploration and hardrock mining in the SEIS, including the cumulative and indirect effects of mining, climate change, revisions to the Central Yukon Resource Management Plan (CYRMP) and potential revocations of the Alaska Native Claims Settlement Act (ANCSA) (d)(1) mineral withdrawals, including those in the Kobuk Seward Resource Management Plan.

i. The SEIS Fails to Provide Current and Adequate Information on the Full Scope of Potential Mineral Exploration and Development Within the Ambler Mineral District and the Project Area.

The SEIS fails to provide current information on the number, location and status of mining claims, exploration projects, prospects and related infrastructure in the Ambler Mining

[312] *Id.* at H-29 to -30.
[313] *Id.* at H-30.

District and Project Area. According to the SEIS, "The Sun deposit is 36,800 acres in size and a total of 230 State of Alaska 160-acre claims."[314] Yet, according to its 2023 technical report, Valhalla staked 162 new claims north, south, and east of the original 230 contiguous Sun block in September 2021.[315] As a result, the claim block has nearly doubled in size and is comprised of 392 contiguous State of Alaska mining claims that total 62,720 acres.[316] This increases the scale of potential impacts from exploration and mineral development over the 50-year project timeline, but the SEIS fails to analyze this significant increase in impacts.

The SEIS also fails to include and adequately consider new information about other potential mining exploration and development in proximity to the road since the release of the Final EIS. In May 2022, South32 USA applied for hardrock exploration permits for its Roosevelt Project, which lies to the east of the District along Alternatives A and B, with a claim block that extends nearly 50 miles in length.[317] As has been noted in the media,[318] the feasibility of such development is linked to construction of the Ambler Road, making it reasonably foreseeable for purposes of analysis in the SEIS. Further activity at these sites is not simply "foreseeable," but it is already having an impact, with numerous helicopter landing sites, 80 drill holes slated for 2022 alone, and more likely in the future. Such helicopter and exploration activity are cumulative to any associated with road preparation and construction, resulting in additional impacts to wildlife and subsistence hunters that should be considered in the SEIS. Although the SEIS describes the Roosevelt claim in very general terms,[319] it is not included in the maps, and there is no analysis of the potential indirect and cumulative effects of drilling, air flights and other exploration activities described above or reasonably foreseeable from additional exploration.

In addition, and as discussed further below, new claim blocks are outlined in Trilogy's SEC filings, including the West Kobuk (23,680 acres), Helpmejack (19,250 acres), and Malamute claims (12,480 acres).[320] According to the company's press release, "All three claim

[314] 2 SEIS App. H, at H-8.

[315] Mine Development Associates, Technical Report on the Sun Project, Brooks Range, Alaska, USA, Effective Date, December 7, 2021, p. 3, *available at* https://valhallametals.com/wp-content/uploads/2023/06/Sun_43-101_2022_v2.pdf.

[316] Valhalla Metals Inc., World Class Ambler Mining District, Sun VMA Project | Smucker VMS Project, Alaska, USA, November 2023, *available at* https://valhallametals.com/wp-content/uploads/2023/11/Valhalla-PPT-Q4-2023_V2.pdf.

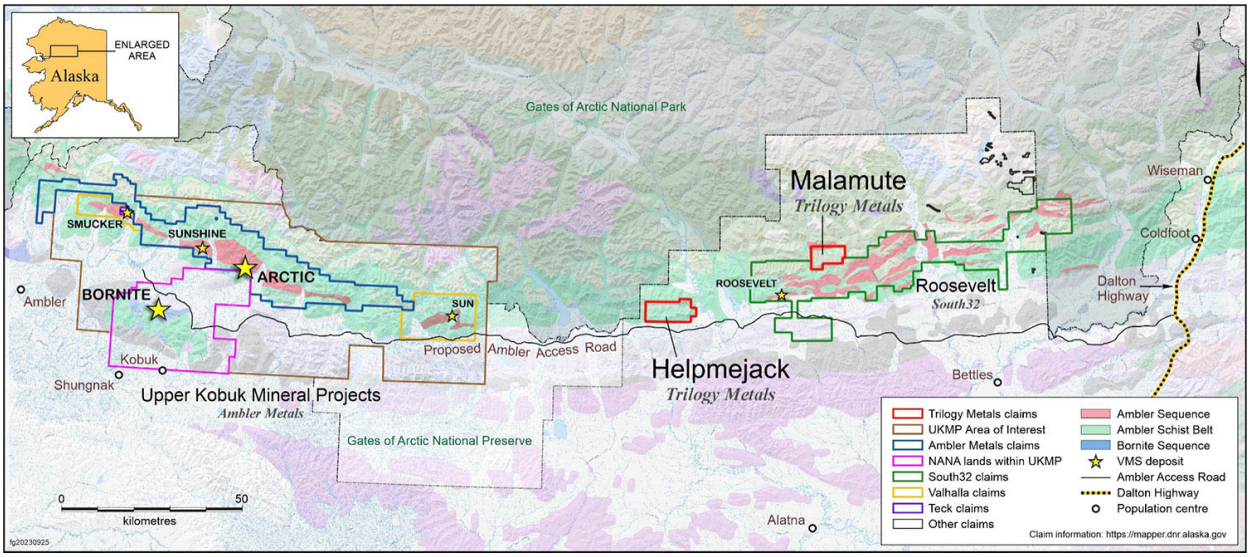
[317] South32 USA Exploration, Inc. 2022. Application for Permits for Hardrock Exploration: Koyukuk Mining District. Roosevelt Project-West. 4 May 2022. Application for Permits to Mine in Alaska (APMA) 20222537, https://aws.state.ak.us/OnlinePublicNotices/Notices/View.aspx?id=207175 (last visited Dec. 13, 2023).

[318] Shane Lasley, *South32 expands exploration in Alaska*, North of 60 Mining News, Jan. 27, 2022, https://www.miningnewsnorth.com/story/2022/01/27/mining-explorers-2021/south32-expands-exploration-in-alaska/7194.html (last visited Dec. 13, 2022).

[319] 2 SEIS App. H, at H-6.

[320] Trilogy Metals, Press Release: *Trilogy Metals begins exploration on claims outside the UKMP*, Oct. 4, 2021, *available at* https://www.sec.gov/Archives/edgar/data/1543418/000127956921001334/ex991.htm.

blocks, which are 100 percent owned by Trilogy, are strategically located along the route of the proposed Ambler Access Road and are prospective for Arctic-type volcanogenic massive sulphide ("VMS") deposits (see map below).[321] These additional claim blocks, air strips, and worker camps also do not appear on the maps that identify mining districts, active claims, mines and mineral occurrences.[322] At a minimum, it is reasonable to assume that additional exploration activities, including flights and drilling, could occur in the 55,410 acres of new claim blocks, and must be considered in the cumulative effects analysis in the SEIS. These claims are depicted in the map below:



The SEIS also fails to describe and take a hard look at the potential impacts associated with new, ongoing or expanded exploration of other prospects within the District. In addition to the four major deposits (Arctic, Bornite, Sun and Smucker), exploration work in the Ambler Belt by Trilogy Metals has identified 30 additional prospects — ten of which have been drill tested (see map below).[323]

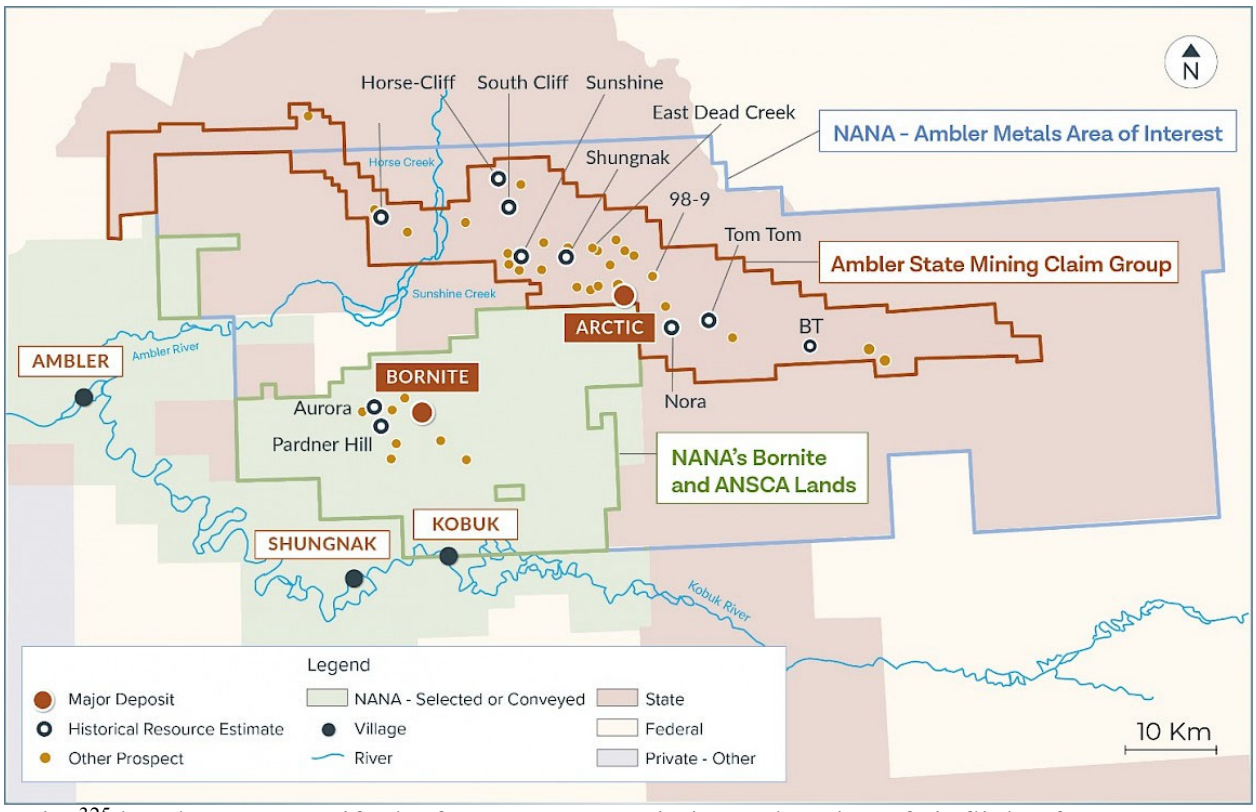
The SEIS talks in generic terms about exploration,[324] but fails to take a hard look at the potential impacts of ongoing and additional exploration throughout the entire Project Area. For example, the SEIS quantifies the number of potential air flights from the four major mineral

[321] Id.

[322] 2 SEIS App. H, at H-53 (Map 1); 4 *id.* at 37 (Map 3-25).

[323] Trilogy Metals, Inc., Exploration, https://trilogymetals.com/properties/exploration (last visited Dec. 11, 2023).

[324] 2 SEIS App. H, at H-9.



deposits,[325] but doesn't quantify the frequency, type, timing or location of air flights from ongoing or potential new exploration over the 50-year timeline. Without that information, it is impossible to determine the potential impacts to wildlife, migratory patterns, and other resources.

These additional mining claims, exploration activities, air strips, and worker camps have the potential for extensive adverse effects to wildlife, wildlife habitat and migratory activities. The maps in Volume 4, including those that identify the overlap between caribou ranges and migration corridors, fail to include these new claim blocks and exploration areas, and the SEIS fails to take a hard look at potential impacts.

Exploration activities such as drilling can also have adverse impacts on wetlands and water resources. Potential contaminant routes could be through drill cuttings disposed of on the surface or in ponds, drill-holes conveying groundwater in contact with sulfides to the surface, or sumps if containment integrity is breached. Research at the Pebble Site in southwest Alaska found that drilling activities resulted in exceedances of water quality criteria at some drill sites.[326] The SEIS fails to quantify the amount of current and expanded drilling, locations, water resources at risk, and other potential impacts associated with increased and expanded exploration activities through the Project Area.

[325] *Id.*, App. H, at H-21 tbl. 2-4.

[326] Kendra Zamzow, Potential Impacts to Wetlands and Water Bodies Due to Mineral Exploration, Pebble Copper-Gold Prospect, Southwest Alaska, 6(7) ENVIRONMENTS 84 (2019), https://doi.org/10.3390/environments6070084.

ii. The Agencies Failed to Obtain Adequate Baseline Data or Characterize Existing Conditions.

The stated purpose of the proposed action is to facilitate mineral exploration and development, including four projects that the SEIS considers reasonably foreseeable for full mine development. However, the SEIS fails to provide adequate baseline information to characterize existing conditions, and it provides conflicting information about the resources at risk from the potential effects of those projects, as discussed in the following sections.

a. *Wildlife Resources*

The SEIS provides scant information for some of the species that are important ecologically or for local food and economic security. For example, discussions of impacts to large carnivores are devoid of much of the relevant research and agency data that is readily available. For example, impacts to wolverine are largely dismissed based on the assumption that "wolverines also tend to select alpine habitat which would be less affected by all of the action alternatives."[327] While this statement is relevant to wolverines in the contiguous United States and southern boreal, this assumption does not hold for the northern boreal or Arctic, where wolverines are abundant and widely distributed based on both academic research and hunter/trapper records available through the Alaska Department of Fish and Game.

b. Water & Aquatic Resources

The SEIS states that "overall water resources are in a fairly pristine state," and "the majority of streams and lakes within the project area are undisturbed and have little to no human-caused impacts on water quantity, water quality, riparian function, or stream stability."[328] This conflicts, in part, with significant new scientific information about the tremendous changes to water and aquatic resources in the region that are occurring as a result of human-induced climate change.

Thawing permafrost in particular has significant impacts on aquatic ecosystems through the release of carbon, mercury, and nutrients.[329] USGS-led research has found that permafrost loss due to a rapidly warming Alaska is leading to significant changes in the freshwater chemistry and hydrology of the Yukon River Basin.[330] The study found that the Yukon River and

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[327] 1 SEIS at 3-141.

[328] 1 SEIS at 3-28, 3-43.

[329] C.L. Ping et al., Permafrost soils and carbon cycling, SOIL (2015); Frey et al., Impacts of permafrost degradation on arctic river biogeochemistry, HYDROLOGIC PROCESSES 169–82 (2009).

[330] R.C. Toohey, et. al., Multidecadal increases in the Yukon River Basin of chemical fluxes as indicators of changing flowpaths, groundwater and permafrost, 43(23) GEOPHYSICAL RESEARCH LETTERS (2016), https://doi.org/10.1002/2016GL070817; U.S. Geological Survey, Permafrost Loss Changes Yukon River Chemistry with Global Implications, Nov. 30, 2016, https://www.usgs.gov/news/permafrost-loss-dramatically-changes-yukon-river-chemistry-and-hydrology-potential-global.

one of its major tributaries, the Tanana River, have experienced significant increases in calcium, magnesium and sulfates. Other research has determined that mercury in fish tissue in the Yukon is projected to increase as a result of thawing permafrost due to climate change.[331]

Climate change is also contributing to widespread impacts to water temperature, fish and fish habitat within the area. A 2020 study finds that "Chinook salmon (Oncorhynchus tshawytscha) declines are widespread and may be attributed, at least in part, to warming river temperatures. Water temperatures in the Yukon River and tributaries often exceed 18˚C, a threshold commonly associated with heat stress and elevated mortality in Pacific salmon."[332] In June 2019, the Tubutulik near Elim and Koyuk had record high temperatures at the Vulcan Creek gage site 30 miles from the mouth; hundreds of otherwise healthy (not spawned out) dead fish including pink and chum salmon and white fish in the river were observed.[333]

A recent study concludes that increased cold season discharge and earlier freshet that occurs under warmer conditions enhance riverbank erosion in most areas.[334] Similarly, in the Yukon River watershed, rivers that traditionally remained frozen are beginning to melt as a result of warming temperatures; permafrost is also degrading during the winter months, resulting in increasing geochemical river loads and groundwater movement.[335]

While many of these changes are described in generic terms throughout the SEIS, the SEIS contains conflicting descriptions and fails to provide current and/or quantitative data to characterize key resources at risk from mineral exploration and development. It is vital that the SEIS accurately characterize conditions resulting from a changing climate in order to analyze the potential indirect and cumulative effects of mineral exploration and development.

The SEIS also fails to characterize important water resources at risk from mines identified as reasonably foreseeable. There are no maps in the SEIS that provide sufficient detail of the Ambler Mineral District to identify the potential surface and groundwater resources at risk from exploration and mineral development. Although Maps 9 & 10 in appendix H appear to be the most detailed, the scale is insufficient to identify anything but major rivers, and it is not clear

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[331] Kevin Schaefer et al., *Potential impacts of mercury released from thawing permafrost*, 11(1) NATURE COMMUNICATIONS (2020), *available at* https://www.nature.com/articles/s41467-020-18398-5.

[332] Bowen et al., "Transcriptomic response to elevated temperatures in adult migrating Yukon River Chinook salmon (Oncorhynchus tshawytscha), Conservation Physiology, Volume 8, Issue 1, 2020. https://pubs.er.usgs.gov/publication/70215368

[333] Dan Joling, *Alaska SalmonDeaths Blamed on Record High Temperatures*, ANCHORAGE DAILY NEWS, Aug. 24, 2019, https://www.adn.com/alaska-news/wildlife/2019/08/23/alaska-salmon-deaths-blamed-on-record-high-temperatures.

[334] Brown et al., *Implications of climate variability and changing seasonal hydrology for subarctic riverbank erosion*, 162 CLIMATE CHANGE 1–20 (2020), https://link.springer.com/article/10.1007/s10584-020-02748-9

[335] Nat'l Sci. Foundation, NNA Track 1, Collaborative Research: The climate impacts on Alaska communities as told through co-produced scenarios 2020-2024. National Science Foundation awards 1928189.

that these maps were informed by actual on-the-ground baseline data about those aquatic resources.

Preliminary wetland determinations and mapping have been completed and are referenced as part of the Arctic Deposit Feasibility Study, yet this information is not included in the SEIS. According to the feasibility study, the Arctic deposit study area includes the entire Subarctic Creek drainage and the majority of the areas that could be directly impacted by the proposed Arctic open pit and mine facilities. According to the Feasibility Study, the broad study area comprises 715 acres of potentially jurisdictional wetlands, 40 acres of Waters of the United States and 5,155 acres of non-jurisdictional uplands.[336] Additional wetlands delineation work was done by DOWL in 2016, 2018, and 2019 to provide wetlands delineation of the entire proposed Arctic Project footprint including access roads, camps, stockpiles, mining, and waste storage facilities. This information is necessary to characterize the resources at risk from developing the Arctic deposit, and the associated roads to access the deposit.

Similarly, the most recent Bornite deposit technical report identifies baseline studies that have been ongoing since 2008, including archaeology, aquatic life surveys, sediment sampling, wetlands mapping, surface water-quality sampling, hydrology, meteorological monitoring, and subsistence.[337] It describes studies to characterize conditions in Ruby Creek and the Shungnak River, project-wide wetlands delineation, including the Bornite Lands and the area from Dahl Creek to the Arctic Deposit and possible facilities locations, wetlands delineation for the road corridor between the Bornite Airstrip and the Arctic Airstrip, soil sampling at the Bornite Camp, Bornite Airstrip and along the Kobuk to Bornite Road. The SEIS fails to include this information or otherwise characterize these important resources.

c. Soils

The SEIS references the Central Yukon Analysis of the Management Situation Report (CYAMS) for current soil conditions, but fails to include key information in the SEIS narrative. For example, the CYAMS finds, "In the lowlands, permafrost underlies much of the planning area except where major rivers, alluvial fans, or active floodplains exist. Due to these factors, these soils are highly susceptible to erosion or other soil movement caused by disturbance of the ground-covering vegetation and subsequent thawing of the permafrost."[338] It emphasizes that, "Planning area soils are thin and fragile. Once damaged, recovery to an original state may require the span of several human lifetimes. Disturbance to ice and moisture-rich soils frequently results in extensive erosion, further retarding recovery."[339]

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[336] Arctic Technical Report, *supra*.

[337] Trilogy Metals, Inc., NI 43-101 Technical Report on the Bornite Project, Northwest Alaska, USA 20-1 to -5 (Feb. 11, 2022).

[338] U.S. BLM, Analysis of Management Situation Central Yukon Resource Management Plan 11 (Apr. 2016) [hereinafter BLM Central Yukon Analysis], https://eplanning.blm.gov/projects/lup/35315/72940/80089/CYRMP_AMS_all_April_2016_Final.pdf.

[339] *Id.* at 13.

It also finds that, "Due to warming of soils and thawing of permafrost in the planning area in the past decades, mass wasting and frozen debris lodes have become more active (Daanen et al. 2012). This has resulted in more areas experiencing catastrophic downwasting."[340] It highlights the risks to transportation corridors, stating that "Mass wasting and frozen debris lodes occur on permafrost-stabilized slopes within the Brooks Range and its foothills. When permafrost soils warm on hillslopes, there is a loss in soil volume, structure, and strength. This results in greater susceptibility to erosion and mass wasting during thawing. These are of particular concern along the Utility Corridor, where they pose a potential direct hazard in the coming years and decades to the Dalton Highway and the Trans Alaska Pipeline (Daanen et al. 2012)." This information, which characterizes the increased risks due to soil conditions in the project area should be included in the SEIS, and permafrost maps should be updated to characterize existing conditions.

To analyze the cumulative and indirect effects of mineral development and exploration, the agencies must ensure that the SEIS fully characterizes the existing social and environmental conditions, including, but not limited to subsistence resources, soils, vegetation, amphibians, fish and wildlife and their habitat, wetlands, birds, cultural resources, hydrology, hydrogeology, air quality, ambient sound, GHG emissions, etc. to ensure that the agencies have the information necessary to analyze the potential impacts of the exploration and mining projects that have potential indirect, direct, cumulative effects and are connected to, and furthered by, construction of the Ambler Road.

iii. The SEIS Identifies Substantial Adverse Impacts from Mineral Exploration and Development that Support a "No Action" Alternative.

Notwithstanding its limited baseline data or lack of updated information regarding the potential mining development in the District, the SEIS nonetheless outlines that there will be extensive adverse impacts to fish, wildlife, waters, and other vital resources that may occur from mineral exploration and development. In terms of impacts to fish and fish habitat, the SEIS states, "Construction of the road is anticipated to lead to the development of mines near habitat that is *essential* for Chinook, chum, and coho salmon; sheefish; broad and humpback whitefish; Arctic grayling; and several other species that are integral to the subsistence practices throughout the region."[341] The SEIS finds that mining has the potential to "to substantially impact habitat structure, quality and function affect fish species at the population level," it could "disrupt natural surface and groundwater interactions and process, reduce the amount of EFH for already declining stocks of Pacific salmon, likely impact water quantity and quality, affect biodiversity and fish production."[342] It finds that mine dewatering has the potential to substantially reduce groundwater flows into important spawning egg incubating and wintering habitat relied upon by salmon, sheefish, whitefish, and other species.

[340] Id.
[341] 1 SEIS at 3-104 (emphasis added).
[342] Id.

The SEIS also finds that hardrock mining often involves moving massive amounts of soil and rock, which disrupts the natural surface and groundwater interaction and associated hyporheic processes, reduces extensive amounts of aquatic habitat, can seriously impact water quality, decrease water quantity, reduce biodiversity and carrying capacity and require treatment of toxic mine water.[343] It states that "toxic dust from open pits, roads and processing facilities can result in the contamination of aquatic habitat and contribute to the bioaccumulation of toxins, such as PAHs and heavy metals, in fish tissue"[344] and "mine haul rods, such as the reasonably foreseeable spur roads in the Kobuk River watershed, can impact fish habitat via fugitive dust, contamination of roadside vegetation with heavy metals, and road runoff . . . ."[345] The SEIS also finds that "Impacts on water resources quality may include increased dust from mining operations, potential spills and containment of ore concentrates, chemicals used in processing ore, fuels and process water, in addition to wastewater from operations of facilities and camps, and may require treatment of mine water in perpetuity . . . ."[346] All of these findings point to the fact that, even on the limited record available, the Ambler Road and mining development it enables would cause significant degradation of aquatic resources across a broad region.

As discussed further below, the adverse impacts identified in the SEIS are further affirmed by the compliance record of three mines (Pogo, Red Dog and Kensington) that the SEIS identifies as *typical* mines for purposes of understanding mine development, closure, and reclamation. All three of these typical mines have been out of compliance with major federal laws to protect air, land, and water over the last 2 years. The EPA compliance database shows the Red Dog Mine out of compliance with the Clean Air Act, the Kensington Mine out of compliance with the Clean Water Act, and the Pogo Mine out of compliance with the Resource Conservation Recovery Act over the last 12 quarters. The failure of these three typical mining operations, with three different operators, to comply with federal lands to protect water, air and lands, demonstrates that the no action alternative is the only alternative that will prevent unacceptable impacts from reasonably foreseeable mineral operations in the Ambler District.

The U.S. Forest Service also identified significant impacts associated with the Red Dog, Kensington, Greens Creek, and other mines in a report it commissioned and considered in its NEPA review for withdrawing federal lands from mineral entry to protect natural and cultural resources in the Rainy River Watershed in Minnesota.[347] The case studies of these mines were "identified to provide instructive insight into real-life impacts."[348] The search identified environmental impacts at all 20 case studies, including impacts on air quality, health, and safety, water quality, and Indigenous communities. Similarly, it reinforces the necessity of the no action alternative to protect vital cultural and natural resources at risk from the proposed Ambler Road and associated development.

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[343] *Id.* at 3-105.
[344] Id.
[345] Id.
[346] *Id.* at 3-44.
[347] U.S. Dep't of Agriculture, Rainy River Withdrawal: Case Studies Report (June 2022).
[348] *Id.* at 3 (emphasis added).

iv. The SEIS Fails to Adequately Analyze the Impacts of Hardrock Exploration and Mining.

Although the SEIS describes many of the myriad adverse impacts associated with hardrock mineral exploration and development, it fails to adequately analyze the potential indirect and cumulative effects of mineral exploration and development in the project area. As noted above, the SEIS points to, and incorporates by reference, information from the Kensington Gold Project Final Supplemental EIS (USFS 2004), Pogo Gold Mine Final EIS (2003), and the Red Dog Mine Extension Aqqaluk Project Final Supplemental EIS (EPA 2009) as examples of quantitative information on mine development, closure, and reclamation for "typical" mines.[349] The SEIS says that information from these three mines has been used in development of the hypothetical baseline development scenario. It is insufficient to reference quantitative information located in other documents, rather than providing that information within the Ambler Road EIS.[350] Furthermore, these documents are dated and often based on descriptions of potential impacts that fail to disclose the full range of actual impacts associated with the mines described as typical operations.

a. Impacts to Water Resources from the Failure to Control Wastewater

All of the mines identified as typical mines in the SEIS (Kensington, Pogo, and Red Dog), have resulted in water quality violations from failure to capture and treat wastewater over an extended period of time. In 2019, the Kensington Mine agreed to pay penalties totaling $534,000 for 200 water quality violations, including violations of permit limits for discharges of manganese, ammonia, sulfate, toxicity, pH and turbidity into Sherman Creek, and violations of permit limits for discharges of cadmium, sulfate, total dissolved solids and manganese into East Fork Slate Creek extending over a 5-year period from 2013–2018.[351] Acid mine drainage was also released into East Fork Slate Creek during construction between 2006 and 2010.[352] According to the EPA press release on the violations,

> Mine water discharges that are not properly controlled and treated can harm water quality and aquatic life. By introducing high concentrations of toxic metals or increasing sediment turbidity, fish can be harmed, and eggs can be smothered in stream bottom gravels. When introduced unchecked, high-velocity

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[349] 2 SEIS App. H, at H-10.

[350] Id.

[351] U.S. EPA, Press Release: EPA and Coeur Alaska Settle Over Alleged Kensington Mine Pollution Discharges: Company Will Pay Fines After 2015 Inspection Reveals Violations of Multiple Envtl. Rules (Aug. 8, 2019) [hereinafter Kensington Press Release], *available at* https://www.epa.gov/newsreleases/epa-and-coeur-alaska-settle-over-alleged-kensington-mine-pollution-discharges.

[352] Associated Press, *Coeur Alaska fined $170,000 for Kensington Mine violation*, FAIRBANKS DAILY NEWS MINER (May 5, 2017); Peter Segall, *Acid mine drainage found at Kensington Mine: State Dep't Issues a Notice of Violation to Company for Violating Water Quality Standards*, JUNEAU EMPIRE (Sept. 30, 2008).

discharge water can also erode stream banks and cause or contribute to riverbank failure.[353]

Similarly, at the Red Dog Mine, Teck agreed to pay a $120,000 civil penalty to the EPA for permit violations, including exceedances of the discharge permit effluent limits and discharges of unpermitted wastewater.[354] At the Pogo Mine, the EPA's online enforcement and compliance database identifies CWA violations between 2016 and 2019. The State of Alaska issued a compliance letter alleging that between November 17, 2015 and November 16, 2018, the Pogo Mine "did unlawfully fail to comply with conditions of its discharge permit," including violations of its discharge permit for cadmium, copper, and iron that were identified during an inspection in November 2018.[355] None of these impacts to water resources are described in the Kensington, Pogo, or Red Dog EIS's cited in the SEIS, but impacts to water resources from the failure to capture and control wastewater regularly occur and should be considered reasonably foreseeable impacts from a typical mine.

The SEIS appears to dismiss these potential impacts, stating that "ADEC would issue permits to authorize the disposal of tailings, waste rock and wastewater, and ensure compliance with applicable water quality standards," and that "[p]ermanent disposal of the potentially hazardous waste rock, and treatment of drainage discharges from such rock, must meet all permit requirements."[356] However, the assertion that compliance with applicable water quality standards is "ensured" is directly contradicted by the compliance history of currently operating Alaska mines, as described above. The Bristol Bay Watershed Assessment considered the potential for wastewater releases from the hypothetical development of the proposed Pebble Mine, stating that "[w]ater collection and treatment failures could result in exceedance of standards potentially including death of fish and invertebrates."[357]

Similarly, a review of modern operating hardrock mines in the U.S. identified significant impacts to surface and/or groundwater resources, and associated beneficial uses, from wastewater releases. For example, a 2012 review of 14 out of 16 operating U.S. copper mines, accounting for 89 percent of copper production in the U.S., found that 92 percent failed to capture and treat wastewater, resulting in significant water quality impacts.[358] A similar 2019 review of 14 out of 15 operating copper mines, accounting for 99 percent of U.S. copper

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[353] Kensington Press Release, *supra*.

[354] US EPA, Archived News Release, Teck Alaska, Inc., assessed $120,000 EPA penalty for water violations at Red Dog Mine and Port Site (Sept. 10, 2009), https://archive.epa.gov/epapages/newsroom_archive/newsreleases/f196a5569e6349748525762d007ac08e.html.

[355] Sumitomo Metal Mining, 2012 *Annual Activity and Monitoring Update* (Mar. 27, 2013), *available at* http://dnr.alaska.gov/mlw/mining/largemine/pogo/pdf/pogo2013ppt.pdf.

[356] 1 SEIS at 3-21; 2 *id.* App. H, at H-13.

[357] 1 U.S. Envtl. Prot. Agency, An Assessment of Potential Mining impacts on Salmon Ecosystems of Bristol Bay, Alaska (2014) [hereinafter EPA Bristol Bay Report].

[358] BONNIE GESTRING, EARTHWORKS, U.S. COPPER PORPHYRY MINES REPORT: THE TRACK RECORD OF WATER QUALITY IMPACTS RESULTING FROM PIPELINE SPILLS, TAILINGS FAILURES AND WATER COLLECTION AND TREATMENT FAILURES (Jul. 2012, rev. Nov. 2012).

production, found that 93 percent failed to capture and treat wastewater, resulting in significant water quality impacts.[359] Indeed, the SEIS acknowledged that "For the 25 modern mines in the United States selected for detailed case study, 100 percent of mines predicted compliance with water quality standards, but 76 percent of mines exceeded water quality standards as a direct result of mining, and 64 percent of mines employed mitigation measures that failed to prevent water contamination. Predictions made about surface and groundwater quality impacts without considering the effects of mitigation appear to be more accurate than those that take mitigation into account."[360]

The SEIS should also consider the potential impact associated with acid mine drainage or metals leaching that continues in perpetuity, requiring perpetual water treatment. Acid runoff at the Red Dog and Kensington Mines requires water treatment in perpetuity. Trilogy also predicts that water treatment will be required in perpetuity at the Arctic Project.[361] It states that seepage from waste rock will be collected in the waste rock collection pond in perpetuity, with a seepage volume at closure of approximately 800 cubic meters per day[362] (equivalent to 77 million gallons per year), which will be stored in the open pit prior to treatment. As described in a literature review and U.S. Forest Service documents, hardrock mineral mining of sulfide-bearing rock, no matter how it is conducted, poses a risk of environmental contamination due to the potential failure over time of engineered mitigation technology.[363] As such, the SEIS should consider the potential for uncontrolled acid drainage or metals leaching from the Arctic Project on water quality impacts to surface or ground water resources far into the future.

The SEIS failed to evaluate the indirect and cumulative impacts associated with perpetual pollution requiring active water treatment, including maintaining access in perpetuity, the disposal of water treatment waste products, the need for long-term power for water treatment facilities, management of an acidic pit lake, including the risks of public and wildlife access to acidic waters, and the inevitable failures that occur when operating water treatment facilities in perpetuity, particularly in adverse weather conditions. The SEIS should identify the projected perpetual water quality impacts as an irreversible and irretrievable commitment of water resources.

The SEIS should consider the direct, indirect, and cumulative hydrologic effects of the four projects in the Ambler Mining District on specific surface and groundwater resources, including groundwater drawdown associated with dewatering the open pits or underground

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[359] BONNIE GESTRING, EARTHWORKS, U.S. OPERATING COPPER MINES: FAILURE TO CAPTURE AND TREAT WASTEWATER (May 2019), *available at* https://earthworks.org/cms/assets/uploads/2019/05/FS_Pebble-FAILURE-TO-CAPTURE-AND-TREAT-WASTEWATER.pdf.

[360] 1 SEIS at 3-106.

[361] Arctic Feasibility Study, *supra*, at 312 (emphasis added)

[362] Arctic Feasibility Study, *supra*, at 349.

[363] RECLAMATION RESEARCH GROUP, ACID MINE DRAINAGE AND EFFECTS ON FISH HEALTH AND ECOLOGY: A REVIEW (2008) (prepared for the U.S. Fish and Wildlife Service, Anchorage Fish and Wildlife Field Office), http://www.pebblescience.org/pdfs/Final_Lit_Review_AMD.pdf.

tunnels; water use for processing, dust control, etc.; and water use for maintaining tailings pond water covers or other reclamation activities, and any other water uses for mining and associated activities. None of these additional water uses were adequately accounted for in the SEIS. The SEIS should quantify the potential effects of hydrologic impacts to specific wetlands, surface, and groundwater resources from mining activities. For example, the total average inflow for the open pit at the Arctic deposit is estimated to run up to 3,760 cubic meters per day, and the tailings management facility will be designed to store approximately 3.0 million cubic meters of water,[364] yet the SEIS failed to quantify the estimated water use at the four potential mines or make any effort to analyze the potential effects on the associated water resources.

b. Hazardous & Unpermitted Releases

All three of the mines cited as typical in the SEIS have also experienced major spills of hazardous materials.[365] The Red Dog mine has repeatedly spilled mine concentrate, containing high concentrations of zinc, along its haul road.[366] These impacts occurred after the referenced 2009 FEIS.[367] Despite employing a range of mitigation measures, transportation accidents along the haul road at the Red Dog Mine continue to occur, with adverse impacts, including a 2014 spill of 10,000 gallons of zinc concentrate spilled from a truck trailer, a 2015 spill of 18,125 gallons of zinc concentrate from a truck rollover, a 2016 spill of 140,000 pounds of zinc concentrate from a truck accident, and a 2019 truck rollover that spilled approximately 5,300 pounds of zinc concentrate.[368]

The SEIS appropriately incorporates updated spill risk estimates based on a new analysis from Lubetkin (2022), which uses ADEC's spill database to calculate the "R" in the most commonly used spill model to estimates spills specific to the proposed Ambler Road and alternatives.[369] Based on this analysis, it concludes that the potential range of accidents involving trucks carrying ore concentrate over the life of the project would be between 258.6 and 6,884.7 or approximately 5.2 to 136.9 annually — a substantial number of potential spills of hazardous material.

BLM, however, draws unsupported conclusions in the SEIS, stating that "[t]he likelihood of substantial environmental effects is considered low, but there is a small risk that the effect could be substantial . . . ."[370] There is no analysis to support the conclusion of relative risk. EPA

[364] Arctic Feasibility Study, *supra*, at 16.

[365] Bonnie Gestring, Alaska Metal Mines: The Track Record of Impacts to Land and Water from the Failure to Capture and Treat Wastewater (2020) [hereinafter Gestring 2020], *available at* https://earthworks.org/wp-content/uploads/2021/09/AK-MINE-POLLUTION-REPORT-2020.pdf.

[366] Elizabeth Harball, *State Raises Concerns about Red Dog Mine Spill Cleanups*, ALASKA'S ENERGY DESK (Aug. 3, 2019), *available at* https://www.ktoo.org/2019/08/03/state-raises-concerns-about-red-dog-mine-spill-cleanups/.

[367] Gestring 2020, *supra*.

[368] *Id.*

[369] 1 SEIS at 3-19 to -20.

[370] *Id.* at 3-21.

described the ecological consequences of a concentrate spill from a hypothetical mine in the Bristol Bay watershed, stating that "[f]ish and invertebrates would experience acute exposure to toxic water and chronic exposure to toxic sediment," and "[a]ccidents that spill processing chemicals into a stream or wetland could cause a fish kill."[371]

The SEIS states that "The action taken to remediate environmental impacts of the release would be "protective of public health and the environment."[372] However, in response to spills along the Red Dog haul route, state regulators have expressed concern about the timeline and difficulty of remediation efforts.[373] The adverse effects of remediation to tundra vegetation should also be considered in the SEIS.

In addition to spills along the haul road, the SEIS should also consider the potential cumulative effects of on-site releases of hazardous materials during mining operations. The SEIS inappropriately defers to other EISs to describe the risk of spills and impacts from spills from on-site mine operations at the reasonably foreseeable mining operations, stating that the effects are anticipated to be similar to those experienced at the Red Dog Mine (EPA 2009) and discussed in the spill risk assessment in the Donlin Gold EIS (USACE 2018).[374] The Red Dog Mine, for example, has experienced extensive on-site spills that have occurred since the referenced 2009 EIS, such as 225,000 gallons of contaminated water spilled from the mine's tailings pond to land and fresh water in August 2021.[375] The State of Alaska's 2022 annual SPAR report, the most recent available, finds that mining was responsible for 77% of Alaska's oil and hazardous substance spills by volume and 99% of contaminated water spills by volume, primarily due to equipment, line, and valve failure.[376]

The SEIS cannot assume compliance with applicable laws for hazardous materials. The management of hazardous materials at other typical mines (the Pogo and Greens Creek) have resulted in RCRA violations. In 2023, the Pogo Mine was penalized $600,000 for improper storage and disposal of hazardous waste. The 2023 EPA ECHO compliance database shows the Greens Creek Mine with significant violations and in noncompliance with the Resource Conservation and Recovery Act for the last 12 quarters.

The SEIS also fails to analyze the potential effects of uncontrolled sewage associated with mine operations and/or worker camps. In 2011 the State of Alaska issued a Notice of Violation to Pogo alleging that between November 1, 2010 and continuing up to September 30, 2011, the mine "did fail to comply" with its permit limit.[377] The NOV identified violations for

[371] EPA Bristol Bay Report, *supra*, at ES-19.

[372] 1 SEIS at 3-21.

[373] Elizabeth Harball, *State Raises Concerns about Red Dog Mine Spill Cleanups*, ALASKA'S ENERGY DESK (Aug. 3, 2019), *available at* https://www.ktoo.org/2019/08/03/state-raises-concerns-about-red-dog-mine-spill-cleanups.

[374] 1 SEIS at 3-22.

[375] ALASKA DEP'T OF ENVTL. CONSERVATION, SPAR ANNUAL REPORT, FISCAL YEAR 2022 (2022), https://dec.alaska.gov/media/mcmpkilp/fy22-spar-annual-report.pdf.

[376] Id.

[377] State of Alaska, Dep't of Envtl. Conservation, Enforcement Tracking No. 11-0929-40-

discharges of pH, manganese, fecal coliform, iron and cyanide above permit limits. During that year, fecal coliform was measured at a maximum daily value of 30,000, 34,000 and 200,000#/100mL, which is 75, 85 and 500 times the amount allowed for that discharge point. extensive releases of untreated sewage from the Pogo Mine resulted in water quality violations for *e coli*.[378]

c. Impacts to Soil Resources

The SEIS fails to take a hard look at the impacts of exploration and mining on soil resources. The Central Yukon AMS finds that "Planning area soils are thin and fragile. Once damaged, recovery to an original state may require the span of several human lifetimes. Disturbance to ice and moisture-rich soils frequently results in extensive erosion, further retarding recovery."[379] The planning area contains both large expanses and small, dispersed occurrences of soils that are classified as thaw-sensitive, and the "[t]he magnitude and scope of climate change effects on soil resources in the planning area are expected to be widespread, with potentially greater impacts than from all the other resource programs or permitted activities. It will consequently be critical that future resource uses in the planning area minimize impacts to thaw-sensitive permafrost soil areas, in order to reduce potential cumulative effects to this sensitive resource."[380]

The Central Yukon AMS also found that "[s]urface mining, in the form of placer mining and gravel pits, is currently ongoing within the planning area" and that it has "localized yet severe impacts on soil resources which can last for decades, if not longer."[381] It determined that "[s]urface mining involves drastic alteration of vegetation, soils, and subsurface materials," and "can result in the complete loss of organic top soils and vegetation, which impairs water infiltration into the soils . . . [and] creates a subsequent alteration in surface and subsurface hydrology."[382]

It forecasts future impacts from mining, stating that, "Surface mining continues in the planning area with an increase in permitted operators in the past 5 years. This has resulted in more soils being negatively impacted by affecting infiltration and permeability rates, moisture storage, and stability of upland soils."[383] "Surface mining is expected to continue in the planning area and increase if gold prices increase. These activities will continue to negatively affect soil resources, especially in wetland and riparian areas."[384] The AMS report also highlights the difficulty and length of time it takes to reclaim mining-disturbed areas, stating that, "post-

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9557, Notice of Violation (Dec. 1, 2011); State of Alaska, Dep't of Envtl. Conservation, Consent Order No. 11-0929-50-0002 (May 9, 2012).

[378] Gestring 2020, *supra*.

[379] BLM Central Yukon Analysis, *supra*, at 13 (emphasis added).

[380] *Id*.

[381] *Id*.

[382] *Id*.

[383] *Id*.

[384] *Id*. at 14

reclamation recovery of mine sites to a condition usable by fish can take decades.[385] Furthermore, it describes how current management activities are not preventing impacts to floodplains and wetlands because, for example, "notice level mining operations do not follow the minimization, restoration or protection standards because NEPA is not required on this type of activity."[386]

d. Vegetation and Watershed Condition

The CYAMS describes already declining watershed conditions within the planning area, stating that, "Since about the mid to late-1980s (the time in which the current Central Yukon and Utility Corridor resource management plans were approved), there has been a declining trend in watershed condition and the associated functioning status of riparian-wetlands on BLM-managed lands within the planning area."[387] According to the CYAMS, "Since the authorization of the current land use plans (Central Yukon and the Utility Corridor), the land use activities that have been most detrimental to riparian-wetlands are mining and infrastructure construction."[388] It emphasizes that "In light of the lengthy recovery times associated with riparian-wetlands, and the fact that certain permafrost-controlled non-riparian wetlands cannot be rehabilitated following disturbance, the forecasted trend for riparian-wetlands, given current management prescriptions and land use allocations, is for a continued downward trend."[389]

The SEIS also should have taken a hard look at potential impacts to vegetation, wetlands, and watershed health from fugitive dust emissions from typical mining operations. Fugitive dust from the tailings storage facilities at the Red Dog and Greens Creek Mine have resulted in metals-contaminated vegetation.[390] An audit conducted in 2018 at the Greens Creek Mine confirmed that fugitive dust emissions from the tailings facility were also a concern for surface water quality.[391] As described below, there is a lack of field-verified wetlands delineations along the proposed Ambler Road corridor which makes assessing impacts to wetlands and their functions essentially impossible. The dearth of data regarding wetlands types and functions in the Ambler Mining District further compounds the significant problems with the current permitting

[385] *Id.* at 50
[386] *Id.* at 220, 222, 225
[387] *Id.* at 44.
[388] *Id.* at 45.
[389] Id.
[390] ABR Inc., Assessment and Delineation of Vegetation Community Impacts and Wetland Mapping at the Red Dog mine, Prepared for Teck Cominco Alaska Inc. (July 18, 2006); ABR Inc., Vegetation Impact Assessment and Monitoring Studies, Red Dog Mine, Alaska, Second Annual Report (Dec. 2007); ABR, Inc., Vegetation Impact Assessment and Monitoring Studies, Red Dog Mine Alaska, 2008., Third Annual Report (Feb. 2009); 1 U.S. Dep't of Agriculture, Tongass National Forest, Greens Creek Mine Tailings Disposal Facility Expansion, FINAL Environmental Impact Statement & Record of Decision at 3-8 (Sept. 2018); HDR, Hecla Greens Creek Mine, Final Environmental Audit (Jan. 2019), *available at* http://dnr.alaska.gov/mlw/mining/largemine/greenscreek/pdf/gcaudit2019.pdf.
[391] Id.

process, given that the Corps and BLM should be evaluating all of the impacts to wetlands from the road and future mining together.

The SEIS also fails to adequately analyze the amount of surface disturbance associated with exploration and mineral development. Table 2-10 in Appendix H of the SEIS described the potential surface disturbance associated with production of four reasonably foreseeable mines. The SEIS acknowledges that the surface disturbance could be 50 percent larger, however it fails to provide a range of maximum surface disturbance impacts.[392] The SEIS also states that no effort was made to estimate gravel needs associated with the proposed mining activities.[393] Without this information it is impossible to evaluate the potential cumulative impacts associated with excavating gravel resources for secondary roads and mineral development.

e. Impacts to Air Quality

The SEIS fails to take a hard look at the potential indirect and cumulative impacts of mineral exploration and development on air quality. The SEIS dismisses potential cumulative impacts on air quality by stating that "No activities that would require air quality permitting would be permitted if they would be likely to exceed the NAAQS or AAAQS. Therefore, these activities combined are unlikely to exceed regional air quality standards."[394] It further states that "[i]mpacts from mines would be site-specific and permitted specifically to proposed operations and potential emissions to avoid exceeding air quality standards."[395] Once again, the compliance record for typical mines in the region (e.g., the Red Dog Mine) demonstrates that the SEIS cannot assume that air quality standards will be met. The EPA's compliance database identifies current high priority Clean Air Act violations at the Red Dog Mine, with noncompliance extending over the last 12 quarters, from January 2021 – November 2023.[396] A 2022 review of EPA's Enforcement and Compliance History Online (ECHO) database shows two quarters of noncompliance of the CAA at the Kensington Mine, which included federally reported violations of exceedances of nitrogen oxides in 2020.[397] As such, air quality impacts, including exceedances of air quality standards, from mineral development at the four reasonably foreseeable mining operations could occur.

The SEIS also inappropriately defers to the EIS for the proposed Donlin Gold Mine as a recent conventional example of a mine reviewed for air quality impacts, rather than providing an analysis of the four reasonably foreseeable mining operations in the District or considering the actual effects to air quality from typical mines, such as Red Dog.[398] BLM needed to consider the potential indirect and cumulative effects of air quality impacts from reasonably foreseeable mining operations, including the potential for releases that exceed air quality standards.

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[392] 2 SEIS App. H, at H-23.

[393] Id.

[394] 1 SEIS at 3-60.

[395] *Id.* at 3-51, 3-61.

[396] U.S. Envtl. Prot. Agency, ECHO database, Detailed Facility Report: Red Dog Mine, https://echo.epa.gov/detailed-facility-report?fid=110000601705&ej_type=sup&ej_compare=US (last visited Dec. 11, 2023).

[397] U.S. Dep't of Agriculture, Rainy River Withdrawal: Case Studies Report (June 2022).

[398] 1 SEIS at 3-68.

f. Impacts to Wildlife, Wildlife Habitat, Connectivity, Migration Routes

The SEIS finds that "The indirect and cumulative impacts from development of the District and secondary access roads, and other development or activities to other large herbivores throughout the analysis area would be additive to and synergistic with the action alternatives (Appendix H)."[399] It further concludes, "Habitat loss due to the mines is predicted to be thousands of acres, not including access roads (see Appendix H, Table 2-10). Habitat loss and alteration due to the reasonably foreseeable development of the District could equal or exceed that from the road itself (Appendix H, Table 2-11) and exponentially increase fragmentation of ungulate habitat."[400] The SEIS comes to the same conclusion about carnivore habitat.[401] It also predicts that mines would encroach on Dall sheep alpine habitat and approach the periphery of muskox range. The SEIS draws general conclusions about the potential profound impact on wildlife and wildlife habitat from reasonably foreseeable mines (i.e., the four major deposits outlined in Table 2-11), but it fails to include data or analysis of the potential effects of additional exploration activities (as described above), including air traffic, in the District and along the road corridors.

g. Greenhouse Gas Emissions & Climate Change

The SEIS estimates greenhouse gas emissions associated with transporting the ore to the port of Alaska to Anchorage.[402] As described below in comments regarding the SEIS's consideration of climate change, this analysis is deficient for multiple reasons. Moreover, the feasibility study for the Arctic Deposit anticipates that the ore concentrate will be shipped from Alaska to a refinery, likely in the Pacific Asia region, for refining.[403] The SEIS should estimate GHG emissions for the full transportation route. Furthermore, the SEIS fails to estimate GHG emissions for the four reasonably foreseeable mining operations over the 50-year timeline. For example, the Red Dog Mine, Kensington Gold Mine, and Greens Creek Mine emit 152,985 MT per year, 32,469 MT per year, and 24,846 MT per year, respectively.[404]

The SEIS finds that the project would not generate sufficient GHG emissions to affect global climate, incrementally with other projects, and would contribute to the accumulation of relatively small emissions worldwide that have together resulted in climate change.[405] CEQ guidance to federal agencies directly discourages this type of approach, saying

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[399] *Id.* at 3-150.
[400] Id.
[401] *Id.* at 3-82.
[402] *Id.* at 3-56.
[403] Arctic Feasibility Study, *supra*.
[404] U.S. ARMY CORPS OF ENG'RS, DONLIN GOLD PROJECT FINAL ENVIRONMENTAL IMPACT STATEMENT 3.26-8 (2018), https://www.arlis.org/docs/vol1/E/Donlin/1066694857/1066694857-ch3sec26.pdf.
[405] *Id.* at 3-56.

> CEQ recognizes that the totality of climate change impacts is not attributable to any single action, but are exacerbated by a series of actions including actions taken pursuant to decisions of the Federal Government. Therefore, a statement that emissions from a proposed Federal action represents only a small fraction of global emissions is essentially a statement about the nature of the climate change challenge, and is not an appropriate basis for deciding whether or to what extent to consider climate change impacts under NEPA.[406]

The SEIS must provide an accurate and reasonable assessment of the regional contributions of the proposed project by considering the projected GHG emissions from the Ambler Road and the mining activity it will enable, and the potential local and regional impacts.

The SEIS notes that the greenhouse gas ("GHG") emissions from the project add a small proportion to total emissions, skirting the problem that all emissions must be dramatically reduced to avoid the worst effects of climate change.[407] Pleune et al. (2020) expressed this as follows:

> The hotter the world gets, the graver the forecasted consequences. Observed warming trends reinforce the importance of limiting global warming to 1.5°C to avoid catastrophic effects and reduce the severity of unavoidable changes. To achieve this result, the International Panel on Climate Change ("IPCC") identifies a reduction target for global net anthropogenic carbon emissions of 45 percent by 2030 and a net zero target by 2050 in order to limit warming to a (hopefully) manageable level. At this late stage in the game, the equation is simple. Higher greenhouse gas ("GHG") emission trajectories lead to higher forecasted global warming with graver environmental and security consequences. In other words, high emissions result in high risk. Failing to reduce GHG emissions is a risk management failure.[408]

As CEQ poignantly reminds all federal agencies: Given the urgency of the climate crisis and NEPA's important role in providing critical information to decision makers and the public, NEPA reviews should quantify proposed actions' GHG emissions, place GHG emissions in appropriate context and disclose relevant GHG emissions and relevant climate impacts, and identify alternatives and mitigation measures to avoid or reduce GHG emissions.

The SEIS must also consider the cumulative effects of mining and climate change. Mining activity contributes stress to an already climate stressed system. Changes in freshwater temperature in combination with increases in mine drainage from increasing precipitation and

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[406] Council on Environmental Quality, CEQ-2022-0005: National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change , 88 Fed. Reg. 1196 (Jan. 9, 2023).

[407] 1 SEIS at 3-56.

[408] Jamie Pleune et al., The BLM's Duty to Incorporate Climate Science into Permitting Practices and a Proposal for Implementing a Net Zero Requirement into Oil and Gas Permitting, 32 COLO. NAT. RES., ENERGY & ENVTL. L. REV. (2021), *available at* https://ssrn.com/abstract=3756375.

extreme events may accelerate biogeochemical (dissolved organic carbon, nitrate, soluble reactive phosphorus, sulfate, etc.) fluxes from sediments to streams, significantly altering water chemistry and impacting aquatic species (Corrales et al. 2011, Duan and Kaushal 2013, Myrbo et al. 2017). Heavy rainfall and flooding have the potential to impact mining infrastructure such as tailing dams, process ponds, and tailings pipelines. This infrastructure may not retain structural integrity, increasing the likelihood of spills and metal leaching, resulting in degraded water and soil quality.

v. The SEIS Fails to Take a Hard Look at the Potential Direct, Indirect, and Cumulative Effects of Small-Scale Mining.

The SEIS should also take a hard look at the potential direct, indirect and cumulative effects of such a keystone decision as it relates to small-scale mining, such as placer and suction dredge operations, which would have the potential to increase with increased access to rivers and streams throughout the region from the development of the proposed Ambler Road, secondary roads, and the reasonably foreseeable potential for the road to become publicly accessible.[409] Placer operations, suction dredge, and other smaller scale mining operations can have significant adverse impacts on water quality and aquatic resources. BLM describes the adverse impacts to water quality and fish habitat from mining operations in its 2016 Analysis of Management Situation for the Central Yukon Resource Management Plan:[410]

> In recent years, water quality meters have been installed above and below mining operations on Gold and Marion Creeks during open water periods when mining operations are active to determine if water quality standards are being met. These meters indicate that these streams (Gold Creek 2012 and Marion Creek 2013) have exceeded State of Alaska Water Quality Standards for turbidity especially during high flow events.[411]

> In any given watershed, there will likely be discontinuous blocks of disturbed ground within the floodplains of the mined streams for as long as mining occurs. Though there is a known reduction in available fisheries habitat in mined streams, the full extent to which mining activities have impacted fish populations is unknown because pre-mining fisheries data are unavailable for many streams.[412]

The AMS found that, "Since the signing of the Utility Corridor Plan Record of Decision (ROD) in 1991, and the Central Yukon ROD in 1986, disturbed watersheds within the planning areas have experienced downward trends in fish habitat condition."[413] This has been "due in

[409] *See generally* C.J. Johnson et al., *Growth-inducing infrastructure represents transformative yet ignored keystone environmental decisions*, CONSERVATION LETTERS 13(2), p.e12696 (2020).

[410] BLM Central Yukon Analysis, *supra*.

[411] *Id.* at 12.

[412] *Id.* at 50.

[413] Id.

large part to a steady increase in development. Most of the impact is tied to locatable mineral extraction occurring along the Dalton Highway and at remote sites scattered throughout the planning area."[414]

The AMS also describes how current management activities are not preventing impacts to floodplains and wetlands because, for example, "notice level mining operations do not follow the minimization, restoration or protection standards because NEPA is not required on this type of activity."[415] It also finds that "[w]ithin the Central Yukon Planning Area water quality is not being maintained in many streams that have been altered by placer mining," and that "mitigation to date has been ineffective in regard to non-point source pollution."[416] BLM and the Corps must consider the impacts to aquatic resources which would result from mining along the proposed Ambler Road corridor.

vi. The SEIS Contains Insufficient Data or Analysis on the Secondary Access Roads that Would Connect the Ambler Road to Mineral Exploration and/or Development.

The SEIS further fails to adequately analyze the impacts of the secondary access or spur roads that would be necessary to connect the proposed Ambler Road to the four projects considered reasonably foreseeable for development, and other potential development along the road. For example, the 2023 technical report for the Arctic Project describes the development of a northern route that will connect the Ambler Road to the Arctic Mine: "The north route will be 22 km long and will support operations at the Arctic mine by transporting employees, mining equipment, supplies, and ore concentrate to and from the mine site. Approximately the first 8.8 km of the north route will be new construction across the Ambler lowlands. The remaining 13 km will upgrade an existing undeveloped summer/winter trail, including 7.7 km that extend up a narrow and steep valley to the Arctic mine site."[417] The access road would extend along Subarctic Creek. It also identifies a southern route to connect the workers to the air strip. "The south route will be 21.4 km long and will be used to transport employees and air freight from the Dahl Creek airport to the Arctic mine. The first 17 km will generally follow the alignment of the existing road between the airport and the existing exploration camp. The remaining 4.5 km to the junction with the AAP road will require new construction."[418]

The SEIS provides broad generalizations about the potential effects of access or spur roads.[419] For example, in terms of impacts to soil resources, it states that "Spur roads would expand the geographic scope of ground disturbance and dust deposit."[420] This type of non-specific qualitative statement is inadequate. The SEIS must provide estimated road lengths and widths, locations, acreage, stream crossings, culverts, presence or absence of NOA, wetlands, cultural resources, sediment deposition, and/or other information necessary to understand

[414] *Id.* (internal quotation marks omitted).
[415] *Id.* at 220, 222, 225.
[416] *Id.* at 224 (emphasis added).
[417] Arctic Feasibility Study, *supra*, at 298.
[418] *Id.*
[419] 1 SEIS at 3-14.
[420] Id.

potential impacts on a myriad of resources from access roads for mineral exploration and development in the Project Area.

vii. The SEIS Failed to Consider the Cumulative Effects of Changes to BLM's Land Management Regimes.

The BLM must consider the cumulative effects of the proposed Ambler Road in conjunction with reasonably foreseeable changes to the Central Yukon Resource Management Plan (CYRMP), and the potential lifting of ANCSA (d)(1) withdrawals in the CYRMP and the Kobuk Seward RMP. The Central Yukon RMP is currently being revised, with a revised RMP expected in 2024.[421] The preferred alternative (C2) in the Draft EIS emphasizes resource extraction.[422] Under this alternative, 98% of the BLM-managed lands in the planning area would be open to mining, and all of the areas currently designated as Areas of Critical Environmental Concern (ACECs) would be eliminated. According to the BLM's analysis, the CYRMP preferred alternative (C-2) could "impact the largest overall proportion of fish and fish habitat in the decision area," have the "greatest potential for impacts from surface disturbance," and have "the greatest cumulative impacts on water resources" (along with Alternative D).[423] For example, Alternative C2 would open substantially more acres of sensitive water resources in areas of high potential to locatable mineral development.[424]

The BLM's 2015 ACEC analysis identified numerous existing and nominated ACECs that provide "crucial" salmon, whitefish, Dolly Varden, or sheefish habitat.[425] The ACEC analysis states that permafrost underlies most of these ACECs, and the soils around the upwelling and downwelling areas associated with spawning habitat in these ACECs are "unique and fragile," and that "any disturbance" of these soils would affect the spawning area's flow regime and would negatively affect egg survival. The report emphasized that this habitat is

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[421] Bureau of Land Mgmt., BLM National NEPA Register: Central Yukon Planning Area Alaska, https://eplanning.blm.gov/eplanning-ui/project/35315/510 (last visited Dec. 11, 2023).

[422] 1 U.S. Dep't of the Interior, Bureau of Land Management, Central Yukon: Resource Management Plan and Environmental Impact Statement Draft (2020) [hereinafter Central Yukon DEIS]

[423] Central Yukon DEIS, *supra*, at 3-76.

[424] Increasing acres open to locatable mineral development in high mineral potential areas from 26,000 acres to 45,000 acres in 100-year floodplain and from 114,000 acres to 167,000 acres in high value watersheds.

[425] *See* Bureau of Land Mgmt., Central Yukon Resource Management Plan: Areas of Critical Environmental Concern 3–6 tbl. 1 & 2 (2015) [hereinafter 2015 ACEC Analysis], *available at* https://eplanning.blm.gov/public_projects/lup/35315/66005/71748/2015-11-24_CYRMP_ACEC-Rpt_final_508_reduced.pdf. Existing ACECs include Hogatza River Tributaries, Indian River, Jim River, Sulukna River, Tozitna River and nominated ACECs include Alatna River, Hogatza River expansion, Indian River expansion, Jim River expansion, Klikhtentotzna Creek, Sethkokna River, South Fork Koyukuk River, Sulukna River, Telsitna-Titna, Upper Teedriinjik, Pah River and Wheeler Creek.

"essential" for "maintaining salmon diversity in the planning area and in Alaska as a whole,"[426] and further described the regional and state-wide importance of these populations, including the population of sheefish in the proposed Pah River ACEC that are considered "genetically unique"[427] maintaining salmon spawning and rearing habitat along Dakli and Wheeler Creeks is "crucial for the species longevity," and the whitefish spawning habitat in Alatna River ACEC is the only documented spawning area in the upper Koyukuk drainage.[428]

As described above, the preferred alternative would eliminate all existing Areas of Critical Environmental Concern (ACEC) designations, removing important land management protections for vital fish habitat.[429] According to the agency's analysis, current management activities are not preventing impacts to floodplains and wetlands because, for example, "notice level mining operations do not follow the minimization, restoration or protection standards because NEPA is not required on this type of activity."[430]

Even if the preferred alternative is not chosen, all of the alternatives considered in the CYRMP (other than the no action alternative) are heavily tilted towards development as demonstrated by the allocation of acreage by alternative: ROW exclusions (Alt. B = 17.6%; Alts. C1, C2 and D = 2%); ACEC protections (Alt. B=30%; C1=3%; C2=0.6%; D=0%); Lands with Wilderness Characteristics (Alt B = 2%; C1, C2 and D = 0%); and all alternatives (except the no action alternative) propose the revocation of ANCSA 17(d)(1) withdrawals in the planning area,[431] which must be considered in the cumulative effects analysis.

Revisions to the CYRMP would also have adverse effects on subsistence users. According to the CYRMP draft EIS, the full or partial revocation of Public Land Order (PLO) 5150 triggers conversion of top-filings to valid selections.[432] This would impact federal priority subsistence access and harvest provisions provided under Federal Subsistence Management regulations for the communities of Allakaket, Anaktuvuk Pass, Bettles, Coldfoot, Evansville, Rampart, Stevens Village, and Wiseman.[433] With the full revocation of PLO 5150, as proposed in the preferred alternative, the CYRMP states that the

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[426] *Id.* at 46 (Jim River); *id.* at 49 (South Fork Koyukuk River); *id.* at 57 (Upper Teedriinjik River).

[427] *Id.* at 4.

[428] *Id.* at 3.

[429] As currently defined, ACECs protect areas where there is a historic, cultural or scenic value; fish or wildlife resource; or another natural system or where there is a natural hazard present that has substantial significance and value or cause for concern and requires special management. 43 C.F.R. § 1610.7-2.

[430] BLM Central Yukon Analysis, *supra*, at 220, 222, 225.

[431] Bureau of Land Mgmt., Central Yukon Draft Resource Management Plan/Environmental Impact Statement: Questions & Answers, https://www.virtualpublicmeeting.com/cy-rmp-eis-question-and-answer#land-withdrawals (last visited Dec. 11, 2023).

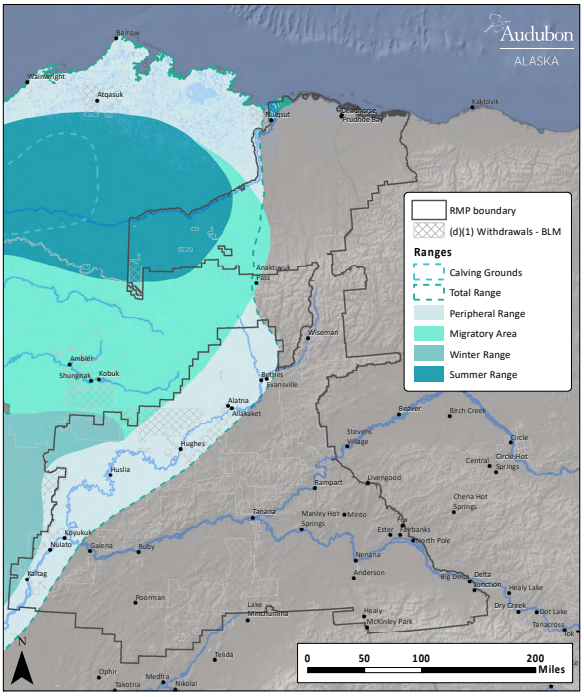
[432] Central Yukon DEIS, *supra*, at 3-185.

[433] Id.

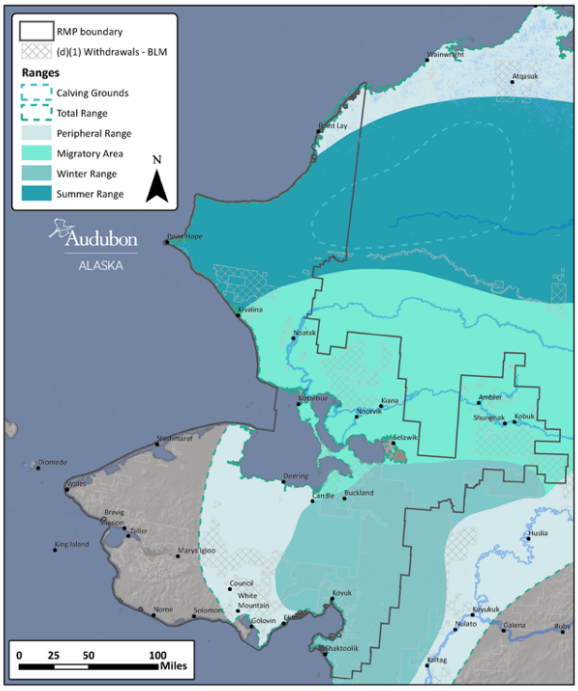
restrictions on the use of firearms in this area, as compared with Alternative A and the other action alternatives. Because of these effects, the communities of Alatna, Allakaket, Anaktuvuk Pass, Bettles, Evansville, and Stevens Village in the planning area may experience an increased cost of living and a heightened risk of food insecurity due to impacts on subsistence resources, constituting a disproportionate and negative impact.[434]

The cumulative effects of the revised CYRMP would have significantly greater adverse effects on fish and wildlife and their habitat, including subsistence resources and subsistence users, and must be analyzed (see map below from Audubon Alaska).

(d)(1) withdrawals in the Central Yukon RMP and the Western Arctic Caribou Herd



(d)(1) withdrawals in the Kobuk-Seward Peninsula RMP and the Western Arctic Caribou Herd



Similarly, BLM is considering the revocation of ANCSA 17(d)(1) withdrawals in the Kobuk Seward planning area, with potential cumulative effects on water resources, fish and wildlife (including caribou), subsistence, and cultural resources. On December 14, 2023, BLM released a Draft EIS analyzing the potential effects of lifting the withdrawals. The proposed action in the ANCSA DEIS (Alternative D) would revoke ANCSA 17(d)(1) withdrawals consistent with the action described in the January 2021 PLOS, including PLO 7899 in the Kobuk Seward planning area.[435] Revocation of withdrawals on certain parcels of land could result in changes in land management status including an increase in the level of development

[434] *Id.* at 3-180.

[435] BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, ANCSA 17(D)(1) WITHDRAWALS DRAFT ENVIRONMENTAL IMPACT STATEMENT 5 (2023).

allowed on those parcels. The ANCSA DEIS identifies potential impacts to a variety of resources in the Kobuk Seward planning area that should be considered in the cumulative effects analysis for the Ambler Road. For example, the proposed action (Alternative D) in the Draft EIS is projected to result in significant restriction to subsistence uses affecting user access for 117 rural communities that may overlap or are adjacent to withdrawals.[436] It finds that subsistence user access for those communities would be affected due to a loss of Federal subsistence priority, resulting in an increase in competition for subsistence resources from non-rural, Federally non-qualified hunters. The communities of Ambler, Koyuk, Kivalina are listed among those that would be impacted.[437]

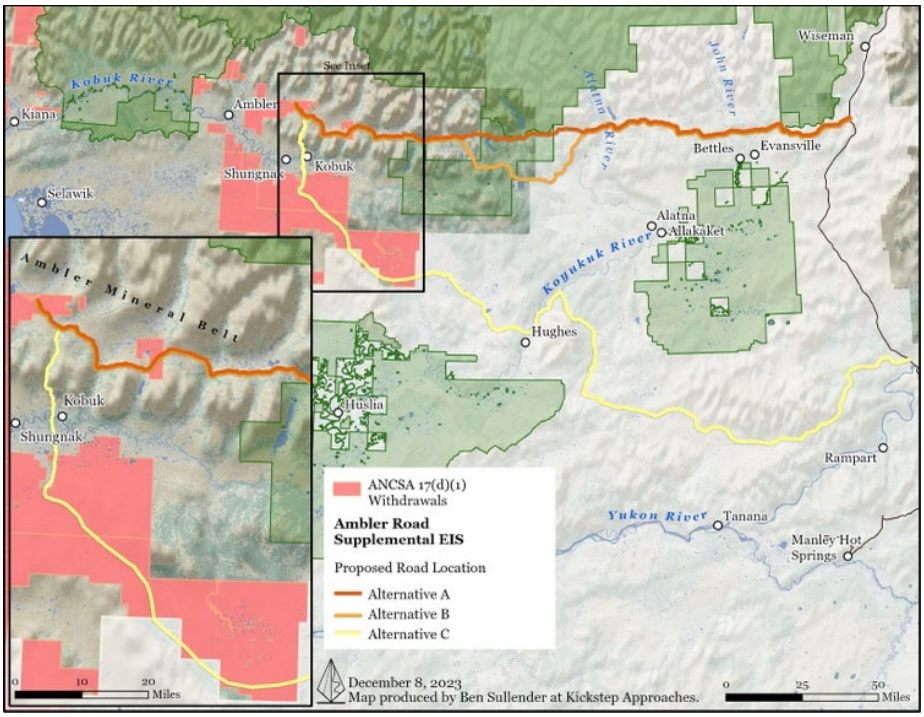
Impacts to wildlife, including caribou, should also be analyzed. For example, the ANCSA DEIS identifies impacts to caribou from the proposed action (Alternative D) that would result in impacts to 31,000 acres of Western Arctic Caribou herd range on 17(d)(1) revocations where priority conveyances are more likely to be developed.[438] According to the ANCSA DEIS, "Impacts on migrating caribou increase with density of roads and infrastructure; thus, increased development of the planning areas resulting from reasonably foreseeable development activities and revocation of 17(d)(1) withdrawals would contribute to changes in caribou migration, distribution, and abundance, with resulting impacts on subsistence resource availability to communities that use these resources."[439]

It also finds that, "The above reasonably foreseeable mining, oil and gas, transportation, and infrastructure projects could contribute to contamination of waterways, air, and foraging habitat through oil spills, mine tailings, fugitive dust from roads and construction, and emissions from equipment. In combination with increased lands open to development as a result of revocation of 17(d)(1) withdrawals, cumulative spills could reduce the abundance of certain subsistence resources including salmon, non-salmon fish, waterfowl, and vegetation."[440]

The ANCSA DEIS also emphasizes the adverse cumulative effects of potential changes in the CYRMP, stating that "In addition to the 17(d)(1) withdrawals being considered in the draft EIS, land management decisions in other planning areas, including the Central Yukon and Eastern Interior planning areas, would contribute to impacts on subsistence users.[441]

The Ambler SDEIS fails to take a hard look at the potential cumulative effects of these impacts, including quantifying the amount and location of lands in the Ambler Road Project Area that may lose protections or otherwise see land use management changes, and provide maps that document the overlap of (d)(1) withdrawal areas, such as that shown below:

[436] *Id.* App. C, at 58.
[437] *Id.* App. C, at 55–57 tbl. C-8.
[438] *Id.* at ES-13.
[439] *Id.* App. C, at 64.
[440] *Id.* App. C, at 65.
[441] *Id.* App. C, at 66; *see id.* at 67–72 tbl. C-10.



The SEIS must take a hard look at the potential harm to salmon, sheefish, caribou, lands with wilderness characteristics, watershed health, cultural and visual resources, high value watersheds, anadromous waters and other resources from the potential revisions to Resource Management Plans, revocation of ACECs, ANCSA 17(d)(1) withdrawals and other protections that are under consideration in these planning areas. Maps such as the one above should be included to document the overlap of these management areas and (d)(1) lands with the proposed Ambler Road and the impact area.

4. The SEIS Fails to Fully Consider Cumulative Effects and Other Reasonably Foreseeable Future Development.

The proposed Ambler Road, mining in the Ambler District, and other reasonably foreseeable developments will have an immense impact on the communities and resources of the largely undeveloped southern Brooks Range. BLM fails to provide a robust cumulative impact analysis commensurate with these significant and likely irreversible cumulative impacts in the SEIS. "Cumulative actions" are those "which when viewed with other proposed actions have cumulatively significant impacts."[442] "Cumulative impact" is defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions."[443] Such impacts can result from individually minor but collectively significant actions taking place over a period of time.[444] As discussed below and elsewhere throughout these comments, the agencies must identify and fully consider all potential cumulative effects in their supplemental analysis.

[442] 40 C.F.R. § 1508.25(a)(2).
[443] *Id*. § 1508.7.
[444] *Id*.

It is reasonably foreseeable that the Ambler Road will spur additional road construction and mine claim development along the road corridor. All such activities must be considered in the SEIS. As noted in prior comments, maintenance of the Ambler Road could lead to synergistic increases in development in surrounding regions, and longer-term impacts in the Ambler Mining District because the road could continue to be used for future development. As proposed, the ROW does not stretch the full distance to the Ambler Mining District, but instead ends south of the anticipated development areas. It is reasonably foreseeable that mining companies will seek to build additional roads to connect individual mining sites to the proposed road, and some may be as long as 50 miles. It is also reasonably foreseeable that the road will result in the development of additional mines both within the District and along the road corridor. BLM notes in the SEIS that a variety of mining claims are present along the road corridor, which may use the road to access these claims.[445] BLM attempts to downplay this likelihood by asserting that such exploration would continue regardless of the outcome of the Ambler Road permitting process;[446] however, that does not excuse the agency's failure to closely analyze the impacts of such future activities because they are still reasonably foreseeable. Moreover, Trilogy Metals recently touted its findings regarding zinc deposits — the Helpmejack and Malamute prospects — which stretch for many miles along the Ambler Road corridor.[447] Tellingly, Trilogy's press statement stresses the close proximity of the road corridor to these prospects, implying strongly that it plans to use the proposed road for access.[448] AIDEA also recently indicated it anticipates there would be up to five concurrent mine operations, which would in turn have cascading effects across the region and more broadly to areas outside of the road, including along the Dalton Highway.[449] Besides failing to consider the impacts from vehicle use to reach these claims, the SEIS failed to adequately analyze the cumulative impacts of furthering these additional mining activities. Furthermore, BLM indicates that the road could revert to mining company control to allow continued access from airstrips to the mines in perpetuity.[450] The impact of permanent continued use by mining companies and of additional mining along the road corridor should have been fully analyzed in the SEIS's cumulative effects analysis. BLM's failure to do so violates NEPA.

There are also project elements that will need to be developed to allow for the transport of any minerals outside of the region. AIDEA Board Chair Dana Pruhs recently acknowledged that the road is "only one part of the logistics chain" and that AIDEA needs to look "holistically" at the full set of transportation logistics for the project.[451] Similarly AIDEA's Executive Director touted that the Ambler Road "has the potential to lead to up to five concurrent mine operations

[445] 2 FEIS at H-38.

[446] *Id*.

[447] Trilogy Metals, Press Release, Trilogy Metals Advances 100%-Owned Helpmejack Project in the Eastern Ambler Schist Belt, Alaska; Exceptionally High Zinc Values in Stream Sediment Samples (Sept. 27, 2023).

[448] *Id*. ("The project is among several exploration projects located along the proposed route of the Ambler access road.").

[449] 2022 AIDEA Press Release.

[450] 1 SEIS at 2-12.

[451] 2022 AIDEA Press Release.

over time, which will have broad impacts to Alaska's existing transportation infrastructure."[452] Based on that, AIDEA commissioned a feasibility study to evaluate ore concentrate transportation routes starting from the intersection of the Ambler Road with the Dalton Highway via rail to potential export terminals within Alaska. These additional infrastructure needs are directly connected to the development of the Ambler Road and should have been analyzed in depth in the SEIS, but were not. The failure to analyze the impacts of these foreseeable and directly related future developments renders the SEIS inadequate under NEPA.

Any realistic analysis of the Ambler Road's cumulative impacts must also be framed within the larger context of existing pressures to increase industrial connectivity across Alaska. Specifically, the Ambler Road may spur a renewed push to expand the DeLong Mountain Transportation System Port for the exportation of not only ore, but also the immense coal resources of the western Arctic. The project may also increase economic pressure to build roads to the north into other mineral zones and coal deposits currently closed to development in the National Petroleum Reserve in Alaska and elsewhere in Alaska. It is also reasonably foreseeable that the proposed road will ultimately connect to Nome, which is currently facing a potential push to increase shipping traffic at its port.[453] A road to Nome has been an Alaska discussion for decades.[454] Most recently, the Western Alaska Access Planning Study Corridor Planning Report evaluated alternative corridors connecting the existing road system to Nome and the Seward Peninsula. One of its final two alternatives was a northerly route that follows roughly the same route as the proposed Ambler ROW from the Dalton Highway to just east of Gates of the Arctic, where it passes south of the Preserve.[455] It does not require imagination to envision a connection between the Ambler District and Nome if a Dalton Highway right-of-way is authorized.[456]

BLM's cumulative analysis to date has been inadequate and has not been rectified here. In the SEIS, BLM lists the following categories of activities as reasonably foreseeable future actions: North Slope development, consisting of activities in the Arctic National Wildlife Refuge Coastal Plain, National Petroleum Reserve-Alaska (NPR-A), and offshore in the Arctic Ocean; small scale mineral mining along the proposed Ambler Road corridor; extension and eventual closure of Red Dog mine; climate change; Dalton Highway improvements; communication towers "in the vicinity of the Ambler Road;" fiber-optic cable connectivity; ANCSA 17(d)(1) land withdrawals expiring; expansions and upgrades to the Ports of Nome and Alaska; the Cape Blossom Road; and the Mahn Choh and Graphite One mines.[457] While this list of reasonably

[452] *Id*.

[453] Emily Schwing, "Like a highway going right past us": Nome grapples with its future as Arctic shipping traffic increases, ALASKA PUBLIC MEDIA, Feb. 23, 2023.

[454] Tim Bradner, *Road to Nome Is Subject of Renewed Studies*, Alaska J. of Commerce, Sept. 3, 2009.

[455] Western Alaska Access Planning Study (WAAPS): Corridor Planning Report, DOWL HKM, January 2010.

[456] 2 SEIS at G-34 to -38 (explaining that connecting the Ambler Mining District to Nome via a road is possible but eliminating the route from considered alternatives because Nome currently lacks the necessary deep-water port and because of environmental impacts from this route).

[457] 2 SEIS at H-38 to -39.

foreseeable future actions may appear robust compared to the FEIS, the significant analytical problems have not changed: BLM fails to actually analyze the impacts of the actions cumulatively with the impacts from the proposed Ambler Road.

With few exceptions, the cumulative effects analysis for each resource ignores most or all of these identified reasonably foreseeable future actions and only discusses impacts from development within the Ambler Mining District.[458] Table 3-1 purports to analyze these "reasonably foreseeable actions" with a single column capturing 1-2 sentences vaguely describing impacts to each resource.[459] The SEIS's entire analysis of the cumulative impacts to subsistence resources from the proposed Ambler Road in conjunction with its list of reasonably foreseeable future actions, is as follows: "could result in reduced harvesting opportunities for local residents and alterations in subsistence harvesting patterns."[460] This statement of the obvious — that development in the Arctic could, in combination with the project, impact subsistence users — falls far short of BLM's obligation to take a hard look at the cumulative effects of the proposed project. The SEIS fails to assess specific projects and describe how these foreseeable future actions could cumulatively impact the very same resources that are at risk from construction, operation, and maintenance of the proposed road to Ambler.

The SEIS must also analyze all past, present, and reasonably foreseeable future actions in a broad geographic area, including all watersheds that the proposed corridor crosses. Many relevant activities were either not addressed or insufficiently addressed in the SEIS. For example, past military developments in the Arctic have led to many contaminated sites in and around the project area. However, previously contaminated sites are not included in the list of relevant past and present actions in the SEIS.[461] In the SEIS, BLM should evaluate whether further asbestos contamination from gravel mining in the area may cause additive or synergistic impacts.

The SEIS should also consider the impacts from specific road and development projects in the area. For example, the proposed road to Umiat on the eastern end of the road, may lead to increased subsistence hunting pressure, habitat fragmentation, and disturbance to wildlife. ConocoPhillips' Willow project is only the beginning of the company's plans to expand their oil and gas infrastructure west. Such future projects are likely to result in cumulative impacts to caribou in combination with the Ambler Road. However, they were not included in BLM's list of reasonably foreseeable developments and are not addressed in the SEIS's subsistence impacts section.

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[458] *See e.g.*, 1 SEIS at 3-123 to -124 (analysis of birds — which contains the one of the most robust cumulative effects analyses in the SEIS — discussing Arctic oil development, expansion of the Red Dog Mine, climate change, and improvements to the Dalton Highway, but not small scale mineral mining, ANSCA 17(d)(1) withdrawals, the Cape Blossom Road or the Mahn Choh and Graphite One mines); *id*. at 3-60 to -61 (discussing only mining in the Ambler District and climate change).

[459] 2 SEIS at H-41 to -44.

[460] 1 SEIS at 3-235; see also 2 SEIS at H-44 (Table noting that ANCSA 17(d)(1) lands being opened for mining nearby "[c]ould result in changes in subsistence management including the loss of Federal subsistence priority for residents in the project area.").

[461] 2 SEIS at H-36 to -37.

In sum, the SEIS fails to fully assess the proposed project's direct, indirect, and cumulative impacts to subsistence use, wildlife, and hydrology in the region in violation of NEPA. Those failings along with the significant revisions needed to adequately assess the project's impacts on specific resources are described in greater detail below.

F. The SEIS Did Not Consider a Broad Enough Range of Mitigation Measures.

"Implicit in NEPA's demand that an agency prepare a detailed statement on 'any adverse environmental effects which cannot be avoided should the proposal be implemented,' is an understanding that the EIS will discuss the extent to which such adverse effects can be avoided."[462] Accordingly, an EIS must discuss appropriate mitigation measures.[463] Specifically, agencies must "include appropriate mitigation measures not already included in the proposed action or alternatives."[464] BLM must seek to avoid impacts, minimize impacts, and then, if those approaches are insufficient to fully mitigate the impacts, consider how to offset any remaining impacts. Those measures "must be discussed in sufficient detail to ensure that environmental consequences have been fairly evaluated."[465] Simply identifying mitigation measures, without analyzing their effectiveness, violates NEPA. Rather, an "essential component of a reasonably complete mitigation discussion" must include "an assessment of whether the proposed mitigation measures can be effective."[466] In addition, CEQ has instructed that the "possibility of mitigation" should not be relied upon to avoid further environmental analysis.[467] In sum, the effectiveness of mitigation measures must always be disclosed in a NEPA analysis and their prominence in the range of alternatives and role in the effects analysis requires substantial treatment in an EIS.

Additionally, under Section 302 of FLPMA, BLM may not authorize, and must "take any action necessary to prevent unnecessary or undue degradation" of public lands."[468] If AIDEA "cannot adequately mitigate impacts from the project and BLM is, as a result, unable to achieve its resource and value objectives, then BLM may deny the land-use authorization in the decision

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[462] *Robertson*, 490 U.S. at 351-52 (quoting 42 U.S.C. § 4332(2)(C)(ii)).

[463] *See* 40 C.F.R. §§ 1502.14(f), 1502.16(h), 1508.25(b). 40 C.F.R. § 1508.20 defines mitigation to include: (1) avoiding the impact altogether by not taking a certain action or parts of an action; (2) minimizing impacts by limiting the degree or magnitude of the action and its implementation; (3) rectifying the impact by repairing, rehabilitating, or restoring the affected environment; (4) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and (5) compensating for the impact by replacing or providing substitute resources or environments.

[464] *Id.* §§ 1502.14(f), 1502.16(h).

[465] *Neighbors of Cuddy Mountain v. U.S. Forest Serv.*, 137 F.3d 1372, 1380 (9th Cir. 1998) (quotations and citation omitted).

[466] S. Fork Band Council of W. Shoshone of Nevada v. U.S. Dep't of the Interior, 588 F.3d 718, 727 (9th Cir. 2009).

[467] Forty Most Asked Questions; *see also Davis v. Mineta*, 302 F.3d 1104, 1125 (10th Cir. 2002).

[468] 43 U.S.C. § 1732(b).

document."[469] BLM also has an obligation under Section 810 of ANILCA to take reasonable steps to minimize and address potential impacts to subsistence from the project, as discussed later in these comments.

Given the significant adverse effects to subsistence uses and resources likely to occur because of the sheer scale of this massive project, it is clear that mitigation measures cannot be relied upon to ensure that any approvals for this project will comply with these statutes or be sufficient to prevent significant degradation. The only legally compliant alternative is the no action alternative.

BLM's analysis of mitigation measures in the SEIS is also deficient for multiple reasons. First, the SEIS is wholly inadequate at considering meaningful mitigation measures and design features that could avoid and minimize impacts from the proposed project's construction and design. This is largely due to AIDEA's failure to gather adequate baseline information or adequately design the project prior to submitting its applications. The limited information — including any amount of site-specific information about the project and its design, baseline information, and potential impacts and mitigation measures, and conclusory statements about minimizing negative impacts in AIDEA's application and the SEIS — raise serious questions about the likely effectiveness of any mitigation measures. Providing the public with a handful of schematics for a typical "slice" of the road, a typical culvert, or a sample bridge, without far more for a project of this size, has effectively deprived the public of any meaningful opportunity to understand, analyze, and propose potential mitigation measures. These shortcomings were further highlighted in in the JROD, which admits the locations of construction and maintenance camps "will be identified in site-specific plans as part of the Plan of Development" that has yet to be developed and that BLM will evaluate site-specific plans and impacts later.[470] This violates NEPA's requirements to conduct a site-specific analysis of a project's impacts and renders it nearly impossible to require meaningful and enforceable mitigation measures.

There are also outstanding questions regarding what version of the project AIDEA is actually proposing and what the agencies are considering for purposes of this remand — the version of the project previously approved by BLM, or the version previously approved by the Corps. This matters for purposes of assessing needed mitigation, among other reasons. For instance, it is unclear whether AIDEA will ever construct the road to Phase III. That was a point of discrepancy between the versions of the project approved by BLM and the Corps that has still not been clarified. Either way, BLM should nonetheless consider an alternative or a mitigation measure wherein AIDEA would not be allowed to build the road in phases and would be required to construct the full road embankment at the outset, which could reduce some impacts along the road corridor when compared to the reckless and unclear phased approach proposed by AIDEA.

Second, BLM failed to analyze the effectiveness and enforceability of the mitigation measures in the SEIS. It is concerning that the permitting agencies involved in this process

[469] Bureau of Land Mgmt., Draft Regional Mitigation Manual Section 1794, at 1-8 (2014).

[470] JROD at 3.

appear to have no clear plan or sense of their own authority to determine how any mitigation measures would be enforced. The SEIS states that because "[o]nly a portion of each alternative would be on BLM-managed land, . . . BLM's authority to require and enforce specific mitigation measures may be limited."[471] This is highly problematic, as BLM seems to be stating that it does not have authority to require mitigation measures on non-BLM lands. This fact, however, does not appear to be reflected in BLM's impacts analysis in the SEIS. Indeed, BLM nonetheless assumes that most mitigation measures are likely to be adopted across the board and would be "mostly effective" at reducing impacts if all are implemented. Relatedly, BLM has broad authority under FLPMA to ensure that any right-of-way the agency grants does not cause undue degradation of public lands. BLM cannot shirk this responsibility. And as discussed elsewhere in these comments, the Corps of Engineers is also obligated to consider mitigation measures to address the impacts to wetlands and waters for the entire project and prevent against significant degradation. The SEIS is not sufficient to support the Corps' legal obligation to consider mitigation measures.

Additionally, the SEIS states that the Alaska Department of Natural Resources has stated that it would separately evaluate questions related to use of the road and restrictions on use, i.e., noting that the agency did not commit to restrictions or mitigation where the road would cross State of Alaska lands.[472] This noncommittal statement is completely unacceptable. Under Alternatives A and B, the proposed road crosses state-owned or managed lands for the majority of its route. BLM and the Corps have an obligation under NEPA and their respective permitting requirements to mandate mitigation measures that are clear, measurable, and ***enforceable***. These significant, outstanding questions regarding the agencies' authority to require mitigation must be sorted out as part of this remand process to ensure the agencies are considering the full breadth of this project's impacts and potential mitigation measures.

Furthermore, the mitigation measures contained in Appendix N are largely vague and contain no clear requirements to avoid and minimize environmental damage. For instance, the SEIS attempts to pass off permitting requirements of the Alaska Department of Environmental Conservation as air quality mitigation measures. These are not mitigation measures, but requirements of other agencies that AIDEA is already mandated by law to comply with. Another example is BLM's vague statements that AIDEA would conduct baseline surveys to identify non-native invasive, as well as rare plants, prior to construction to avoid impacts, or requiring AIDEA to later identify areas of natural occurring asbestos prior to gravel mining. After-the-fact baseline surveys and monitoring are **not** mitigation measures. Indeed, such baseline studies should have been conducted prior to AIDEA proposing a particular route.

Regarding the project's impacts on hydrology and wetlands, the EIS falls short on basic information regarding use of mitigation measures. As pointed out by Dr. Siobhan Fennessy:

> Overall, the SDEIS claims that the full impact of the proposed road will be mitigated by the use of BMPs and other mitigation measures that are promised to be used during road construction and maintenance in order to minimize impacts to natural flow patterns and maintain hydrologic connectivity, particularly with

[471] 1 SEIS at 3-3.
[472] *Id*. at 2-3.

> respect to culverts (e.g. Appendix N). No details of the mitigation measures are provided and no assurances are given that they will be checked for completeness and proper implementation and maintenance. The SDEIS gives a general description of the fish passage culverts (pg. 3–33), but details are few. Given the ecological sensitivity of the region and the risks posed by the project, the details and plans to minimize and mitigate impacts should be included in the SDEIS.[473]

These issues are described in more detail below in comments on permafrost and tundra, aquatic ecosystems, fish, and comments regarding the Corps' mitigation obligations. Critiques of mitigation measures for specific resources are likewise contained in resource-specific comments below.

The SEIS repeatedly indicates with regard to a range of resources and impacts that mitigation measures would be designed at a later, unspecified permitting/design phase.[474] BLM cannot defer conducting any analysis of meaningful mitigation measures to some future point in time, seemingly outside the scope of this NEPA process. BLM is required to conduct this analysis at this point and cannot simply note that it will design effective measures in the future. It raises serious questions about how the agency can analyze the effectiveness of mitigation measures it has yet to even develop. Any conclusory statements that such measures will be adequate in the future to mitigate impacts are arbitrary and unfounded. It is not meaningful and is contrary to NEPA for the agency to list measures that might be developed at some future time. Promises that those measures would be developed in the future do not excuse the agencies from needing to analyze the effectiveness of those measures as part of their NEPA obligations, prior to authorizing the project.

In sum, the final EIS falls short of discussing mitigation in sufficient detail to ensure that environmental consequences have been fairly evaluated. BLM has failed to identify mitigation measures, merely parrots permitting requirements for other agencies, makes vague statements about "minimizing damage," or references wholly unclear future points at which it or another agency might conduct the analysis of the mitigation measures BLM and the Corps were obligated to conduct as part of the NEPA process and prior to approving the project. The final EIS violates NEPA by failing to fully consider actual mitigation measures or to analyze their effectiveness or enforceability, and these errors must be rectified in the SEIS.

BLM and the Corps must also consider new mitigation measures specific to the Ambler Road that will help to avoid, minimize, and compensate for adverse effects to resources. We encourage the agencies to work closely with affected communities in crafting mitigation

[473] Siobhan Fennessy, Ph.D., PWS, Comments on the Ambler Road Supplemental Draft Environmental Impact Statement 6 (Dec. 15, 2023) [hereinafter Fennessy SDEIS Report] (included as Attachment 1 to these comments).

[474] 1 FEIS at 2-12 to -19; *see e.g.*, 3 SEIS at N-5, N-32 ("AIDEA would provide the BLM with as-built drawings of the road within 90 days of completion of each construction phase…. This mitigation measure, on its own, would be highly effective in documenting the road location and construction details for BLM records and would be used to compare the constructed project to the project as proposed in the application.").

measures for the final SEIS. All mitigation should be meaningful in its ability to address adverse impacts, and measurable in its effectiveness. BLM should also discuss in the SEIS how the project and its impacts will be monitored and adjusted over time, both to address the effectiveness of the mitigation measures and to account for future changes to the project area like climate change and additional future development.

The SEIS lists the mitigation measures contained in the Corps' unlawful 404 permit.[475] But this is not sufficient because, as explained further in the Clean Water Act (CWA) section of these comments, the Corps' mitigation measures would not comply with the CWA or NEPA. As discussed elsewhere in this letter, the Corps should also use this new process as an opportunity to rectify the serious problems with its previous compensatory mitigation determination. As part of the prior process, the Corps failed to ensure AIDEA's proposed mitigation adequately offset impacts and required zero compensatory mitigation. That is wholly inappropriate for a project of this scale, and those problems should be corrected in any new decisions.

VII. THE SEIS FAILS TO PROVIDE AN ADEQUATE BASIS FOR THE CORPS TO MEET ITS CLEAN WATER ACT AND NEPA OBLIGATIONS.

In its authorization of the Ambler Road, the Corps violated Section 404 of the CWA by failing to adequately analyze or mitigate the project's impacts to aquatic resources.[476] The Federal Defendants made no commitment to address the Corps' legal violations in their remand motion.[477] The draft SEIS seemingly sets the stage for the Corps repeat the same legal violations underlying its existing 404 permit.

A. Section 404 Permit Review Requirements

Congress enacted the CWA in 1972 to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters."[478] The Act sets several goals, including attainment and preservation of "water quality which provides for the protection and propagation of fish, shellfish, and wildlife . . . ."[479] To further its goals, the Act prohibits the "discharge of any pollutant" into navigable waters except in accordance with the CWA's terms.[480]

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[475] 3 SEIS at N-51 to -55.

[476] Pls.' Opening Br. for Summ. J. at 35–54, *N. Alaska Envtl. Ctr. v. Haaland*, Case No. 3:20-cv-00187-SLG (Dec. 1, 2021) (ECF No. 99) [hereinafter NAEC Br.].

[477] AVC Remand Mot. at 3 n.1 (stating that the Corps would "consider what action is needed" and follow its own regulations regarding possible permit modifications during the remand).

[478] 33 U.S.C. § 1251(a).

[479] *Id*. § 1251(a)(2).

[480] *Id*. § 1311(a). The term "pollutant" encompasses not only chemical and biological materials but also, rock and sand. 33 U.S.C. § 1362(6). Pollutants are known as "fill material" when their discharge either replaces any portion of a water of the United States with dry land or changes the bottom elevation of a water body. *See* 33 C.F.R. § 323.2(e)(1); 40 C.F.R. § 232.2. The term "dredged material" means "material that is excavated or dredged from waters of the

The Corps issues permits for the discharge of dredged or fill material pursuant to section 404 and subject to the Corps' and EPA's 404(b)(1) Guidelines (Guidelines).[481] Corps regulations governing the issuance of Section 404 permits declare that "[m]ost wetlands constitute a productive and valuable public resource, the unnecessary alteration or destruction of which should be discouraged as contrary to the public interest."[482] The Corps' and EPA's 404(b)(1) Guidelines impose important limitations on the Corps' ability to issue a Section 404 permit.[483] The Corps must ensure compliance with the 404(b)(1) Guidelines before issuing a permit. The Guidelines impose important limitations on when a Section 404 permit may be issued.[484] The Guidelines prohibit the permitting of any discharge of dredged or fill material: 1) if there is a practicable alternative to the proposed discharge, 2) if the discharge causes or contributes to violations of applicable state water quality standards, 3) if the discharge will cause or contribute to significant degradation of the environment, or 4) unless all appropriate steps have been taken to minimize potential adverse impacts.[485] The 404(b)(1) Guidelines provide that significant adverse effects on human health or welfare; aquatic life and other water dependent wildlife; aquatic ecosystem diversity, productivity, and stability; or recreational, aesthetic, and economic values are effects contributing to significant degradation.[486] These factors both individually and cumulatively must be considered when evaluating the specific details of the road application.

The Corps cannot authorize a discharge without "sufficient information to make a reasonable judgment as to whether the proposed discharge will comply with [the Section 404(b)(1)] Guidelines."[487] EPA notes that:

> the record must contain sufficient information to demonstrate that the proposed discharge complies with the requirements of Section 230.10(a) of the Guidelines. The amount of information needed to make such a determination and the level of scrutiny required by the Guidelines is commensurate with the severity of the environmental impact (as determined by the functions of the aquatic resource and the nature of the proposed activity) and the scope/cost of the project.[488]

United States." 33 C.F.R. § 323.2(c); 40 C.F.R. § 232.2.

[481] 33 U.S.C. § 1344; 40 C.F.R. pt. 230.

[482] 33 C.F.R. § 320.4(b)(1); *see also id.* § 320.4(b)(2) (identifying eight types of wetland functions important to the public interest).

[483] 40 C.F.R. pt. 230.

[484] *Id*.

[485] *Id*. § 230.10.

[486] *Id.* § 230.10(c)(1)–(4).

[487] *Id.* § 230.12(a)(3)(iv); *see* 33 C.F.R. §§ 320.2(f) and 320.4(a)(1).

[488] *See* Environmental Protection Agency, Memorandum: Appropriate Level of Analysis Required for Evaluating Compliance with the Section 404(b)(1) Guidelines Alternatives Requirements, https://www.epa.gov/cwa-404/memorandum-appropriate-level-analysis-required-evaluating-compliance-section-404b1.

Pursuant to the Guidelines, no discharge of dredged or fill material shall be permitted if, among other things, a practicable alternative to the proposed discharge would have less adverse impact on the aquatic ecosystem.[489] The Corps also cannot authorize any discharge of dredged or fill material that will cause or contribute to significant degradation of the waters of the United States.[490] The "degradation or destruction of special aquatic sites, such as filling operations in wetlands, is considered to be among the most severe environmental impacts covered by the[] Guidelines."[491]

Under the 404(b)(1) guidelines, the Corps is required to consider the following effects, individually and collectively, that contribute to significant degradation:

> (1) Significantly adverse effects of the discharge of pollutants on human health or welfare, including but not limited to effects on municipal water supplies, plankton, fish, shellfish, wildlife, and special aquatic sites.
>
> (2) Significantly adverse effects of the discharge of pollutants on life stages of aquatic life and other wildlife dependent on aquatic ecosystems, including the transfer, concentration, and spread of pollutants or their byproducts outside of the disposal site through biological, physical, and chemical processes;
>
> (3) Significantly adverse effects of the discharge of pollutants on aquatic ecosystem diversity, productivity, and stability. Such effects may include, but are not limited to, loss of fish and wildlife habitat or loss of the capacity of a wetland to assimilate nutrients, purify water, or reduce wave energy; or
>
> (4) Significantly adverse effects of discharge of pollutants on recreational, aesthetic, and economic values.[492]

The Corps is required to base this determination on factual determinations, evaluations, and tests required under the guidelines, and to focus in particular on the persistence and permanence of the effects.[493] The Guidelines require the Corps to make certain factual determinations addressing the potential short-term or long-term effects of a proposed discharge of dredged or fill material on the physical, chemical, and biological components of the aquatic environment.[494] This includes determinations on (a) physical substrate; (b) water circulation, fluctuation, and salinity determinations; (c) suspended particulate/turbidity determinations; (d) contaminant determinations; (e) aquatic ecosystem and organism determinations; (f) proposed disposal site determinations; (g) determinations of cumulative effects on the aquatic ecosystem; and (h) determinations of secondary effects on the aquatic ecosystem.[495] The Corps cannot

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[489] 40 C.F.R. § 230.10.
[490] *Id.* § 230.10(c).
[491] *Id.* § 230.10(d).
[492] *Id.* § 230.10(c).
[493] *Id*.
[494] *Id.* § 230.11.
[495] *Id.* § 230.11(a)–(h).

authorize a discharge without "sufficient information to make a reasonable judgment as to whether the proposed discharge will comply with [the Section 404(b)(1)] Guidelines."[496]

When a project is not "water dependent," as in the case of the Ambler Road, and the project would fill "special aquatic sites," including wetlands, the Corps' regulations create a rebuttable presumption that there are practicable and environmentally preferable alternatives, and such alternatives are presumed to have less adverse impact unless "clearly demonstrated" otherwise.[497] This substantive requirement mandates the Corps to select the least environmentally damaging practicable alternative (LEDPA).

An alternative is practicable "if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes."[498] Practicable alternatives include "activities which do not involve a discharge of dredged or fill material," as well as "discharges of dredged or fill material at other locations" where such discharges would result in fewer impacts to the aquatic environment.[499] The applicant has the burden of demonstrating that no feasible alternative exists, and the Corps must engage in a reasoned analysis of this issue.[500] The Corps cannot blindly and uncritically accept an applicant's study of alternatives and its assertions that no practicable alternative exists.[501] Under the regulations, any "practicable" alternative to achieve the basic and overall project purposes must be determined to be cost-effective, when viewed from the perspective of the industry as a whole.[502] But the least environmentally damaging practicable alternative need not be the least-costly, nor the most profitable.[503] The regulations presume that less environmentally damaging alternatives are available to the applicant and practicable, unless the applicant clearly demonstrates otherwise. In the absence of such a clear showing, the Corps is required to deny the permit application.[504]

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[496] *Id.* § 230.12(a)(3)(iv); *see* 33 C.F.R. §§ 320.2(f), 320.4(a)(1).

[497] 40 C.F.R. § 230.10(a)(3); *Flowers*, 423 F. Supp. 2d at 1352.

[498] 40 C.F.R. § 230.10(a)(2).

[499] *Id.* § 230.10(a)(1).

[500] *Flowers*, 423 F. Supp. 2d at 1356–57.

[501] *Hintz*, 800 F.2d at 835–36.

[502] The financial circumstances of a particular applicant are not considered relevant if an alternative could be achieved practicably by a "typical" applicant. The preamble to the 404(b)(1) regulations states: "Our intent is to consider those alternatives which are reasonable in terms of the overall scope/cost of the proposed project. The term economic might be construed to include consideration of the applicant's financial standing, or investment, or market share, a cumbersome inquiry which is not necessarily material to the objectives of the Guidelines. We consider it implicit that, to be practicable, an alternative must be capable of achieving the basic purpose of the proposed activity." 45 Fed. Reg. 85,339 (Dec. 24, 1980).

[503] *Louisiana Wildlife Fed'n, Inc. v. York*, 761 F.2d 1044, 1048 (5th Cir. 1985) (noting that the Corps had properly chosen "alternatives that reduced both the applicants' profit and the economic efficiency of their proposed operations in order to preserve other environmental values").

[504] *See* 40 C.F.R. § 230.12(a)(3)(i), (iv).

B. The Corps Does Not Have Sufficient Project or Baseline Information to Determine if the Project Will Comply with the 404(b)(1) Guidelines.

The Corps does not have sufficient information on which to make the factual determinations required under the Guidelines. One of the most substantial problems with both the 404 permit application and the prior and current EIS is that the agencies are proceeding without having sufficient information about any of the details of this project or the specific areas that will be impacted. The information AIDEA has provided to date is wholly inadequate to provide a basis for the Corps to meet its NEPA obligations or to legally permit this project under the Clean Water Act and 404 Guidelines. These comments reflect equally on the lack of analysis in the SEIS and relate to problems both BLM and the Corps need to address under NEPA.

1. Lack of Project Information

Despite the massive scale of this project and the near guarantee that it will cause significant degradation across the region, the Corps approved the 404 permit. As noted in just a handful of sentences in the Corps' 2019 public notice, the permit application is for the phased construction of a year-round industrial road from the Ambler Mining District to the Dalton Highway.[505] The Corps states there are three phases to the road that will involve starting with a single-lane gravel pioneer road and building up until it is an all-season road that could support mining exploration, development, and operations. Despite this, there is absolutely no information anywhere in AIDEA's permit application, the Corps' notice, or the SEIS explaining in any level of detail how that phased construction will actually occur, what the impacts will be, and how the Corps will mitigate against those impacts.

As an initial matter, AIDEA submitted a substantially modified permit application to the Corps, midstream in the last permitting process. This raises serious questions about what version of the project the agencies are considering as part of this remand process. The JROD disclosed that AIDEA submitted another revised permit application to the Corps in February 2020 — after publication of the DEIS, but before issuance of the FEIS.[506] The Corps never released that revised application for public review or comment.

In its modified proposal, AIDEA proposed to construct the road to Phase II, but not Phase III.[507] Nonetheless, the SEIS continues to represent that AIDEA would build the road in phases, up to completion of Phase III.[508] The revised application also requested approval of only 15 gravel mines — despite the acknowledged need for over 40 mines, as well as access roads — 4 maintenance stations, 12 communication towers, 3 aircraft landing strips, and a fiberoptic cable.[509] Problematically, Chapter 2 of the SEIS does not disclose the number of anticipated

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[505] U.S. Army Corps of Eng'rs, Public Notice of Application for Permit: POA-2013-00396 (Sept. 13, 2019) [hereinafter COE Notice].

[506] JROD, App. F at F-3.

[507] *Id.*

[508] 1 SEIS at 2-8 to -9.

[509] JROD, App. F at F-3 to -4.

material sites; rather it points the reader to maps buried in appendices.[510] The maps do not provide the number of mines by alternative; instead, apparently the reader must count the number of material sites on the maps, which is confusing and awkward. Offhand, it appears 40 or more gravel mines are proposed based on these maps, which is inconsistent with the Corps' approval in the JROD. If the reader finds themselves closely reviewing Appendix E, Table E-16 states that 41–46 mines are anticipated, depending on the alternative.[511] BLM and the Corps must clarify and include the number of proposed gravel mines by alternative in Chapter 2 for the sake of transparency. The agencies must also explain discrepancies in the number of mines anticipated. Additionally, AIDEA changed its requested 404 permit to a 10-year term, in contrast to its 50-year right-of-way requests to NPS and BLM. None of these discrepancies are adequately discussed or explained, and a site-specific analysis of the impacts of those mines is completely lacking in the SEIS.

The Corps determined that the revised version of the project was the least environmentally damaging practicable alternative, and approved the project as described in AIDEA's revised permit application.[512] AIDEA failed to provide updated applications to any of the other permitting agencies, and the agencies ultimately permitted very different versions of the project in the JROD. It is astonishing that this glaring discrepancy has not been addressed during the remand process or in the SEIS. All agencies involved should reject the project entirely as a result. AIDEA should be required to submit a new, consolidated application to all the agencies, consistent with ANILCA, to ensure all the agencies are reviewing the same project proposal. The Corps cannot properly authorize this project under the 404 Guidelines or ANILCA without all agencies having adequate and consistent permit application on which to base any of the factual determinations.

There is also zero site-specific information on which to base an appropriate analysis of the infrastructure associated with this project. AIDEA has yet to provide sufficient site-specific information about the precise way in which this project will be built, where exactly it will be located, what the site-specific impacts of their proposal will be, what mitigation measures will address those impacts, and more. Indeed, the SEIS admits to this fatal flaw:

> There are several uncertainties associated with all three Action Alternatives. Without on-the-ground surveys, the layout, staging, and sequencing of construction actions are not fully known, and impacts are approximate. Unknown ground conditions such as depth of permafrost or presence of clay/silt lenses underlying the area are not verified and could cause construability issues (e.g., settlement). With respect to bridges, foundation requirements, hydraulics, and ice flow designs are unknown; although using typical square-foot costs with contingencies can cover many situations, if ground or river conditions don't follow [the] forecasted path, there could be a greater need for engineering solutions and more frequent maintenance…. Material site sources are untested and locations unknown, therefore the availability of appropriate types, quality, and

[510] 1 SEIS at 2-10.
[511] 1 SEIS, App. E at E-14.
[512] JROD at 11.

> volumes of mineral materials is unknown.... Limited specifications regarding road engineering design and associated mine development also present unknowns which limit the certainty of any analysis.[513]

All of this points to the fact that there is still not sufficient information about the project on which to base the NEPA analysis, CWA analysis, or any legally defensible decision. As such, the agencies need to adopt the no action alternative and reject AIDEA's application.

AIDEA's schematics for construction of the road are so generalized as to provide essentially no information to the public or to the Corps. For example, the Corps' notice shows "typical fill sections" for what the road might look like for the "full build out (Phase III)."[514] This is wholly inadequate for a project of this scale and provides no information about how a phased approach will actually be implemented, what the site-specific impacts of the project will be, what mitigation will be necessary to prevent degradation, or any other information necessary for the Corps to adequately evaluate this project.

The Corps had previously identified data gaps in AIDEA's application that were never remedied. Early in the prior permitting process, the Corps raised concerns that AIDEA's application did not address "[h]ow roads cross and are parallel to major river crossings."[515] As discussed further below, the Corps approved AIDEA's 404 Permit despite an outstanding need for accurate mapping of wetlands and streams along the actual road corridor, and the fact that AIDEA could not identify the locations of all stream crossings.[516] EPA also questioned the Corps' decision to defer its analysis of culvert impacts at specified locations.[517] In its JROD, the Corps allowed AIDEA to defer obtaining data and identifying water crossings for the eastern 50 miles of the corridor until an unspecified "final design phase."[518] The Corps never should have authorized this project without that key site-specific information. Its decision to do so raises serious questions about how the Corps could have engaged in an adequate analysis of the impacts of this project when it had yet to obtain complete information on which to base such an analysis.

The Corps cannot proceed with revisiting its permit for this project in reliance on the incomplete, skeletal amount of information and conflicting project designs that AIDEA has provided to date. As discussed further throughout these comments, the Corps also does not have sufficient site-specific project information related to any of the factors it is required to consider and make findings on under the Guidelines, including physical substrate; water circulation, fluctuation, and salinity determinations; suspended particulate/turbidity determinations; contaminant determinations; aquatic ecosystem and organism determinations; proposed disposal

[513] 1 SEIS at 2-12.

[514] COE Notice at 12–14.

[515] Army Corps of Eng'rs, Scoping Comments/Review of Functional Assessment (2013).

[516] Envtl. Prot. Agency, FEIS Comments 1 (2020) [hereinafter 2020 EPA Comments].

[517] 2019 EPA Comments at 8, 15 (explaining need to identify culvert locations to assess impacts); JROD, App F at F-7 (stating AIDEA would identify culvert locations later); *see also* Report of C. Frissell on 2019 DEIS at 9–10 [hereinafter Frissell 2019 DEIS Report] (fisheries expert Dr. Chris Frissell explaining lack of information on waterway crossings).

[518] JROD, App. F at F-7.

site determinations; determinations of cumulative effects on the aquatic ecosystem; and determinations of secondary effects on the aquatic ecosystem.

The Corps should rescind the prior 404 Permit and should not move forward in issuing any revised permit until AIDEA provides sufficient information about the project design so the agency can adequately analyze this project and make the required findings under the Guidelines.

2. Lack of Baseline Information.

The Corps also does not have sufficient information on the distribution of wetlands across the project area to determine appropriate mitigation measures or to adequately assess the proposed project. Given the prevalence of jurisdictional wetlands throughout the project area, the Corps needs to ensure that impacts are assessed and mitigated appropriately. The road would permanently fill over 2,000 acres of wetlands and cross over 2,900 waterbodies.[519] It would require 29 bridges, with 11 large bridges crossing major rivers, including the Kobuk Wild and Scenic River.[520] The project would discharge between 15–22 million cubic yards of fill into wetlands permanently,[521] and over 47 miles (250,000 feet) of stream channels would be permanently impacted.[522] As described further below, there is a significant lack of baseline information about aquatic resources in the project area that must be rectified during this remand process both for NEPA and CWA compliance purposes.

The Corps should require a full wetlands delineation and complete a functional assessment for the entire length of the road, as well as alternative routes under consideration during the NEPA process. This has yet to be done for the full length of the proposed road or for any of the alternatives.

As discussed further below and in the attached expert report from Siobhan Fennessy, Ph.D., multiple delineation reports were completed related to this project: a preliminary wetland delineation report by DOWL (2014), a desktop delineation study by DOWL (2016), and a delineation report for the Gates of the Arctic conducted by the NPS and ABR, Inc. (2017).[523] Those reports "focus[] on different sized study areas, and each reports different wetland extents, making comparisons difficult."[524] There is also no delineation for Alternative C, which precludes a complete assessment of the alternatives.[525] Without more specific information about the alternatives, it is not possible to meaningfully compare or assess the impacts of the different road alignments. Desktop wetlands delineations are not always a reliable indication of where wetlands or protected resources may occur. Information is often outdated and, in some cases, inaccurate

[519] 1 SEIS, App. C at Tbl. 2.

[520] *Id*.

[521] *Id*. (seeking to discharge 15–22 million cubic yards); JROD at 10 (authorizing 8.4 million cubic yards).

[522] JROD at 10.

[523] Fennessy SDEIS Report at 22–23; 1 SEIS at 3-83 (pointing back to AIDEA's prior analysis that did not identify waterways less than 12 feet wide, and desktop analysis).

[524] Fennessy SDEIS Report at 4–5, 22.

[525] *Id*.; 1 SEIS, App. E at E-5 ("Field-verified mapping was not available for Alternative C.").

when compared with results from field surveys. Also, the desktop review does not account for common variables in the data, which could include seasonal changes in vegetation, climate, and land use change. Therefore, at a minimum, a wetland delineation should be performed for the entire road length, areas that will host project facilities (i.e., airstrips, camps, gravel mines) and that will be disturbed during construction.

Moreover, neither AIDEA nor the Corps performed an adequate functional assessment as part of the prior EIS process, and Groups are not aware that any further functional assessments have been completed to date. As discussed by Dr. Fennessy, multiple assessments of the functions and values of the wetlands were completed over the past five years, "but as with the delineation reports, different methods were employed in the different studies, giving differing results."[526] This is inconsistent with the Corps' regulatory guidance, which notes that "Districts should use a functional assessment by qualified professionals to determine impacts and compensatory mitigation requirements."[527] Conducting a functional assessment is critical to determining what functions particular wetlands perform, and their capacity to perform those functions. This missing information is critical to understanding the functions of wetlands the Ambler Road would destroy and determining whether the project would directly or cumulatively cause significant degradation. The Corps should require AIDEA to complete a new functional assessment to inform the agency's permitting decision during the remand process.

This lack of baseline information highlights the fact that the Corps and BLM do not have site-specific information about the project proposal or basic information about the area the road would traverse — making it nearly impossible to engage in a meaningful or remotely accurate assessment of the potential impacts to wetlands and other water resources in the project area.

Knowing the locations of wetlands and other aquatic resources is necessary to determine the nature and degree of impacts from the project and ensure impacts are avoided and minimized before 404 permit issuance.[528] The Corps cannot rely on mitigation measures as a substitute for identifying those areas and evaluating the impacts of the proposal in the first instance, as it did in its JROD.[529]

Moreover, the SEIS contains a minimal analysis of impacts or mitigation measures related to the Nutuvukti Fen, an aquatic site whose importance to the aquatic ecosystem cannot be overstated. "[T]here are few patterned fens in all Interior Alaska, of which Nutuvukti Fen is

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[526] Fennessy SDEIS Report at 24.

[527] U.S. Army Corps of Eng'rs, Regulatory Guidance Letter No. 02-02, Guidance on Compensatory Mitigation Projects for Aquatic Resource Impacts Under the Corps Regulatory Program Pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899, Dec. 24, 2002 (included as an attachment to these comments).

[528] 40 C.F.R. §§ 230.10(d), 230.11(b), (e).

[529] JROD, App. F at F-42 to -44, F-51 (acknowledging general issues of permafrost thaw, fugitive dust, and thousands of stream crossings are problematic, but assuming without support that mitigation measures and construction to Phase II would reduce impacts to extent practicable).

one of the largest."[530] The SEIS purportedly justifies the omission of a detailed analysis because the fen is on NPS-managed lands, and thus subject to a separate, non-NEPA process.[531] The SEIS points to special conditions numbers 16 and 17 of the Corps' 404 permit, which contain vague requirements that "the road be designed to minimize the disruption of surface and shallow groundwater flows through the active layer upstream of the lake and fen to protect hydrologic inputs and that the road alignment be located to minimize water quality impacts to the lake and fen."[532] But the SEIS fails to analyze how AIDEA or the permitting agencies could actually minimize impacts to the Fen under Alternative A, given the Ambler Road would be only a quarter mile upgradient from the Fen.[533] The Corps must identify and assess the nature and degree of all potential impacts to aquatic resources from the proposed fill, including those on NPS-managed lands.[534] And this SEIS is meant to serve as the basis for the Corps' 404 permit. This missing analysis must be included in any final EIS prepared for the Ambler Road.

C. The Corps Must Obtain Sufficient Information to Determine the Least Environmentally Damaging Practicable Alternative.

As part of this remand process, the Corps must fully assess whether AIDEA's proposal is the LEDPA. As noted above, the Corps cannot authorize a discharge without "sufficient information to make a reasonable judgment as to whether the proposed discharge will comply with [the Section 404(b)(1)] Guidelines."[535] There are still many essential pieces of information regarding gravel mining, bridge and culvert construction and maintenance, ice roads, other project components, and hydrological impacts that AIDEA and the agencies have not addressed. AIDEA has failed to provide the site-specific information necessary for the Corps to make the necessary factual determinations related to significant degradation and the impacts of this project. Additionally, AIDEA has failed to clearly demonstrate that less environmentally damaging alternatives are unavailable. Nor did the Corps explain why other less damaging alternatives were not also practicable or available.

AIDEA submitted a revised application which the Corps deemed the LEDPA in the JROD; this proposal has never been subject to review by the public or other agencies. Indeed, as described above, it is not even the version of the project considered in this SEIS.

As discussed above, the SEIS fails to consider a range of reasonable alternatives and design measures that could dramatically reduce the impact of this project, including rail rather than road transport or use of rigid foam board insulation to vastly reduce the project's gravel footprint.[536] These deficiencies must be addressed and the missing information contained and

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[530] 1 SEIS at 3-64.

[531] Agency Comment/Response Matrix for the Preliminary DEIS Review (Aug. 16, 2019) [hereinafter 2019 PDEIS Agency Response Matrix] at 10; 1 SEIS at 3-64.

[532] 1 SEIS at 3-39.

[533] *Id*. at 3-64 ("The Nutuvukti Fen is a patterned fen unique to the area located approximately 0.25 mile downgradient of the footprint of Alternative A… According to NPS (2019a), upstream impoundments, should they occur, could disrupt recharge of this fen.").

[534] 40 C.F.R. § 230.11(e).

[535] *Id.* § 230.12(a)(3)(iv); *see* 33 C.F.R. §§ 320.2(f), 320.4(a)(1).

[536] *See also* 2019 Engineering Report.

analyzed in the SEIS for the Corps to consider on remand. The Corps cannot authorize this project on the basis of the information provided to date. The project proposal does not incorporate adequate mitigation measures and the agencies did not look at an adequate range of alternatives to ensure that the version of the project authorized by the Corps (but not the other agencies) is in fact the LEDPA.

D. The Project and Its Secondary and Cumulative Effects Will Cause or Contribute to Significant Degradation of Aquatic Resources.

This project will cause significant degradation. The waters across this region will be significantly degraded by the proposed project. As noted above, the direct and indirect impacts to jurisdictional wetlands and waters of the United States will be inevitable and significant from this project. The water crossings alone have the potential to significantly degrade waters in the area, particularly since there is not even site-specific information on which to base an analysis of impacts and mitigation measures. Gravel roads, facility and maintenance pads, and airstrips placed on the tundra surface would smother the vegetation and permanently alter the natural soil horizon by compression.

As discussed in the expert report by Dr. Frissell, prepared for the original draft EIS, given the widespread occurrence of surface waters and wetlands along the proposed road corridors, there is "abundant evidence that more than 50% of the proposed corridor for the Ambler Road routings traverses wetland. These wetlands are intimately connected to surface and groundwater and therefore influence the quality of streams, rivers, and lakes."[537] Dr. Frissell also explained that "massive alteration of wetland features and landscape hydrology — both directly underneath the foot print of the road — and indirectly through up-gradient and down-gradient alteration of surface and subsurface water flows — will inexorably result" from the road.[538]

The expert report by Dr. Siobhan Fennessy concludes that there will be substantial, negative impacts along the road corridor:

> The proposed Ambler road alignment will have severe, negative impacts on aquatic ecosystems along the length of its route, including to rivers, streams, lakes, and wetlands. Roads have well documented ecological impacts on hydrology, soils, and biota, disrupting ecosystems and altering landscapes. The SDEIS fails to adequately assess or document the full extent of these negative impacts, nor are the details provided on measures that might mitigate those impacts . . . Because the alignment of the Ambler road runs east to west, it is situated perpendicular to the natural flow of water from the Brooks Range, and will cause hydrologic disruption with impacts to the chemical, physical and biological integrity of the waters along the route, which are now in essentially pristine, undisturbed condition.[539]

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[537] Frissell 2019 SDEIS Report at 9.
[538] *Id*. at 10.
[539] Fennessy SDEIS Report at 1–2.

Dr. Fennessy also explained that, because the Ambler Road would run perpendicular to the Brooks Range's natural runoff flows, it "represents a major hydrologic alteration that will severely reduce stream connectivity, fragment habitats, and pose a barrier to fish passage," and will cause "extensive" wetland and water quality impacts.[540]

The seasonal nature of the pioneer road, which is projected to flood annually and will also likely lead to significant permafrost degradation issues because of the lack of insulation, will have major impacts to hydrological systems in the area, as will adding multiple inches of gravel to the road for annual maintenance. The Corps must consider the impacts of the road beyond just construction, as the ongoing flooding and maintenance of the road have the potential to even further degrade the environment.

Excavation at the necessary gravel mine sites would also result in permanent loss of the existing vegetation and wetlands within the gravel mine footprints, and given the location of this project, have the potential to release asbestos into the environment. Further, dewatering these mines onto the tundra surface or into a natural drainage could permanently alter the hydrologic regime through vegetation destruction and surface soil erosion. This could have widespread geographic impacts considering the number of gravel mines proposed for this project.

AIDEA is also proposing to mine gravel along the road corridor with little to no information provided about the size, location, or impacts from such gravel mining. Gravel mining causes severe and long-lasting impacts, particularly if gravel extraction is allowed in floodplains and streambeds.[541] The SEIS states that the Corps' "special condition 10, which the BLM has adopted as proposed mitigation measures, would prohibit material mining from streambeds, riverbeds, active floodplains, lakeshores, and lake outlets and would not allow material sites to be located in active channels or floodplain."[542] Despite that, AIDEA is still proposing to mine for gravel in floodplains and streams, making it unclear how the project might shift to account for the agencies' stated plans to preclude such damaging activities.

EPA determined the project "may result in substantial and unacceptable impacts" to aquatic resources of national importance — specifically, the Kobuk and Koyukuk Rivers and their tributaries and wetlands, and the Nutuvukti fen,[543] triggering a process for the agencies to elevate concerns over a project under CWA section 404(q). EPA based this determination on the "outstanding natural resource value" of the region's wetlands and waterways, habitat for fisheries and other wildlife, subsistence use, and unique ecosystems like the Nutuvukti fen — an "intricate" and "unique" wetland ecosystem.[544] EPA noted that impacts "would result from water extraction activities associated with dust abatement, the development of [gravel mines] adjacent to waterways, and the release of hazardous materials and pollutants during operation and management of the road."[545] We understand that EPA did not ultimately elevate its concerns

[540] *Id*. at 1–2, 28.
[541] Frissell DEIS Report at 14; Fennessy SDEIS Report at 19.
[542] 1 SEIS at 3-96.
[543] 2019 EPA Comments at 3.
[544] *Id*.
[545] *Id*.

over the Ambler Road under the 404(q) process, meaning the agency did not submit a "3(b)" letter under this process.[546] However, given that no apparent changes were made to the project to address those substantial and unacceptable impacts, this only underscores further how serious the impacts to important aquatic resources will likely be from this project and raises questions about whether those concerns were actually addressed.

The Corps is obligated to demonstrate why concerns about the project's widespread and permanent impacts are either unfounded or adequately addressed to ensure that the project would not cause or contribute to significant degradation.[547] To date, the agency has failed to do so. The Corps attempted to brush off these significant direct and secondary impacts by asserting that AIDEA's vague mitigation measures and post-permitting project design would reduce or eliminate them.[548] For instance, the JROD repeatedly states that adaptive management and future design features would ensure hydrological connectivity is maintained and impacts from contamination would be avoided.[549] The Corps' findings are not supported by the record because it lacked critical information to make that determination, as described above, and because those findings are contradicted by the SEIS, the Corps' experts, and expert comments that explained mitigation would not completely resolve these issues.

Specifically, the SEIS acknowledges that, even with AIDEA's design measures in place, there would be widespread changes to overland, surface, and groundwater flows, and myriad other adverse impacts from the road.[550] The Corps' wetlands specialist also found that, even if mitigation practices are followed, embankment erosion and culvert blowouts (a culvert failure that washes portions of the embankment and pipe downstream) are "inevitable."[551] And Dr. Frissell confirmed that "there is no opportunity for avoidance of significant adverse hydrologic and aquatic habitat effects in and near the road corridor from this project; the only question is which streams and rivers will be more directly impacted."[552] In sum, the record demonstrates the Ambler Road would have significant, adverse impacts to the structure and function of aquatic ecosystems across a vast region, and that such impacts are not sufficiently avoided or minimized such that significant degradation would not occur.[553]

As part of this remand process, the Corps should have addressed the serious deficiencies with its conclusions that mitigation measures would sufficiently address these unacceptable adverse impacts.[554] The Corps has not adequately addressed these concerns to date, or considered

[546] *See* email from John Sargent, Corps, to Annie Whitley, EPA (Nov. 26, 2019).
[547] 40 C.F.R. § 230.10(c).
[548] JROD, App. F at F42–43.
[549] *See, e.g.*, JROD, App. F at F43–50.
[550] 1 SEIS at 3-94 (noting construction would degrade fish spawning habitat, increase water temperatures, and introduce fugitive dust and toxins into waterways); 3 FEIS App. N at N-19 to 20, -26 (explaining bridges and culverts would only be "partially effective" at maintaining hydrological connectivity and wetland functions because of difficulty in predicting drainage pathways and potential that culvert installation and maintenance would be inadequate).
[551] A. Tippery PFEIS Comments at 2.
[552] Frissell 2019 DEIS Report at 9.
[553] 40 C.F.R. § 230.11(e).
[554] *Id.* § 230.10(c).

the significance or magnitude of impacts that would result even with mitigation measures. Moreover, the Corps still lacks critical baseline information about the aquatic resources in the region and project infrastructure to support its analysis of the impacts and potential mitigation measures. The scale of this industrial road, AIDEA's unclear plans for development, and the lack of meaningful mitigation measures show that there will be significant degradation from this project. As such, the project would cause or contribute to significant degradation and cannot be lawfully permitted under CWA Section 404.

1. The Corps Needs to Consider the Cumulative and Secondary Effects of the Project in Its Significant Degradation Determinations.

The impacts the Corps is required to consider are not limited in time or space to just the initial discharge and acreages. Rather, they encompass all activities and impacts "associated with" the fill activities. Furthermore, "[f]undamental to these Guidelines is the precept that dredged or fill material should not be discharged into the aquatic ecosystem, unless it can be demonstrated that such a discharge will not have an unacceptable adverse impact *either individually or in combination with known and/or probable impacts of other activities affecting the ecosystems of concern*."[555]

The secondary and cumulative effects from the Ambler Road, such as the release of asbestos and ARD into the region's waters, risk causing significant degradation and the Corps has not demonstrated otherwise. The SEIS determines there could be population-level effects to fish, even in the unlikely event that mining and associated activities are properly managed: "Proper management would minimize, but not eliminate, the potential for impacts to individual fish as well as population-level effects on fish."[556] EPA explained that identifying and avoiding asbestos and ARD along the road corridor is necessary to ensure against significant degradation, but noted that "total avoidance may be difficult to achieve."[557] Dr. Fennessy further explains "the indirect and cumulative impacts of [ARD] are likely to be severe" and can persist for decades.[558] Dr. Frissell pointed out that "the release of even low levels" of contaminants can cause "large and potentially irreversible biological effects."[559]

Moreover, the SEIS concludes that "[c]umulatively, the project has the potential to cause very substantial, long-term impacts to fish and aquatic life that could lead to very substantial impacts on subsistence use practices in the region, even with mitigation measures in place."[560] The Corps acknowledged during the prior permitting process that the road would create issues of

[555] *Id.* § 230.1(c) (emphasis added).

[556] 1 SEIS at 3-105; *see also id.* at 3-106 (explaining recent study finding 100% of modern mines in the U.S. predicted compliance with water quality standards, but 76% failed to meet those standards from mining, and 64% failed to mitigate water contamination).

[557] 2019 EPA Comments at 10 (citing 40 C.F.R. § 230.10(c)).

[558] Fennessy SDEIS Report at 17.

[559] Frissell DEIS Report at 14.

[560] 1 SEIS at 3-112.

permafrost thaw and degradation,[561] introduce fugitive dust into wetlands and waterbodies with resulting turbidity and changes to water quality,[562] present risks of contamination from asbestos and ARD,[563] and require thousands of stream crossings and culverts.[564] Despite all of those problems, the Corps still authorized the project and has not addressed those lingering gaps and problems with its significant degradation analysis as part of this remand process.

The Corps also needs to accurately consider secondary effects from road dust. EPA questioned the scientific basis for limiting the EIS's analysis of impacts to wetlands and waterways to 100 meters beyond the project footprint, noting impacts could extend up to 1,000 meters.[565] Yet, the SEIS continues to limit the scope of its analysis of fugitive dust impacts to 100 meters (328 feet).[566] The Corps itself undermined the SEIS's limited analysis, confirming that "indirect impacts to wetlands *will occur* outside of the 100 meter direct impact corridor, mostly due to changes in hydrology and thermal regime caused by the road structure, even with culverts" and acknowledged that impacts should have been considered to 300 meters.[567] Despite its own critique, the Corps issued its JROD without obtaining the information or doing the analysis necessary to understand the full nature and degree of the project's aquatic impacts. And the Corps has inexplicably failed to rectify these fatal flaws during the remand process.

Despite these issues, the Corps deferred gathering information and assessing the impacts of gravel mining, road dust, ARD, and asbestos contamination until after permit issuance. These deficiencies are reflected in the lack of analysis in both the SEIS and the Corps' decision. The following statement in the SEIS regarding potential impacts to aquatic resources strains credulity: "Drainage design would be reviewed by appropriate regulatory agencies (USACE, ADNR, ADF&G) during permitting for the project."[568] **This is the permitting process for the project**. As a result, the Corps must analyze these issues and impacts **now** in determining whether the Ambler Road's secondary and cumulative effects will cause or contribute to significant degradation; it cannot defer these findings until a later date. The fact that the Corps ultimately authorized a number of the gravel mines without engaging in a site-specific analysis is contrary to both NEPA and the CWA. Due to the fatal flaws with the Corps' prior approval and the current SEIS, the agencies must reject AIDEA's proposal to construct the Ambler Road.

2. Secondary and Cumulative Effects Include Hardrock Mining Operations Made Possible by the Issuance of the 404 Permit(s) for the Ambler Road.

The Corps' regulations state that "[a]ll activities which the applicant plans to undertake which are reasonably related to the same project and for which a [Department of the Army]

[561] JROD App. F at F-42.
[562] *Id.* at F-49.
[563] *Id.* at F-46 to -47.
[564] *Id*. at F-44.
[565] 2019 EPA Comments at 9.
[566] *See e.g.*, 1 SEIS at 3-117.
[567] A. Tippery PFEIS Comments at 3 (emphasis added).
[568] 1 SEIS at 3-29.

permit would be required should be included in the same permit application."[569] The Corps must consider impacts from the development of hardrock mines in the Ambler District because the purpose of the road is to provide industrial transport for Trilogy Metals' mine and potentially other mining companies.

The Corps must consider future actions in the Ambler Mining District, such as large and small mining operations, and the development of a port or terminal for ore transport, which would also need permits from the Corps. Mining activity is "reasonably related" to the proposed road project, and will require a Corps permit. This also includes the mineral and related operations associated with all of the gravel mines (material sites) proposed along/near the Road, and others associated with the Road Project (such as along the Dalton Highway). While AIDEA will not be the mining development applicant, the entire purpose of the Ambler Road is to provide access to the Ambler Mining District, with AIDEA acting as a stand-in for mining companies who do not wish to expend their own capital on the proposed road. Thus, the SEIS's failure to provide sufficient information on which the Corps can base its analysis of the impacts from mineral-related operations violates the CWA.

The Corps has acknowledged that foreseeable future actions associated with the Ambler Road, including mining, would cause a wide range of "major impacts" to aquatic resources.[570] While the Corps claims impacts of reasonably foreseeable future mining activities were "unknown," it also recognizes those impacts are likely to be extensive.[571] Despite those acknowledgements, the Corps did not explain in the JROD why these cumulative impacts would not cause or contribute to significant degradation as required by the Guidelines.[572] Nor did the Corps identify mitigation measures that would address cumulative impacts from mining. As a result, the Corps failed to demonstrate that the Ambler Road "will not have an unacceptable adverse impact either individually or in combination with [other likely impacts] affecting the ecosystems of concern."[573]

The Corps is required to consider the secondary and cumulative effects of the mine and other components of this project, and must do so before reissuing a new 404 permit as part of this remand process. Because AIDEA lacks sufficient information on future mining activities for such analysis, the Corps must revoke its 404 permit.

E. The Previously Approved Mitigation Measures Are Inadequate.

The Corps must require appropriate measures to mitigate the impacts from the Ambler Road. The CWA requires AIDEA to avoid, minimize, and mitigate impacts to the aquatic ecosystem.[574] The mitigation sequence requires AIDEA to first avoid impacts to aquatic

[569] 33 C.F.R. § 325.1(d)(2).
[570] JROD, App. F at F-38.
[571] *Id*. at E-23 (predicting loss and alteration from future mining is expected to be at least thousands, if not hundreds of thousands, of acres).
[572] 40 C.F.R. § 230.11(g).
[573] *Id.* § 230.1(c).
[574] *See* 33 C.F.R. pts. 325 and 332.

resources.[575] For those impacts that cannot be avoided, AIDEA must take all appropriate and practicable steps to minimize impacts.[576] For the remaining unavoidable impacts, AIDEA must use compensatory mitigation to replace the loss of wetland and aquatic resource functions in the watershed.[577] The amount and quality of compensatory mitigation may not substitute for avoiding and minimizing impacts.[578] The SEIS fails to recognize that the Corps is obligated to consider mitigation measures to address the impacts to wetlands and waters for the entire project and prevent against undue degradation.[579]

The prior permitting process did not include any detailed mitigation plan, and the current permitting process continues to fail to adhere to the Corps' stringent mandates to mitigate adverse impacts to aquatic resources. While the SEIS lists the mitigation measures that were included in the Corps' 404 permit for the project,[580] these mitigation measures are not sufficient under the CWA, as described in this section. Nor does listing mitigation measures — without analyzing their effectiveness — comply with NEPA, as described above. Critically, the SEIS acknowledges that, with regard to mitigation measures generally failing to reduce impacts from mining: "Predictions made about surface and groundwater quality impacts without considering the effects of mitigation appear to be more accurate than those that take mitigation into account."[581]

The Corps attempted to brush off the Ambler Road's significant direct and secondary impacts by asserting in its JROD that AIDEA's vague mitigation measures and post-permitting project design would reduce or eliminate them.[582] For instance, the JROD repeatedly states that adaptive management and future design features would ensure hydrological connectivity is maintained and impacts from contamination would be avoided.[583] These vague statements are arbitrary and unsupported; the Corps cannot possibly know those measures will be adequate to ensure connectivity is maintained or impacts are minimized when the measures have yet to be designed to a point where that analysis could be done. Nor does the Corps explain how practicability would be determined given AIDEA has little to no baseline information regarding

[575] *See* Envtl. Prot. Agency, Factsheet, Wetlands Compensatory Mitigation Factsheet, EPA-843-F-08-002, https://www.epa.gov/sites/production/files/2015-08/documents/compensatory_mitigation_factsheet.pdf.

[576] See *Id*.

[577] *Id*.

[578] *Id*.

[579] *See, e.g.*, 33 C.F.R. § 320.4(r)(2) (requiring mitigation for "significant resource losses which are specifically identifiable, reasonably likely to occur, and of importance to the human or aquatic environment").

[580] 3 SEIS, App. N at N-51 to -55.

[581] 1 SEIS at 3-106.

[582] JROD at F-42 to -43.

[583] *See, e.g.*, *id.* at F-43 to -50; *see e.g.*, 3 SEIS App. N at N-51 (requiring future culvert studies to maintain drainage patterns), N-52 (requiring a future adaptive management plan), N-55 (requiring future plan regarding avoidance of asbestos "to the greatest extent practicable" and ARD), N-53(AIDEA "shall ensure pollution to aquatic resources from road gravel spray and fine airborne dust discharges are minimized to the maximum extent practicable.").

the region's resources. The Corps also included a requirement that "AIDEA shall design the road where it crosses upstream of Nutuvukti Fen and Nutuvukti Lake to minimize the disruption of surface and shallow subsurface flow though the active layer to protect hydrologic inputs to the fen and lake."[584] But, to the extent AIDEA has designed the road, its design would plainly cause significant degradation of the fen. The Corps must rectify its failure to avoid and minimize the Ambler Road impacts as part of this remand process.

Simply put, the Corps lacked baseline and project information to find that AIDEA's design measures and mitigation would minimize and avoid impacts. There is no detailed mitigation plan and numerous aspects of the project plans are not finalized, including the actual locations and designs of the road, gravel mines, and other project components. The Corps' ROD and the SEIS do not explain the agencies' determinations that impacts were sufficiently mitigated in light of this missing information.[585] Additionally, as described above, the record demonstrates that significant and unavoidable adverse impacts would occur even if all mitigation measures are properly implemented.

The Corps also cannot categorize impacts as being avoided or minimized when it anticipates permitting them later.[586] For instance, the Corps cannot simply ignore impacts from AIDEA's extensive gravel mining proposals simply by permitting the mines in a piecemeal fashion. Of concern, during the prior process, the Corps claimed a reduction in the number of gravel mines (41 to 15 sites) would be an important avoidance and minimization measure,[587] while admitting elsewhere in its JROD that additional mines may still be permitted later to supply sufficient quantities of gravel.[588] There was likewise no indication that the reduced number of mines realistically would be capable of supplying the amount of gravel necessary for the road; instead, that reduction appeared to just be an attempt to segment out the review of project components that are clearly connected actions and need to be analyzed at a site-specific level now.

The Corps should not merely rely on the proposed avoidance and design criteria contained in AIDEA's application, many of which are simply requirements of other permitting agencies, and not actual mitigation measures. The Corps should independently consider what additional measures are needed for the length of the industrial gravel road to minimize and avoid impacts to wetlands and how mitigation will replace lost aquatic resource functions.

Besides the shortcomings found in the Corps-specific mitigation, the SEIS fails to transparently assess the effectiveness of any specific mitigation measures that might be used to address the impacts of the project. As discussed above, many of the mitigation measures related

[584] 3 SEIS, App. N at N-53.

[585] *Id*. at N-55 ("The measures listed above, if implemented collectively, are expected to be highly effective at reducing impacts to resources associated with removal-fill activities in wetland and waters.").

[586] 33 C.F.R. § 325.1(d)(2) (requiring all activities related to a project that need a 404 permit to be in same permit application).

[587] JROD, App. F at F-42.

[588] *Id.* App. F at F-53.

to a vast array of resources and potential impacts (particularly with regard to aquatic resources) were left to be developed at a later, unspecified permitting/design stage — calling into question how the Corps could have even analyzed the effectiveness of such yet-to-be-developed measures. Instead of actually analyzing the specific measures that might mitigate impacts, there are only general statements that the design features would be determined during that later permitting phase and would be incorporated into BLM's ROW authorization prior to construction.[589] Due to the lack of specificity regarding the measures, the SEIS's conclusions that the mitigation measures are mostly or partially effective are unsupported.[590] Even to the limited extent there are mitigation measures identified, it is also still unclear in the SEIS to what extent those measures will even apply across the length of the road. This lack of specific, enforceable mitigation measures will further exacerbate the significant degradation likely to occur from this project. BLM and the Corps cannot wait until the point of issuing a new record of decision or wait until some later post-decisional point in time to analyze the mitigation measures for this project and present that analysis to the public.

According to Dr. Fennessy, a "clear evaluation of road impacts and mitigation efforts requires detailed information on the stream and wetland hydrology in the specific areas where those impacts will occur, and information on the design, sizing, installation and maintenance of the culverts," but the "SDEIS does not present this information."[591] The EIS acknowledges the vast majority of culverts are likely to fail and cause serious problems, such as blocking fish passage, and yet the SEIS does nothing to mitigate against those impacts.[592]

There are also substantial concerns related to the manner in which AIDEA anticipates constructing this project. Even though AIDEA is purportedly planning to build the road in three phases — depending on which application one is looking at — there is no site-specific information or details about precisely how that will be implemented or how further degradation to wetlands and other water resources will be avoided. BLM and the Corps need to address these omissions.

Additionally, the Corps must adequately take into consideration the potential effects of climate change on the project and how to mitigate against those impacts. The SEIS provides almost no analysis of the potential impacts of climate change on the project and the need for additional mitigation measures or design features to address those vulnerabilities:

> The existing and ongoing effects of climate change may present challenges for all of the action alternatives in terms of project design and operations and could potentially affect the practicability and technical feasibility of the action alternatives over time. For example, changing climate conditions could negatively

[589] *See, e.g.*, 1 SEIS at 2-13 to -19; 3 SEIS App. N at N-2 to -8.

[590] 1 SEIS at 3-33 (claiming AIDEA's design features and Corps 2020 permit requirements would largely mitigate long term effects of infrastructure on hydrology and impacts from cross-drainage designs).

[591] Fennessy SDEIS Report at 11.

[592] *See, e.g.*, *id*. at 9–14.

affect the reliability and practicability of a winter construction access trail, which is common to all features of the action alternatives.[593]

This hand waving about impacts is unacceptable for a project like this, which is located in the Arctic and likely to be susceptible to the effects of climate change. As discussed below, there are also serious concerns related to permafrost degradation that will only be further exacerbated by climate change, and yet were not adequately addressed in the prior decision-making process. Permafrost degradation has the potential to cause serious downstream and other adverse impacts to aquatic resources along the corridor, and yet those impacts are almost entirely ignored in the SEIS.

The Corps should analyze the potential impacts of climate change on each of the alternatives to determine how each alternative should be designed or how mitigation measures should be incorporated into each alternative to address the potential impacts from climate change in a region that is experiencing the effects of climate change first-hand. The Corps should also assess, based on things like the site-specific permafrost conditions and hydrology in the vicinity of the specific alternatives, how these impacts are likely to play out over time in the project area.

F. Compensatory Mitigation Must Replace Lost Aquatic Functions.

The 404(b)(1) Guidelines provide that "no discharge of dredged or fill material shall be permitted unless appropriate and practicable steps have been taken which will minimize potential adverse impacts of the discharge on the aquatic ecosystem."[594] Pursuant to the Corps' permitting regulations, compensatory mitigation may be required to ensure that a permit complies with the 404(b)(1) Guidelines.

Despite the wide range of impacts that will not be addressed through avoidance and minimization measures, the Corps required absolutely no compensatory mitigation for the Ambler Road — an unprecedented and unfathomable decision for a project of this size. Rather, the Corps' JROD stated that it would not require compensatory mitigation because "mitigation in the form of avoidance and minimization is sufficient."[595] As described above, that finding was arbitrary and unsupported.

The 2008 Mitigation Rule sets out how mitigation requirements are determined and provides the Corps with the authority to deny a permit if there is a "lack of appropriate and practicable compensatory mitigation."[596] The 2008 Mitigation Rule also contains substantive provisions regarding the size and location of compensatory mitigation that are directly pertinent to the Corps' decision whether to permit this project. The 2008 Mitigation Rule requires that "the amount of required compensatory mitigation *must be, to the extent practicable, sufficient to replace lost aquatic resource functions.*"[597] The district engineer "must use a watershed approach

[593] 1 SEIS at 2-12.
[594] 40 C.F.R. § 230.10(d).
[595] JROD, App. F at F-15.
[596] 33 C.F.R. § 332.1(c)(3).
[597] *Id*. § 332.3(f) (emphasis added).

to establish compensatory mitigation requirements . . . to the extent appropriate and practicable."[598] "The ultimate goal of a watershed approach is to maintain and improve the quality and quantity of aquatic resources within watersheds through strategic selection of compensatory mitigation sites."[599]

EPA and the Corps have entered into two relevant memoranda of agreement — a general memorandum of agreement (MOA) in 1990 (1990 MOA) and an MOA specific to Alaska in 2018 (2018 MOA).[600] The 1990 MOA sets out the avoid-minimize-mitigate sequence, stating that the Corps must first make "a determination that potential impact[s] have been avoided to the maximum extent practicable; remaining unavoidable impacts will then be mitigated to the extent appropriate and practicable by requiring steps to minimize impacts, and, finally, compensate for aquatic resource values."[601] The 1990 MOA also sets out the "no net loss" policy: "The Corps will strive to avoid adverse impacts and offset unavoidable adverse impacts to existing aquatic resources, and for wetlands, will strive to achieve a goal of no overall net loss of values and functions."[602] The 1990 MOA acknowledges that some individual permitting decisions may not achieve no net loss because "mitigation measures to meet this goal are not feasible, not practicable, or would accomplish only inconsequential reductions in impacts."[603] The 1990 MOA also identifies that "[t]he determination of what level of mitigation constitutes 'appropriate' mitigation is based solely on the values and functions of the aquatic resource that will be impacted."[604] The 1990 MOA also states that "'Practicable' is defined at Section 230.3(q) of the [404 (b)(1)] Guidelines."[605]

The 2018 MOA recognizes guiding principles specific to Alaska, including:

- Avoiding wetlands may not be practicable where there is a high proportion of land in a watershed or region which is jurisdictional wetlands;

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[598] *Id*. § 332.3(c)(1).

[599] *Id*.

[600] Memorandum of Agreement Between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines (1990 MOA), https://www.epa.gov/cwa-404/memorandum-agreement (included as an attachment to these comments); Memorandum of Agreement Between the Department of the Army and the Environmental Protection Agency Concerning Mitigation Sequence for Wetlands in Alaska Under Section 404 of the Clean Water Act (2018 MOA) https://www.epa.gov/sites/production/files/2018-06/documents/epa_army_moa_alaska_mitigation_cwa_404_06-15-2018_0.pdf (included as an attachment to these comments).

[601] 1990 MOA at II.C.

[602] *Id*. at II.B.

[603] *Id*.

[604] *Id*.

[605] *Id.* 40 C.F.R. § 230.3(q) provides "the term *practicable* means available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes."

- Restoring, enhancing, or establishing wetlands for compensatory mitigation may not be practicable due to limited availability of sites and/or technical or logistical limitations;
- Compensatory mitigation options over a larger watershed scale may be appropriate given that compensation options are frequently limited at a smaller watershed scale;
- Where a large proportion of land is under public ownership, compensatory mitigation opportunities may be available on public land;
- Out-of-kind compensatory mitigation may be appropriate when it better serves the aquatic resource needs of the watershed; and
- Applying a less rigorous permit review for small projects with minor environmental impacts is consistent with the Section 404 program regulations.[606]

The 2018 MOA identifies that "required compensatory mitigation should be located in the same watershed as the impact site, and should be located where it is most likely to successfully replace lost aquatic resource functions and values."[607] The 2018 MOA endorses a "Watershed Approach," and sets out that "[t]he goal of a watershed approach is to maintain *and improve the quality and quantity of aquatic* resources within watersheds through strategic selection of compensatory mitigation sites."[608]

While the 2018 MOA recognizes that larger watershed scales may be used, it states that "[t]he size of watershed addressed using a watershed approach should not be larger than is appropriate to ensure that the aquatic resources provided through compensation activities will effectively compensate for adverse environmental impacts resulting from activities authorized by Section 404 permits."[609]

The Corps' 2018 *Thought Process*, an agency guidance document, identifies six factors that may warrant compensatory mitigation,[610] four of which are relevant to the Ambler Road. The relevant factors include: (1) projects in rare or difficult to replace wetlands; (2) projects that permanently impact more than one-tenth an acre of wetlands or WOUS, or 300-feet of streams where the watershed condition warrants mitigation; (3) placement of fill within 300 feet of fish-bearing waters and jurisdictional wetlands with "more than minimal" impacts; and (4) large-scale projects with adverse aquatic resource impacts, such as mining development and highway projects.[611] The Ambler Road will traverse and impact aquatic resources of national importance; permanently impact over 1,400 acres of wetlands and over 47 miles of streams in a watershed

[606] 2018 MOA at II.B.
[607] *Id.* at III.C.1.
[608] *Id.* at III.C.1.a (emphasis added).
[609] 2018 MOA at III.C.1.b.
[610] U.S. Army Corps of Eng'rs, *Alaska District Compensatory Mitigation Thought Process* 5 (Sept. 18, 2018), https://www.poa.usace.army.mil/Portals/34/docs/regulatory/2018MitigationThoughtProcess.pdf (listing factors and explaining they are consistent with Corps' regulations).
[611] *Id*.

that warrants mitigation; place fill in fish-bearing waters causing significant impacts; and is a large-scale highway project for a mining development with adverse aquatic impacts.

Despite this, the Corps failed to require any compensatory mitigation for the Ambler Road during the prior permitting process. The Corps stated that compensatory mitigation would not be required because the project — in tandem with existing disturbance — would impact less than 5% of the watershed.[612] But nothing in the CWA or the Corps' regulations limit its consideration of mitigation to only those impacts that impact a certain threshold of a watershed.[613] The goal of the Corps' watershed approach "is to maintain and improve the quality and quantity of aquatic resources within watersheds through strategic selection of compensatory mitigation sites."[614] It does not set a threshold percentage for impacts that must be reached before the Corps requires compensatory mitigation. In addition, allowing the Corps to arbitrarily define an almost boundless scale for arbitrarily determining what percentage of a watershed will be impacted by a project would allow the Corps to write off the impacts of even highly impactful, serious projects — as it did with the Ambler Road. Such an approach is contrary to the CWA. Even EPA has critiqued this threshold percentage approach as potentially violating the CWA.[615] The Corps must require compensatory mitigation sufficient to offset lost aquatic functions for the entirety of the Ambler Road and its secondary and cumulative effects, in order to comply with its obligations under the CWA and the 404 Guidelines. Its failure to do so as part of the prior decision-making process violated the CWA and 404 Guidelines.

G. The Corps Should Not Authorize this Project Because It Is Not in the Public Interest.

Issuance of a CWA Section 404 permit for this project was contrary to the public interest and nothing has shifted in the interim to alter this fact.[616] Corps regulations governing the issuance of Section 404 permits declare that "[s]ome wetlands are vital areas that constitute a productive and valuable public resource, the unnecessary alteration or destruction of which should be discouraged as contrary to the public interest."[617] In furtherance of this protective

[612] JROD App. F at F-30 to -31.

[613] *See* 33 C.F.R. § 332.3(f)(1).

[614] 33 C.F.R. § 332.3(c)(1); *see also* 33 C.F.R. § 332.2 (defining "watershed approach" as an analytical tool for assessing locations and types of mitigation).

[615] U.S. Environmental Protection Agency, Technical Review of a Threshold-Based Approach for Determining Significant Degradation in Alaska (July 5, 2018).

[616] 33 C.F.R. § 320.4(a)(1) ("The benefits which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. The decision whether to authorize a proposal, and if so, the conditions under which it will be allowed to occur are therefore determined by the outcome of this general balancing process."). In the preamble to a 1982 Interim Final Rule and a Request for Comments concerning a wide range of issues concerning the Corps permitting programs, the Corps described the public interest review process as "the heart of our evaluation process. It involves weighing and balancing of all factors affecting the public interest." 47 Fed. Reg. 31794 (July 22, 1982).

[617] 33 C.F.R. § 320.4(b)(1); *see also* 33 C.F.R. § 320.4(b)(2) (identifying eight types of wetland functions important to the public interest).

policy for wetlands, the Corps is required to undertake a "public interest review" of a proposed discharge before issuing a wetlands permit.[618] This includes a "careful weighing of all those factors which become relevant in each particular case."[619] The "benefits which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments."[620] This requires the Corps to consider "the probable impacts" of a proposed project on "[a]ll factors which may be relevant to the proposal[,] including cumulative effects."[621] The Corps must consider the probable impacts, including cumulative impacts, of the proposed activity and its intended use on the public interest.[622]

The Ambler Road is not in the public interest. The project involves significant, unresolved conflicts as to resource use and will result in major adverse impacts to subsistence uses, public health, and other values. As discussed throughout these comments, the project has not been adequately analyzed or considered to date, the agencies have yet to receive site-specific information about the vast majority of this project and the proposed infrastructure, and the agencies have not adopted appropriate mitigation measures to prevent significant degradation.

There is no demonstrated private or public need for the proposed road,[623] other than the preference of a single mining company that would like to increase its profit margins. Further the Ambler Road presents extensive unresolved conflicts.[624] There is significant local opposition to the Ambler Road, which underscores the fact that the project does not comply with the Corps' public interest factors: 74 tribes & First Nations on the Yukon River watershed passed a resolution in opposition; 37 Tribal governments in Tanana Chiefs Conference region passed 3 resolutions in opposition; and there are multiple resolutions by Tribes across the region (Evansville Tribal Council, Tanana Tribal Council, Alatna Village Council, Allakaket Village Council, Huslia Tribal Council, Kotzebue Tribal Council, Tanana Tribal Council, and the Norton Bay Watershed Council, which represents the Native Villages of Elim, Teller, Brevig Mission, Shaktoolik, Golovin, Shishmaref, and St. Michael) strongly oppose the project. All together, 88 Indigenous governments oppose the proposed Ambler Road, which include the following fifteen language groups: Yupik, Cupik, Inupiaq, Gwichiin Athabascan, Inland Tlingit, Han Gwich'in, Upper Tanana, Upper Kuskokwin, Deg Hit'an, Koyukon, Holikachuk, Northern Tutchone and Southern Tutchone, Tagish, and Kaska. And as described throughout these comments, the Ambler Road will to cause significant degradation across a far-reaching area and poses significant cumulative effects, with the majority of those impacts being permanent.[625]

The Corps should rescind the prior authorization and should not reissue the permit because this project is contrary to the public interest.

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[618] *Id.* § 320.4(a).
[619] *Id.* § 320.4(a)(1).
[620] *Id*.
[621] *Id.*; *see also id.* pt. 325 App. B. § (7)(b)(3).
[622] *Id.* § 320.4(a)(1); *see also id.* pt. 325 App. B. § (7)(b)(3).
[623] 33 CFR § 320.4(a)(2)(i).
[624] *Id*. § 320.4(a)(2)(ii).
[625] *Id*. § 320.4(a)(2)(iiI).

VIII. BLM MUST COMPLY WITH FLPMA IN PREPARATION OF THE SEIS.

The project, the SEIS, and this process as a whole has failed to meet the strict public interest, environmental protection, and financial requirements of the Federal Land Policy and Management Act (FLPMA). Under FLPMA Title V, Section 504, BLM may grant a ROW only if it "will do no unnecessary damage to the environment."[626] BLM must adhere to the requirements of FLPMA governing issuance of ROW permits in addition to meeting its obligations under NEPA. FLPMA provides that rights-of-way "shall be granted, issued or renewed . . . consistent with . . . any other applicable laws."[627] BLM was obligated to require AIDEA to submit complete ROW or other special use permit authorizations and to ensure that all mandates of FLPMA Title V and its implementing regulations were adhered to.[628]

BLM failed to comply with FLPMA's substantive and procedural requirements when previously authorizing this project, and these deficiencies were not rectified during the remand process because, as the SEIS acknowledges, there have been no changes or updates to AIDEA's application.[629] The SEIS contains the same fundamental flaws as BLM's prior authorizations, and as such, BLM should rescind the prior approvals and deny the project application.

A. AIDEA's Right-of-Way Application Is Still Incomplete for Purposes of FLPMA's Procedural Requirements.

Groups pointed out during the prior permitting process that many of the informational requirements needed for a ROW were missing or exceedingly vague in AIDEA's application. The SEIS falls short of rectifying these omissions, rendering BLM's analysis insufficient under NEPA and making issuance of a right-of-way by BLM inappropriate.

FLPMA and BLM's regulations contain strict application and approval requirements for rights-of-way. A right-of-way that "may have significant impact on the environment" requires submission of a complete plan of construction, operation, and rehabilitation of the right-of-way.[630] Prior to granting a right-of-way, the applicant must submit, and BLM must approve, a plan of development (POD) for the entire project.[631] BLM's regulation at 43 C.F.R. § 2804.12(a) provides that a completed application *must* include the following: a description of the project and the scope of the facilities; the estimated schedule for constructing, operating, maintaining, and terminating the project; the estimated life of the project and the proposed construction and reclamation techniques; and a statement of the entity's financial and technical capability to construct, operate, maintain, and terminate the project.

There is no question that this ROW will have significant impacts. BLM was therefore required to obtain a complete plan of construction, operation, and rehabilitation prior to issuance

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[626] 43 U.S.C. § 1764(a).
[627] *Id*. § 1764(c).
[628] *See* 43 C.F.R. pt. 2800 (BLM FLPMA grant regulations).
[629] 1 SEIS at 1-3.
[630] 43 U.S.C. § 1764(d).
[631] *Id.*; 43 C.F.R. §§ 2804.12, 2804.25(c).

of the ROW. The SEIS states that "AIDEA would submit to the BLM, separately or as part of the plan of development (POD), a financing plan that indicated surety of the funding needed to build and operate the road according to the POD." [632] This makes clear that despite the fact that AIDEA has yet to submit a complete POD, BLM issued its right-of-way. The JROD states AIDEA would "refine" the POD and the "POD would be reviewed and approved by the BLM and made part of the [right-of-way] Grant to AIDEA."[633] That never happened; the right-of-way was issued without a complete POD. The right-of-way instead details 26 subject areas — such as permafrost, stream crossings, asbestos, ARD, dust control, air quality, and more — that had yet to be addressed in a POD and where AIDEA needed to submit plans addressing those issues.[634] It is those future plans, which have yet to be developed, that "will describe in detail the construction, operation, maintenance, and termination of the right-of-way and its associated improvements and facilities."[635]

That is exactly the information required to be in the POD prior to issuance of the right-of-way.[636] The right-of-way also acknowledged that AIDEA has yet to apply for many of the facilities directly related to the road and right-of-way, including gravel mines and project components.[637] These necessary project components needed to be part of the complete POD. BLM's failure to require the submission of a complete POD prior to issuing the right-of-way violated FLPMA.[638]

As discussed in further detail below, there were a number of specific elements that were required in the FLPMA regulations for there to be a complete application — but were lacking at the time BLM issued the ROW. BLM's issuance of the ROW prior to having this complete information was contrary to FLPMA. BLM should select the no action alternative in its ROD, rescind the ROW, and ensure it has all this required information prior to beginning any new EIS process or reissuing the ROW.

1. AIDEA Failed to Provide an Adequate Description of the Project and the Scope of the Facilities.

AIDEA's application did not provide a complete description of either the project or the full range of anticipated facilities needed for the proposed road. [639] For example, the 250-foot ROW width does not specify whether that will be the operational (i.e., post-construction) width of the road itself, or the width for construction purposes, and vaguely states that in a few areas, with bridge crossings and steep terrain, the ROW width may need to be up to 400 feet wide.[640] Information such as where this steep terrain occurs and which areas of the ROW will need to be

[632] 1 SEIS at 3-13.
[633] JROD at D-2 to -4; 3 FEIS App. N at N-6.
[634] BLM ROW at 6–7.
[635] *Id.* at 6.
[636] 43 U.S.C. § 1764(d).
[637] BLM ROW at 7–8.
[638] 43 U.S.C. § 1764(d). All of those project components are also connected actions and needed to be considered as part of this project for purposes of NEPA, but have not been.
[639] *Id*. § 1764(c).
[640] 1 SEIS at 2-8.

wider, is not included anywhere in AIDEA's application — which isn't surprising, given that AIDEA has yet to do sufficient studies and design work to even know where these issues are likely to arise. There is no description of equipment that will be needed to construct and maintain the road or associated gravel mines. Further, it is not clear that AIDEA has requested a ROW from BLM for any necessary ice or snow roads for the project. The description of the ROW itself is completely lacking the information necessary to understand where these activities might occur and the potential impacts.

As to the scope of the facilities, the application stated that "the project would require the construction of numerous support structures including: bridges, culverts, maintenance stations, turnouts, material sites, material site access roads, maintenance stations [sic], and airstrips . . . ."[641] Aside from the indefinite, projected locations of bridges and culverts, little else is described for these structures. BLM itself acknowledges that it does not have site-specific information related to many of these project components, which it needed to analyze in the SEIS for purposes of both NEPA and FLPMA.[642] This vague information was insufficient to provide BLM or the public with adequate information about the facilities that will be associated with this project. There is no information on bridge construction methods (e.g., how pile driving will be done or how AIDEA plans to construct span bridges), nor have the bridges been designed yet based on site-specific information to even fully understand how they would be built. There is no information on culvert installation, maintenance, or replacement, or details on airstrip construction and use. It is unclear whether the material site access roads will be entirely ice roads, or whether permanent gravel roads will be needed. The extent of infrastructure at the maintenance stations should have been included in a complete application as well. That should have included information on infrastructure size, number of staff, means of year-round access, and power generation requirements.

2. AIDEA Failed to Provide an Adequate Schedule or Information on Proposed Techniques for Constructing, Operating, Maintaining, and Terminating the Project.

AIDEA previously provided no meaningful information about the schedule of its project. All statements in its application were tied to the level of industry interest at any given time, making the timeframe for every aspect of the project from construction through reclamation completely unclear. AIDEA's use of a vaguely defined 3-phase approach to construction was particularly problematic. While BLM is now considering an alternative component requiring construction to Phase II at the outset of the project, there is still almost no information on AIDEA's plan to use its proposed 3-phase approach to construction and the timing of each phase. AIDEA states that its proposed transition from one phase of the road to another would "occur over time and would only proceed as needed based on activity levels in the district and the number of mines in production or being developed, which determines the demand for

[641] 2016 AIDEA Application, sec. 6, at 3.

[642] 1 SEIS at 2-12 (noting that the layout, staging, and sequencing of construction activities, permafrost conditions, river crossing conditions, material sources and availability, soil conditions, and road reclamation and the associated harms remain unknown).

transportation capacity."[643] The ROW itself recognizes this serious gap, in that it allows AIDEA to submit plans of development at later points in time for the individual phases of development.[644] BLM never should have issued the ROW without a complete plan of development that encompasses all anticipated phases of the project; without that complete information, BLM was not in a position to adequately analyze mitigation and other measures necessary to meet its substantive legal obligations under FLPMA.

AIDEA's application also contains no intelligible time frame on when or how the road will be reclaimed. Reclamation "would be expected to occur 50 years after road construction is completed, *or* when mineral exploration and development activities in the District conclude."[645] Given how little is known about the amount of mineral resources in the Ambler Mining District, this statement about the timing of reclamation is meaningless. BLM should set a time limitation on the life of the "seasonal" Phase I road to ensure that if mineral development does not take place in the District in a reasonable time frame, that the environmentally damaging road is not simply abandoned in place. As noted elsewhere in these comments, AIDEA's proposed Phase I road is not even anticipated to be a year-round road and could present a serious hazard to the public, wildlife, and the environment if left in place. To comply with FLPMA, BLM must require a schedule for terminating the project, which was lacking in AIDEA's application.

AIDEA provides essentially zero information about the plans for reclamation of this project. AIDEA's application does not discuss basic information on how this road will be constructed, let alone any information on how it will be reclaimed. AIDEA states that it "may procure road design, construction, maintenance and operation services through third-parties,"[646] but that type of catch-all statement is legally insufficient. AIDEA is responsible for providing this information to obtain a FLPMA ROW grant, and cannot evade this requirement by assigning these responsibilities to an unidentified future contractor or by making promises to obtain that information in the future. The SEIS further illustrates that whether or not AIDEA can reclaim the road is an open question:

> AIDEA's application states that, at the project's outset, before final approval for construction, AIDEA would pre-fund a Reclamation Reserve Fund or similar bonding instrument to the satisfaction of the BLM and other landowners providing authorizations for the road, to provide for adequate reclamation during the closure and reclamation period. However, as noted above, there is uncertainty about this, given that the financing throughout the life of the project hinges on sufficient revenue from mining companies and is therefore vulnerable to the investment decisions of those entities.[647]

This is plainly incompatible with FLPMA. BLM must require AIDEA to provide assurances that it is capable of reclaiming the road before reissuing its ROW grant.

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[643] *Id.* sec. 2, at 6.
[644] BLM ROW ex. A at 6.
[645] 2016 AIDEA Application, sec. 2, at 7 (emphasis added).
[646] *Id.* sec. 2, at 1.
[647] 1 SEIS at 2-13.

Other specific shortcomings in AIDEA's application include statements that merely acknowledge the need for, and state the vague locations of, material sites. AIDEA anticipates 42.23 million cubic yards of gravel will be needed for the project for construction and maintenance.[648] By way of comparison, about 24 million cubic yards of gravel were used just to construct the Dalton Highway paralleling the Alaska pipeline.[649] BLM itself acknowledged in the JROD that it did not have sufficient site-specific information to authorize the gravel mines at that time;[650] but the gravel mines are a core, connected component of this project and AIDEA was required to provide complete information about the plans for gravel mining as part of this permit application. There is no information on the specific mine locations, blasting, how much gravel will be taken from each site, the excavation process, necessary machinery, or gravel mine reclamation.

As stated above, important information on bridge and culvert construction and maintenance is absent from the application, as well as any information on AIDEA's reclamation plan. Different reclamation techniques would be needed depending upon which "Phase" of the road is eventually built and subsequently reclaimed. Presumably, AIDEA must use ice roads to transport materials, however, a description of these activities and ice road construction and maintenance is wholly absent from the application. AIDEA has not met the requirement to provide information on the estimated life of the project or construction and reclamation techniques, and BLM should reject the application under FLPMA.

3. A Statement of AIDEA's Financial and Technical Capability to Construct, Operate, Maintain, and Terminate the Project Is Required.

The SEIS glosses over FLPMA's requirement that AIDEA must provide a statement of its financial and technical ability to construct, operate, and maintain the Ambler Road, simply stating:

> AIDEA would submit to the BLM, separately or as part of the plan of development (POD), a financing plan that indicated surety of the funding needed to build and operate the road according to the POD. Indication of AIDEA's financial ability to fund the project and its removal would be via binding agreements with mining companies, project investors, or other funders, indication of the ability to issue sufficient revenue bonds, and indication of acceptable financial instruments to ensure road closure and reclamation. The financing plan would be submitted for review and approval before the BLM would issue a Notice to Proceed to begin construction of any portion of the Ambler Road.[651]

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[648] 2016 AIDEA Application, sec. 2, at 4.

[649] U.S. Bureau of Land Mgmt., Utility Corridor Planning Area Resource Mgmt. Plan and Envtl. Impact Statement, 3-24 (Aug. 1987).

[650] JROD at 3.

[651] 1 SEIS at 2-13.

As described above, BLM must have a complete POD now, while it considers whether to affirm AIDEA's ROW grant. This FLMPA mandate cannot be punted to some future time after ROW issuance. Of particular importance, BLM must carefully consider AIDEA's financial ability to reclaim the road, as described in the section immediately above. AIDEA's ability to finance the construction and maintenance costs for this project is already questionable; their ability to finance any sort of reclamation, let alone one that would adequately restore the project area to an appropriate condition, is in serious doubt. And as described elsewhere in these comments, the SEIS fails to make clear that AIDEA will be required to undertake reclamation.

Relatedly, it is unclear whether BLM previously complied with the financial requirements of FLPMA regarding ROW applications and approvals. At a minimum, BLM must obtain "Fair Market Value" (FMV) for the use of federal land and resources. FLPMA requires that "the United States receive fair market value of the use of the public lands and their resources."[652] "The holder of a right-of-way shall pay in advance the fair market value thereof, as determined by the Secretary granting, issuing, or renewing such right-of-way."[653] In addition, AIDEA must fully "reimburse the United States for all reasonable administrative and other costs incurred in processing an application for such right-of-way and in inspection and monitoring of such construction, operation, and termination of the facility pursuant to such right-of-way."[654]

While the BLM ROW gives a nod toward these requirements, it is unclear what BLM ultimately determined would be FMV for the ROW — the ROW grant merely punts and states that the BLM authorized officer would determine the FMV at an unspecified future time.[655] This is incompatible with FLMPA's requirements that the ROW holder pay such value in advance. The projected FMV amount should be provided for public review and comment in the final SEIS.

In addition, BLM must charge full costs for a reclamation and performance bond to cover the ROW.[656] In particular, BLM's bonding requirements mandate that ROW holders must provide for bonding "that covers liability for damages or injuries resulting from releases or discharges of hazardous materials."[657] This is especially important for AIDEA's proposal to mine for and construct a road from gravel that is known to contain asbestos, which will inevitably lead to environmental liabilities from use of these hazardous materials. Additionally, AIDEA's bond must provide for "[i]nterim and final reclamation, re-vegetation, recontouring, and soil stabilization. This component must address the potential for flood events and downstream sedimentation from the site that may result in offsite impacts."[658] Because there is no reclamation plan for this proposal, it is unclear how AIDEA and BLM will ensure compliance

[652] 43 U.S.C. §1701(a)(9).
[653] *Id*. § 1764(g).
[654] *Id*.
[655] BLM ROW at 2 ("For and in consideration of the rights granted, the holder agrees to pay the Bureau of Land Management fair market value rental as determined by the AO").
[656] *See* 43 C.F.R. § 2805.20 (BLM Bonding Requirements).
[657] *Id*.
[658] 43 C.F.R. § 2805.20(a)(5)(ii).

with BLM's bonding requirements. These substantial financial considerations are in addition to the rents and other fees required by FLPMA and the ROW regulations.[659]

AIDEA's application, which should contain the requisite information for BLM to meet these FLPMA mandates, is woefully inadequate. In its application to BLM, AIDEA claimed "AIDEA's capability to construct, operate, maintain and terminate the project is evidenced by the successful [DeLong Mountain road] at Red Dog Mine."[660] This response is unacceptable, and AIDEA must be held to a higher standard than a single conclusory sentence related to a project that moved forward under dramatically different circumstances than the Ambler Road might. BLM must analyze AIDEA's assertion with close scrutiny. The DeLong Mountain Road is a 52-mile haul road connecting the Red Dog Mine — the world's largest zinc mine — to a port along the Chukchi Sea. Ambler would foremost be a copper mine, producing a small quantity of high-quality copper ore. While this copper is economically valuable, it might annually produce less than ½ of 1% of global supply. Ambler would secondly be a zinc mine, projected to produce around ¼ as much zinc per year as Red Dog, for a lifetime ¼ as long. Whereas Red Dog is one of the world's most important sources of zinc (it is currently the #2 global source) and produces a noticeable percentage (5%–10%) of global zinc, Ambler would produce closer to 1%–2% of the annual world supply, if that, and for a much shorter length of time.

Further, Red Dog Mine, whose road was financed by AIDEA, receives payments from the mine's operator (Teck Alaska) for its use. In that project, there was a proven applicant who was part of the permitting process, unlike the present case, involving a company with a dubious track record in both Alaska and elsewhere. NovaGold, led by Trilogy's CEO for fifteen years, Rick Van Nieuwenhuyse, operated the Rock Creek Mine outside of Nome for only a few months before shutting down. The company was also subject to a class action lawsuit involving allegations that NovaGold misled investors about the economic feasibility of the Galore Creek Mine in British Columbia and settled that case for $28 million Canadian dollars — the largest securities settlement at the time under Canada's class action laws. AIDEA itself is also a highly questionable project proponent. A recent report on AIDEA showed that AIDEA's project decisions are politically driven and that AIDEA has lost billions of dollars for the state.[661]

In addition to the disreputable project proponent, the current road has a much higher cost for AIDEA. Construction of the DeLong Mountain road decades ago cost $180 million and then an additional $85 million for improvements, for a total cost of $265 million.[662] The potential $844.9 and $906.0 million cost in AIDEA's permit application for the 30-year life of the Ambler road is already considerably higher, and does not purport to include the cost to eventually reclaim the road, as AIDEA is obligated to do for the project. We also note that AIDEA

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[659] *See* 43 C.F.R. pt. 2800.

[660] 2016 AIDEA Application, sec. 2, at 7.

[661] Milt Barker & Gregg Erickson, AIDEA – Cost and Financial Performance – A Long, Hard Look (2022), *available at* https://static1.squarespace.com/static/62cca323b85faf15e3ca3ce8/t/63320dbc1620c750ff2654f5/1664224705415/FINAL_AIDEA+Cost+and+Financial+Performance+Report_+2022.pdf.

[662] AIDEA, AMBLER ACCESS, http://www.ambleraccess.com/funding.html (last visited Oct. 25, 2019).

repeatedly claims the road will have a 50-year life, so this is likely not an accurate cost assessment.

Moreover, the DeLong Mountain road ends at a tidewater export location, in contrast to the Ambler Road ending at the Dalton Highway. The transportation cost via road for Ambler Mining District ore would be much greater than for Red Dog mine ore, as the latter can reach a ship by travelling a much shorter distance. Compared to the DeLong Mountain road, the proposed road is longer, to a more uncertain mineral deposit, with a significantly higher price tag. Development of the Ambler mining district and this proposed road have no long-term funding, no investors, and no plan. This road project should proceed only with a clear commitment by mine operators to repay the state all the construction, operations, maintenance, financing and the reclamation costs of the project. A vague statement about a toll road and bonding is not a statement of financial capability and does not meet FLPMA's requirement.

In addition to all of the above FLPMA requirements, because all of these financial considerations are necessarily part of BLM's review and approval of the ROW, they are subject to full public review under NEPA — something the SEIS fails to provide.

B. BLM's Prior Right-of-Way Grant Did Not Comply with FLPMA's Substantive Requirements and the SEIS Does Not Address BLM's Errors.

Important substantive requirements flow from FLPMA's ROW provisions. First, BLM must honor the requirement that the right-of-way grant "do no unnecessary damage to the environment."[663] A right-of-way that "may have significant impact on the environment" requires submission of a plan of construction, operation, and rehabilitation of the right-of-way.[664] The ROW permit "shall contain terms and conditions which will . . . minimize damage to scenic and esthetic values and fish and wildlife habitat and otherwise protect the environment."[665] Additionally, BLM must "protect the interests of individuals living in the general area traversed by the right-of-way who rely on the fish, wildlife, and other biotic resources of the area for subsistence purposes" and incorporate terms and conditions or mitigation measures to adhere to this requirement.[666]

At least three important substantive requirements flow from FLPMA's ROW provisions. First, BLM has a mandatory duty to impose conditions that "will minimize damage to scenic and esthetic values and fish and wildlife habitat and otherwise protect the environment."[667] The terms of this section do not limit "damage" specifically to the land within the ROW corridor. Rather, the expansive term "the environment" indicates that the overall effects of the ROW on wildlife, environmental, scenic, and aesthetic values must be evaluated and these resources protected. In addition, the obligation to impose terms and conditions that "protect Federal property and

[663] 43 U.S.C. § 1764(a) (1996).
[664] *Id*. § 1764(d).
[665] *Id*. § 1765(a)(ii).
[666] *Id*. § 1765(b)(iv).
[667] *Id.* § 1765(a) (emphasis added).

economic interests"[668] requires that BLM impose conditions that protect not only the land crossed by the ROW, but all federal lands affected by the approval of the ROW.

For the Ambler Road proposal, as noted herein, BLM failed to evaluate all aspects and ramifications of issuing the ROW by unreasonably limiting the scope of its analysis. In particular, BLM failed to consider the mineral material/gravel mines and related infrastructure made possible by the ROW, and the extensive significant impacts to aquatic resources along the road corridor. Also, as noted herein, the SEIS failed to show how mining development in the Ambler District made possible by the issuance of the ROW meets these FLPMA requirements.

Second, FLPMA mandates a BLM determination as to what conditions are "necessary" to protect federal property and economic interests, as well as "otherwise protect[ing] the public interest in the lands traversed by the right-of-way or adjacent thereto."[669] This means that the agency can only approve the ROW if it "protects the public interest in lands" not only upon which the road would traverse, but also lands and resources adjacent to and associated with the ROW. "[A]s BLM has held, it is not private interests but the public interest that must be served by the issuance of a right-of-way."[670]

BLM is currently unable to make a finding that industrial use of the lands surrounding by and served by the ROW (such as through the road itself, the hardrock mines in the Ambler District, and the gravel mines and related infrastructure) would "protect the public interest" because of the dearth of baseline data and project information provided to date. In particular, BLM's deferral of review of the project's gravel mines and other necessary project components violates its substantive responsibilities under FLPMA. BLM cannot legitimately conclude that the impacts from over 40 gravel mines, airstrips, access roads, and other components necessary for the Ambler Road are in the "public interest" and "minimize damage to scenic and esthetic values and fish and wildlife habitat and otherwise protect the environment,"[671] when BLM has never seen the complete plans for this infrastructure. Nor has BLM analyzed the site-specific impacts or obtained baseline information related to these project components. Moreover, BLM lacked information to conclude that the road itself, particularly its vaguely defined phased construction approach, would serve the public interest. BLM's ROW referred to a broad range of missing information and plans (e.g., a complete plan of development) that would need to eventually be provided to BLM, but were not available or clear at the time BLM issued the ROW.[672] As explained above, the SEIS notes that BLM still has yet to require or receive such a plan of development. BLM is not in a position to ensure the project was in the public interest when it had yet to receive key information, and never should have issued the ROW without obtaining that information and engaging in the necessary analysis to ensure the project would be in the public interest.

BLM cannot and should not have issued a ROW that failed to "protect the environment" as required by FLPMA, including the environmental resource values in and beyond the ROW

[668] *Id.* § 1765(b).
[669] *Id.* (emphasis added).
[670] *King's Meadow Ranches*, 126 IBLA 339, 342 (1993).
[671] 43 U.S.C. § 1765(a)(ii), (b)(vi).
[672] BLM ROW.

corridor. FLPMA does not authorize BLM to consider private interests as weighed against environmental and public interests such as protection of fish and wildlife habitat, subsistence uses, and public health.

Third, FLPMA requires that the right-of-way grant "do no unnecessary damage to the environment" and be "consistent with . . . any other applicable laws."[673] FLPMA further requires that BLM "take any action necessary to prevent unnecessary or undue degradation of the [public] lands" when granting a right-of-way.[674] Unnecessary or undue degradation is defined, in part, as "[f]ail[ing] to comply with . . . Federal and state laws related to environmental protection,"[675] and includes "applicable Federal and state air quality standards."[676]

This means that a grant of a ROW leading to exploration and mining in the Ambler District must satisfy all applicable laws, regulations and policies, including the Clean Air Act, Endangered Species Act, Clean Water Act, and all state and local laws and regulations. In particular, BLM must work with the Corps to ensure compliance with the CWA, as described above. BLM must also ensure AIDEA complies with applicable air quality standards, as described further below. Yet, as detailed below, the SEIS does not analyze whether the project will comply with national ambient air quality standards (NAAQs). This does not fulfill BLM's FLPMA duty to ensure that the project will comply with NAAQS when granting a right-of-way.

BLM's "permit first, monitor later" plan for ensuring compliance with air pollution, water quality, and other legal standards fails to ensure it has prevented unnecessary or undue degradation and fails to support BLM's finding that the project is in the public interest.[677] As described elsewhere in these comments, it is clear that this ROW authorization cannot comply with a number of important laws designed to protect the environment and the public. As such, the only legally compliance option is for the agency to adopt the no action alternative.

Finally, FLPMA expressly requires that all land-use authorizations contain terms and conditions to protect resources and the environment.[678] As described in these comments, the final EIS fails to consider an adequate range of enforceable and meaningful mitigation measures, in violation of NEPA and FLPMA.

Because the prior authorizations did not meet FLPMA's substantive requirements, BLM should rescind the ROW and ensure that it has complete information to engage in the required

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[673] 43 U.S.C. § 1764(a)–(c).

[674] *Id.* § 1732(b); 43 C.F.R. §§ 2801.2(b), 2805.11(a)(5).

[675] 43 C.F.R. § 3809.5. Although that definition is contained in BLM's hardrock mining regulations, that is the only place BLM has defined UUD.

[676] 43 C.F.R. § 3809.420(b)(4) (performance standards under UUD).

[677] *Ctr. for Biological Diversity v. U.S. Dept. of Interior*, 623 F.3d 633, 647 (9th Cir. 2010) (lack of supporting analysis renders BLM's public interest determination arbitrary and capricious).

[678] Colo. Trout Unlimited v. U.S. Dept. of Agriculture, 320 F.Supp.2d 1090, 1108 (D. Colo. 2004).

public interest analysis and ensure there are measures that are adequate to protect the environment prior to making a new decision.

IX. THE AGENCIES FAILED TO COMPLY WITH THE WILD AND SCENIC RIVERS ACT.

Congress passed the Wild and Scenic Rivers Act of 1968 (WSRA) to "protect[] for the benefit and enjoyment of present and future generations" selected Wild rivers that "possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values."[679] To qualify for inclusion in the Wild and Scenic Rivers system, a river must first be a "free-flowing stream" and the adjacent land must possess at least one of those enumerated outstandingly remarkable values (ORVs).[680]

The WSRA mandates that designated Wild rivers "shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected."[681] "Wild" rivers should be maintained "free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted."[682] Free flowing is defined as "existing or flowing in natural condition without impoundment, diversion, straightening, rip-rapping, or other modification of the waterway."[683] This includes all rivers not yet designated, but available for inclusion in the system.[684] The WSRA requires that, "[i]n all planning for the use and development of water and related land resources, consideration shall be given by all Federal agencies involved to potential national wild, scenic and recreational river areas."[685] Despite these requirements, the agencies have still not adequately analyzed the impacts or adopted necessary mitigation measures for Wild and Scenic Rivers, including the designated Wild Kobuk River, to ensure that their values will not be impaired.

A. The SEIS Did Not Adequately Analyze the Impacts to Wild and Scenic Rivers.

BLM failed to adequately address the deficiencies in its prior WSR impacts analysis in the SEIS, particularly with regard to the Kobuk River. The agency's prior Wild and Scenic Rivers Act analysis in the FEIS was almost non-existent since BLM left it to NPS and its EEA to consider the Kobuk River.[686] Where the Wild and Scenic Rivers Act was discussed, the analysis was buried in other sections of the FEIS.[687]

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[679] 16 U.S.C. § 1271.
[680] *Id*. §§ 1271, 1273(b).
[681] *Id.* § 1271.
[682] 16 U.S.C. § 1273(b)(1).
[683] *Id*. § 1286.
[684] *Id.* § 1276(d)(1).
[685] Id.; see Ctr. for Biological Diversity v. Veneman, 335 F.3d 849 (9th Cir. 2003).
[686] 1 FEIS at ES-4.
[687] The FEIS purported to address the Wild and Scenic Rivers' values in "Sections 3.4.3, Recreation and Tourism; 3.4.4, Visual Resources; 3.2.6, Acoustical Environment; and 3.4.1, Land Ownership, Use, Management, and Special Designations." 1 FEIS at ES-4. While the Recreation and Tourism section mentions that Gates of the Arctic is used for backpacking, river

Unlike the FEIS, the SEIS does not even purport to analyze the impacts to WSR values.[688] In the SEIS, BLM again relies on NPS's analysis of the Wild and Scenic River impacts in the NPS's EEA.[689] This is particularly problematic since NPS has not indicated that the agency will revisit its 2020 EEA for the project as part of this remand process. In addition, BLM merely mentions the potential impacts to the wild and scenic river values without providing any additional analysis or mitigation measures to address such impacts.[690]

BLM must analyze the proposed Amber Road's impacts on the Kobuk River, which would be impacted under alternatives A and B.[691] BLM is obligated to consider all information before making an informed decision and should not merely assume NPS's decision was adequate for purposes of NEPA or the WSRA. BLM has an independent duty under NEPA to perform its own impact analysis and adopt necessary mitigation measures. Those impacts were also directly relevant and tied to the Corps' consideration of potential aquatic impacts. ANILCA also makes it clear in Title XI that any transportation system that traverses an area within the National Wild and Scenic Rivers System "shall be subject to such conditions as may be necessary to assure that the stream flow of, and transportation on, such river are not interfered with or impeded, and that the transportation … system is located and constructed in an environmentally sound manner."[692] Nothing in ANILCA related to the Ambler Road undercuts or modifies the applicability of these requirements.

Ignoring these important environmental impacts is contrary to NEPA and ANILCA and leads to the SEIS being incomplete and misleading.[693] BLM frustrated the public's opportunity to weigh in on these alternatives by omitting this analysis from the EIS. BLM cannot sever this duty or delegate to another agency when there is a requirement to consider the environmental impacts for each alternative. BLM must correct these deficiencies in the final SEIS so that it

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floating, and fishing and is managed to retain wilderness values for "'solitude' and 'primitive and unconfined recreation' values," there is no express mention of the Wild and Scenic Rivers Act and its mandates to manage and protect ORVs. 1 FEIS at 3-117.

[688] BLM removed from the SEIS what little language it had in the FEIS that purported to point to an analysis of WSR values. *Compare* 1 SEIS at ES-4, *with* 1 FEIS at ES-4.

[689] 1 SEIS at 1-7.

[690] *Id.* at 3-40 to -41, 3-159 (stating that the "location and quantity of the impacts would vary" under the action alternatives, but "the type of impact would be similar.") "The impacts to wilderness characteristics within the . . . WSR cannot be eliminated or even meaningfully reduced by changes in road and bridge appearance or operations." *Id.* BLM notes that Alternatives A and B would cross six of the seven common float trips listed in a chart which would include the Kobuk Wild and Scenic River; however, BLM does not provide any impact analysis or mitigation measures beyond noting that the road crossings would "affect the sense of solitude and remoteness." *Id.* at 3-176. Merely using a list or chart does nothing to provide analysis of Wild and Scenic Rivers Act designation and necessary protections.

[691] *Id.* at 3-40 to -41.

[692] 16 U.S.C. § 3167(b).

[693] 42 U.S.C. § 4332(C).

supports meaningful public engagement and the agencies can make informed decisions about a preferred alternative.

BLM must take a hard look at the full range of direct, indirect, and cumulative impacts from the road, bridges, culverts, and mining activities to Wild and Scenic Rivers. For example, BLM must analyze the potential impacts to the Kobuk or other rivers from AIDEA's phased construction approach. The final SEIS also needs to consider the potential for spills, water withdrawals, other pollution, culverts, road dust, climate change, mining, other foreseeable developments (such as spur roads), and other project impacts specifically in the context of designated and potential Wild and Scenic Rivers.

The final SEIS must also consider additional mitigation measures to address the impacts to Wild and Scenic Rivers, including the Kobuk River. The SEIS sections that supposedly covered such mitigation measures failed to provide any river specific analysis.[694] Mitigation under the Wild and Scenic Rivers Act is meant to ensure that ORVs are protected for future generations, and the consideration of how to do that and also how to maintain the natural flow and other requirements of the WSRA need to be analyzed on a river- and site-specific basis. The final SEIS should incorporate consideration of alternatives and mitigation measures to minimize the impacts to specific designated and potential Wild and Scenic Rivers.

B. The SEIS Failed to Analyze the Outstandingly Remarkable Values & Impacts to the Kobuk River.

BLM was required to consider and mitigate impacts to the Kobuk River's ORVs,[695] but has failed to do so to date. The Kobuk River is a designated Wild River with Cultural, Geologic, Natural Resources (fisheries), Recreation, and Scenic ORVs.[696] The Kobuk Wild River holds some of the highest values for wilderness character in the entirety of Gates of the Arctic. The road would cross the designated section of the river under both Alternatives A and B—one route to the south and one to the north within Gates of the Arctic. Alternative C also crosses the Kobuk, but below the designated portion.[697]

BLM needed to consider each alternative in light of the WSRA. Although two alternatives cross at different locations on the river, BLM improperly did not provide any analysis recognizing the site-specific differences, merely finding that both river crossing are the same width.[698]

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694 *See* 3 SEIS App. N at N-39 to -40.

695 16 U.S.C. § 1276(d)(1).

696 NPS, Kobuk River, https://www.nps.gov/gaar/kobukriver.htm.

697 1 SEIS at 3-161. The SEIS states that "Both alternatives [A and B] would alter the character of the WSR corridor, primarily creating a road bridge over a river designated for its 'wild river' characteristics, including free-flowing waters that are generally inaccessible except by trail, while the character would change in the vicinity of the bridge." *Id.*

698 *Id*.

The agencies need to ensure they have the actual site-specific information about the Kobuk crossings. As detailed throughout these comments, AIDEA has yet to do many of the studies necessary to fully design and pin down the bridge locations on a site-specific basis. AIDEA is also still missing key baseline data about aquatic resources in the region. This lack of site-specific design and baseline information for the area calls into question the adequacy of the agencies' analyses with regard to the Kobuk River in general. Without complete bridge designs and site-specific information, the agencies were not able to analyze whether there were adequate requirements in place to protect ORVs and prevent modifications to the stream flow. This is contrary to the agencies' obligations under the WSRA for both the Kobuk and other designated and potential Wild and Scenic Rivers. These major information gaps need to be addressed by both BLM and NPS for purposes of its EEA.

BLM must also address several problems with its prior consideration of the Kobuk's ORVs. In the SEIS, like the flawed FEIS, BLM allows watercraft use, such as barge or other traffic, on the Kobuk River that is potentially inconsistent with the Wild and Scenic River Act designation. It is unclear in the SEIS how barge and other vessels might be allowed along the Kobuk in relation to the road right-of-way.[699]

Although BLM provided some analysis about the visual impacts for the Ambler Road in the SEIS, that analysis was inadequate. The SEIS only included a visualization of the Kobuk River with a bridge for Alternative A.[700] BLM states that Alternative A would have more significant visual impacts than Alternative B or C, but does not provide any photo or other comparison or any apparent basis for such a conclusion.[701] There is no site-specific analysis to indicate why this may be the case — only the conclusory statement that there might be greater impacts because the area in Alternative A is more sensitive.[702] BLM must explain this conclusion, and frame its analysis in terms of the Wild and Scenic Rivers Act and Kobuk River's ORVs. Additionally, BLM must consider and incorporate issues from soundscape impacts on the Kobuk River, which wasn't done in the SEIS.[703]

BLM did not address AIDEA's proposed water withdrawals on the Kobuk. Using water from the designated Kobuk River for construction is inconsistent with its Wild and Scenic River designation. The SEIS does not mention that a withdrawal is planned for the designated Wild and Scenic Kobuk River for construction, but the EEA makes clear that is part of AIDEA's proposal.[704] This must be analyzed for consistency with the WSRA.

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[699] *See* 1 SEIS at 3-166 ("While the types of impacts are similar among alternatives, Alternative C would cross the Kobuk and Koyukuk rivers in areas more commonly used by barges or other large boats while Alternatives A and B would cross rivers used more commonly by smaller craft.").

[700] *Id*. at A-9.

[701] *Id.* at 3-182 to -183.

[702] *Id*.

[703] 1 *id.* at C-22.

[704] *See* Nat'l Park Serv., U.S. Dep't of the Interior, Ambler Mining District Access Project at Gate of the Arctic National Park and Preserve: Environmental and Economic Analysis (July 2020) at 10 [hereinafter Final EEA] (describing the proposed withdrawal).

The contemplated use of riprap and other fill material is directly inconsistent with the WSRA.[705] The SEIS does not explain when or how AIDEA will choose to use riprap or select other materials — possibly because AIDEA has yet to fully design the bridge at a site-specific level. There is no description of what "other" fill materials may be used and what environmental impacts such materials would have. BLM needs to describe what types of fill will be used and what would be most appropriate in light of the Kobuk's Wild and Scenic designation. BLM provides no analysis to explain this inconsistency, and the apparent reliance on rip-rap, which is expressly prohibited in the WSRA, indicates the agency did not comply with its legal obligations.

Further, AIDEA previously proposed to place a gravel mine near the Kobuk Wild and Scenic River; that proposed material site would encompass approximately 61 acres near the Kobuk.[706] There is no indication that AIDEA has shifted this plan or that the agencies have in any way restricted AIDEA from doing so. AIDEA also proposes to include a construction camp that will develop into a long-term maintenance facility with an airstrip.[707] The proximity of the above described development is not mentioned the SEIS, only the NPS EEA. The mine and all the related additional infrastructure and support facilities would be inconsistent with the Kobuk's Wild and Scenic Values and, as discussed in these comments, a blatant violation of ANILCA. BLM should make it clear those project elements are contrary to law and will not be authorized.

BLM also did not consider Alternative C's impacts on the Kobuk River. Alternative C still crosses the Kobuk River, even though this location is south of the designated section in Gates of the Arctic.[708]

Overall, the cursory statements in the SEIS do not constitute a meaningful analysis of Wild and Scenic River Act impacts to the Kobuk River and do not adequately address or minimize those impacts, as required by the WSRA and ANILCA. Allowing development of a road across the Kobuk River (especially without adequate information about its design and impacts to ensure the protection of ORVs), water withdrawals, and adjacent development would be inconsistent with protecting the river's ORVs. BLM must address these deficiencies in the final SEIS.

C. The SEIS Failed to Analyze the Outstandingly Remarkable Values of Other Designated Rivers and Rivers Suitable for Future Designation.

The final SEIS must consider effects on other designated WSRs. Alternatives A and B cross the Alatna, John, and Koyukuk Rivers below the area where they are officially designated Wild and Scenic.[709] BLM must consider the impacts the road will have on their upriver status

[705] 1 SEIS at 3-35; 16 U.S.C. § 1286.

[706] Final EEA at 9; Final EEA App. A, Figure 5; 4 SEIS Map 2-3 p.2.

[707] *Id*. at 9; *id*. at App. A, Figure 3; 4 SEIS Map 2-3 p.2.

[708] 1 SEIS at 3-101.

[709] In addition, the primary tributary of the Wild Designated North Fork of the Koyukuk is also designated as Wild. *See* NPS, Tinayguk River, https://rivers.gov/rivers/Tinayguk.php. The

and address any likely changes to their protected values. The rivers are connected waterways, ecosystems, and recreation corridors and the proposed road development will likely impinge on the rivers' ORVs, even if the road does not cross the designated areas directly.

While the SEIS acknowledged that the road would cross the Alatna, John, and Koyukuk rivers south of where they are designated (in Gates of the Arctic), the SEIS provided no analysis for how their values would be protected or how the designated portions could be impacted — instead, it merely concluded that there will be impacts to recreational float trips.[710] For Alternative C, it also mentioned that float trips will be affected in the Koyukuk, Kobuk (downstream of Wild River segment), and Hogatza River corridors.[711] BLM states that, "[i]n some instances, culverts can impact the transport and storage of sediment and wood, which can adversely affect the instream habitat characteristics both upstream and downstream of the structures throughout the life of the road."[712] Beyond this acknowledgement, the information presented is so minimal it is unclear to what extent BLM believes impacts will occur upstream to these rivers. BLM must account for the impacts to the ORVs of all designated rivers — whether the proposed road directly crosses them or not — and must account for and address upstream impacts to designated rivers from the project.

Finally, to ensure river values are protected for future designation, BLM is also required to consider the recommendation of all suitable rivers for inclusion in the Wild and Scenic Rivers System.[713] BLM must undergo an identification and evaluation process for the rivers crossed by Alternatives A, B, and C to comply with internal agency guidance and the WSRA.[714] The SEIS did not provide any analysis of undesignated rivers for possible future inclusion in the Wild and Scenic Rivers system, and this shortcoming should be addressed in the final SEIS.

X. THE AGENCIES FAILED TO COMPLY WITH ANILCA.

There were significant issues related to the agencies' compliance with section 810 of ANILCA, in addition to those the agencies already acknowledged in requesting this remand process. In addition to those legal errors, the agencies failed to comply with the substantive and procedural requirements of Title XI of ANILCA. In addition, any consideration of gravel mines or other infrastructure in Gates of the Arctic also needs to be removed from consideration, as it is contrary to ANILCA.

SEIS does not acknowledge this relationship and should consider the Wild Tinayguk River in the appropriate analysis of upstream effects to the designated rivers.

[710] 1 SEIS App. C at C-22; *see* 4 SEIS at Map 3-26.

[711] 1 *id.* at C-22.

[712] *Id*. at 3-91.

[713] 16 U.S.C. § 1276(d)(1).

[714] *See id*. § 1275; Bureau of Land Mgmt., BLM Manual 6400, Wild and Scenic Rivers – Policy and Program Direction for Identification, Evaluation, Planning, and Mgmt. at 6-136 (July 13, 2012).

A. BLM's Must Address the Numerous Deficiencies with Its ANILCA 810 Analysis.

BLM has made some improvements in the ANILCA 810 evaluation as compared to the prior version, but there remain several fundamental flaws. One key problem is BLM's continued distinction between subsistence communities near the road corridor, which receive individualized analysis, and more distant communities reliant on migratory fish and caribou, which are addressed in summary fashion. Another important flaw is BLM's continued application of an erroneous legal standard in determining whether subsistence impacts exceed the minimal threshold for a community to proceed from Tier 1 to Tier 2 of the ANILCA 810 process. A third issue is the disconnect between the analyses of project impacts in various substantive sections of the draft SEIS confirming the potential for major impacts to fish, caribou, and subsistence, and the contrary findings that nearly half of the communities within the subsistence study area will not have even the minimally significant impacts necessary to proceed to Tier 2. Additional flaws arise from the overarching problems with the entire draft SEIS discussed elsewhere in these comments, including the lack of adequate project design information, lack of baseline data concerning affected resources, inadequate alternatives, failure to consider gravel and hardrock mining as connected actions, inadequate evaluation of indirect and cumulative effects, and inadequate mitigation.

Despite its limitations and inadequacies, the draft SEIS makes it clear that the Ambler Road would harm subsistence resources and the communities that rely on them across all of Northwest Alaska—from Nuiqsut on the North Slope to Russian Mission in the Yukon-Kuskokwim Delta to Point Hope on the Lisburne Peninsula.[715] This is a vast region encompassing nearly a quarter of the land area of the State. The information in the draft SEIS amply demonstrates that the Ambler Road project has the potential to result in profound adverse impacts for all 65 of the identified subsistence communities throughout this region.[716] BLM's exclusion of any of these communities from the formal Tier 2 hearings and determinations would thus be unlawful.

Further, NPS has an independent obligation to comply with ANILCA 810 which, to date, it has not fulfilled. Given the shortcomings of BLM's draft SEIS, NPS will not be able to rely on either BLM's Tier 1 subsistence review or Tier 2 determinations to satisfy its statutory duties. At this point, NPS's only viable options will be to deny project approval or to sign onto an SEIS that selects the no action alternative.

Ultimately, potential profits for mining companies and a handful of jobs cannot be found to justify the widespread degradation of vibrant subsistence-based cultures across an entire region. The agencies' only legitimate option is to select the no action alternative.

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[715] 3 SEIS App. L, map 1, at L-3.

[716] BLM listed Fairbanks among a group of 66 communities within its subsistence study area based on its usage of caribou. 3 SEIS Appx. L, tbl. 1. However, since Title VIII of ANILCA applies to "rural Alaska residents," 16 USC 3111(1), 3113, and Fairbanks is not considered rural (https://www.doi.gov/subsistence/regions/wi), its inclusion appears to be in error. As such, the total number of subsistence communities in the study area is actually 65, rather than 66.

1. Statutory Background

In enacting ANILCA, Congress intended to "provide for the maintenance of sound populations of, and habitat for, wildlife species," "protect the resources related to subsistence needs," and "protect and preserve historic and archeological sites, rivers, and lands."[717] Congress found that the "continuation of the opportunity for subsistence uses ... is essential to Native physical, economic, traditional, and cultural existence," and that "the situation in Alaska is unique in that, in most cases, no practical alternative means are available to replace the food supplies and other items gathered from fish and wildlife which supply rural residents dependent on subsistence uses."[718] Congress declared it to be federal policy that the "utilization of the public lands in Alaska is to cause the least adverse impact possible on rural residents who depend upon subsistence uses of the resources of such lands"[719] Congress also intended to ensure that "rural residents who have personal knowledge of local conditions and requirements" play a "meaningful role in the management of fish and wildlife and of subsistence uses on the public lands in Alaska."[720] The term "subsistence" in ANILCA is defined broadly.[721] Subsistence extends beyond a sufficient food supply and protects customary and traditional practices.

ANILCA 810 establishes both procedural and substantive requirements to protect subsistence.[722] Federal agencies must conduct a two-tiered process when determining whether to authorize the "use, occupancy, or disposition" of public lands.[723] In Tier 1, the federal agency must evaluate the potential impacts of a proposed project on subsistence.[724] In Tier 2, the agency must hold hearings in subsistence communities and make several substantive determinations.[725] Only after a federal agency has demonstrated compliance with ANILCA's subsistence protections is it authorized to "manage or dispose of public lands."[726] Actions that would "significantly restrict subsistence uses can only be undertaken if they are necessary and if the

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[717] 16 U.S.C. § 3101(b).

[718] *Id*. § 3111(1)-(2).

[719] *Id*. § 3112(1); *see id.* §§ 3101(c), 3111(4); *see also City Tenakee Springs v. Clough*, 915 F.2d 1308, 1310 (9th Cir. 1990).

[720] 16 U.S.C. § 3111(5).

[721] *See id*. § 3113 (defining "subsistence uses" to mean the "customary and traditional uses by rural Alaska residents of wild, renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for the making and selling of handicraft articles … ; for barter, or sharing for personal or family consumption; and for customary trade").

[722] *See Sierra Club v. Marsh*, 872 F.2d 497, 502-03 (1st Cir. 1988); *City Tenakee v. Clough*, 750 F. Supp. 1406, 1421, 1427 (D. Alaska 1990).

[723] 16 U.S.C. § 3120(a).

[724] *See id*.

[725] *See id.* § 3120(a)(1)–(3).

[726] *See id.* § 3120(a), (d).

adverse effects are minimized."[727] Thus, ANILCA Section 810 imposes substantive restrictions on the agency's decisions.[728]

2. BLM's Tier 1 Analysis is Inadequate.

The supplemental ANILCA Section 810 analysis must analyze subsistence impacts to all potentially affected communities in order to correctly identify which communities may experience significantly restricted subsistence uses.

In a Tier 1 evaluation, the federal agency must evaluate (1) the effects of the proposed project on "subsistence uses and needs," (2) the "availability of other lands for the purposes sought to be achieved," and (3) "other alternatives which would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes."[729] A proper Tier 1 evaluation must also reflect ANILCA's broad definition of subsistence, including the potential destruction of village culture and way of life,[730] and the agency must consider cumulative impacts along with direct and indirect impacts.[731]

BLM has admitted that its prior Tier 1 evaluation under ANILCA 810 was "deficient" for multiple reasons.[732] While the draft SEIS addresses some of these deficiencies, many aspects of the Tier 1 evaluation remain flawed and inadequate. The components of the Tier 1 evaluation that overlap with the subsistence review under NEPA will be discussed below. This section will focus on the requirements unique to ANILCA 810.

A key problem with BLM's original Tier 1 evaluation was that the agency applied a geographic proximity-based threshold that unlawfully limited its scope. Unfortunately, BLM is continuing to utilize a very similar, and likewise unlawful, approach in the draft SEIS.

In the prior evaluation, BLM had initially identified 53 potentially affected subsistence communities by looking at "communities that harvest subsistence resources within or near the project area, use the project area to access subsistence use areas, or harvest resources that migrate through the project area and are later harvested elsewhere."[733] Of this group, however, only the 27 communities closest to the road corridor were deemed "primary," and only these received individualized attention. BLM recognized the critical importance of migratory Western Arctic caribou to another 26 communities farther away from the road corridor and the potential for the Ambler project to have population-level effects on the caribou herd, but the agency inexplicably and unlawfully eliminated these communities at the outset of the Tier 1 evaluation.

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[727] *Amoco Prod. Co. v. Vill. Gambell*, 480 U.S. 531, 554 (1987).
[728] *Sierra Club v. Marsh*, 872 F.2d 497, 502–03 (9th Cir. 1989).
[729] 16 U.S.C. § 3120(a).
[730] *See* 16 U.S.C. § 3113.
[731] *See City Tenakee*, 915 F.2d at 1312-13. *Sierra Club v. Penfold*, 664 F. Supp 1299, 1310 (D. Alaska 1897), *aff'd*, 857 F.2d 1307 (9th Cir. 1988).
[732] AVC Remand Mot. at 2, 14–17.
[733] FEIS App. L.

BLM has made some improvements in the draft SEIS, such as its recognition that, much like the more distant communities harvesting caribou, subsistence communities reliant on migratory fish will also experience subsistence impacts notwithstanding their distance from the road corridor. Nevertheless, BLM is still prioritizing the communities closest to the road and failing to conduct site-specific evaluations for each of the other communities. The draft SEIS identifies a total of 65 potentially affected subsistence communities, including the same 27 "primary" communities nearest the road corridor and another 38 more distant communities that harvest migratory caribou and/or fish which could be adversely affected by the Ambler project. Much like the previous ANILCA 810 evaluation, the new version in the draft SEIS describes the subsistence practices and potential impacts on the so-called primary communities (i.e., those situated within the Kobuk River, Kotzebue Sound, Koyukuk River, Tanana River, and Yukon River subregions) in an individualized manner over approximately 115 pages, except Livengood for which there is a complete lack of data and no discussion.[734] By contrast, the other 38 communities (i.e., those spread throughout the surrounding northern, western, and southwestern subregions) are grouped together, and their subsistence impacts are discussed collectively in less than 4 pages.[735]

This cursory treatment of 38 communities affected by the project's impacts on migratory fish and caribou is starkly at odds with the information in the draft SEIS. Indeed, the draft SEIS clearly establishes that communities throughout the Northwest Alaska region rely heavily on highly-mobile and far-ranging populations of caribou and fish:

> With few exceptions, use of caribou among the 42 study communities is high,[736] with over 50 percent of households in 30 of the 42 study communities using caribou. … Strong sharing networks between communities and regions ensure that residents of the study communities continue to receive and consume caribou, and the resource remains culturally important to all study communities regardless of current harvest levels.[737] …With few exceptions, use of fish among the 32 study communities is high,[738] with more than 50 percent of households in nearly all fish study communities using Chinook salmon, chum salmon, or sheefish.[739]

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[734] 3 SEIS App. L, at L-26 to -141.

[735] *Id*. at L-141 to -144. These are pages in the subsistence technical report (Appendix L) on which the ANILCA 810 evaluation (Appendix M) is based. The 810 evaluation does not provide any additional site-specific discussion for these or any other subsistence communities.

[736] The 42 figure refers to the agency's grouping of "caribou study" communities, including 16 "primary" communities near the road corridor, plus another 26 caribou-focused communities farther away.

[737] 3 SEIS, App. L, at L-142 to -143.

[738] The 32 figure refers to the agency's grouping of "fish study" communities, including 15 "primary" communities near the road corridor, plus another 17 fish-focused communities farther away.

[739] 3 SEIS, App. L, at L-143.

The draft SEIS also acknowledges the potential for severe impacts on WAH caribou, salmon, sheefish, whitefish, and other fish species from the Ambler Road project, especially when combined with subsequent mining activities and the network of secondary roads that would be facilitated by the project. For instance, the draft SEIS explains that "caribou migration may be altered to the point where winter survival and calving success are affected," resulting in "major impacts on the herd population,"[740] and it reiterates that the project "could cause population level impacts to the WAH."[741] With respect to fish, the draft SEIS similarly acknowledges that the Ambler project and associated mining and secondary access roads "could cause population level impacts to fish" through increased sedimentation and smothering of eggs in spawning grounds for sheefish, salmon, whitefish, and other species, alteration and degradation of fish habitat both upstream and downstream from the road, and spills of hazardous materials.[742]

Moreover, just because the more distant communities have in common the fact that their impacts will arise primarily from impacts to their fish and caribou resources—rather than directly from the Ambler Road project and associated mining—each community will be affected in different ways, and these varying conditions must be evaluated. The affected communities range from tiny remote villages to larger towns. Some are coastal and others inland. Some lie 700 miles apart from each other, with entirely different climates, topography, and landscapes. Some communities rely on just a few subsistence resources, while others have a broader array of resources available. They also vary in levels of income and resilience. These and many other factors contribute to the subsistence impacts they will experience from the Ambler Road project. The immense scale of the project and its far-reaching adverse impacts underscore the importance of fully evaluating the impacts for each community. They do not provide an excuse for superficial analysis and extrapolation. On the contrary, under ANILCA 810, the agency's analysis cannot be overly generalized or abstract. Federal agencies must "consider site-specific aspects of a proposed action," including its "effect on local 'subsistence uses and needs.'"[743] BLM therefore has a duty to conduct a robust, site-specific Tier 1 subsistence evaluation for each affected community. Its failure to do so has resulted in a gross understatement and mischaracterization of the subsistence impacts of the project. Given that BLM is not on track to satisfy ANILCA 810 requirements before finalizing the SEIS, it cannot approve the Ambler Road project.

BLM's Tier 1 evaluation must also analyze the "availability of other lands" that could be used to serve the project's purpose as well as "alternatives" that would "reduce or eliminate" the project's "use ... of public lands needed for subsistence purposes."[744] The draft SEIS fails to satisfy these requirements. While alternatives considered in an EIS could potentially be used to satisfy the "availability of other lands" and "alternatives" requirements of ANILCA 810, for the reasons discussed elsewhere in these comments, BLM's alternatives analysis in the draft SEIS is inadequate and fails to fulfill the agency's obligations under both NEPA and ANILCA 810. In

[740] *Id*. App. M, at M-10.
[741] *Id*. at M-27.
[742] *Id*. at M-28.
[743] *Se. Alaska Conserv. Council v. U.S. Forest Serv.*, 443 F. Supp. 3d 995, 1017 (D. Alaska 2020) (emphasis added).
[744] 16 U.S.C. § 3120(a).

particular, BLM's alternatives screening process was flawed and its combined phasing alternative is not sufficiently analyzed. BLM also focused on highly similar alternatives, varying only with respect to their route, and thus failed to consider a reasonable range of alternatives. BLM should have carefully considered the proposed Tribal alternative instead of summarily dismissing it, and BLM should have evaluated other modes of transportation, westerly routes, and other types of alternatives. Further, as discussed above, BLM should have considered alternatives—such as a single-phased project, a project limited to the buildout of Phase 2 (as approved by the Corps), westerly routes, and alternate modes of transportation such as rail—that have the potential to dramatically reduce the need for gravel and otherwise minimize the project footprint.

Additionally, an obvious way to reduce the public lands footprint of the project would be to adopt an alternative or variant that limits the width of the right-of-way corridor. For a linear project 211 miles or longer, even a relatively small reduction in width could make a significant difference. Evaluating width reductions is also necessary to inform the required determination in Tier 2 that the project will "involve the minimal amount of public lands necessary" to achieve its purpose, as discussed further below.

In the draft SEIS, however, BLM has once again simply accepted AIDEA's proposals and failed to evaluate whether a narrower width would be sufficient. The draft SEIS explains that "AIDEA has requested a ROW" that would be "250 feet wide in most areas, although at bridge crossings and steep terrain, the width may need to be up to 400 feet to accommodate cut and fill slopes."[745] In a footnote, BLM acknowledges that the "normal highway width including ROW in Alaska is 100 feet;" the State of Alaska has "limited the access road for the Donlin Mine to a 150-foot ROW;" and the Dalton Highway is subject to a "200-foot ROW width specified by statute."[746] These examples demonstrate that it is common practice and generally feasible to use smaller right-of-way widths for large-scale road projects in Alaska, including mining access roads. Yet BLM has failed to actually analyze the feasibility of adopting one of these narrower widths for all or part of the Ambler Road corridor. BLM should have considered whether vegetation-clearing and other project needs could be accomplished within a smaller right-of-way width, and considered ways to reduce lands used for AIDEA's ancillary facilities and gravel mines. Because it failed to do so, the only alternative which would adequately protect subsistence pursuant to ANILCA 810 is the no action alternative.

3. BLM Is Unlawfully Excluding Numerous Communities from the Tier 2 Hearings and Determinations.

Federal agencies may eliminate subsistence communities from further evaluation if, after completing a proper site-specific Tier 1 evaluation, they determine that the proposed activity "may significantly restrict subsistence uses" for some communities but not others.[747] The

[745] 1 SEIS at 2-8.

[746] *Id*. at 3-159, n.72.

[747] *See Vill. Gambell v. Hodel*, 774 F.2d 1414, 1421-22 (9th Cir. 1985), *rev'd in part other grounds* 480 U.S. 531 (1987); *Hanlon v. Barton*, 740 F. Supp. 1446, 1448-49 (D. Alaska 1988); *see also Tribal Vill. Akutan v. Hodel*, 792 F.2d 1376, 1378-79 (9th Cir. 1986), *vacated on*

standard for carrying forward subsistence communities into Tier 2 is "quite low."[748] A "threat of significant restriction" is enough to mandate Tier 2 hearings and determinations,[749] and the occurrence of the threat "need not be likely."[750]

Despite BLM's acknowledgment of many serious subsistence impacts, including population-level impacts to caribou and fish throughout Northwest Alaska, BLM has found that 30 communities fall below the threshold and will not be carried forward to Tier 2. Instead of properly applying the minimal "may significantly restrict" standard, BLM erroneously and unlawfully focused on whether subsistence impacts would be "expected" to occur and whether they would be "substantial," "large," "major," or "extensive":

> An alternative would be considered to significantly restrict subsistence uses if … it can be expected to substantially reduce the opportunity to use subsistence resources … Substantial reductions are generally caused by large reductions in resource abundance, a major redistribution of resources, extensive interference with access, or major increases in the use of those resources by non-subsistence users.[751]

It is improper as a matter of law to require a showing that subsistence impacts are "likely" before proceeding to Tier 2.[752] Instead, federal agencies must proceed to Tier 2 whenever there is a "significant possibility" of significant restrictions on subsistence.[753] Defendants' approach, in which subsistence impacts must be "expected," is more stringent than a likelihood requirement and violates ANILCA 810. With respect to the *extent* of harm to subsistence, the terms "substantial," "large," "major," and "extensive" all demand a higher showing for subsistence impacts than merely a "significant" restriction.[754] Maintaining a low threshold for Tier 2 serves ANILCA 810's overarching purpose to protect subsistence, which Congress found is essential to the very existence of Native communities, by ensuring that the impacts of public land disposals on subsistence are fully evaluated and minimized. Reliance on an overly stringent standard would be contrary to Ninth Circuit case law.[755]

It is also problematic that BLM's methodology relies on a deeply flawed quantitative approach that assigns labels of low, moderate, or high importance to various resources based on community harvest data that is plagued with gaps, relies on ballpark estimates, and is very outdated. Also, BLM inappropriately limited the scope of the ANILCA 810 evaluation such that "[o]nly high and moderate valued resources were analyzed in detail."[756] BLM's qualitative

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other grounds, 480 U.S. 943 (1987).

[748] *Sierra Club*, 664 F. Supp. at 1307.

[749] *Vill. Gambell*, 774 F.2d at 1422.

[750] *Hanlon*, 740 F. Supp. at 1449.

[751] 3 SEIS App. M, at M-3.

[752] *See Vill. Gambell*, 774 F.2d at 1414; *Hanlon*, 740 F. Supp. at 1448–49.

[753] *See Hanlon*, 740 F. Supp. at 1449-52; *City Tenakee,* 750 F. Supp. at 1425.

[754] *See* 16 U.S.C. § 3120(a).

[755] *Kunaknana v. Clark*, 742 F.2d at 1151–52; *see Hanlon*, 740 F. Supp. at 1448–49.

[756] 3 SEIS App. M, at M-27 (note 1).

discussions recognize the importance of broad regional and statewide sharing networks, the cultural significance of participating in harvesting traditions and transmitting knowledge to future generations, the role of super-harvesters, the diversity of resources in times of scarcity, the year-round availability of certain resources, and other factors. But these considerations appear to have been largely ignored for purposes of the ultimate "may significantly restrict" determinations.[757] Instead, the main factors underlying these determinations seem to be the quantity harvested for each resource and the proximity or distance of the community from the project corridor.

BLM offers various rationales for including communities in Tier 2, but it is silent as to why the remaining communities are being excluded. This is inadequate and unlawful, as BLM has a duty to provide a rational explanation and reasonable basis for every aspect of its decision making. A preliminary overview of the excluded communities illustrates that many of them satisfy the "quite low" threshold standard for Tier 2, even using BLM's own data and criteria. To begin with, BLM acknowledges that:

- "[p]opulation-level impacts could extend to the 42 WAH WG communities, particularly those with a moderate to high reliance on the resource."[758]

- mining operations could have "population level impacts" on salmon, sheefish, whitefish, and other important subsistence species;"[759] and

- in light of recent Chinook and chum salmon declines, cumulative impacts from "the road, mining activity, and other reasonably foreseeable future actions" could lead to "reduced harvest success" for communities in the Kobuk-Selawik, Koyukuk, and Yukon River basins, where these resources are of high or moderate importance.[760]

Looking first at the communities identified as "primary," BLM has excluded all 4 communities in the Tanana River subregion (Manley Hot Springs, Minto, Nenana, and Tanana) and 4 of the 5 communities in the Yukon River subregion (Beaver, Galena, Livengood, and Rampart). All 8 of these communities should have been carried forward into Tier 2. These communities were initially labeled primary due to their relative proximity to the Ambler Road corridor, and some of them are also identified as "fish" and/or "caribou" study communities due to their reliance on migratory species. A few more details are listed below:

Manley Hot Springs (primary) – Ranked high for salmon overall – chum salmon (32% of households use), Chinook salmon (80% of households use); ranked moderate for non-salmon

[757] *See* Annette Watson, Ph.D., Expert Analysis Regarding the Supplemental EIS (SEIS) for Ambler Road and Mining District (Dec. 18, 2023) at 5–6 [hereinafter Watson Report] (included as Attachment 2 to these comments).

[758] 3 SEIS App. M, at M-36.

[759] *Id*. at M-37.

[760] *Id*.

fish overall (sheefish included, but not broken out).[761] Community located within 50 miles of road corridor, and subsistence use areas within 30 miles of road corridor.[762]

Minto (primary) – Ranked high for salmon overall – chum salmon (41% of households use) and Chinook salmon (61% of households use); ranked moderate for non-salmon fish (sheefish included, but not broken out).[763] Community located within 50 miles of road corridor, and subsistence use areas within 30 miles of road corridor.[764]

Nenana (primary) – Ranked high for salmon overall – chum salmon (33% households use), Chinook salmon (31% of households use); ranked high for non-salmon fish (sheefish included, but not broken out).[765] Subsistence use areas within 30 miles of road corridor.[766]

Tanana (primary, fish) – Ranked high for chum salmon (70% of households use), moderate for Chinook salmon (92% of households use), and moderate for sheefish (36% of households use), and high for fish overall.[767] Community located within 50 miles of road corridor, subsistence use areas overlap the project and within 30 miles of road corridor.[768]

Beaver (primary) – Ranked high for salmon overall – chum salmon (44% of households using), Chinook salmon (96% of households using); ranked moderate for non-salmon fish (sheefish included, but not broken out).[769] Subsistence use areas within 30 miles of road corridor.[770]

Galena (primary, fish, caribou) – Ranked high for chum salmon (59% of households use), moderate for Chinook salmon (71% of households use), moderate for sheefish (36% of households use), and high for fish overall; ranked low for caribou (13% households use, usage declined until 2001 but now increasing, possibly due to shifting migration patterns).[771] Subsistence use areas overlap the project and within 30 miles of road corridor.[772]

Rampart (primary, fish) – Ranked high for chum salmon (57% of households use), low for sheefish (29% of households use), and high for fish overall.[773] Community located within 50

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[761] 3 SEIS App. L, at tbl. 29 (fish usage), tbl. 46 (fish ranking).
[762] *Id*. at tbl. 1 (community category).
[763] *Id*. at tbl. 29 (fish usage), tbl. 46 (fish ranking).
[764] *Id*. at tbl. 1 (community category).
[765] *Id*. at tbl. 29 (fish usage), tbl. 46 (fish ranking).
[766] *Id*. at tbl. 1 (community category).
[767] *Id*. at tbl. 42 (fish usage), tbl. 49 (fish ranking).
[768] *Id*. at tbl. 1 (community category).
[769] *Id*. at tbl. 35 (fish usage), tbl. 46 (fish ranking).
[770] *Id*. at tbl. 1 (community category).
[771] *Id*. at tbl. 41 (caribou usage), tbl. 42 (fish usage), tbl. 46 (caribou and fish ranking), tbl. 49 (fish ranking).
[772] *Id*. at tbl. 1 (community category).
[773] *Id*. at tbl. 42 (fish usage), tbl. 49 (fish ranking).

miles of road corridor, subsistence use areas overlap the project and within 30 miles of road corridor.[774]

All seven communities above were ranked as placing "high" importance on at least one of the key resources BLM used in determining whether communities should be carried forward into Tier 2, particularly salmon. As discussed above, BLM had elsewhere determined that mining operations could have "population level impacts" on salmon, sheefish, whitefish, and other important subsistence species,"[775] and that, in light of recent Chinook and chum salmon declines, cumulative impacts from "the road, mining activity, and other reasonably foreseeable future actions" could lead to "reduced harvest success" for communities in the Yukon River basin, which includes its tributary, the Tanana River.[776] BLM did not provide and, under these circumstances could not have provided, any valid justification for excluding these communities. BLM's failure to carry them forward to Tier 2 contravenes ANILCA 810.

Additionally, BLM made affirmative findings that each of the action alternatives and the cumulative case "would not result in a significant restriction to subsistence uses" for the community of Livengood.[777] These findings were unsupported because BLM has no subsistence data for Livengood.[778] Using its own criteria, BLM initially determined that Livengood could experience subsistence impacts and deemed it "primary" due to its position within 50 miles of the road corridor. Moreover, its location between the Tanana and Yukon rivers near their confluence strongly suggests the community relies on salmon, much like its neighboring communities. Considering the available evidence demonstrating the potential for subsistence impacts and the absence of any countervailing basis for excluding Livengood, BLM had an obligation to carry it forward to Tier 2.

BLM's determinations excluding another 23 "non-primary" communities from Tier 2 were likewise unsupported and invalid. In the absence of any explanation, it is difficult to know exactly why BLM excluded these communities. Although BLM did carry forward 15 non-primary communities, it appears that the remaining communities' relative distance from the Ambler Road corridor played a role in BLM's determinations despite BLM's findings regarding the potential for serious harm to migratory caribou and fish, and the communities' heavy reliance on these species. The following list of excluded communities below illustrates the incongruity of BLM's findings:

Kaltag (caribou, fish) – Ranked high for Chinook salmon (85% of households use), moderate for chum salmon (67% of households use), moderate for sheefish (61% of households use), and high overall for fish; ranked low for caribou (declined from 1996 to 2017, current usage not specified).[779]

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[774] *Id*. at tbl. 1 (community category).
[775] 3 SEIS App. M, at M-37.
[776] *Id*.
[777] *Id*. at M-27, M-30, M-32, M-40.
[778] *Id*. App. L, at tbl. 1 (community category).
[779] *Id*. at tbl. 41 (caribou usage), tbl. 42 (fish usage), tbl. 46 (caribou and fish ranking), tbl. 49 (fish ranking).

Kotlik (caribou, fish) – Ranked moderate for Chinook and chum salmon (no usage data), as well as sheefish (89% of households use), and moderate for fish overall; ranked low for caribou (only data from 1980).[780]

Koyukuk (caribou, fish) – Not ranked, very little data. Available data shows sheefish could be of high or moderate importance (66% of households use). Also, Koyukuk is located at the confluence of the Koyukuk and Yukon rivers, where salmon is generally considered a resource of high importance.[781]

Nulato (caribou, fish) – Ranked high for Chinook salmon (87% of households use), moderate for chum salmon (37% of households use), and moderate for sheefish (60% of households use), and high overall for fish; ranked low for caribou (declined from 1996 to 2010, current usage not specified).[782]

Atqasuk (caribou) – Ranked high for caribou (96% of households use).[783]

Brevig Mission (caribou) – Ranked moderate for caribou (44% of households use).[784]

St. Michael (caribou) – Ranked high for caribou (68% of households use).[785]

Teller (caribou) – Ranked moderate for caribou (34% of households use).[786]

Alakanuk (fish) – Ranked moderate for Chinook and chum salmon (usage data not available), moderate for sheefish (81% of households use), and moderate for fish overall.[787]

Anvik (fish) – Ranked high for Chinook salmon (100% of households use), moderate for chum salmon (58% of households use), moderate for sheefish (60% of households use), and high overall for fish.[788]

Emmonak (fish) – Ranked high for Chinook salmon (89% of households use), high for chum salmon (91% of households use), moderate for sheefish (70% of households use), and high for fish overall.[789]

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[780] *Id*. at tbl. 41 (caribou usage), tbl. 42 (fish usage), tbl. 46 (caribou and fish ranking), tbl. 49 (fish ranking).

[781] *Id*. at tbl. 42 (fish usage).

[782] *Id*. at tbl. 41 (caribou usage), tbl. 42 (fish usage), tbl. 46 (caribou and fish ranking), tbl. 49 (fish ranking).

[783] *Id*. at tbl. 41 (caribou usage), tbl. 48 (caribou ranking).

[784] *Id*. at tbl. 41 (caribou usage), tbl. 48 (caribou ranking).

[785] *Id*. at tbl. 41 (caribou usage), tbl. 48 (caribou ranking).

[786] *Id*. at tbl. 41 (caribou usage), tbl. 48 (caribou ranking).

[787] *Id*. at tbl. 42 (fish usage), tbl. 49 (fish ranking).

[788] *Id*. at tbl. 42 (fish usage), tbl. 49 (fish ranking).

[789] *Id*. at tbl. 42 (fish usage), tbl. 49 (fish ranking).

Grayling (fish) – Ranked high for Chinook salmon (97% of households use), moderate for chum salmon (59% of households use), high for sheefish (76% of households use), and high for fish overall.[790]

Holy Cross (fish) – Ranked moderate for Chinook and chum salmon (usage data not available), ranked moderate for sheefish (4% of households use), and moderate overall for fish.[791]

Marshall (fish) – Ranked high for Chinook salmon (89% of households use), high for chum salmon (89% of households use), moderate for sheefish (19% of households use), and high overall for fish.[792]

Mountain Village (fish) – Ranked moderate for Chinook salmon (85% of households use), high for chum salmon (83% of households use), moderate for sheefish (60% of households use), and high overall for fish.[793]

Nunam Iqua (fish) – Ranked moderate for Chinook salmon and high for chum salmon (no usage data available), high for sheefish (83% of households use), and high for fish overall.[794]

Pilot Station (fish) – Ranked moderate for Chinook salmon (55% of households use), high for chum salmon (92% of households use), moderate for sheefish (53% of households use), and high for fish overall.[795]

Ruby (fish) – Ranked moderate for Chinook salmon (77% of households use), high for chum salmon (55% of households use), moderate for sheefish (41% of households use), and high for fish overall.[796]

Russian Mission (fish) – Ranked high for Chinook salmon (85% of households use), moderate for chum salmon (no usage data), moderate for sheefish (41% of households use), and high for fish overall.[797]

Using BLM's approach (focusing on communities that place a high or moderate value on key subsistence resources) and its data and findings, all of the above-listed communities should have been carried through to Tier 2.

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[790] *Id*. at tbl. 42 (fish usage), tbl. 49 (fish ranking).
[791] *Id*. at tbl. 42 (fish usage), tbl. 49 (fish ranking).
[792] *Id*. at tbl. 42 (fish usage), tbl. 49 (fish ranking).
[793] *Id*. at tbl. 42 (fish usage), tbl. 49 (fish ranking).
[794] *Id*. at tbl. 42 (fish usage), tbl. 49 (fish ranking).
[795] *Id*. at tbl. 42 (fish usage), tbl. 49 (fish ranking).
[796] *Id*. at tbl. 42 (fish usage), tbl. 49 (fish ranking).
[797] *Id*. at tbl. 42 (fish usage), tbl. 49 (fish ranking).

Furthermore, BLM found that each of the action alternatives and the cumulative case "would not result in a significant restriction to subsistence uses" for the fish study communities of St. Mary's and Pitka's Point.[798] These findings are unsupported because BLM has no subsistence data for either community. Using its own criteria, BLM initially determined that these communities could experience subsistence impacts due to their location within the range of key migratory fish species. Indeed, the two villages are located along the Yukon River in close proximity to Russian Mission, Marshall, Pilot Station, and Mountain Village, all of which are ranked as placing high importance on at least one key fish species. In light of the available evidence demonstrating the potential for subsistence impacts and the absence of any countervailing basis for excluding St. Mary's and Pitka's Point, BLM had an obligation to carry them forward to Tier 2.

BLM also made no significant restriction findings for the caribou study communities of Stebbins and Wales. Both of these were ranked low for caribou, with household usage rates of 7% and 22% respectively.[799] Nevertheless, as noted above, BLM's draft SEIS recognizes qualitative considerations that could mean the harm to caribou resources expected from the Ambler Road and associated mining "may result in significant restrictions" on subsistence, even for communities that utilize caribou less often or in lower quantities Some examples include the cultural significance of participating in harvesting traditions and sharing networks and transmitting knowledge to future generations, the diversity of resources in times of scarcity, and others. In any event, BLM has not explained its decision. Its exclusion of these communities from Tier 2 was therefore unlawful.

4. The Draft SEIS Is Not Adequate to Support Tier 2 Determinations Favoring the Ambler Project and Would Only Support the No Action Alternative

In Tier 2, a federal agency must provide notice, hold hearings "in the vicinity" of the affected communities, and make a series of detailed findings and determinations demonstrating compliance with ANILCA's substantive standards.[800] More specifically, the agency is prohibited from authorizing the proposed activity unless and until it determines that (1) the "significant restriction of subsistence uses is necessary, consistent with sound management principles for the utilization of the public lands," (2) the proposed activity will "involve the minimal amount of public lands necessary to accomplish the purposes" of the project, and (3) "reasonable steps will be taken to minimize adverse impacts upon subsistence uses and resources resulting from such actions."[801]

With respect to the first determination, the term "utilization" refers to the array of multiple uses within the federal land manager's purview, and the purpose of ANILCA 810 is to reconcile its goal of subsistence protection with these other uses.[802] In other words, the statute calls upon the agency to balance subsistence against other competing interests. The Ambler

[798] 3 SEIS App. M, at M-27, M-30, M-32, M-40.
[799] *Id*. App. L, at tbl. 41 (caribou usage), tbl. 48 (caribou ranking).
[800] 16 U.S.C. § 3120(a).
[801] *Id*.
[802] *Hoonah Indian Assn. v. Morrison*, 170 F.3d 1223, 1227-28 (9th Cir. 1999).

Road's significant restrictions on subsistence are far from "necessary." The main purpose of the road is to enrich for-profit mining companies, including foreign companies. BLM's own analysis demonstrates that the project would only generate about 10 long-term jobs for residents of the region. Weighing against that are the interests of dozens of Alaska Native communities across a vast region who have maintained a traditional, subsistence-based way of life for millennia and want to pass on their knowledge, skills, culture, and spirituality to future generations. Sacrificing those profound interests and transforming a magnificent wilderness area supporting unique populations of migratory caribou, salmon, and other wildlife into a degraded and polluted industrial zone for the pecuniary gain of a few would be unreasonable, unlawful, and contrary to Congress' strong subsistence protection policies and procedures set forth in Title VIII of ANILCA.

As to the second determination, the proposed Ambler Road, as currently described, does not involve the minimal amount of public lands necessary. As explained elsewhere in these comments, BLM has failed to properly consider a number of reasonable alternatives, including the proposed Tribal alternative, other modes of transportation, westerly routes, a single-phased project, and a project limited to the buildout of Phase 2 (as approved by the Corps), that have the potential to dramatically reduce the amount of public lands necessary for the project. In the absence of a robust alternatives evaluation for purposes of both NEPA and Tier 1 of the ANILCA 810 review, BLM cannot make the second determination either.

Finally, as discussed below, the harmful impacts to subsistence from the Ambler Road and the network of mines and access roads it would enable are far greater and more pervasive than BLM has acknowledged in the draft SEIS. The potential mitigation measures developed to date are uncertain, limited in scope, and wholly inadequate to meaningfully reduce these impacts. At a minimum, necessary prerequisites for a legitimate determination that reasonable steps have been taken to minimize adverse impacts would include (1) a set of robust and enforceable mitigation measures addressing the full array of project impacts, which does not currently exist; (2) firm commitments from the State of Alaska, Alaska Native landowners, the Alaska Native Corporations, and BLM to implement such measures within their respective jurisdictions; and (3) a demonstration from each landowner that they have the financial capacity, staffing, and legal authority to implement and enforce the mitigation measures throughout the life of the Ambler Road, which could be in perpetuity.

B. The Agencies Previously Failed to Comply with ANILCA Title XI's Substantive and Procedural Requirements.

Congress enacted Title XI of ANILCA to provide for "an orderly, continuous decisionmaking process" and minimize adverse siting impacts when permitting transportation system units (TSUs) through conservation system units and "to insure the effectiveness of the decisionmaking process."[803] To achieve these goals, Congress established "a single comprehensive statutory authority for the approval or disapproval of applications for such

[803] 16 U.S.C. § 3161(a), (c).

systems."[804] Title XI applies broadly to "any Federal department or agency that has any function or duty" under "any law of general applicability . . . to grant any authorization . . . without which a transportation or utility system cannot, in whole or in part, be established or operated."[805]

Section 1104 requires a very specific process.[806] It mandates the submission of a consolidated application on a specific form to all relevant federal agencies on the same day.[807] Section 1104 then provides a precise timeline for notice to the applicant regarding the application's completeness and, if complete, publication of the EIS.[808] All agencies must then make a decision whether to approve the application.[809] In reaching its decision, each permitting agency must make specific findings including whether alternative routes are available, the impacts on resources from the TSU, and what measures are necessary to "avoid or minimize negative impacts."[810]

Title XI further requires that rights-of-way include protective terms and conditions.[811] These include, but are not limited to, requirements to ensure the right-of-way is compatible with the conservation system unit's purposes "to the maximum extent feasible"; "requirements for restoration, revegetation, and curtailment of erosion"; requirements to ensure compliance with air and water quality standards; requirements that the right-of-way be "the minimum necessary width," and designed to control or prevent damage to the environment, fish and wildlife habitat, property, and public health; requirements to protect subsistence; and requirements to avoid and minimize other adverse impacts.[812] Congress was clear: failure to comply with Title XI's procedures renders the agencies' approvals without "any force or effect."[813]

The federal permitting agencies previously failed to follow Title XI's procedures to permit a TSU through Gates of the Arctic and those problems have not been addressed as part of this remand process.[814] As a threshold matter, the agencies violated Title XI because they did not consider the same unified project application as part of this permitting process. AIDEA submitted its original application to the agencies in 2015 which was deemed incomplete.[815] AIDEA revised its application in 2016.[816] Although AIDEA was still missing significant

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[804] *Id*.

[805] *Id*. § 3162(1), (3).

[806] *Id*. § 3164. Congress stated these procedures "supersede[] rather than supplement[] existing law." S. REP. NO. 96-413, at 246 (1979).

[807] 16 U.S.C. § 3164(c); *see also* ANILCA § 201(4)(c) (addressing rights-of-way across Gates).

[808] 16 U.S.C. § 3164(d), (e).

[809] *Id.* § 3164(g); *see also* ANILCA § 201(4)(e) (providing deadline for Gates).

[810] 16 U.S.C. § 3164(g).

[811] *Id.* § 3167; ANILCA § 201(4)(e) (making section 1107's process applicable to Gates).

[812] 16 U.S.C. § 3167(a).

[813] *Id.* § 3164(a); *Friends of Alaska Nat'l Wildlife Refuges v. Bernhardt*, 463 F. Supp. 3d 1011, 1024–26 (D. Alaska 2020) (explaining Title XI's mandatory procedures).

[814] ANILCA § 201(4)(c)–(d) (making section 1104's process applicable to Gates).

[815] 2015 SF299 Application at 1–2.

[816] 2016 Revised App.

information about the project and project area, NPS began its EEA process and the other agencies began their NEPA process.[817] In 2019, AIDEA made changes to the proposed project to incorporate communications infrastructure and submitted a modified application to all the agencies at that time.[818]

Subsequently, in February 2020, AIDEA revised the project further but only submitted those revisions to the Corps; it did not submit the revised proposal to BLM or NPS.[819] The 2020 application proposed building the road to Phase II instead of Phase III, eliminating gravel mines without maintenance stations or communications towers present, eliminating gravel mines within Gates of the Arctic for the Northern route, and reducing the number of bridge crossings and culverts.[820] AIDEA explained that it made the revisions to reduce impacts.[821] As a result, the agencies considered very different projects with different impacts and the Corps ultimately permitted a project in its 404 permit that was different from the project and rights-of-way approved by BLM and NPS.[822]

This violated Title XI, which mandates a consolidated application and outlines the process to be followed very specifically.[823] The agencies failed to adhere to this mandatory process by considering and approving different applications and versions of AIDEA's project. This renders those prior approvals "without any force or effect."[824] On remand, the agencies need to rescind the prior authorizations and require AIDEA to submit a consolidated application to all of the federal agencies involved to ensure they are reviewing the same proposal and are following Title XI's procedural requirements.

NPS also failed to include adequate terms and conditions in the right-of-way across Gates of the Arctic, in violation of Title XI. NPS failed to incorporate requirements designed to prevent damage to the environment, "including the minimum necessary width" for the right-of-way across Gates of the Arctic.[825] In the right-of-way, NPS indicated that AIDEA is still "in the pre-

[817] Notice of Intent, 82 Fed. Reg. 12119 (Feb. 28, 2017).

[818] Letter from Jeffrey San Juan, AIDEA, to Timothy Hammond, BLM, re: Modification to AIDEA AMDIAP SF299 Communications Application Amendment (2019); DOWL, Ambler Mining District Industrial Access Project: SF299 Application Communications Amendment (Apr. 2019).

[819] Revised 404 Permit Application; JROD App. F at F-3 (describing changes in the Corps' February 2020 revised permit application).

[820] *Id*.

[821] Letter from Mark Davis, AIDEA, to John Sargent, U.S. Army Corps of Eng'rs, re: AMDIAP Permit Application, POA-2013-00396 (Feb. 5, 2020).

[822] EEA ROD at 6 (NPS ROD explaining it did not receive the 2020 amended application and describing differences); Email from Ellen Lyons, U.S. Army Corps of Eng'rs, to Jeff Rasic, Nat'l Park Serv., re: CORPS 151-200_2020_0227.pdf (June 4, 2020) (Corps email noting "[t]he Corps was always working off of a different set of plans than that which was submitted" to other agencies).

[823] 16 U.S.C. §§ 3162, 3164, 3166, 3167.

[824] *Id.* § 3164(a).

[825] *Id.* § 3167(a)(4).

construction stage of the project, with field studies, engineering, and design to be undertaken next."[826] Because AIDEA had yet to identify the actual location of the road corridor, NPS authorized a "Conceptual Alignment," which it defined as a 250- to 400-foot corridor.[827] NPS indicated the constructed road corridor would be 100-feet wide and located somewhere within the Conceptual Alignment.[828] NPS also authorized all three phases of the road,[829] even though AIDEA amended its application to the Corps to eliminate Phase III for the road.[830]

NPS's authorization of an extremely wide "conceptual" right-of-way corridor did not meet ANILCA's requirement for the agency to issue rights-of-way for the minimum necessary width. As written, the right-of-way provides AIDEA with an open-ended pass to determine and modify the location of the road within a broad area and without the agency ensuring in advance that it has only authorized the minimum necessary width. It is unclear how NPS determined the Conceptual Alignment corridor was the minimum footprint or sufficient to protect resources when AIDEA has yet to do the field work to identify the road location and project design. The fact that the Corps only authorized Phase II of the project indicates that NPS should have also only authorized Phase II — and therefore potentially a narrower and less impactful right-of-way.[831] NPS's failure to incorporate requirements to minimize the footprint of the right-of-way and impacts on Gates of the Arctic is contrary to ANILCA.

NPS also failed to incorporate adequate terms more broadly into the right-of-way to control or prevent damage to the environment or ensure the right-of-way is compatible with the purposes of Gates of the Arctic "to the maximum extent feasible."[832] Gates' purposes include maintaining wilderness values, providing for continuing recreation opportunities, and protecting habitat for fish and wildlife.[833] Rather than incorporating adequate terms in the right-of-way, NPS included an open-ended provision for AIDEA to complete its plan of development for each phase, and provide information for at least 27 subject areas, at a later point in time.[834] The right-of-way stated AIDEA would need to submit plans for construction, operation, maintenance, and termination of the right-of-way and related facilities for each road phase after right-of-way issuance.[835] This illustrates AIDEA had yet to complete its project designs or gather baseline information for permafrost, stream crossings, asbestos, air quality, and more.[836] The right-of-way also only requires AIDEA to "take reasonable efforts" to ensure facilities are built and operated

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[826] NPS ROW at 2.

[827] *Id.*; EEA ROD at 5.

[828] NPS ROW at 2.

[829] *Id.* at 3–4.

[830] Revised 404 Permit Application at 12.

[831] *See* 16 U.S.C. § 3161(c) (explaining intent "to minimize adverse impacts" of siting TSUs).

[832] *Id.* § 3167.

[833] ANILCA § 201(4)(a).

[834] NPS ROW Ex. C at 7.

[835] *Id.*

[836] *Id.*; *cf. Or. Nat. Desert Ass'n*, 840 F.3d at 571 (stating agency could not do analysis without baseline information).

in a way that protects scenic, cultural, fish, and wildlife values.[837] That is insufficient to ensure adequate protections for those resources, as required by ANILCA. Listing future plans and calling them "terms and conditions" does not satisfy ANILCA's requirement that NPS include enforceable terms and conditions in its right-of-way for restoration and reclamation, to ensure activities will not violate air and water quality standards, or to ensure the protection of the environment and Gates of the Arctic's purposes.[838]

Despite the seriousness of these problems with NPS's prior authorizations, the agency has still not provided any indication that it will address these problems as part of this remand process. NPS needs to rescind the prior right-of-way and ensure prior to making a new decision that the terms and conditions fully comply with ANILCA's mandates.

C. Allowing Gravel Mining or Additional Infrastructure in Gates of the Arctic Would Violate ANILCA.

Alternatives A and B in the FEIS and the SEIS show that AIDEA contemplates gravel material sites within the boundaries of the Gates of the Arctic to support construction of the Ambler Road,[839] as did NPS's EEA and ROD.[840] The maps depicting alternative B also indicate there would be both an access road and a maintenance station within the boundaries of the Preserve.[841] As discussed in these comments, some of the material sites would potentially be developed into long-term roadway maintenance facilities with housing for maintenance workers, landing strips, and their own access roads.

Any authorizations for material sites and additional infrastructure in the Preserve are contrary to law and need to be eliminated from consideration. There is no legal basis for allowing material sites or other major infrastructure within the boundaries of the Gates of the Arctic. ANILCA Section 206 withdrew all units of the National Park System in Alaska "from all forms of appropriation or disposal under the public land laws, including location, entry, and patent under the United States mining laws, disposition under the mineral leasing laws, and from future selections by the State of Alaska and Native Corporations."[842] This broad withdrawal encompasses any potential disposals under the Materials Act. Nothing in ANILCA Section 201, which relates solely to a right-of-way across the Preserve for access to the Ambler Mining District, or any other provision modifies this withdrawal to allow for BLM to authorize material sales or additional infrastructure within the boundaries of the Preserve.[843] BLM and NPS need to ensure these features are eliminated from consideration and make it clear that any such authorizations would be contrary to ANILCA.

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[837] NPS ROW Ex. C at 4.
[838] 16 U.S.C. § 3167.
[839] 4 SEIS at Map 2-3 p.2; 2 FEIS at Map 2-3.
[840] EEA at A-6; NPS ROD at 5.
[841] 4 SEIS at Map 2-3 p.2.
[842] ANILCA § 206.
[843] *Id*. at § 201.

XI. THE AGENCIES FAILED TO COMPLY WITH ADDITIONAL RELEVANT LEGAL REQUIREMENTS.

In addition to the agencies' obligations under NEPA, the CWA, FLPMA, and ANILCA, as described above, there are additional legal flaws in the prior decision-making process that are not adequately addressed in the SEIS. As described below, the Coast Guard failed to meet its legal obligations in the prior permitting process and BLM failed to comply with its own mineral mining regulations. These obligations are discussed in the following sections. We further note that BLM's process continues to fall short of its obligations under the National Historic Preservation Act despite the agency's acknowledgement of legal errors in requesting this remand, as explained in our comments on archaeological resources below.

A. The Coast Guard Failed to Meet Its Obligations Under the Rivers & Harbors Act.

Any entity planning to construct or modify a bridge or causeway across a navigable waterway of the United States must apply for a USCG bridge permit.[844] The USCG requires information on a broad range of information relevant to its ability to maintain navigation on navigable waterways, including the direction and strength of currents[845] and the heights of the high and low water marks.[846] The Coast Guard may impose necessary conditions relating to the construction, maintenance, and operation of these bridges in the interest of public navigation.[847]

At the outset of this project, when AIDEA filed its original and revised permit application, the Coast Guard raised serious questions about the completeness of AIDEA's application for purposes of its authorizations under Section 9 of the Rivers and Harbors Act. This is because AIDEA failed to provide any site-specific information about the precise locations and designs of the multiple proposed bridges that would cross navigable waterways. As a result, the Coast Guard sent a letter to AIDEA indicating that its application for a Rivers and Harbors Act permit was not complete.[848]

Throughout the entirety of the prior EIS process, the Coast Guard maintained that it would need to receive complete permit applications and site-specific information related to the bridge crossings before it could issue a decision under the Rivers and Harbors Act related to navigability. The Coast Guard even went so far as to reiterate to BLM in 2019, prior to BLM

[844] *See* 33 C.F.R. § 115.
[845] *Id*. § 115.50(h)(2)
[846] *Id*. § 115.50(h)(3).
[847] U.S. Coast Guard, Bridge Permitting Guide, 3 (2016).
[848] Letter from J.N. Helfinstine, U.S. Coast Guard, to Maryellen Tuttel, DOWL HKM (Jan. 22, 2016) ("Your Coast Guard permit application for numerous bridges spanning several major rivers within [AIDEA's] proposed 211-mile-long Ambler Mining District Industrial Access Project corridor outlined in your Transportation and Utility System Right-of-Way application (SF299) under the Alaska National Interest Lands Conservation Act . . . can not be processed at this time. It is incomplete and does not meet the requirements as outlined in our application guidelines.").

finalizing the EIS, that it identified five rivers within the Koyukuk River System (Jim River, the South Fork of the Koyukuk River, the Koyukuk River, the Middle Fork of the Alatna River, and the Alatna River) as well as seven rivers in the Kobuk River System (Kobuk River , Reed River, Mauneluk River, Kogoluktuk River, Shungnak River, Ambler River) to be navigable waters that would require Coast Guard bridge permits.[849] AIDEA never submitted detailed site-specific information on the bridges and their designs to the Coast Guard or any of the other federal agencies. AIDEA is only now, after the fact, proposing to conduct summer fieldwork studies to do the geotechnical and other hydrology studies necessary to develop the designs for these bridges.[850]

ANILCA requires the submission of a complete, consolidated application from AIDEA to all the relevant federal agencies, who are then required to issue decisions on the same timeframe. Despite this, the FEIS ultimately indicated that the Coast Guard would obtain and analyze site-specific information about the project as part of a post-NEPA permitting process. Groups filed their lawsuit raising questions about the Coast Guard's failure to comply with ANILCA and issue a decision as part of the joint permitting process in August 2020. Several months later, in December 2020, the Coast Guard issued cursory letters to AIDEA indicating it no longer needed bridge permit applications from AIDEA. The Coast Guard appears to have issued these documents well after litigation challenging the Ambler Road permits was filed and after the window of time when the agencies should have made their joint decisions. These actions appear to be an attempt to negate ANILCA claims related to the Coast Guard's failure to make its requisite joint decision with the other permitting agencies.

The Coast Guard's cursory and unsupported statements that it would no longer need complete permit applications, despite years of maintaining that it would need those applications to adequately address navigability concerns, raises serious questions about the Coast Guard's compliance with the Rivers and Harbors Act and its obligations to maintain navigability. There was no apparent process or outreach to communities done to verify the uses of the rivers it previously identified or to ensure navigability would actually be maintained on those rivers. On remand, the agencies need to ensure that the navigability and existing uses of the rivers that will be impacted by this project — many of which are important for subsistence, recreation, and other uses — will be maintained.

The problems and questions around the Coast Guard's role also relate directly to the information gaps in the NEPA process more broadly and to the lack of an adequate basis for BLM's and the Corps' authorizations. The SEIS still lacks site-specific information about the bridge crossings over navigable waters because the agencies were never provided with that information. AIDEA has still yet to do much of the work to inform the actual designs for the bridges. Without that site-specific baseline and design information, none of the federal agencies are in a position to do an adequate analysis of the bridge crossings and to determine whether those crossings could impact navigation or hydrology, among other issues. All of this weighs in favor of the agencies rescinding the prior authorizations and adopting the no action alternative

[849] Letter from J.N. Helfinstine, U.S. Coast Guard, to Tim LaMarr, Bureau of Land Mgmt. (July 29, 2019).

[850] *See, e.g.*, 2022 Field Work Plan.

since they do not have complete information on which to base their analyses and comply with the law.

B. Authorizing the Gravel Mines Would be Contrary to the Materials Act and the Public Interest.

Any gravel mine approvals must be conducted under BLM's mineral material sales regulations, which contain strict limits to protect the public interest. In 1947 Congress passed the Materials Act, as amended, 30 U.S.C. §§ 601-604, authorizing the disposition of, inter alia, sand, stone, and gravel. Eight years later, Congress passed the Multiple Use Mining Act of 1955, also known as the Surface Resources Act or Common Varieties Act, 30 U.S.C. § 611, which declared that no deposit of common varieties of, *inter alia*, sand, stone, or gravel would be considered "a valuable mineral deposit within the meaning of the mining laws of the United States so as to give effective validity to any mining claim hereafter located under such mining laws." Thus, Congress removed common varieties of those materials from the purview of the mining law and made them subject to the provisions of the Materials Act.[851]

These gravel mines and material sales contracts are governed by 43 C.F.R. § 3600. Under these Mineral Material Disposal regulations, no disposal is authorized by the statute where it would be "detrimental to the public interest."[852] In addition, the regulations preclude BLM from disposing of mineral materials if it determines "that the aggregate damage to public lands and resources would exceed the public benefits that BLM expects from the proposed disposition."[853] These Part 3600 rules, unlike the § 3809 rules governing locatable/hardrock minerals, preclude BLM from authorizing any activity/sale without meeting the "public interest" standard at 43 C.F.R. § 3601.

Even the limited record available regarding these mines shows that mining these sites would fail the public interest test. Gravel mining will directly cause additional ground disturbance and habitat destruction above and beyond what will be associated with the Ambler Road project footprint and needs to be considered as a connected action in this EIS, not downplayed across resource analyses. Gravel extraction is generally done in large, open pit mines and can have devasting impacts on permafrost areas. Open pit mines require extensive overburden removal; for example, over 50 feet of vegetation and soil needed to be excavated to reach suitable gravel in the mines created for Kuparuk.[854] The resulting overburden stockpile disturbs tundra, and the gravel pit itself causes permanent changes to the area's thermal regime due to "thaw bulbs" forming in the permafrost around the unfrozen water during flooding.[855]

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[851] United States v. Pitkin Iron Corp., 170 IBLA 352, 353–354 (2006); United States v. Multiple Use, Inc., 120 IBLA 63, 76A (1991).

[852] 30 U.S.C. § 601 (2000); 43 C.F.R. 3601.6(a).

[853] 43 C.F.R. § 3601.11; *see also Ronald W. Byrd*, 171 IBLA 202, 208 (2007).

[854] BENJAMIN SULLENDER, AUDUBON ALASKA, ECOLOGICAL IMPACTS OF ROAD- AND AIRCRAFT-BASED ACCESS TO OIL INFRASTRUCTURE 19 (July 2017), *available at* http://ak.audubon.org/sites/g/files/amh551/f/road_aircraft_access_report_final_0.pdf.

[855] *Id*. (internal citations omitted).

Indirect effects such as these have led some researchers to approximate that a one acre gravel pit may affect as much as 25 acres surrounding the site.[856]

Beyond the damage associated with "typical" gravel mining in permafrost regions, the likelihood of releases of harmful asbestos into the environment from the mines precludes their approval. The SEIS acknowledges that "[g]ravel materials containing [Naturally Occurring Asbestos (NOA)] may be used in the construction of the road embankment where alternative materials are not readily available."[857] Surveys have found NOA in mineral deposits in rock and soils in the project area. Asbestos minerals typically are stable within undisturbed soils, but disturbances to the soils through construction and excavation may cause fibers to become mobile. A preliminary evaluation of bedrock potential for NOA in the project area shows all action alternatives traverse areas of medium potential for NOA and cross large swaths of surficial deposits that have not been evaluated for NOA potential.[858] The Alaska Department of Transportation and Public Facilities (DOT&PF) conducted explorations for suitable material sites in 2004 and 2013 for the Ambler Airport improvements project. Most test sites within surficial deposit areas had measurable concentrations of NOA present.

Development of the material sites, construction of the road, and use of the road constructed using materials with NOA may result in worker exposures to asbestos. Asbestos is a known carcinogen, and exposure to asbestos fibers through inhalation may lead to the development of pulmonary disease, including asbestosis and/or lung cancer and mesothelioma. Fugitive dust emissions would have measurable amounts of asbestos in areas of the roadway constructed with gravel containing NOA. Dusts settling on snow, foliage, or bare ground would affect an area approximately 328 feet (100 meters) from the roadway edge, spreading the asbestos contamination beyond the road footprint.[859] Wind, precipitation, and vegetation disturbances (e.g., humans and animals moving through brush where asbestos fibers have settled) may cause asbestos fibers to become airborne or be washed into water bodies and drinking water sources.[860]

While BLM admits that NOA will be released, and that it is possible that workers and subsistence users may be exposed, it refused to analyze the site-specific aspects of this pollution and where it might be an issue.[861] The FEIS's dismissal of the need for baseline information about NOA was particularly troubling; rather than gather additional information on the likely material sites and the presence of asbestos, BLM said the information was not essential to a choice among alternatives and did not require material testing.[862] Yet, the admitted significant potential for asbestos to be released was essential to BLM's alternatives review, as producing carcinogenic asbestos is a highly relevant factor BLM must consider to ensure it meets the FLPMA and Part 3600 public interest mandates. Not only did BLM fail to improve its analysis in

[856] *Id*. (internal citations omitted).
[857] 1 SEIS at ES-5.
[858] Solie and Athey 2015; *see* 4 SEIS at Map 3-2.
[859] 1 SEIS at 3-10.
[860] *Id*. at 3-14.
[861] *Id*. at 3-12.
[862] 3 FEIS at R-5.

the SEIS, it omitted the relevant appendix entirely. The problem has not been resolved, and the SEIS acknowledges that NOA contamination in water will affect fish, but then fails to analyze those impacts, stating only that "analysis of effects to fish from asbestos are limited."[863] Worse, BLM noted that contamination from NOA could "have disproportionately high and adverse public health effects to [Environmental Justice] communities."[864] Further, the SEIS does not analyze the extent to which the NOA materials would actually be used — potentially because AIDEA has yet to even gather the baseline information to understand how pervasive NOA might be and what the likelihood of gravel with NOA being used actually is for the project. Because BLM did not obtain site-specific information to analyze the actual locations of the gravel mines and the likelihood of asbestos exposure, BLM did not even have adequate information about the project on which to base a public interest analysis. In addition to the unacceptable NOA releases caused by the mines, the mines are detrimental to the public interest due to their likely short- and long-term damage to the environment.[865]

As noted in prior comments, BLM should have undertaken a full review of the impacts from these mines under FLPMA and NEPA as part of this remand process since that did not occur as part of the prior decision-making process. BLM's failure to obtain baseline and site-specific information about the proposed gravel mines and likelihood that there could be NOA exposure concerns violated the agency's obligations to protect the public interest under FLPMA and the Materials Act. This is particularly is troubling because the SEIS demonstrates that BLM is aware that the impacts of NOA exposure could fall on especially vulnerable communities. Despite that knowledge, BLM did not endeavor to describe, quantify, or analyze those impacts. Since BLM did not undertake a NEPA-compliant analysis or meet its obligations to protect the public interest, it must select the no action alternative.

THE ANALYSIS OF IMPACTS IN THE DRAFT SEIS IS INADEQUATE.

BLM and the Corps were obligated to assess the direct, indirect, and cumulative effects of the proposed project on the human environment, as well as means to mitigate adverse environmental impacts.[866] The effects and impacts to be analyzed include ecological, aesthetic, historical, cultural, economic, social, and health impacts.[867]

Direct effects are those that are caused by the project and that occur in the same time and place.[868] Indirect effects are those that are somewhat removed in time or distance from the project, but nonetheless reasonably foreseeable.[869] In contrast, "cumulative impact" is defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency

[863] 1 SEIS at 3-95.
[864] *Id*. at F-21.
[865] *See Echo Bay Resort*, 151 IBLA 277, 284 (1999) (denial of mineral material sale upheld due to threats to local springs, wildlife and habitat, recreation, and scenery).
[866] 40 C.F.R. §§ 1502.16, 1508.25(c).
[867] *Id.* at § 1508.8.
[868] *Id.* at § 1508.8(a).
[869] *Id.* at § 1508.8(b).

(Federal or non-Federal) or person undertakes such other actions."[870] "Cumulative impacts" include those impacts "which when viewed with other proposed actions have cumulatively significant impacts."[871] Such impacts can result from individually minor but collectively significant actions taking place over a period of time.[872] The agencies must also consider actions that are connected with, or closely related to, the project in question.[873] NEPA requires that "connected actions" and "cumulative actions" be considered together in a single EIS.[874]

In the cumulative impacts analysis, BLM and the Corps are required to take a "hard look" at all past, present, and reasonably foreseeable future actions and "give a sufficiently detailed catalogue of past, present, and future projects, and provide adequate analysis about how these projects, and differences between the projects, are thought to have impacted the environment . . . ."[875] Absent that information, "neither the courts nor the public . . . can be assured that the [agency] provided the hard look that it is required to provide.[876] Effects are reasonably foreseeable and need to be considered by the agency "if they are sufficiently likely to occur that a person of ordinary prudence would take [them] into account in reaching a decision."[877]

The agencies may not rely solely on the one-sided information and conclusions contained in AIDEA's permit application. As the lead agency responsible for developing the EIS, BLM is obligated to obtain appropriate baseline data for the project area and do a thorough analysis of potential impacts from the proposed project. As discussed in the following sections, for many of the resources reviewed in the SEIS, BLM has still failed to take an adequate hard look at direct, indirect, and cumulative effects for purposes of NEPA — nor could it, given the lingering lack of adequate project information and baseline information from AIDEA. The severe lack of detailed information about the project does not allow the agencies to engage in a meaningful analysis of this project or to meet their legal obligations under numerous statutes. As such, the agencies should rescind their prior authorizations and adopt the no action alternative.

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[870] *Id.* at § 1508.7.

[871] *Id.* at § 1508.25(a)(2).

[872] *Id*.

[873] *Id.* at § 1508.25(a)(1).

[874] *Id.* at § 1508.25.

[875] *Te-Moak Tribe of W. Shoshone v. Dep't of Interior*, 608 F.3d at 603 (rejecting NEPA review for mineral exploration operation that failed to included detailed analysis of impacts from nearby proposed mining operations).

[876] *Id*.

[877] *EarthReports Inc. v. Fed. Energy Regulatory Comm'n*, 828 F.3d 949, 955 (D.C. Circuit 2016); see also Environmental Protection Agency, Consideration of Cumulative Impact Analysis in EPA Review of NEPA Documents, Office of Federal Activities, May 1999, at 12–13 ("[P]rojects need not be finalized before they are reasonably foreseeable. "NEPA requires that an EIS engage in reasonable forecasting. Because speculation is . . . implicit in NEPA, [] we must reject any attempt by agencies to shirk their responsibilities under NEPA by labeling any and all discussion of future environmental effects as crystal ball inquiry." As the [EPA] also has noted, "reasonably foreseeable future actions need to be considered even if they are not specific proposals." (citation omitted)), https://www.epa.gov/sites/production/files/2014-08/documents/cumulative.pdf.

I. THE AGENCIES' ANALYSIS OF THE IMPACTS OF THE AMBLER ROAD ON THE AQUATIC ECOSYSTEM IS INADEQUATE.

BLM and the Corps failed to take a hard look at the serious impacts to aquatic resources likely to result from this project. The prior EIS's analysis of the potential impacts to the aquatic ecosystem and its analysis of ways to address those impacts was completely inadequate. The EIS's failure to take a hard look at impacts to aquatic resources was made clear by the agencies themselves in their motion for voluntary remand. There, the agencies admitted for purposes of ANILCA Section 810 that their "analyses lack meaningful discussion of Project-related water impacts," including fisheries impacts.[878]

Nonetheless, those deficiencies were not rectified as part of the remand process. Both BLM and the Corps still lack critical information needed for an analysis of aquatic impacts, including baseline data about the area and information about the project itself. The agencies therefore failed to provide a complete analysis of impacts or evaluate appropriate mitigation as required by NEPA and the CWA, as explained above.

The agencies failed to obtain adequate baseline data prior to this SEIS being prepared. During the prior permitting process, the Corps identified data gaps in AIDEA's application that were never remedied. Early in the permitting process, the Corps informed AIDEA that it would require a functional or aquatic site assessment, and that mapping of wetland types was required to compare alternatives and evaluate how aquatic impacts could be avoided and minimized.[879] The Corps also raised concerns that AIDEA's application did not address "[h]ow roads cross and are parallel to major river crossings."[880] This information was needed for the 220-mile length of the Ambler Road corridor. In particular, AIDEA also almost entirely failed to provide any verified data regarding aquatic resources in the eastern 50 miles of the road corridor. The Corps informed AIDEA it would need wetland classification mapping, LiDar (high-resolution ground maps created via laser scans), and fieldwork to identify aquatic resources along the road corridor.[881] The Corps informed AIDEA that it could not make any accurate determinations of impacts to waters of the U.S. until these missing data issues were resolved.[882] However, AIDEA never provided this information.

There was little in the way of hydrological data provided by AIDEA to support its permit application, and the corresponding flaws in the SEIS are glaring. The SEIS references some river

[878] AVC Remand Mot. at 15.

[879] Corps Letter to BLM request for specific analysis in DEIS in response to scoping NOI (Feb. 7, 2018) at 4.

[880] Army Corps of Engineers Functional Assessment Review.

[881] *Id*.; Corps response to March 28 DOWL JD report (May 3, 2018) at 2; Email re Amber Road EIS Questions (Feb. 8, 2018).

[882] Email re AMDIAP – Desktop Delineation Documentation (Apr. 26 2016); Ambler Road EIS Cooperating Agency Meeting Notes (Jun. 11, 2019) at 7 (agencies explaining they "need to know the existing functions of wetlands, and a functional assessment of wetlands that should be field determined and quantitative to get a 404 permit").

gauging station records, but that stream flow data is limited to only 4 gauging stations currently operating in the project area, despite the SEIS listing at 20 large rivers present in the project area, 18 or which would be crossed by the Ambler Road. [883] And the limited data provided is not even used in the SEIS for purposes of analysis. The information provided in the SEIS simply does not provide any "insight into the hydrological conditions (for example, flow rates or water volumes), of the rivers, streams, and wetlands in the region, nor the anticipated impacts of the road either from crossings or lateral disconnection."[884] There is also no information on the ordinary high-water mark, mean high water mark, and 100-year flood levels for locations of the major bridge crossings — all of which is necessary for the agencies to ensure they can maintain navigability on those rivers. The SEIS presumes that bridge infrastructure on State lands may be below the ordinary high water mark, but these impacts do not appear to be analyzed in the SEIS.[885] The Corps' issued a 404 permit for the Ambler Road and BLM prepared this SEIS without obtaining this basic data. This fails to comply with the CWA and NEPA.

Regarding the lack of data for the eastern 50 miles of the corridor, the Corps allowed AIDEA to rely on prior fieldwork delineating wetlands 15 miles away from the road corridor with "similar aerial signatures."[886] In its JROD, the Corps allowed AIDEA to defer obtaining data for the eastern 50 miles of the corridor until "the final design phase," at which time it would "identify additional drainages and . . . avoid and minimize the impacts to wetlands and aquatic resources to the extent practicable."[887] But, as EPA noted, even with that prior data, there was still an outstanding need for accurate mapping of wetlands and streams along the actual road corridor, and the agencies were still missing the locations of all stream crossings.[888] EPA also questioned the Corps' decision to defer its analysis of culvert impacts at specified locations.[889] Indeed, AIDEA recently confirmed that "[m]ost of the rivers and streams along the Project alignment have little or no data regarding the flow regime and no data [has] been gathered in the 50 easternmost miles of the alignment to support the Project."[890] This plain violation of the NEPA and the CWA was not rectified part of this remand process. The SEIS confirms that, for both wetlands and waterways, data is missing for the eastern 50 miles of the road corridor under both Alternatives A and B.[891] It is inconceivable that the agencies would re-approve the ROW,

[883] 1 SEIS, App. D at D-9. *See also id.* at 3-27 (noting that data on "discharge and stage" and precipitation in project area are limited).

[884] Fennessy SDEIS Report at 9.

[885] 1 SEIS at 3-166.

[886] U.S. Army Corps Memorandum of Record Approving Wetland Delineation Methodology for Ambler Road Permit Application (Dec. 17, 2019).

[887] JROD, App. F at F-7.

[888] 2020 EPA Comments at 1 (EPA noting FEIS acknowledgment that drainages less than 12 feet wide in vegetated areas were not mapped).

[889] 2019 EPA Comments at 8, 15 (EPA comments explaining need to identify culvert locations to assess impacts); JROD, App. F at F-7 (JROD stating AIDEA would identify culvert locations later); *see also* Frissell DEIS Report at 9–10 (Dr. Frissell explaining lack of information on waterway crossings).

[890] 2021 AIDEA field work plan at 3

[891] 1 SEIS at 3-64 ("Functional assessments, to date, have not included Alternative C or the eastern 50 miles of Alternatives A and B."); 1 SEIS, App. E at E-5 "DOWL (2014) prepared

and dredge and fill activities, for 50 miles of road corridor that lack data on aquatic resources. The only defensible option is the no action alternative.

The SEIS also lacks basic information about the project design, as discussed throughout these comments. The SEIS, like the prior EIS, does not adequately analyze the potential impacts from all of the proposed phases for construction of this project. And, to make matters even more confusing, the Corps determined that limiting the Ambler Road's construction to Phase II was the LEDPA, but the SEIS still considers the proposed action to be construction of the project through Phase III, based on a different application from the one considered by the Corps. The inconsistencies between the permitting applications received from AIDEA and what the agencies are considering authorizing raises serious questions about the scope and scale of the project currently under consideration, and makes plain that the agencies' SEIS analysis is deficient. While the SEIS now purports to analyze a "combined phasing option" alternative, its description of the tradeoffs is cursory at best, as BLM appears to point to the Corps' requirement of construction to Phase II in thaw-sensitive permafrost areas already in place to assume this alternative would make little difference in the road's design.[892] BLM also appears to focus solely on the drawbacks of building the Ambler Road to Phase II, such as increased ice road reliance and a longer period of initial construction, without explaining the benefits.[893] BLM must fully analyze the impacts of the "Pioneer Road" and its risk of washing out annually, as AIDEA has stated that Phase III of the project may never be implemented and the Pioneer Road may remain in place for an underdetermined amount of time.

The SEIS also lacks information on impacts resulting from the Ambler Road. Expert comments on the prior DEIS pointed out that the document lacked detailed information explaining the extent or magnitude of the disruption to natural patterns of floods, erosion, and blocked wetland surface water drainage, among other impacts.[894] These omissions have not been rectified.[895] As discussed in attached report by Dr. Siobhan Fennessy, "[t]he proposed Ambler road alignment will have severe, negative impacts on aquatic ecosystems along its route, including rivers, streams, lakes, and wetlands. Roads have well documented ecological effects on hydrology, soils, and biota, disrupting ecosystems and altering landscapes."[896] Because the alignment of the Ambler Road runs from east to west, "it is situated perpendicular to the natural flow of water from the Brooks Range, and is likely to cause major hydrologic disruption with impacts on the chemical, physical and biological integrity of the waters along the route, which are now in near pristine, undisturbed condition."[897]

EPA previously identified that "[t]he analysis of temporary, secondary and cumulative impacts to aquatic resources lacks site-specific data to allow for a full evaluation of project

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field-verified mapping, for Alternatives A and B, apart from the eastern 50 miles of the two alignments.").

[892] 1 SEIS at 3-42.

[893] *See id*. at 3-43.

[894] Frissell 2019 DEIS Report at 21.

[895] Fennessy SDEIS Report at 8.

[896] Fennessy SDEIS Report at 1.

[897] *Id*. at 1–2.

impacts to the project area and downstream waters."[898] Further, it is clear that the Ambler Road's impacts would extend beyond the corridor, but the impacts of road's numerous hydrological alterations are not quantitatively addressed in the SEIS.[899] The prior EIS also lacked "any reasoned assessment of the downstream hydrologic effects of the extent and distribution of wetlands expected to be impacted" because it does not assess number, distribution, and characteristics of sites where erosion, turbidity, barriers to fish passage, and alteration of hydrological flow could occur.[900] This information is critical to determine the nature and degree of impacts, but was not considered in the SEIS.

The Ambler Road will require the installation of between 2,900 and 4,300 culverts in more than 1,000 perennial streams that support anadromous fish populations,[901] with many bridges also being built to channel water under the road. This project "represents a massive hydrologic alteration to the region that will reduce stream connectivity, fragment habitats, and decrease biodiversity through vegetation impacts and by presenting a barrier to the passage of fish, amphibians, and other species."[902] BLM cannot simply identify or list impacts that are likely to occur. The SEIS should provide details on the anticipated extent or magnitude of impacts from altered flooding and streamflow patterns, increasing erosion and the transport of sediment and other materials, disruption of overland sheet flows, and long-term impacts, such as changes to the patterns of channel migration and associated biodiversity effects. It fails to do so.

The SEIS also incorrectly assumes that many of the impacts of the road footprint will be limited to the immediate area around the road corridor.[903] However, studies of the impacts of roads and other linear infrastructure concluded that "the hydrological impacts of a road can be widespread, extending well beyond the direct footprint of a road."[904] The SEIS failed to consider the full impacts outside of the direct road footprint, such as downstream impacts and fugitive dust impacts well beyond the road corridor, consistent with NEPA and CWA requirements.

The agencies failed to obtain sufficient quantitative and site-specific data about the existing conditions on which to base its analysis in the SEIS. The final EIS contained "little quantitative data on existing local conditions used to substantiate the findings presented in the EIS."[905] These errors are repeated in the SEIS, for example, the document notes that that Alternative A will have the least impact, a conclusion which is apparently based solely on the length of the road.[906] This is despite the fact that Alternative B would require fewer bridges and

[898] 2019 EPA Comments at 2.
[899] Fennessy SDEIS Report at 14.
[900] Frissell 2019 DEIS Report at 10.
[901] 1 SEIS, App. D at D-12.
[902] Frissell 2019 DEIS Report at 6.
[903] 1 SEIS, App. C at C-9 ("Water quality and water flows would be altered along the corridor compared to current, mostly natural conditions."), C-11 ("Overall, losses and damage to wetlands and vegetation would be high-likelihood, small- to medium-magnitude impacts of long or permanent duration and covering a small/narrow area along the road corridor.").
[904] Frissell 2019 DEIS Report at 6.
[905] *Id*. at 4.
[906] 1 SEIS at 3-39 to -40.

would not pass within one-quarter mile of Walker Lake or Nutuvukti Fen and those important hydrological resources.[907] Without specific, quantitative and site-specific information about the anticipated impacts, there is insufficient information on which to base conclusions about alternatives.

The project is also likely to have serious impacts to water quality that must be adequately addressed in the SEIS. As discussed by Dr. Fennessy, there will be major impacts to water quality from a range of aspects related to this project that have not been adequately addressed:

> Water quality will be impacted by many factors including increased sediment loads (including fine sediments that impact fish and their spawning grounds), contamination by naturally occurring asbestos in mineral deposits, acid mine drainage from mine operations (including drainage containing selenium), the generation and deposition of dust (including the possibility of dust carrying toxic contaminants such as lead and zinc), and the likelihood of petroleum spills that can be toxic to fish and other organisms. Water quality is also impacted by culverts such that upstream stream water chemistry differs compared to downstream.[908]

The SEIS should provide specific information on anticipated water quality changes, including a quantitative assessment of how water quality might change.[909] There are also a number of significant problems with the SEIS's discussion of water quality discussed in the report by Dr. Fennessy. Roads are known to increase issues with soil erosion and sedimentation.[910] The SEIS reports without any basis that increased sediment will be similar to that which occurs naturally during high flow events.[911] It also assumes, without basis, that properly implemented mitigation measures will preclude these impacts.[912] Increased sediment levels can have substantial impacts on fish, eggs, and spawning habitat. [913] These impacts must be fully analyzed in the SEIS.

The SEIS also fails to adequately assess the likely impacts of crossing areas and utilizing gravel known to contain naturally occurring asbestos. Even without asbestos present, gravel

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[907] *Id*. at 3-40 to -41. *See also id.* at 3-74 ("Alternative A is the only alternative that could result in impacts to the Nutuvukti Fen, a rare, patterned fen, located approximately 0.25 mile downgradient of the development footprint within GAAR.").

[908] Fennessy SDEIS Report at 3.

[909] *Id*. at 15.

[910] *Id*.

[911] 1 SEIS at 3-33 to -34.

[912] 1 SEIS at 3-33 ("Special condition number 12 requires the development of an Adaptive Management Plan for monitoring, maintaining, and repairing culverts over the life of the road (USACE 2020). If these measures were not implemented properly, the gravel infrastructure would result in an increase in sedimentation and turbidity in nearby waterways because of erosion of the embankment materials."); *but see id.* at 3-89 (noting that even if implemented properly, mitigation would not eliminate impacts to fish and aquatic species).

[913] *Id*. at 3-91.

mining activities are likely to have serious impacts to fish and water resources.[914] BLM and the other agencies cannot reasonably permit the Ambler Road without a full understanding how AIDEA would supply gravel for the project, and how much asbestos would be likely to be released as part of the gravel mining process. The failure to obtain this information renders the SEIS inadequate.

The SEIS also fails to adequately assess or document the full extent of the Ambler Road's impacts to a range of water-dependent resources, and fails to provide the details of the measures that might mitigate those impacts. According to Dr. Fennessy, the SEIS and supporting documents are "not clear about the extent of wetland impacts that will result, neither about the extent of the direct impacts due to fill or the indirect effects of altered hydrology, vegetation and water quality."[915] Indeed the SEIS notes that "[f]unctional comparison of the alternatives was completed on the basis that wetlands within the analysis area are not degraded (i.e., fully functioning) and each alternative would impact similar wetland types with similar functions, and thus a functional assessment was not completed for all action alternatives."[916] But given that AIDEA has not even delineated all the wetlands traversed by the proposed road, it is unclear how the agencies can credibly make such a statement or support its discussion of wetlands in the area.[917]

The SEIS must look at the full range of cumulative impacts to water resources, including the cumulative impact of placing thousands of culverts in the watersheds that will be crossed by the road. The prior EIS failed to do so. This is particularly troubling because "the loss of connectivity between wetlands and other aquatic sites will affect the functions and ecosystem services provided by all of these systems."[918] Despite purporting to consider hardrock mining in the Ambler District as a cumulative effect, the SEIS fails to look with any level of specificity at the potential impacts from hardrock mining on water and water quality. The SEIS provided information regarding the different types of mining operations that might be used, and the types of impacts that might result, but fails to provide a specific analysis of the impacts that might occur to water quality as a result of mining in the Ambler District.

The SEIS's discussion of reclamation and how that will impact water resources is essentially non-existent. The SEIS states generally the road would be reclaimed, but there is no information given about methods of road or fill removal, how culverts and bridges will be removed, or how the area of the road alignment will be reclaimed.[919] For instance, the SEIS provides the conclusory statement that "restoration of disturbed soils and wetlands would be required to reduce impacts to wetlands from construction activities."[920] But this overlooks that impacts from wetland fill are generally permanent, and AIDEA has not even provided a reclamation plan to support such a finding. Furthermore, current experiences with restoration or rehabilitation of wetland habitats disturbed by gravel fill on similarly permafrost-laden soils on

[914] Fennessy SDEIS Report at 19.
[915] *Id*. at 4.
[916] 1 SEIS at 3-70.
[917] *See id.*
[918] Fennessy SDEIS Report at 4.
[919] *See* 1 SEIS at 2-11 to -12
[920] *Id*. at 3-71.

Alaska's North Slope should be considered in this analysis. For example, it is already clear that existing gravel constrains hydrological flow without maintained and effectively placed culverts, but full removal of that gravel during decommissioning leads to substantial thermokarst. These factors (strategy on gravel removal and/or long-term maintenance of culverts in remaining gravel) present significant engineering and ecological challenges to establishing restoration goals for the proposed road. A full analysis of AIDEA's proposed reclamation activities should be included in the SEIS, in order to comply NEPA and other applicable laws.

As discussed elsewhere in these comments, the SEIS's consideration of potential mitigation measures related to hydrology and water resource impacts is inadequate. Instead of providing details about the mitigation measures and analyzing their actual effectiveness, BLM repeatedly says that the design features and mitigation will be determined during permitting.[921] In particular, the SEIS fails to provide mitigation measures regarding gravel extraction in sensitive areas. The mitigation measures for this project must be analyzed on a site-specific level at this stage of the environmental review process. AIDEA's application and the SEIS do not provide sufficient site-specific information for where and how this project will be built; that information is necessary in order to determine the actual effectiveness of any mitigation measures. Right now, BLM can only assume without any basis that any mitigation measures will be effective. BLM and the other agencies need to obtain sufficient site-specific information about this project in order to engage in a meaningful analysis of the impacts and mitigation, and should not proceed permitting the project prior to doing so.

II. BLM'S ANALYSIS OF THE IMPACTS ON FISHERIES IS INADEQUATE.

In moving for a remand to prepare this SEIS, BLM conceded that its prior analysis of subsistence impacts regarding fish was "deficient."[922] Specifically, BLM acknowledged that it failed make "any mention of dewatering's potentially significant impacts on fish, spawning areas, and subsistence, even though fish provide interior Alaska's greatest quantity of subsistence resources."[923] BLM also indicated that these analytical deficiencies were "compounded by new information" showing that "Yukon River salmon runs plunged in 2021 to historic lows."[924] On remand, DOI committed to reconsidering these issues contained in its 810 analysis.[925]

Despite recognizing these significant flaws and making these commitments, the SEIS fails to fully account for the Ambler Road's significant degradation to fish habitat, aquatic resources, and direct lethal and non-lethal impacts to all fish species. BLM was still unable to identify critical information needed for an analysis of cumulative impacts to fish and fish habitat, including baseline data about species and anadromous waterways, and continues to lack detailed information about the project itself. Without this crucial information, it is impossible to conduct a complete analysis of impacts to fisheries, and therefore is not possible that appropriate mitigation can be conducted in compliance with NEPA and the CWA.

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[921] *See generally* 3 SEIS, App. N & *supra* (mitigation discussion).
[922] AVC Remand Mot. at 2, 14–17.
[923] *Id.* at 16.
[924] *Id.* at 16–17.
[925] *Id*. at 2.

All fish species present in the area will incur harms from road impacts due to construction, operation, and maintenance activities near or in the watersheds. Yet, the SEIS is still not able to address the lack of data on the extent of fish habitat, what these impacts would look like, and how the proposed mitigation measures would alleviate direct and indirect harms to fish. AIDEA's additional fieldwork and data analysis attempted to augment the baseline data on fish, however, even that continues to be woefully inadequate, and their analyses were prevented from identifying some drainages that are almost certainly used as fish habitat.

BLM's SEIS assumptions are based on sparse data and continue to underestimate the fish populations in the project area, particularly because the agency lacks data to assess to the downstream impacts to rivers and streams crossed by the road corridor. Waterways that are not directly crossed by proposed road activities can still be greatly affected by upstream disturbances. BLM must gather detailed fish data for the specific roadway corridors, using different methods that pertain to the sampled species, consider the individual seasonal migrations for different fishes, estimate the levels of sedimentation, and evaluate sedimentation's impact/loss of values from its delivery into the waterways for specific areas.[926] BLM must do detailed studies of the alternatives to more definitively identify the fish populations and fish habitat along different alternative routes, as well as downstream of the route, in order to fully assess impacts in the SEIS.

BLM also fails to fully consider the scale of impacts from road construction, including construction of the phased road, which will have the most significant impacts for the project. Road construction will have effects on all fish present in the study area, including sheefish, chum coho, and Chinook salmon, Dolly Varden charr, Arctic grayling, humpback whitefish, broad whitefish, northern pike, burbot, and Alaska blackfish.[927] These populations will be affected by sedimentation and road construction activities will cause "massive alteration of wetland features and landscape hydrology—both directly underneath the foot print of the road—and indirectly through up-gradient and down-gradient alteration of surface and subsurface water flows."[928]

Since the final EIS was published, the status of chum, Chinook, and coho salmon stocks in the Yukon watershed has grown markedly worse, leading to restrictions on subsistence fishing and complete closure of commercial and recreational fishing activities for these species, including in rivers along the proposed road corridor.[929] Between 2020 and 2022, the Yukon's chum populations declined by around 80 percent, and Chinook populations dropped by nearly two-thirds.[930] The SEIS does not fully acknowledge the gravity and scope of this drastic decline for the region, but does address the importance of specific creeks within the project area that provide crucial spawning habitat for salmon in the greater Yukon watershed (Koyukuk River drainage).[931] While there are many causes for this decline beyond the scope of this SEIS, including ocean bycatch and climate change, project review and approval should take into

[926] Frissell 2019 DEIS Report at 7–8.
[927] 1 SEIS at 3-82 to -86
[928] Frissell 2019 DEIS Report at 9.
[929] 1 SEIS at 3-85.
[930] Jallen et al. 2022
[931] 1 SEIS at 3-83 to -85.

account the landscape of factors that are already negatively affecting fish populations in the project area.

Due to declining salmon runs and recent harvest closures, other species of fish such as whitefish, sheefish, and grayling have become even more important for subsistence. As stated in the SEIS, sheefish require specialized spawning habitat conditions, and have high degree of spawning site fidelity, with large numbers of individuals targeting small, specific areas of ideal spawning grounds.[932] This means that negative impacts from construction or road-related activities could have disproportionately large impacts on sheefish populations if their spawning grounds are damaged. Sheefish are also particularly vulnerable to toxic bioaccumulation from pollutants that enter rivers via road runoff, including mercury and various PAHs due to their greater age of maturation.[933] None of these unique life history factors are addressed in mitigation measures, which is especially concerning given the growing importance of sheefish as a regional food source.

There will be no way to avoid "significant adverse hydrologic and aquatic habitat effects in and near the road corridor from this project; the only question is which streams and rivers will be more directly impacted by the selected route."[934] BLM must acknowledge and account for the full extent of such impacts from bioavailability of nutrients, turbidity and sediment related harms, erosion, and alteration of stream and river channels, among others. The SEIS purports to evaluate the number of crossings, mileage and acreage of road impacts and habitat affected, between alternatives, including the total amount of spawning habitat that may be lost.[935] However, BLM must require further studies before the agency can even begin to answer basic questions that are imperative to assess fisheries habitat, such as: "How would specific river and stream crossings in the area be affected, and where do these lie in relation to streams and habitats of known importance to fishes? What proportion of known important habitats within the affected region are vulnerable to harm from the project?"[936] These questions still must be answered for BLM to truly evaluate the differences in impacts between alternatives and meaningfully assess impacts to fisheries from the proposed Ambler Road.

The SEIS points to predictive noise modeling of the proposed action alternatives, and the fish and aquatics section acknowledges some impacts of noise from construction activities like pile driving. BLM states that, "[w]hile some fish may die, impact hammer use would not affect enough individual fish to cause effects to fish populations" while it also says that "[f]ish response is difficult to predict, and the extent of injury or harm to fish is difficult to quantify."[937] This highlights the lack of specific data on this subject necessary to support BLM's assertion that there would be no population-level impacts. Additionally, there is no analysis of noise effects from road operations and maintenance on fisheries, and therefore no adequate mitigation measures are provided for these ongoing project impacts after construction ends. The only noise

[932] *Id*. at 3-85.
[933] *Id*. at 3-105.
[934] Frissell 2019 DEIS Report at 9.
[935] 1 SEIS at E-14
[936] Frissell 2019 DEIS Report at 10.
[937] 1 SEIS at 3-92

mitigation measure included in Appendix N acknowledges that "the noise from blasting, excavating, grading, vehicle movement, and other construction and maintenance activities would be unavoidable."[938] Research has shown that road traffic noise from bridge crossings can infiltrate surrounding freshwater ecosystems and increase stress responses in fish.[939] Additionally, the Western Interior Alaska Subsistence RAC noted that noise disturbances resulting from increased traffic would decrease availability of key terrestrial and aquatic resources within at least a 50-mile radius of the Project.[940]

While the SEIS provides additional details on design, installation, and maintenance of fish passage protocols on a general level, it treats the entire road corridor as homogeneous and provides no site-specific details on the construction or impacts of the thousands of stream crossings that will be required. The SEIS, and AIDEA's design features, fail to provide any site-specific mitigation measures, and AIDEA merely commits to an adaptive management plan.

Overall, the mitigation measures contained in the SEIS are inadequate to protect fisheries habitat and must be further tailored to avoid impacts from erosion and sedimentation, permafrost melt, water contamination, and other negative effects of the proposed road. Specifically, BLM must develop site-specific mitigation measures for the following impacts:

- Erosion and sedimentation. The mitigation measure currently described is vague, simply requiring AIDEA to develop and comply with future best management practices.[941] This provides no assurance this will be effective. This measure must be robust, detailed, and tailored to site-specific locations and particular water crossings.
- Affects to water chemistry. BLM has adopted proposed mitigation measures to avoid use of materials containing NOA or sulfide materials, and AIDEA indicates they would avoid cuts in acid rock areas. The SEIS acknowledges that total avoidance may be difficult to achieve, and that exposure or leaching of acid rock would substantially degrade habitat and fish health.[942]
- Permafrost. As described below in Section VI.C., the current measures contained in Appendix N again simply point to future design features developed at a later time to mitigate impacts. The SEIS acknowledges that constructing and maintaining roads and other infrastructure built on thawing permafrost is poorly understood,[943] therefore guaranteeing mitigation measures will be impossible. BLM must consider the practicality

[938] 3 SEIS at N-22

[939] Crovo JA, et al. (2015) Stress and Auditory Responses of the Otophysan Fish, *Cyprinella venusta*, to Road Traffic Noise. PLoS ONE 10(9): e0137290. https://doi.org/10.1371/journal.pone.0137290.

[940] 1 SEIS at 3-221.

[941] 3 SEIS App. N at N-33.

[942] 1 SEIS at 3-95

[943] *Id.* at 3-110

of design features for the mitigation of permafrost impacts and adjust these to minimize drainage alterations.[944]

- Wetlands avoidance. BLM and the Corps failed to design alternatives that sufficiently mitigate for wetlands impacts, as described in detail above regarding the Corps' CWA obligations and the SEIS's failure to analyze impacts to aquatic resources. The SEIS still does not contain a reasoned assessment of the effectiveness of these wetlands avoidance measures for maintaining fish populations within each of the action alternatives, given the complexity of the project terrain.
- Blockage of fish movements. The SEIS mitigation measures point to later designs to ensure fish passage via culverts and bridges, but do not explain what such designs would be or actually analyze their effectiveness.[945] Site-specific measures must be included and analyzed due to the significant amount of stream crossings and potential for changing the streamways due to grading.[946] The sheer number of stream crossings and associated long-term maintenance needed for them may still result in fish passage blockage on an annual or seasonal basis, for example, road operators would need to clear potentially thousands of culverts prior to spring thaw each year to maintain passage for all fish species and life stages.
- Dust abatement. AIDEA's design features section mentions working with the University of Alaska Fairbanks to use their best available dust abatement research and technology, but provides no additional details.[947] The SEIS requires dust abatement activities, but acknowledges that common options like calcium chloride will also have negative impacts on fish populations, so they cannot use dust suppressants with ingredients that may be potentially harmful to aquatic organisms within 100 meters of fish-bearing streams or wetlands.[948] Using no dust abatement will result in sedimentation and other detrimental effects to rivers and streams. The most common type of dust abatement is spreading water which will cause additional runoff issues and deliver contaminants into waterways,[949] which is not addressed in the SEIS. Mitigation measures must be tied to the specific road locations and designs, soil types, road surface materials, and operating and maintenance regimes, with differences considered among alternatives.
- Toxins. The SEIS provides additional information on the ways toxins from mining or mitigation materials may impact fish, as well as evidence of toxin transport via waterways from the Red Dog Mine, even with mitigation measures in place.[950] It also acknowledges the risk of bioaccumulation of toxins in the food chain, and the risk to human consumers. However, with the exception of a measure for dust suppressants and pesticides, it fails to require adequate or specific mitigation for any alternatives, and

[944] Frissell 2019 DEIS Report at 17.
[945] 3 SEIS App. N at N-33.
[946] Frissell 2019 DEIS Report at 16.
[947] 1 SEIS at 2-17.
[948] *Id.* at 3-94.
[949] Frissell 2019 DEIS Report at 13-14.
[950] 1 SEIS at 3-108.

rather says that total avoidance of impacts on fisheries from toxins may not be possible.[951]

- Spills. BLM's current mitigation measures only account for relatively small spills, and acknowledges the measures are likely ineffective at addressing large spills.[952] Larger spills into waterways would have larger effects on fish abundance, particularly in spawning streams.[953] BLM must ensure that there are measures in place for catastrophic spills in these remote and pristine areas.
- Gravel extraction. Gravel extraction is one of the most damaging activities to take place during the construction period, and the SEIS prohibits taking material from streambeds, riverbeds, active floodplains, lakeshores, lake outlets, active channels and floodplains. However, the SEIS acknowledges that AIDEA has identified several potential gravel mine sites in floodplains, including nearly half the material sites in Alternative A[954], and some directly adjacent to active stream channels, which may affect fish habitat and survival.[955] The SEIS is unable to account for the inherent risks and potential effectiveness of any mitigation measures and practices it lists, due to the lack of specific gravel extraction methods and plans provided, and inconsistencies between AIDEA's application as-described in the SEIS, and BLM and the Corps' permitting requirements. Gravel extraction poses a significant risk to fisheries habitat, and restoration from gravel mining can be expensive and ineffective due to the wide-reaching impacts.[956] The noted plan upon road closure for gravel reclamation from road embankment back to material sites may not be allowable on BLM lands.[957] BLM must not allow gravel activities in riverbeds and floodplains, the most sensitive areas.
- Ice road water withdrawal. The mitigation procedures for withdrawing water relies on knowledge of fish presence in the water body, which the SEIS has acknowledged is based on incomplete baseline data. The SEIS says water withdrawals will cause minor fluctuations in water levels, as well as reduce oxygen and nutrient levels during winter, but will not affect resident and anadromous fish populations,[958] yet specific impacts could vary based on location and the species affected,[959] as well as effects from climate change.

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[951] *Id*. at 3-95.
[952] 3 SEIS App. N at N-18 to -19.
[953] 3 SEIS App. L at L-173
[954] 1 SEIS at 3-100
[955] *Id*. at 3-96.
[956] *Id*.
[957] *Id.* at 3-97.
[958] *Id.* at 3-98.
[959] Cott, P. et al., *Effects of Water Withdrawal From Ice-Covered Lakes on Oxygen, Temperature, and Fish*, J. OF THE AMERICAN WATER RESOURCES ASSOCIATION (2008), https://onlinelibrary.wiley.com/doi/full/10.1111/j.1752-1688.2007.00165.x.

The SEIS states that overall impacts from ice road development under the action alternatives would potentially impact all waterbodies along the road corridor,[960] so mitigation requirements for these activities must be robust and specific.

- Snow removal. There are no mitigation actions associated with reducing the impacts of snow removal on aquatic resources and fish. Plowing snow may have negative effects on fisheries including increased dispersion of road dust, spreading of contaminated materials, and introducing deicing agents into waterways.[961]
- Reclamation. The SEIS notes that there is great uncertainty associated with reclamation activities as a source of impact mitigation, and no plan has been submitted by the applicant.[962]

As described above, the prior permitting process determined that, even with mitigation measures in place, significant impacts would result to fisheries and their habitat. While some differences between the alternatives are now noted (i.e. greater water withdrawal needs, more floodplain routes, possibilities for unauthorized use, proximity to spawning habitat), greater site-specific analysis is required to fully understand the risks and effectiveness of mitigation, as well as the likely impacts. The SEIS still does not describe site-specific conditions of the proposed Ambler Road alternatives, and therefore cannot accurately assess the feasibility and effectiveness of mitigation measures. The SEIS also states that this road may lead to future hard rock and coal mining proposals, but did not included any details for a development scenario or address potential cumulative impacts from such additional development.[963]

BLM acknowledges that climate change is predicted to continue impacting freshwater fish habitat availability, quality, and connectivity within and beyond the project area, especially in Alaska.[964] BLM must consider the significantly higher peak flows at a 100-year frequency consistent with current trends in the SEIS, and account for other climate trends such as increased stress and reduced survival of fisheries from warming waters. BLM is also required to consider mitigation due to the increase in erosion, sedimentation, stability of riverbanks, and nearby stream vegetation.[965] Climate change alters the applicability of all mitigation measures, increasing risks — so all measures should be adjusted accordingly.[966] In addition to climate change, the SEIS also highlights the potential for the road itself to accelerate the predicted rate of permafrost thaw, which would further reduce downstream water quality, potentially inhibit fish movement, and may alter species distribution and abundance.[967]

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[960] 1 SEIS at 3-99.
[961] Frissell 2019 DEIS Report at 16.
[962] 1 SEIS at 3-93.
[963] *Id.* at 3-103.
[964] *Id.* at 3-111.
[965] Frissell 2019 DEIS Report at 19.
[966] *Id.* at 18–19.
[967] *Id*.

There will be significant cumulative effects from mining in the Ambler District that will increase the Ambler Road's effects on water and fishery resources. While additional information is provided about the four most advanced mining projects proposed for the Ambler region, it is "difficult to quantify the impact that future mines may have on fish and aquatic habitat, given that specific mine proposals and associated mitigation measures are not available."[968] The SEIS also acknowledges evidence that selenium from mine waste can easily reach toxic levels in fish, and then troublingly points out that Ambler Metals has proposed to dispose of effluent containing selenium by discharging it directly into the Shungnak River.[969] This proposal should be deemed unacceptable by both BLM and the Corps as it would cause significant degradation of aquatic resources, and the failure of the agencies' to assess impacts from Ambler Metals' proposal to discharge violates NEPA by simply shrugging off these impacts as too uncertain to consider.

The Frissell report on the draft EIS describes how the omission of mining impacts alters the analysis for impacts to fishery resources in both scale and duration:

> the nature of environmental effects of the road system itself integrally depends on the nature of the mines developed. This will affect the quantity and timing of haul and support traffic on the roads, the nature of the materials hauled and therefore subject to spills, fugitive dust, and chronic leakage and dispersion into receiving waters, hence the specific aspects of the toxicity of the essentially permanent contamination that will impact the industrial road corridor. Operating life and any need for post-closure operations at mines will further affect the traffic loads and need for maintenance of the road to maintain its operability, both seasonally (e.g., with regard to snow clearance and use of deicing agents) and long-term (maintaining running surfaces a drainage while limiting erosion and sediment delivery to waterways).[970]

In addition, if the outgrowth from the current proposed and acknowledged scenarios were to increase — such as through additional mining and other industrial development along the road corridor — regional fisheries would also experience significant adverse effects. Impacts would be particularly significant if the road is made available to the public, as public use would increase fishing pressure as well as pollution in the area. Even if the road remains closed to the public, additional traffic from anticipated commercial delivery operators and the influx of people needed in the region to staff and maintain the road and mines could lead to additional habitat degradation and fishing pressure.[971] Any additional mining or increases in the duration of road use will proliferate the critical impacts.

Overall, the SEIS continues to inadequately consider the scale, duration, seasonality and other critical factors described above in detail in order to develop an accurate picture of cumulative and site-specific impacts to fisheries, while highlighting the many potential risks of both the proposed road alternatives and the associated future mines. The continuing lack of site-

[968] 1 SEIS at 3-104 to -106.
[969] *Id*. at 3-107.
[970] Frissell 2019 DEIS Report at 19–20.
[971] 1 SEIS at 3-108, 3-112

specific information on the project and fisheries in the region are particularly concerning, given the agencies' legal obligations to consider that site-specific information prior to authorizing the project. This leaves the no action alternative as the only appropriate and legal alternative to adequately protect fish and aquatic resources.

III. BLM'S ANALYSIS OF THE IMPACTS TO CARIBOU IS INADEQUATE.

Caribou (*Rangifer tarandus*) are an incredibly important resource for people in Alaska and for the natural functioning of a healthy environment. The Ambler Mining District and proposed road corridors are used by multiple caribou herds, most prominently the Western Arctic Herd (WAH) and Ray Mountains Herd, with lesser amounts of use by the Teshekpuk, Central Arctic, and Hodzana Hills herds. As Groups have repeatedly reiterated in prior comments on the proposed Ambler Road, development of a road in this region could have detrimental effects on caribou, with cascading implications for the people and environment that rely upon caribou.

A. There Is Insufficient Scientific Support for Statements in the Draft SEIS.

There were multiple places where the draft SEIS fails to conform to the best available scientific information or where statements and conclusions are insufficiently supported by the scientific literature. One example comes from the description of the influence of insects on caribou behavior. The draft SEIS claims that during the insect harassment season "avoidance of insects becomes the only factor that influences habitat selection during conditions conducive to insect activity."[972] Such a claim does not align with the best-available scientific information. Insect activity does have a strong influence on caribou behavior and habitat selection but is not the only influential factor. Research on the Central Arctic Herd found that adult female caribou avoid infrastructure more than expected by chance even during the mosquito harassment season, though at shorter distances than during calving or post-calving.[973] Other recent work found that while resource selection and probability of road crossing was strongly influenced by the level of insect harassment, they also were affected by traffic volume and distance to road.[974] Accurately representing this point is critical as the current draft SEIS text erroneously implies that the proposed roads would have no effect on caribou during insect harassment. It is important to align the final SEIS with the best available scientific information and to clarify that infrastructure and human activity can affect caribou movement, distribution, and habitat selection even when other environmental factors are also having a strong impact.

In its discussion of displacement of caribou from roads, the draft SEIS cites a number of studies describing displacement of caribou in various seasons. Mentioning displacement distances up to 5 km from roads, the draft SEIS then acknowledges that "other studies have identified larger displacement zones: up to 6 miles (9.6 kilometers) from various forms of

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[972] 1 SEIS at 3-128.

[973] Johnson et al., Caribou Use of Habitat Near Energy Development in Arctic Alaska, 84(3) J. OF WILDLIFE MGMT. 401–412 (2020).

[974] Severson et al., Effects of Vehicle Traffic on Space Use and Road Crossings of Caribou in the Arctic, 33(8) ECOLOGICAL APPLICATIONS e2923 (2023).

disturbance."[975] While a number of citations are given in support of this statement, it is not clear how the 9.6 km maximum was determined. Plante et al.,[976] which is cited in support of the quoted statement, reported displacement zones around roads ranging from 0-15 km, as well as displacement around other forms of disturbance including mining exploration (2-21 km), mines (21-23 km), and human settlements (2-18 km). Two other studies around mines that were not cited in the draft SEIS found displacement distances 6-13 and 11-14 km in years in which significant displacement occurred.[977] The maximum displacement distance mentioned in the final SEIS should be increased to reflect the information from these studies.

The draft SEIS indicates that the WAH has exhibited the same general movement patterns for the last 50 years.[978] This is accurate in a broad sense, including strong fidelity to historic calving grounds and repeated use of coastal and mountain insect relief habitat,[979] but recent years have seen altered timing and location of fall migration and winter use with fewer animals crossing the Kobuk River and more wintering north of the Brooks Range mountains.[980] Such changes have altered scientific practices, leading to helicopter-based captures in spring for collaring caribou, rather than boat-based captures at Onion Portage.[981] They also have implications for subsistence as changing patterns mean that many communities that formerly received large numbers of caribou may no longer expect such abundance. These recent patterns may become more common as the climate continues to change and should be clearly described in the final SEIS beyond simply noting increased use of northern wintering areas.[982]

The draft SEIS acknowledges that even relatively low traffic levels can have detrimental effects on caribou movement patterns.[983] This is an important recognition that aligns with the best available science. Recent work not cited in the draft SEIS also found behavioral responses

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[975] 1 SEIS at 3-136.

[976] Plante et al., Human Disturbance Effects and Cumulative Habitat Loss in Endangered Migratory Caribou, 224 BIOLOGICAL CONSERVATION 129–143 (2018).

[977] Boulanger et al., Estimating the Zone of Influence of Industrial Developments on Wildlife: A Migratory Caribou Rangifer Tarandus Groenlandicus and Diamond Mine Case Study, 18 WILDLIFE BIOLOGY 164–179 (2012); Boulanger et al., Estimation of Trends in Zone of Influence of Mine Sites on Barren-Ground Caribou Populations in the Northwest Territories, Canada, Using New Methods, 2021(1) WILDLIFE BIOLOGY wlb.00719 (2021).

[978] 1 SEIS at 3-127.

[979] Cameron et al., Pronounced Fidelity and Selection for Average Conditions of Calving Area Suggestive of Spatial Memory in a Highly Migratory Ungulate, 8 FRONTIERS IN ECOLOGY & EVOLUTION 564567 (2020); Joly et al., Seasonal Patterns of Spatial Fidelity and Temporal Consistency in the Distribution and Movements of a Migratory Ungulate, 11 ECOLOGY & EVOLUTION 8183–8200 (2021).

[980] Joly & Cameron, Nat'l Park Serv., Caribou Vital Sign Annual Report for the Arctic Network Inventory and Monitoring Program: September 2021–August 2022 (2022), *available at* https://doi.org/10.36967/2295319.

[981] *See id.*

[982] 1 SEIS at 3-128.

[983] *Id.* at 3-135 to -136.

of caribou at low traffic levels.[984] In some cases, caribou rarely crossed winter roads with any level of traffic.[985] These citations should be incorporated into the final SEIS to add further scientific support for the recognition of expected impacts with anticipated traffic levels.

When describing experiences with other caribou herds, the draft SEIS states that "other Alaska herds such as the CAH have maintained habitat connectivity and general migration patterns despite being intersected by highways and roads."[986] This statement ignores the larger shifts in calving distribution of the Central Arctic Herd that took place after oil and gas infrastructure was constructed, with calving grounds shifting south away from areas of concentrated development.[987] It also does not adequately consider that despite caribou still using some of these areas, they show altered movement behavior and ongoing displacement around roads and human activity.[988] This information should be incorporated and the text of the final SEIS altered to better reflect the best available scientific information.

There are multiple places where claims are made without supporting citations from the scientific literature. For example, during Phase 2 operation, the draft SEIS claims that "the use of pilot cars and convoys would limit displacement impacts on caribou."[989] No citation is given in support of this claim. The literature on the effects of convoying on caribou displacement is sparse but one recent study found mixed results with stronger, more frequent behavioral responses of caribou near roads with convoying than those without but also reduced avoidance by caribou with calves to roads with convoying compared to those without.[990] These nuances and uncertainties should be better described in the draft SEIS rather than assuming convoys will reduce impacts.

Similarly, no citation is given for the draft SEIS' statements that, "according to ADF&G studies, although delays and deflections of individuals may occur, and changes to localized movement patterns may result with potential impacts to caribou energetics and subsistence harvest, the migratory patterns of the WAH as a whole would likely remain intact unless the road

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[984] Prichard et al., *The Effect of Traffic Levels on the Distribution and Behavior of Calving Caribou in an Arctic Oilfield*, 75(1) ARCTIC 1–19 (2022); Severson et al., supra.

[985] Smith & Johnson, *Why Didn't the Caribou (Rangifer Taradus Groenlandicus) Cross the Winter Road? The Effect of Industrial Traffic on the Road-Crossing Decisions of Caribou*, 32(8–9) BIODIVERSITY & CONSERVATION 2943–59 (2023).

[986] 1 SEIS at 3-215.

[987] Wolfe, Habitat Selection by Calving Caribou of the Central Arctic Herd, 1980–95 (2000) (M.S. thesis, University of Alaska Fairbanks) (on file with the Alaska Resources Library and Information Services); Cameron et al., *The Central Arctic Caribou Herd*, *in* U.S. GEOLOGICAL SURVEY, ARCTIC REFUGE COASTAL PLAIN TERRESTRIAL WILDLIFE RESEARCH SUMMARIES 38–45 (Douglas et al. eds., 2002); RUSSELL & GUNN, VULNERABILITY ANALYSIS OF THE PORCUPINE CARIBOU HERD TO POTENTIAL DEVELOPMENT OF THE 1002 LANDS IN THE ARCTIC NATIONAL WILDLIFE REFUGE, ALASKA (2019).

[988] *E.g.*, Johnson et al., *supra*; Severson et al., *supra*.

[989] 1 SEIS at 3-137.

[990] Prichard et al., *supra*.

creates a barrier to movement"[991] and that "the overall migratory routes are expected to remain intact."[992] The same statement is made, without the reference to ADF&G, in Appendix M.[993] These are consequential claims that needs to be demonstrated with support from the scientific literature rather than simply asserted with a vague reference to agency support. Without this, the final SEIS should not rely on the conclusion that migratory patterns will remain intact. We also note that multiple scientific studies do indicate that roads create a barrier to movement for caribou and other ungulates, making these statements of little value.

One final example is the ANILCA 810 Evaluation in Appendix M. It includes the statement that though direct mortality events due to collisions may occur their significance for the population "would be minor."[994] Once again, no citation is given or other data provided to justify this statement. This needs to be corrected and supported in the final SEIS.

In other circumstances, citations are given but do not accurately support the associated text. For example, the draft SEIS claims that the strongest reactions of caribou to human disturbance occur in response to humans on foot.[995] However, the three studies that are cited in support of this statement are inadequate to support the statement. Only one of the cited references is from a peer-reviewed source, the other two are industry reports. The study that is published in a peer reviewed journal, Curatolo and Murphy,[996] does not deal at all with evaluation of caribou response to humans on foot and so is wholly inappropriate for reference here. It evaluated the effects of pipeline features, roads, and traffic on pipeline crossings by caribou in the North Slope oilfields. No mention of humans on foot was made in the paper. Cronin et al.[997] is a report compiled at the behest of the Alaska Oil and Gas Association and various state, federal, and local agencies to summarize data on mitigation effectiveness for caribou. The document makes recommendations for reducing impacts of oil and gas development on caribou, which include reductions in human foot traffic, but does not present evidence showing the harms of foot traffic beyond a single statement in the appendix that "ungulate populations that are being hunted typically exhibit extreme wariness and long flight distances from vehicular traffic and humans on foot," with supporting references.[998] This does not say anything about the relative disturbances of foot traffic to that from other sources, nor does the report present any other such data, making it also inappropriate to use in justifying the draft SEIS' claim of increased impacts from humans on foot. Lawhead et al.[999] is an industry report on caribou monitoring for the Endicott Development Project. It does say that "humans on

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[991] 1 SEIS at 3-138.

[992] *Id.* at 3-231.

[993] 3 *id.* App. M, at M-17 to -18.

[994] *Id.* at M-9.

[995] 1 *id.* at 3-136.

[996] Curatolo & Murphy, The Effects of Pipelines, Roads, and Traffic on the Movements of Caribou, Rangifer Tarandus, 100(2) CANADIAN FIELD-NATURALIST 218–224 (1986).

[997] Cronin et al., Mitigation of the Effects of Oil Field Development and Transportation Corridors on Caribou 125 (1994).

[998] *Id.* at A-64.

[999] Lawhead et al., 1990 Endicott Environmental Monitoring Program Final Report, Volume 5: Caribou Synthesis, 1987–1990 (1993).

foot and vehicles on the road elicited the strongest reactions"[1000] from caribou but does not state which was stronger. It also notes that reactions to humans on foot "were a potent source of disturbance that consistently elicited responses from caribou"[1001] but does not provide any quantification of this response or comparison with the response of caribou to vehicles or other sources. Sample size also raises questions about whether humans on foot had the greatest impact as vehicles were the most common cause of disturbance in the study, comprising around 75% of disturbance events,[1002] while humans on foot in the study area were rare, making up about 5% of events.[1003] This source, then, also does not adequately support the statement in the draft SEIS. Given a complete lack of support for the statement that the strongest reactions to human activity occur in response to humans on foot from the three cited studies, the statement and its references should be removed from the final SEIS.

Another example occurs when the draft SEIS cites Fullman et al.[1004] for the statement "Sport hunting of the WAH has occurred for many years, but appears to have increased rapidly since 2000 then stabilized or declined due to regulatory changes, herd declines, and national economic downturn."[1005] This is not an appropriate reference to support such a statement. As is correctly referenced later in the paragraph, Fullman et al. investigated effects of aircraft landing sites and sport hunter camps on the ability of caribou to migrate through Noatak National Preserve. While they mentioned patterns of sport hunting in their introduction, this was not the focus of their research efforts. They did note the marked increase in sport hunting that occurred since 2000, citing the relevant literature, but said nothing about subsequent stabilization or declines or their potential causes. This information must have come from another source, which is not cited. The final SEIS should instead cite the studies that did report on historic and recent patterns of sport hunting, referenced in Fullman et al. or elsewhere.

The draft SEIS cites Joly et al. 2018 in support of the statement that caribou make some of the longest terrestrial migrations in the world.[1006] This appears to be a typo as Joly et al. 2018 in the references cited in Appendix O is a National Park Service report about the history, purpose, and status of caribou movements.[1007] Joly et al.[1008] would be a more appropriate reference for this.

In its evaluation of cumulative effects, the draft SEIS claims that the Port of Nome expansion, Graphite One Mine, and Cape Blossom Road would each not have an effect for

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[1000] *Id.* at 3-46.

[1001] *Id.* at 3-48.

[1002] *Id.* at 3-46.

[1003] *Id.* at 3-47.

[1004] Fullman et al., *Effects of Environmental Features and Sport Hunting on Caribou Migration in Northwestern Alaska*, 5 MOVEMENT ECOLOGY 4 (2017).

[1005] 1 SEIS at 3-126.

[1006] *Id.* at 3-127.

[1007] 1 *id.* App. O, at O-28.

[1008] Joly et al., Longest Terrestrial Migrations and Movements Around the World, 9 SCI. REPS. 15333 (2019).

mammals in the project area.[1009] Such a conclusion ignores the fact that for highly mobile species like caribou, impacts in one part of their range can have influence on a population that then uses areas far distant from the site of impact. Because many communities rely on the WAH, which stretches over a vast area, impacts far from the proposed Ambler Road may nonetheless have an effect on caribou that spend some of their time near the road. This should be more adequately discussed and analyzed in the final SEIS.

Some references in the text do not appear in the reference list in Appendix O or are missing linking information. For example, references occur in the text to "Dau n.d.a.," "Dau n.d.c.", and "Dau n.d.d"[1010] but these do not appear in the appendix. If the information is going to be relied on in the SEIS analysis it needs to also be clearly listed in the references so that the public can confirm the validity of the cited sources. In another instance, Fullman et al. 2021 is cited in the text in reference to the use of circuit theory to estimate how new roads may affect caribou and subsistence.[1011] In Appendix O, however, this is listed as Fullman et al. 2021b.[1012] These should be standardized for clarity.

B. Other Issues and Concerns

Direct habitat loss due to vegetation removal and gravel fill is quantified in the draft SEIS but indirect impacts are not. This is "because they are dependent on numerous variables."[1013] Nonetheless, we note that indirect displacement will vastly exceed the amount of direct habitat loss. This has been seen for caribou in other locations and seasons. While the right-of-way for the Ambler Road is expected to typically be about 76 m wide,[1014] dust deposition around other industrial roads has led to environmental impacts stretching between 100 – 1000 m on either side of roads.[1015] Furthermore, studies of the Central Arctic Herd with direct habitat loss of 100 m or less in diameter for oilfield gravel roads report displacement distances of 1-5 or more kilometers on either side of the road depending on season.[1016] Behavioral responses of caribou to roads may extend even farther from roads.[1017] It should be recognized and duly considered in the final SEIS

[1009] 2 SEIS App. H, at H-42.
[1010] *E.g.*, 1 *id.* at 3-125, 3-136.
[1011] *Id.* at 3-138.
[1012] 3 *id.* App. O, at O-20.
[1013] 1 *id.* at 3-133.
[1014] *Id.* at 2-8.
[1015] E.g., Walker & Everett, *Road Dust and its Environmental Impact on Alaskan Taiga and Tundra*, 19(4) ARCTIC & ALPINE RSCH., 479–489 (1987); Myers-Smith et al., *Cumulative Impacts on Alaska Arctic Tundra of a Quarter Century of Road Dust*, 13(4) ECOSCIENCE 503–510 (2006); Ackerman & Finlay, *Road Dust Biases NDVI and Alters Edaphic Properties in Alaskan Arctic Tundra*, 9 SCI. REPS. 214 (2019); Neitlich et al., *Impacts on Tundra Vegetation From Heavy Metal-Enriched Fugitive Dust on National Park Service Lands Along the Red Dog Mine Haul Road, Alaska* 17(6) PLOS ONE e0269801 (2022).
[1016] E.g., Cameron et al., *Redistribution of Calving Caribou in Response to Oil Field Development in the Arctic Slope of Alaska*, 45(4) ARCTIC 338–342 (1992); Johnson et al., *supra*.
[1017] *E.g.*, Wilson et al., *Effects of Roads on Individual Caribou Movements During Migration*, 195 BIOLOGICAL CONSERVATION 2–8 (2016); Dau 2023, *supra* (cited in the draft

that habitat loss and environmental effects from the Ambler Road and any associated mining would extend far beyond the footprint of direct loss.

It is also important that BLM take seriously the draft SEIS' acknowledgements that "habitat loss and alteration due to the reasonably foreseeable development of the [Ambler Mining] District could equal or exceed that from the road itself…and exponentially increase fragmentation of migratory and winter range"[1018] and that in such a situation, "migrating caribou would encounter a network of active roads and industrial development that does not exist elsewhere in their range. It is much more likely that a system of roads would jeopardize long-distance migration than any single road."[1019] These admissions are of great concern as such development is expected if the road is allowed. This reinforces the likelihood of strong negative effects to caribou and reiterates the call for BLM to not approve the ROW application.

Climate change is a pressing concern around the globe, with high levels of warming being experienced in the Arctic.[1020] In light of this, it is crucial to consider how the impacts of the proposed Ambler Road will interact with the effects of a changing climate. We affirm the draft SEIS' statement that "habitat fragmentation or displacement resulting from development may limit the ability of caribou to withstand and adapt to climate change"[1021] and urge BLM to take this into greater consideration in their final SEIS. Indeed, the draft SEIS' recognition that climate change is likely to decrease high-quality winter forage and lichens[1022] reinforces the importance of reducing impacts to winter range and lichen habitat that are expected under the various action alternatives. One way climate impacts on caribou could be strengthened in the final SEIS is through more comprehensive discussion of disease dynamics under climate change. These were only briefly mentioned in the draft SEIS but are a cause for concern as melting permafrost due to climate change may lead to sudden pathogen outbreaks that can cause rapid large-scale die offs of herbivores. This was reported in Russia when over 2,000 reindeer were killed by anthrax exposed by melting permafrost.[1023] An outbreak of *Pasteurella* similarly killed off over 200,000 saiga antelope (*Saiga tatarica*), which calve in large aggregations somewhat similarly to caribou, reducing the global population by over 60%.[1024] Such events may become more common under climate change and their consideration should be included in the final SEIS.

We appreciate that the draft SEIS acknowledges that "habituation to development and human activity during calving does not appear to occur."[1025] This statement aligns well with the

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SEIS at 3-134 to -138).

[1018] 1 SEIS at 3-147.

[1019] *Id.* at 3-148.

[1020] Post et al., *The Polar Regions in a 2°C Warmer World*, 5(12) SCI. ADVANCES eaaw9883 (2019).

[1021] 1 SEIS at 3-149.

[1022] *Id.* at 3-149.

[1023] Golovnev, *Challenges to Arctic Nomadism: Yamal Nenets Facing Climate Change Era Calamities*, 54(2) ARCTIC ANTHROPOLOGY 40–51 (2017).

[1024] Kock et al., *Saigas on the Brink: Multidisciplinary Analysis of the Factors Influencing Mass Mortality Events*, 4 SCI. ADVANCES eaao2314 (2018).

[1025] 1 SEIS at 3-136.

best available scientific information that fails to find evidence of habituation for caribou and other ungulate species to human development and activity, including both the studies cited in the draft SEIS and others. We note that this is not only valid during calving but also extends to other seasons, when a lack of clear habituation has also been found.[1026] Groups have repeatedly made these point in our comments on previous iterations of this and other EIS processes and we appreciate their inclusion in the draft SEIS. It was then surprising, later in the draft SEIS, to see it suggested that "initially exposing caribou to a small pioneer road may increase their tolerance of the larger Phase 2 road,"[1027] with a similar statement in Appendix C.[1028] It is inappropriate to even suggest that this might happen as there is no robust scientific evidence for caribou habituation to roads. These statements should be removed.

Additional clarity is needed about the expected future level of road traffic, which may affect caribou herds. The description of all alternatives in Chapter 2 indicates that AIDEA anticipates 40 trips per day on the Ambler Road during production, but that when other mines come into production this could increase to 168 trips per day.[1029] Because double-trailer loads used on the Ambler Road would be split into single-trailer loads for the Dalton Highway[1030] this suggests that with multiple mines in production this could equate to up to 336 trucks per day added to the Dalton Highway. The caribou impacts section, however, claims an increase in traffic volume of 160 – 238 trucks per day under Phase 3.[1031] The draft SEIS claims that even these lower levels may adversely affect the Hodzana Hills Herd,[1032] making nearly 100 trucks more each day especially concerning. Increased transparency about traffic volumes and their expected impacts should be included in the final SEIS.

The final SEIS would benefit from additional detailed mapping of the metrics quantified in the draft SEIS. This includes lichen cover, snow depth, and observed years of use by collared caribou. The draft SEIS states that "the reduction of lichen-dominated vegetation types would result in disproportionately greater impacts on the WAH than reduction of other vegetation types."[1033] The mean percentage lichen cover was calculated for each alternative in the draft SEIS but no mapping of lichen cover along the proposed alternatives is presented. Given the importance of lichen as a source of winter forage for caribou and the potential of the proposed road to reduce lichen availability for overwintering caribou, BLM should include maps of lichen cover along each route in the final SEIS. The draft SEIS cites work by Macander et al. that estimated lichen cover using remote sensing,[1034] indicating that data should exist to support creation of maps. Similarly, snow cover and the number of years each mile of road was within the wintering and high-density wintering areas for collared WAH caribou were also summarized

[1026] *E.g.*, Johnson et al., *supra*.
[1027] 1 SEIS at 3-146.
[1028] *Id.* App. C, at C-13.
[1029] *Id.* at 2-8.
[1030] *Id.*
[1031] *Id.* at 3-143.
[1032] *Id.*
[1033] *Id.* at 3-133.
[1034] *Id.*

for each alternative in the draft SEIS but not mapped.[1035] Data for these also exists and should be mapped in the final SEIS. This mapping should be done at a fine enough scale to enable evaluation of whether modifications to the proposed routes would avoid areas of high potential winter food availability, low snow cover (which affects food availability, predation risk, and movement energetics), and high winter overlap for caribou. Of course, the best option to protect caribou winter forage and minimize disturbances is to not permit building of the road.

The text references Map 3-23a as showing a high level of seasonal overlap in ranges of the Ray Mountains Herd and Hodzana Hills Herd.[1036] Volume 4 of the draft SEIS, however, does not contain a Map 3-23a and what is depicted in Map 3-23 is the fall and winter distribution of collared WAH females across years.[1037] It is possible that the text intended to refer to Map 3-22, which does depict ranges for the Ray Mountains and Hodzana Hills herds, but this map only shows the overall range for the Hodzana Hills Herd and overall and summer ranges for the Ray Mountains Herd,[1038] which does not seem to clearly support the statement in the text without additional information. The text and/or map should be updated and clarified for consistency.

Appendix H states that other potential mining locations outside of the Ambler Mining District are depicted on Map 2-2.[1039] However, review of Map 2-2 indicates that these are not depicted, nor are they clearly shown on any of the other chapter 2 maps. Identifying the location of potential additional mines that could lead to impacts cumulative to those in the District is important to more fully account for future expected impacts. These should be added in the final SEIS.

Chapter 3 indicates that "Alternative B would affect…less than half as much habitat used by collared caribou in the winter" compared to Alternative A.[1040] However, Table 2 in Appendix C and Table 19 in Appendix E both list equal winter caribou habitat area affected under Alternative A and B.[1041] This should be clarified in the final SEIS.

Table 34 in Appendix F lists Indigenous place names in the study area,[1042] which correspond to the points in Map 3-33.[1043] However, point 196 listed in Appendix F does not appear to have been included on the map. According to Table 34 the Indigenous place name for this point means "caribou corral." This important historical and cultural area likely also has archeological value and should be included on the map in the final SEIS to ensure it is not destroyed or altered by the proposed road or facilitated infrastructure.

[1035] *Id.* at 3-133 to -134.
[1036] *Id.* at 3-130.
[1037] 4 SEIS at 35.
[1038] *Id.* at 34.
[1039] 2 *id.* App. H, at H-6.
[1040] 1 *id.* at 3-143.
[1041] *Id.* App. C, at C-21; 2 *id.* App. E, at E-20.
[1042] *Id.* App. F, at F-41.
[1043] 4 *id.* at 45.

Map 3-20 depicts the ranges of caribou herds in northwestern Alaska.[1044] There are discrepancies, however, between the legend of the map and what is actually displayed. For example, the legend indicates that the range of the Teshekpuk Herd is shown with diagonal hatching running from upper right to lower left, but this does not appear anywhere on the map. The Central Arctic Herd range is depicted using diagonal hatching that runs from upper left to lower right in the legend. This is displayed on the map, but only for a portion of the herd range. The symbols from the legend should be applied consistently across the map to provide clarity for those unfamiliar with caribou ranges in northern Alaska. In addition, it would be helpful to include additional description of how the annual range was determined for each herd. The Teshekpuk Herd range, for example, is smaller than the herd range depicted in peer-reviewed studies.[1045] A citation to ADF&G 2017 is given in the map legend, but this only says "seasonal ranges of 33 caribou herds in Alaska. GIS shapefile,"[1046] which is insufficient to identify the data used, its timeframe, what measures are being represented, or its reliability. Failing to include more robust information makes it difficult for the public to determine the validity of the draft SEIS' conclusions about potential interactions of other caribou herds with the proposed Ambler Road. Finally, the map legend reads "Caribou Seasonal Ranges" but appears to depict annual ranges for each herd, as no distinct seasonal subsets are shown for any herd. This should be corrected.

C. Eliminating the Pioneer Road Phase Could Reduce Some Impacts to Caribou.

The draft SEIS adds consideration of a 2-phase construction option that proceeds directly to construction of a year-round single-lane road, rather than first constructing a seasonal pioneer road.[1047] While we oppose construction of the road altogether, if BLM persists in permitting the road it is likely that eliminating the pioneer road phase would reduce impacts to caribou. Reducing the number and duration of construction periods may lessen the impacts on caribou, other species, and subsistence, though the remaining impacts are still likely to be significant and detrimental. If the 2-phase approach is used, clear guidance should be provided describing how a decision will be made about proceeding to Phase 3's final two-lane construction, if that is authorized at all.

[1044] 4 *id.* at 32.

[1045] *E.g.*, Person et al., *Distribution and Movements of the Teshekpuk Caribou Herd 1990–2005: Prior to Oil and Gas Development*, 60 ARCTIC 238–50, Fig. 3 (2007); Wilson et al., *Summer Resource Selection and Identification of Important Habitat Prior to Industrial Development for the Teshekpuk Caribou Herd in Northern Alaska*, 7 PLOS ONE e48697, Fig. 1 (2012); Fullman et al., *Variation in Winter Site Fidelity Within and Among Individuals Influences Movement Behavior in a Partially Migratory Ungulate*, 16(9) PLOS ONE e0258128, Fig. S5 (2021).

[1046] 3 SEIS App. O, at O-1.

[1047] 1 *id.* at 2-4.

D. The Proposed Mitigation Measures Are Inadequate for Sufficiently Reducing Impacts to Caribou.

The draft SEIS includes both a suite of mitigation measures proposed by AIDEA and potential mitigation measures proposed by BLM. Together these contain some important practices that may reduce the impacts of a road, but there are significant concerns that they do not go far enough to convey adequate protections for caribou.

AIDEA proposes to apply the wildlife interaction protocols practiced on the Delong Mountain Transportation System (DMTS) to the Ambler Road.[1048] Published scientific work[1049] and unpublished analyses by experienced caribou scientists[1050] report altered movement behavior along the DMTS. Both delayed crossing and complete failure to cross the road have been observed despite employment of the wildlife interaction protocol and mitigation measures. Indeed, the draft SEIS acknowledges that the measures used on the DMTS "are not very effective, and therefore behavioral disturbance, and displacement should be anticipated" if they are applied to the Ambler Road.[1051] It seems likely that similar or greater reactions would be observed around the Ambler Road if a similar protocol is used.

The measures proposed by AIDEA also suffer from insufficient detail to enable full evaluation of their likely effectiveness. For example, AIDEA proposes to adopt a communications protocol for road users that will involve notifying drivers of animal movements and presence of caribou.[1052] Additional details are needed about what kind of monitoring will be conducted, using what methods, and at what distances from the road. Furthermore, how will this information be translated into decisions about when the road should be closed? How many animals need to be present and how close to the road do they need to be? Clarifying such information will allow a better evaluation of the robustness of the proposed measures than simply saying that they would be developed "in conjunction with wildlife managers."[1053] AIDEA's proposal also constrains the potential for traffic cessation and road closure to "times of caribou herd seasonal migration."[1054] Caribou may interact with the proposed road at other times of the year, which can also have consequences for their behavior. This measure should be expanded to apply whenever caribou are present.

Appendix N contains an array of potential mitigation measures that BLM could adopt for the Ambler Road, if approved. While we ultimately urge that the road not be approved, if BLM does move forward with approval we urge that all of the proposed mitigation measures should be adopted, with the considerations and alternations outlined in the following sections.

[1048] *Id.* at 2-9, 2-18.
[1049] *E.g.*, Wilson et al., *supra*.
[1050] *E.g.*, Dau 2023 (cited in the draft SEIS at 3-134 to -138).
[1051] 1 SEIS at 3-138.
[1052] *Id.* at 2-18.
[1053] *Id.*
[1054] *Id.*

1. 1.1 General Measures

Potential Measure 3 requires AIDEA to ensure facilities would limit or prevent damage to environmental values, cultural values, and other important aspects. This is an important goal but the lack of clearly described standards or means of attaining this make its effectiveness questionable. A more thorough description of what this entails or at least what metrics will be used to evaluate whether the measure is met is needed for it to have the desired effect.

Potential Measure 4 requires AIDEA to notify the BLM Authorized Officer in writing 30 days before any temporary closure and 90 days before permanent closure and reclamation. As the effectiveness statement indicates, this will help ensure BLM oversight over closure activities and enforcement and so is a reasonable requirement for planned closures. It will not be effective, however, for rapid responses, such as emergency closures that temporarily halt operations when caribou are present. It is not feasible for this to be done with a 30-day warning. This raises concerns that if adopted as currently written, this measure could restrict the ability of AIDEA to be responsive to rapidly changing conditions. The measure should be updated to specify its application to planned closures and clarify that it does not prevent emergency closures for health and safety or to avoid disturbance to wildlife, subsistence, or other processes.

BLM concludes that together the measures in this section would be highly effective in "securing the road for its intended use, minimizing effects of the road on environmental resources, and establishing an ongoing program of compliance."[1055] This conclusion is questionable, however, given the lack of information about gates, guards, or monitoring for ensuring compliance with use restrictions. As is noted above, the level of detail in the potential requirements is insufficient for ensuring that the road and associated facilities will have minimized effects on environmental resources.

2. 1.2 Reporting Requirements

Potential Measure 1 requires AIDEA to submit documentation of consultation with affected subsistence communities. While it is important that such consultation occurs and is documented, it also matters that input received is used to inform changes. As part of AIDEA's report on issues raised during consultation, AIDEA should also be required to describe how it intends to address the issues reported. Doing so will improve the accountability of AIDEA to the concerns of subsistence communities.

Potential Measure 2 requires AIDEA to monitor road use, including vehicle numbers and types. This is very important to present a more complete picture of impacts from the road and associated activity. Part of this requirement should include not just keeping records of total trips each day but also the timing of trips. Such traffic volume data is increasingly being recognized as important for understanding behavioral responses of species such as caribou.[1056] These data should be required to be shared with BLM and made available to the general public to support research and public accountability.

[1055] 3 *id.* App. N, at N-5.

[1056] *E.g.*, Severson et al., *supra*; Smith & Johnson, *supra*.

Potential Measure 3 requires AIDEA to provide as-built shapefiles of road construction to BLM within 90 days of the end of each construction phase. It is incredibly important that accurate spatial data be made available to enable monitoring and research that evaluates the extent to which environmental impacts from the road are occurring. Along with the shapefiles, AIDEA should be required to provide metadata specifying the timing of construction for each portion of the road that will enable finer-scale evaluation of construction and operation effects. These data should also be specified to be made publicly available or, at minimum, be made available upon reasonable request for research purposes.

Potential Measure 4 requires annual reporting of incidents and accidents as well as monthly reports of camp locations and impacts during construction. This information will complement well that provided in Potential Measure 3 and should likewise be made available to the public and for research purposes.

3. 1.4 General Completion of Use (Restoration/Reclamation)

Potential Measure 1 requires removal of all improvements or equipment upon completion of use. Restoration is an important goal, which would be hindered by leaving materials behind. Thus, the exception to leave items approved by the Authorized Officer should be removed to ensure that habitat is restored to the maximum extent possible and that disturbance to wildlife and subsistence users is minimized. As written, the standard for the condition of restoration is described as "to a condition that is approved in writing by the Authorized Officer."[1057] This lacks the specificity necessary to support adequate restoration. Indeed, the statement of effectiveness for this mitigation measure acknowledges that "the plan for what is being removed and how it would be removed would be important in ensuring the effectiveness of this stipulation."[1058] A reclamation plan needs to be clearly defined and approved prior to approval of the ROW. This approval should come only after review by agency staff, independent scientists, and Indigenous Knowledge holders from subsistence communities that will be affected by the project (in a broad sense, including from communities far distant that utilize a resource that overlaps the project area, such as the WAH). The initially approved plan should also specify a procedure for periodic review and updates to ensure the plan continues to conform to the best available scientific information and restoration technology as improvements are generated over time. This is described in Potential Measure 4 of this section, which should be adopted with the strengthened review described above.

Potential Measure 2 requires removing gravel fill at the completion of the project and restoring the original contours of the landscape to return the land to its original condition for fish and wildlife. This is a worthy goal that should be adopted, though as the draft SEIS states, it is likely to be only partially effective as there is not sufficient technology or scientific information to confirm the ability to fully restore arctic environments.

The summary of effectiveness provided by BLM for this section focuses primarily on the effectiveness of the proposed measures in keeping BLM informed about AIDEA's plans. While the land manager should be informed about plans and operations on their land, information alone

[1057] 3 SEIS App. N, at N-6.
[1058] *Id.* at N-7.

is ultimately insufficient to bring about meaningful restoration. The quality of the plan and its scientific rigor will strongly influence the likelihood of effective restoration. This reinforces the importance of independent review and approval of various phases and products for the project.

4. 2 Alternatives

Potential Measure 2 requires AIDEA to provide financial guarantees in the form of bonds or other such instruments to cover the full cost of construction, operation, maintenance, and termination/reclamation. As is noted in the section below, this is a very important metric that should be required to ensure that project phases, especially termination and reclamation, have the funding needed to succeed. However, it will only be effective to the extent that bond amounts are sufficient to cover the eventual expenses. The measure should be updated to specify amounts necessary, or should define a process to determine those amounts based on similar projects in similar environments. As part of this, the required bonding amount needs to be sufficient to account for expected inflation and a margin for error to ensure future costs are not underestimated.

5. 3.2.6 Acoustical Environment (Noise)

Potential Measure 1 requires AIDEA to provide a Noise Management Plan for land manager approval that outlines noise reduction methods and features to be used. As caribou exhibit sensitivity to a range of anthropogenic sounds, this measure may provide an important means of reducing disruption and other environmental impacts. However, the description of the measure should be updated to specify that the proposed plan be reviewed and approved by an expert group comprising agency staff, independent scientists, and subsistence users from the communities affected by the project to ensure that it aligns with the best available scientific information and Indigenous Knowledge.

6. 3.3.2 Wildlife – General

Potential Measure 1 and Potential Measure 2 require development and implementation of a Comprehensive Wildlife Interaction and Avoidance Plan, "using the best available science and Indigenous Knowledge,"[1059] and a Comprehensive Fish and Wildlife Monitoring Plan, respectively. Measure 1 specifies a group of people who will work to develop the plan for Authorized Officer approval. This is an important step that aligns with our recommendations about plan review above and we strongly recommend that the list of participants be expanded to include independent scientists with relevant knowledge of the species for which policies are being developed. Furthermore, it should be clarified that the Subsistence Advisory Committee mentioned here includes representatives from across the communities affected by the project (including those across the full WAH range). As we have noted above for other potential mitigation measures, the stipulation for reviewing the plan at least every 5 years to account for changing conditions is also critical to maintain a more effective plan. The monitoring plan described in Potential Measure 2 should be expanded beyond habitat to also include other key wildlife processes such as movement and resource selection. Monitoring will not be effective without adequate funding. Potential Measure 2 should be updated to specify that funding to

[1059] *Id.* at N-30.

support monitoring will come from AIDEA and be given to BLM or NPS, who would be responsible for carrying out the monitoring or hiring qualified scientists and Indigenous Knowledge holders to do so, similar to what BLM has proposed elsewhere.[1060]

Potential Measure 7 requires AIDEA to work with land managers and wildlife agencies to identify construction timing windows to protect wildlife. Additional details are needed to clarify how timing windows will be identified and applied. This should be determined by the same group of scientists, agency staff, and subsistence users from communities affected by the project that review and approve the other plans described above.

Potential Measure 8 requires development of a Fish and Wildlife Protection Plan that describes measures to minimize habitat fragmentation and maximize unfettered wildlife movement. Several examples are given of what kinds of design features this could include. These should be expanded to include overpasses, which have demonstrated effectiveness in supporting movement connectivity for species in other systems and may have benefits for connectivity and access by subsistence users. This is another situation where the plan should be reviewed and approved by an independent group of scientists, Indigenous Knowledge holders, and agency staff to ensure if aligns with the best available Indigenous Knowledge and scientific information.

The above measures may help reduce impacts from the Ambler Road. However, we agree with BLM's recognition that even if all the proposed wildlife mitigation measures were implemented, they would only be "partially effective at reducing impacts to wildlife as a result of construction and operation of the Ambler Road. It is not possible to fully avoid or mitigate the impacts of the road to wildlife."[1061] To more meaningfully avoid impacts, BLM should select the No Action Alternative.

7. 3.3.5 Mammals

Potential Measure 1 gives the Authorized Officer the option of restricting AIDEA activities on BLM-managed lands during calving and major migration periods. Restricting activities to protect sensitive wildlife is important but is likely to have minimal effects if it only is applied to BLM-managed lands since much of the area used by caribou lies outside these areas. While BLM only has authority over the lands under its purview it is essential to work with other landowners to apply the requirements of this and the other proposed mitigation measures across the entire Ambler Road area. As currently written, the potential to restrict activities under this mitigation measure is restricted to migration and calving periods. As is described above and in the draft SEIS, winter is also an important period for caribou and there can be substantial overlap between caribou winter range and the proposed road. This measure would be strengthened by being updated to apply whenever caribou are present. As has been noted for other proposed mitigation measures, greater specificity is needed to clarify how the Authorized Officer will determine if cessation of activities is needed and how long this should last. Finally, the proposed text currently specifies that notification must be provided in writing for activities to be restricted under this measure. The language should be updated to clarify that written notice

[1060] *E.g.*, BLM 2023.
[1061] 3 SEIS App. N, at N-32.

can include electronic communication to enable rapid responses to caribou movements or other changing conditions.

Potential Measure 2 gives wildlife the right of way on the Ambler Road and requires vehicles to slow down or stop to allow wildlife to cross the road. Once again, the Authorized Officer is given the ability to temporarily stop traffic during known caribou migration. As we noted above, additional description is needed about how caribou will be monitored and at what spatial and temporal scales, as well as what the thresholds will be for group size and proximity to trigger road closures and for traffic to be restarted. Indigenous Knowledge and scientific observations indicate that caribou do not have to be next to a road to be affected by it. Sounds, smells, and social cues may all affect behavioral responses, allowing them to occur at far greater distances than suggested by visual lines of sight. As is noted for measure 1, the language of this potential measure should be updated so that traffic may temporarily be stopped in seasons other than migration if caribou encounter the road. The provision to share data on road closures with state and federal agencies is important and should be expanded to also include communities that rely upon caribou for subsistence, scientists for research purposes, and the public for transparency and accountability.

IV. THE SEIS DOES NOT ADEQUATELY CONSIDER IMPACTS TO BIRDS.

Foundationally, the agency should not rely on inadequate data to describe bird values that could be affected by the proposed road. The SEIS acknowledges that there is still "little information on avian species distribution or abundance in the project area, and researchers have completed few avian monitoring studies in this region."[1062] The agency, or the project proponents, should have completed at least a few years of avian monitoring, including point counts and breeding bird surveys, before moving forward with the SEIS to ensure there was adequate baseline data. For instance, instead of using breeding bird surveys from nearby areas, the SEIS should have included data from surveys along the alternative routes, including agency grey literature, published reports, and online through outlets such as eBird.[1063] The SEIS claims that "obtaining detailed data on [bird] species distribution and abundance of 142 species in a project area of this size would be exorbitant."[1064] But this is a specious argument because BLM could focus on a few focal species, limit surveys for distribution and abundances of birds to only the road corridors and zones of influences, or use a habitat suitability model to model species distribution in certain areas of the project area, based on vegetation data. BLM even acknowledges that "due to limited baseline data on bird distribution and abundance in the project area, it is not possible to quantify potential impacts to most birds at the species or population level."[1065] Better baseline data and modeling on where birds occur in the project area is needed to ensure the agencies have adequate baseline data and are in a position to analyze different alternatives and mitigation measures. As discussed above, BLM is required to engage in a site-specific analysis of the impacts of this project at this stage and prior to making an irretrievable commitment of resources. It is highly questionable how the agency is capable of doing such an

[1062] 1 SEIS at 3-113.
[1063] *Id*.
[1064] *Id*. at 3-113 n.68.
[1065] *Id.* at 3-116.

analysis of the impacts in more than just a generalized way when it is still missing this key baseline information necessary to do so.

The SEIS lacks sufficient mitigation measures for birds. First, the mitigation measures in Appendix N did not include measures to mitigate effects from predation, collisions, or vehicle and aircraft traffic, despite these impacts being mentioned in the SEIS. In particular, the mitigation measure on the Migratory Bird Treaty Act (MBTA) is inadequate and confusing. The SEIS states, "If AIDEA chose to clear vegetation during this timeframe then AIDEA would have a qualified biologist survey any area where vegetation would be damaged by the project or associated activities within 48 hours prior to vegetation disturbance."[1066] This deference to the road proponents' preference is improper. The agency should ensure AIDEA adheres to the standards in the MBTA. The final SEIS should also incorporate in additional mitigation measures to minimize the impacts to birds more broadly.

While the SEIS notes that "[d]irect habitat loss and alteration would occur during all phases of road construction, including gravel mining and construction of a seasonal ice road,"[1067] the SEIS does not provide any robust analysis of the extent of habitat loss or propose sufficient mitigation measures to address the habitat loss likely to occur from the project. The only mitigation measures proposed to address habitat loss to birds are ensuring vegetation clearing is scheduled outside of nesting season,[1068] providing an invasive species prevention plan,[1069] and preventing construction facilities from providing nesting for bank swallows, raptors, and ravens.[1070] The impacts on habitat range from vegetation removal and damage to permanent damage to habitat through changes in hydrology. The mitigation measures proposed by BLM do not even begin to address the severe, and frequently permanent, habitat impacts that will occur in and around the project area. In addition, the SEIS only provides a cursory analysis of the habitat loss likely to result from the project, often noting the impact without disclosing the full extent of the harm. For instance, the SEIS merely notes that fugitive dust deposition may increase thermokarst and soil pH without any further analysis.[1071] Habitat loss through thermokarst, permafrost melt, and changes in hydrology due to gravel road construction would span much longer than the life of the road and are irreversible. These effects are well documented,[1072] and the final SEIS should include analysis of these impacts and proper mitigation measures.

[1066] 3 SEIS, App. N at N-35.
[1067] *Id.* at 3-116.
[1068] 3 SEIS, App. N. at N-35 to -36.
[1069] 1 SEIS at 3-117, *see* 3 SEIS, App. N at N-27.
[1070] *Id.* at 3-117, *see* 3 SEIS, App. N at N-36.
[1071] *Id.* at 3-117.
[1072] E.g., M.K. Raynolds et al., Cumulative geoecological effects of 62 years of infrastructure and climate change in ice-rich permafrost landscapes, Prudhoe Bay Oilfield, Alaska, 20 GLOBAL CHANGE BIOLOGY 1211 (2014); D.A. Walker et al., Landscape and Permafrost Changes in the Prudhoe Bay Oilfield, Alaska, Alaska Geobotany Center Publication, Fairbanks, Alaska (2014); see generally, Ben Sullender, Ecological Impacts of Road- and Aircraft-based Access to Oil Infrastructure, Audubon Alaska (2017).

Moreover, the estimate of how far dust may affect habitat extending out from a road appears to have been underestimated. The SEIS states "fugitive dust could be deposited up to 328 feet (100 meters) from the gravel road (Walker and Everett 1987)."[1073] BLM should have taken into consideration that a newer study, Myers-Smith et al. (2006), concluded, "significant disturbance may have occurred in a 200-m-wide [656 feet] corridor adjacent to the roadway."[1074] The older study by Walker and Everett (1987) only notes that snowmelt from dust is evident out to 100 meters (328 feet), but dust was actually found out to 1000 meters, was heavier in winter, and the methods at the time made it difficult to measure dust effects beyond 30 meters. These are important data points are not analyzed in the SEIS, which simply concluded, without a scientific basis, that the indirect impact will extent out to 328 feet. Indeed, more recently other researchers have found "zones of impact" of windblown dust to 3280 feet from a road.[1075] This indicates that the SEIS is not only wrong but may be off by an order of magnitude in its analysis of indirect impacts on bird habitat. The agency should use updated data, explain the assumptions and drawbacks of the studies it is using, and expand upon its analysis of impacts from roads and their indirect effects.

The SEIS was also overly conclusory regarding impacts on birds from noise and light. The SEIS states, "Noise and light pollution may extend large distances from the gravel footprint, depending on vegetation type, topography, ambient sound levels, and various other factors (Bayne et al. 2008; see Section 3.2.6, Acoustical Environment, and Appendix D, Attachment A, for more information on noise)."[1076] This statement does not explain how noise and light can impact birds and is inadequate.

For the alternatives analysis, the SEIS still fails to meaningfully describe the different impacts that would arise between the alternatives. At the outset of describing Alternative A, the SEIS said, "Avian habitat associations lack the refinement, and vegetation mapping lacks the detail necessary to accurately predict impacts at the species level."[1077] Under Alternative B, the SEIS stated, "Due to the poor granularity of available habitat mapping and lack of refined species habitat associations, it is not possible to pinpoint differences between Alternatives A and B in regard to potential impacts on birds."[1078] And the comparison made for Alternative C is merely that the route is longer, that some different habitat types are implicated, and the route would cross an area of high waterfowl species richness.[1079]

That alternatives comparison falls short of what is required by NEPA, and the problems were only exacerbated by the underlying lack of baseline data. In the impacts analysis, the SEIS

[1073] 1 SEIS at 3-117.

[1074] I.H. Myers-Smith et al., Cumulative impacts on Alaskan arctic tundra of a quarter century of road dust, 13 Ecoscience 503 (2006).

[1075] T. Kumpula et al., Land Use and Land Cover Change in Arctic Russia: Ecological and Social Implications of Industrial Development, 21 Global Environmental Change 550 (2011).

[1076] 1 SEIS at 3-119.

[1077] *Id*. at 3-121.

[1078] *Id*.

[1079] *Id*.

notes, "The removal or alteration of uncommon habitat types would have a proportionately greater impact on the species that use them."[1080] But the alternatives comparison does not consider the differences in altered habitat types among the alternatives, and how it relates to birds. For instance, the impacts analysis used cliff-dwelling raptors as an example of how varying habitat types could affect different birds.[1081] The analysis on each alternative could consider how much cliff habitat will be affected under each alternative, and result in a more robust alternatives comparison. The agency should engage in an analysis of habitat loss and how it will vary based on the alternatives in the SEIS for various bird species, in addition to more data and conducting more modeling to better describe the affected environment.

V. THE ANALYSIS OF THE IMPACTS FROM EXTRACTION OF SAND AND GRAVEL RESOURCES IS INADEQUATE.

A. The Agencies Failed to Obtain Adequate Baseline Information Related to Sand and Gravel Resources.

The agencies failed to obtain adequate baseline data related to the sand and gravel resources in the project area. The construction of the road will require "large amounts of sand and gravel, embankment material, and aggregate resources, as well as sources of riprap."[1082] Despite the clear need for extensive amounts of gravel to be mined for this project, geotechnical investigations on the specific sizes, grades and actual quantities that are available and where they are located have not been conducted. As a result, it is still unclear precisely where the gravel mines are likely to be located, whether there are sufficient gravel resources for this project, and whether there are sufficient volumes of materials that are clean of Naturally Occurring Asbestos (NOA). If a source contains unacceptable levels of asbestos, alternative sources must be located and mined for sand and gravel. It is impossible to evaluate the potential impacts of excavating the sand and gravel resources necessary for the mine without baseline data to characterize where there might be sources of NOA-free sand and gravel along the proposed route. Baseline information on sand and gravel resources needed to be obtained prior to the agencies authorizing the project and was essential to the agencies being able to evaluate the impacts of the actual proposed mines. That information should have been obtained prior to any new decisions and incorporated into the SEIS. The agencies failed to do so, and failed to adequately evaluate the impacts of using materials containing NOA, as explained elsewhere in these comments.

Additionally, there is still not adequate baseline data related to the potential for acid rock drainage (ARD) along all the corridor. Leaching of metals and metalloids, such as selenium, arsenic, mercury, and other harmful materials can have lasting adverse impacts on water, flora and fauna and subsistence uses and users. For example, mineralized rock was used in construction materials at the Kensington mine, resulting in downstream impacts.[1083] The prevention of ARD is notoriously difficult, and the use of an alternative site for road

[1080] *Id.* at 3-117.
[1081] *Id*. at 3-114 to -115, 3-117.
[1082] 1 SEIS at 3-15.
[1083] Bonnie Gestring and John Hadder, EARTHWORKS, U.S. Gold Mines Spills & Failures Report: The Track Record of Envtl. Impacts Resulting from Pipeline Spills, Accidental Releases and Failure to Capture and Treat Mine Impacted Water (July 2017).

development to avoid sites with ARD potential should have been analyzed in the prior EIS. The SEIS must include baseline data on ARD generating material to provide for a reasoned choice between alternatives and to inform the need for additional mitigation measures.

B. The Agencies Failed to Adequately Analyze Gravel Mining.

As discussed earlier in these comments, the gravel mines were connected actions that needed to be analyzed in depth in the EIS, but that did not occur as part of the prior decision-making process. AIDEA proposed to develop material sites to obtain gravel and riprap for construction and maintenance. Some of the material sites would be expected to be developed into long-term roadway maintenance facilities. These long-term sites would house maintenance workers and include landing strips. Most material sites would require access roads of varying lengths to connect the borrow location to the proposed road. Additionally, side roads would be constructed to provide access to water sources for road construction and maintenance activities.

Instead of conducting an adequate analysis of all these facilities in the SEIS, the gravel mines described are only hypothetical locations proposed by AIDEA without the actual baseline information and fieldwork done to verify those would be the actual gravel mine locations. BLM postponed its site-specific review of the gravel mines to a future permitting stage. This was directly at odds with the Corps, which affirmatively authorized a number of gravel mines without that required NEPA analysis taking place.[1084] The SEIS attempts to justify its failure to analyze the impacts from the gravel mines and other project components by pledging to review and approve them later.[1085] As a result, the SEIS never took a hard look at the actual site-specific impacts of the gravel mines, and it remains unclear where these mines will actually be located. This is completely backwards and at odds with the requirements of NEPA.

The SEIS fails to adequately analyze the direct, indirect, and cumulative effects of mining for gravel or other materials necessary for construction of the road. According to the SEIS, this project will require a massive amount of gravel mining to meet the anticipated gravel needs for the project; "Estimated required borrow material for road construction under the action alternatives would be approximately 15 million cubic yards (Alternative A), approximately 16.8 million cubic yards (Alternative B), and approximately 22 million cubic yards (Alternative C; DOWL 2019b)."[1086] AIDEA further anticipates 42.23 million cubic of gravel more will be needed for the project for ongoing road maintenance.[1087]

The development of material sites would affect vegetation cover, topography, drainage patterns, the thermal regime of subsurface soils, wetlands and aquatic resources, wildlife and birds, noise, air quality (e.g., fugitive dust), and more.[1088] There are also massive indirect effects — e.g., from the storage of overburden piles, which in turn can create thermal regime changes

[1084] JROD at 15.

[1085] 1 SEIS at 3-3 ("The BLM may authorize portions of the project under separate permits, such as . . . separate authorizations for material extraction and sales.").

[1086] 1 SEIS at 3-17.

[1087] 2016 AIDEA Application, sec. 2, at 4

[1088] 1 SEIS at 3-17, 3-67, 3-96, 3-103, 3-116, 3-118.

and permafrost damage — have led some researchers to approximate that a one-acre (0.4 ha) gravel pit may impact as much as 25 acres surrounding the site.[1089] There are also significant human health concerns related to the presence of NOA in much of the gravel in the region that were left largely ignored in the prior decision-making process. Rather than fully analyze all those impacts, the SEIS provides only vague descriptions and failed to take a hard look at the potential direct, indirect and cumulative effects on the specific resources in the project area based on the specific proposed gravel mine sites. BLM acknowledges that "the full magnitude of effects is difficult to quantify given the lack of specific gravel extraction methods and plans."[1090] Without specific gravel extraction methods and plans, it was impossible to evaluate the direct, indirect, and cumulative effects of gravel and materials mining on water resources, hydrology, fish and fish habitat, air quality, vegetation, amphibians, wildlife and wildlife habitat, subsistence resources, and other potential resources. The mitigation measures in the FEIS were also too vague to provide any certainty about whether they would successfully offset, prevent, or remediate impacts, and BLM entirely failed to update these vague mitigation measures in the SEIS. It is impossible to determine whether mitigation measures will be effective without detailed information about how they will be monitored and enforced.

Overall, the SEIS was severely deficient in its analysis of the impacts of gravel mines. BLM should have obtained complete applications for the specific gravel mines (after the completion of appropriate baseline studies to determine those would be the actual gravel mine locations) and analyzed the full range of impacts and mitigation measures from those specific sites in the SEIS. Detailed mining plans and reclamation plans are necessary to evaluate the potential direct, indirect and cumulative effects of gravel and other materials mining under NEPA, and this type of information and analysis cannot be deferred until some further time by the agencies.

VI. THE ANALYSIS OF THE IMPACTS TO TUNDRA, PERMAFROST, AND VEGETATION IS INADEQUATE.

A. The Agencies Are Still Missing Key Baseline Data Necessary to Engage in a Meaningful Analysis.

There is still almost no baseline or site-specific data about the physical environment that would allow for an assessment of road impacts on tundra, permafrost, or vegetation. The SEIS acknowledges that Alternatives A and B traverse areas of continuous permafrost (greater than 90 percent).[1091] Despite the pervasiveness of permafrost across the entirety of the project area, site-specific baseline data about the permafrost conditions has still not been considered as part of this decision-making process — likely, because there had not been sufficient baseline information gathered to inform that analysis in the first place. As a result, the description of the baseline is

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[1089] BENJAMIN SULLENDER, AUDUBON ALASKA, ECOLOGICAL IMPACTS OF ROAD- AND AIRCRAFT-BASED ACCESS TO OIL INFRASTRUCTURE 19 (July 2017), *available at* http://ak.audubon.org/sites/g/files/amh551/f/road_aircraft_access_report_final_0.pdf.

[1090] 1 SEIS at 3-96.

[1091] 1 SEIS at 3-5.

woefully inadequate, cursory, and too generalized and not site-specific enough to provide for a meaningful analysis in the SEIS.[1092]

In the SEIS, BLM states that "[g]eotechnical investigations proposed during the design phase" would identify the presence of problematic soil and subsurface conditions, and "the road would be designed and constructed to avoid and minimize [those] risks using appropriate and standard road design practices."[1093] In response to previous comments calling on the agencies to obtain information on temperature, ice-content, and soils data and permafrost information along the alternative alignments, the FEIS stated that that "missing information likely is relevant to better understanding of the project area environment but … is not relevant to significant adverse impacts on the environment."[1094] The FEIS claimed that the consequences for "thawing permafrost are principally damage to the road, which is a risk to the applicant but probably not significant to the broader environment."[1095] As such, the FEIS concluded that "[d]rilling information would be informative but is not essential to a choice among alternatives" and that the risks from permafrost "would be dealt with equally among the alternatives in design."[1096] That does not constitute a hard look for purposes of NEPA and this problem has yet to be fixed in the SEIS, despite those admissions being removed. Those statements also highlight the agencies' failure to consider a reasonable range of alternatives that would reduce impacts to permafrost and tundra in the project area. As discussed above, meaningfully different road routes, consideration of a seasonal ice road, or use of a rail rather than gravel road would alter and potentially reduce project impacts, particularly on vegetation and permafrost.

The agencies' failure to obtain baseline information related to the soils and particularly the permafrost conditions across the project area violates NEPA. The agencies need that fundamental baseline information to adequately analyze the likely impacts and necessary mitigation measures for the project. It is inappropriate for the agencies to rely on after-the-fact baseline studies and project design work to reach the baseless conclusion that the project would somehow be designed in a way that would mitigate those impacts. Baseline information about the road corridor is critical to ensure that the project is designed in an environmentally responsible and safe way and does not cause degradation to aquatic and other resources along the entirety of the corridor. As the SEIS recognizes, permafrost soils are "highly susceptible to erosion or other soil movements caused by disturbances to ground-covering vegetation and subsequent thawing of the permafrost. Depending on soil type and ice content, permafrost may be considered thaw-stable, where foundation materials are unchanged in unfrozen condition, or thaw-sensitive (unstable), where the foundation experiences loss of strength and thaw settlement upon thawing."[1097] Not obtaining that information to inform the agencies' analysis of impacts at this stage is contrary to NEPA.

The dismissal of the need for this information based on conclusory statements that such information did not relate to potentially significant impacts on the environment or related

[1092] *Id.* at 3-5, 3-8.
[1093] *Id*. at 3-8.
[1094] 3 FEIS App. R at R-32.
[1095] *Id*.
[1096] *Id*.
[1097] 1 *id.* at 3-5.

primarily to damage to the road is arbitrary. Permafrost degradation along the entirety of the road corridor, given the pervasiveness of permafrost in the region, is a serious impact that has still not been adequately analyzed. Even to the limited extent the SEIS discusses permafrost impacts in more detail, that analysis is still too cursory and is not a site-specific analysis, which is required at this stage and cannot be deferred to the future. Many other impacts have the potential to cascade out from permafrost degradation — including the need for additional gravel mining to mitigate those impacts and to maintain the road, the potential for downstream impacts with the road washing out regularly, the risk of ponding and other subsidence, and other broader degradation of aquatic resources across a vast region. The agencies' dismissal of the need for this information — which will be needed to fully design the project — is arbitrary, contrary to NEPA, and reflects a broader failure to analyze or address the true impacts of this project.

The roadway design will necessarily need to change, depending on the issues with soil quality and permafrost. Thicker embankments will be needed when designing with poor soils compared to good soils. As embankment thickness design increases, so do gravel requirements. Relatedly, gravel reduction opportunities from the use of rigid foam insulation board on the "good" soil fill design is greater than on the "poor" soil fill design. Despite that, the SEIS does not categorize site-specific detail for the types of soils (good, moderate, or poor) found across the length of the roadway because that information was lacking. That information was important to determine depth of gravel needed across the roadway and thus the total amount of gravel — and potential impacts from gravel mining — needed for the project.

The missing baseline data is necessary to this decision-making process since it also would have provided information on areas that may have high dust volume (from silt), high risk of erosion (and stream sedimentation), and would inform an analysis of the likelihood of potential for acid rock drainage along the road route, as well as necessary mitigation measures to address those impacts. Soil baseline information is important to determine the locations of areas rich in silt where, if winds are also high, dust may blow further than in areas dominated by gravel and affect greater areas of vegetation and water bodies, or contribute greater volumes of dust in those locations. Silt and dust additionally alter the rate of snowmelt where the dust is blown on the surface. These factors all heavily influence the extent and severity of impacts to permafrost from this project. Additionally, in areas with permafrost, it is likely to increase the cost of building that section of road, or indicate more frequent repairs may be needed in along that road section, suggesting higher maintenance costs.

While there is a map of permafrost locations in the SEIS, it has the following caution that further underscores that the agency does not have key baseline information necessary to take a hard look at the impacts of this project: "No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards."[1098] Without soil baseline or specific information on permafrost, it is difficult to place confidence in this type of large-scale map to provide site-specific information. Such admissions also highlight that BLM violated NEPA's mandate that an EIS be "supported by evidence that the agency has made the necessary

[1098] 4 SEIS at Map 3-01.

environmental analyses."[1099] "The information must be of high quality" because "[a]ccurate scientific analysis . . . and public scrutiny are essential to implementing NEPA."[1100] BLM's statements flagging questions about the accuracy of maps and underlying data are contrary to this basic NEPA requirement. Site-specific information is necessary to make an accurate comparison of alternatives, determine the overall impacts of the roadway, and develop meaningful mitigation measures. Because that information is still lacking and is necessary for the agencies to make an informed decision on this project, the agencies should adopt the no action alternative.

Finally, BLM has still not adequately considered impacts to permafrost and tundra as a result of mining in the Ambler District, which is a direct effect of this project. Important details relevant to the extent of permafrost impacts are not sufficiently addressed, including: the type of mining (underground, open pit, mill, or heap leach); the volume of waste rock; and the volume of tailings, which influence whether waste rock and tailings can be placed underground, thereby influencing the amount of surface area required for long term storage. The amount of area required for storage — particularly if multiple mines are developed — may be restricted by the land area not susceptible to permafrost thaw. The entire mining belt appears to be in a location of continuous permafrost, and may be highly susceptible to landslides, subsidence, and other dramatic ground movement. These impacts have affected the Dalton Highway and Denali Park Road, will no doubt affect the Ambler Road, and could very possibly affect mine waste management in ways that will cause foreseeable impacts to the region that BLM needs to analyze.

B. The Analysis of AIDEA's Phased Approach and the Impacts to Permafrost Is Still Inadequate.

Given that more than 90% of the road corridors under Alternatives A and B traverse areas of continuous permafrost, it is concerning and contrary to NEPA for BLM to fail to provide site-specific and meaningful consideration of the impacts of this project on permafrost. BLM has still not taken a hard look at the full range of impacts related to AIDEA's phased construction approach, and particularly the impacts of Phase I, where the risk of serious permafrost degradation was a significant concern previously flagged by agency staff. The SEIS's updates to the discussion of likely permafrost impacts largely duplicates the deficient analysis that was in the FEIS, with just a few minor changes and the addition of one sentence analyzing how the combined phasing option may reduce impacts to soil and permafrost resources.[1101] This is still not a sufficient site-specific analysis of the project of AIDEA's phased approach. While groups appreciate the additional consideration of an alternative that would eliminate the highly damaging Phase 1 stage, BLM's analysis of both AIDEA's original proposal and the combined phasing action are still lacking in the SEIS.

The SEIS still includes very little detail on the road's phases or how they would be constructed — largely because of the lack of project designs and detailed construction plans.[1102]

[1099] 40 C.F.R. § 1502.1; *see also id*. § 1502.8.
[1100] *Id*. § 1500.1(b).
[1101] 1 SEIS at 3-9.
[1102] Letter from AIDEA to BLM re Request for Information AMDIAP F-97112 (2810)

One of the key differences between Phase I and later phases is the shallow depth of the road embankment at Phase I, with later phases upgrading the road to a thicker embankment to insulate the road and mitigate impacts to permafrost.[1103] The potential for permafrost degradation, particularly from the less-insulated Phase I, was a serious impact raised by agency staff and commenters.[1104] EPA noted that about "92% of the [project] area is underlain by continuous permafrost susceptible to thawing."[1105] In Gates of the Arctic, AIDEA estimated that 80% of the corridor would require road embankments greater than eight feet thick to protect permafrost from thaw.[1106] Groups also previously submitted technical comments underscoring the serious risks of Phase I, explaining that the depth of permafrost is likely to decrease at a rate of 0.5 feet per year until the construction of Phase III, with greater impacts at Phase I because of its shallower depth and lack of insulation.[1107] This is particularly troubling since AIDEA indicated the Phase I road could remain in place for up to ten years and be used for longer-term mine development.[1108]

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032 rw, at 1 (Apr. 16, 2019); Email from A. Freeburg to C. Glassburn re Phone follow up (Aug. 8, 2019), Email from C. Glassburn to A. Freeburg re Re: Phone follow up (Aug. 8, 2019) (stating there was only a "conceptual level of design and development" and estimating AIDEA had only designed 7–30% of the project); BLM ROW at 6 (requiring later submission of information and detailed plans for each phase).

[1103] 2016 AIDEA Application at 3–4; 1 FEIS at 2-3; 2019 Engineering Report at 7. Phase I could not be used during heavy rainfall or the spring and early summer because of the need to minimize roadway damage during breakup with its less rigorous design. 1 FEIS at 2-6; Email from Joe Durrenberger to Greg Dudgeon et al. re FWD: Response to Questions (Mar. 19, 2018).

[1104] Ambler Road Environmental Impact Statement Subsistence Impacts Assessment Workshop Day 2 Meeting Minutes, at 5 (Apr. 9, 2019) (flagging Phase I could lead to sinkholes, contribute large sediment loads into streams, cause operations and maintenance concerns, and permafrost thawing will impact water quality in downgradient streams); Ambler Mining District Industrial Access Project Cumulative Impacts Assessment Workshop Day 1 Meeting Minutes at 7 (Apr. 8, 2019) [hereinafter Cum. Impacts Meeting Minutes] (indicating Phase I is the "vulnerable stage" and mitigation would be difficult to implement); *id.* at 16 (NPS noting it "wouldn't take much" to thaw permafrost at Phase I); 2019 PDEIS Agency Response Matrix at 4 (BLM responding to EPA that site-specific information on thaw subsidence risk does not exist and would be gathered later); 2019 EPA Comments, Enclosure at 3; *id*. at 9 (EPA requesting quantification of permafrost impacts); Ambler Mining District Industrial Access Project Cumulative Impacts Assessment Workshop Day 2 Meeting Minutes at 5–6 (Apr. 9, 2019) (NPS staff explaining "everything flows from permafrost: water quality issues, erosion potential, long-term viability of road, and amount of gravel needed to support the road").

[1105] 2019 EPA Comments, Enclosure at 1.

[1106] 2016 Revised App. at 4.

[1107] 2019 Engineering Report at 7.

[1108] The record contains conflicting statements about Phase I's duration. Email from J. Durrenberger to Greg Dudgeon et al re FWD: Response to questions 2 (Mar. 19, 2018) (AIDEA indicating mine operations could use the Phase I road); 2016 Revised App. at 6 (indicating Phase II construction would commence once mine operations reach level requiring year-round access); 2 FEIS, Att. G at G-1–2 (indicating construction of different phases may overlap); Cum. Impacts Meeting Minutes at 4 (noting inconsistencies in time periods for Phase 1, and unknown timeframe for Phase 3).

Despite these serious concerns, and the agency purporting to evaluate an alternative that would eliminate these impacts, the SEIS still lacks an adequate analysis of the unique and significant impacts to permafrost from Phase I. The SEIS has a cursory reference to the potential for phased construction to accelerate permafrost thaw because Phase I would not insulate the roadway similar to later phases.[1109] The SEIS briefly notes drainage changes could impound water and warm subsurface soils and that, if permafrost thaw issues occur during early phases, shoulder rotations and embankment cracks could impact the road's surface, but the SEIS still does not contain an analysis of what impact those occurrences would have.[1110]

These conclusory statements are not an adequate hard look at the full range of impacts from Phase I. Phase I has little, if any, mitigation for permafrost damage since it is lacking the insulation of later phases. Because Phase I would not include all the measures to insulate the roadway of later phases, there needs to be a site-specific analysis of the unique impacts specific to that phase, particularly for permafrost degradation. This includes an analysis of the extent and severity of permafrost degradation across the length of the road, how that degradation would be exacerbated by Phase I, how not having adequate insulation at Phase I could impact the road's long-term viability, how that could alter the amount of gravel needed for the road and its continual maintenance, how climate change could further amplify the impacts, and how that particularly vulnerable stage of the project might cause a host of other serious problems in downgradient waters. Considering the impacts of the Phase II and III roads was not sufficient because those phases included greater insulation and did not present the same threats to permafrost degradation as Phase I. Even so, the SEIS still did not take a hard look at the permafrost impacts from Phase II and III to understand if even those designs would actually be adequate to mitigate the impacts to permafrost. This is inadequate for purposes of NEPA.

The agencies' conclusion that the yet-to-be-determined mitigation measures to address permafrost thaw were likely to be successful is also arbitrary.[1111] The agencies could not adequately analyze the likely scope of these impacts or ways to mitigate them because they did not have baseline information about the extent and depth of permafrost in the project area or thaw subsidence risk, and those mitigation measures have yet to even be designed to understand if they will be inadequate.[1112] As the Ninth Circuit recognized in analogous contexts, an agency's reliance on post-approval studies to gather baseline information, assess impacts, and then develop mitigation "deprives [the agency] of any foundation upon which to base their conclusion" that mitigation measures will be sufficient.[1113] Without that information, the agency could "not know what impacts to mitigate, or whether the mitigation proposed would be

[1109] 1 SEIS at 3-9.

[1110] *Id.*

[1111] *Id.* at 2-13.

[1112] *See* 2019 PDEIS Agency Response Matrix at 4 (indicating site-specific information on thaw subsidence risk does not exist and AIDEA will do geotechnical investigations to evaluate permafrost and risk of thaw and then design project to consider the risks); 2016 Revised App. at 37–38 (AIDEA acknowledging "the extent and depth to permafrost is widely unknown" and stating AIDEA needs more detailed thermal information).

[1113] *LaFlamme*, 852 F.2d at 400.

adequate to offset damage."[1114] The agencies' failure to take a hard look at the impacts to permafrost and ways to mitigate those impacts is contrary to NEPA.

The SEIS also still does not consider impacts from the "access trail" proposed as an initial step even prior to the Phase I Pioneer Road. It is unclear from the SEIS whether this access trail would be needed even under a combined phasing approach. As explained in the Engineering Report incorporated by reference into these comments (and previously submitted with comments), an access trail would be needed in advance of constructing the Pioneer Road, meaning that trees and brush along the road corridor will be removed.[1115] Once removed, permafrost degradation will accelerate significantly, to an average of .15 meters per year.[1116] Applying this data to the Ambler Road project, over 2 years, the permafrost can be expected to decrease by about 1 foot — i.e., by the start of Phase 2 road construction.[1117] The permafrost degradation rate of about .5ft/year can be expected to continue unchanged until a full depth embankment is constructed.[1118] The SEIS entirely failed to consider impacts from the access trail or mitigation measures for that stage to prevent rapidly occurring deterioration once it goes in. Conditions can change and deteriorate rapidly once surface resources are disturbed without adequate protections in place. For the sake of illustration, these photos show a single-lane road built by a private citizen in the region with no insulation or other safeguards; within nine months, it was so distorted and heaved that it was no longer passable:

[1114] Or. Nat. Desert Ass'n, 840 F.3d at 571.
[1115] 2019 Engineering Report at 7.
[1116] *Id.*
[1117] *Id.*
[1118] *Id.*

Additionally, the SEIS did not consider damage to tundra and permafrost resulting from use of the road during spring break up. Because there is no enforceable mechanism to restrict public access of the road during flooding, BLM must consider the adverse impacts to permafrost resulting from spring-time use of the Pioneer Road.

Adding embankment insulation to the road soon after removing earth above the permafrost, especially in ice rich thaw-sensitive areas, has the potential to reduce permafrost degradation.[1119] Although AIDEA's construction plans are still largely unclear and undefined, there is some indication they would establish the entire access trail, build the entire Pioneer Road (Phase I), and then build the full depth embankment (Phase II).[1120] BLM should implement mitigation measures from the start to prevent permafrost degradation and should limit the way in which construction is allowed to occur to ensure pristine areas of land remain untouched longer to limit permafrost degradation and associated road quality deterioration.

C. The SEIS Has Not Adequately Considered Mitigation Measures to Address Permafrost and Other Impacts.

The SEIS still has not adequately analyzed mitigation measures for the project to address permafrost and other impacts to soils and vegetation, and largely defers to AIDEA to develop those measures in the future after collecting baseline data. The SEIS still states that measures related to permafrost and soil impacts have yet to be developed: "[p]rovisions for reducing permafrost degradation would be included in project design" and "specific measures to be incorporated in specific areas would be identified during final design after the alignment has received approval from the appropriate federal and state agencies to control permafrost thawing."[1121] As discussed repeatedly throughout these comments with regard to multiple aspects of this project, this is completely contrary to NEPA. The agencies needed to obtain adequate baseline and project design information prior to authorizing this project to ensure that serious impacts would not be overlooked or unaddressed. Allowing AIDEA to do the vast majority of the design work and studies for this project after the completion of the NEPA process does not allow for a meaningful analysis and does not meet the agencies' NEPA obligations. Because AIDEA has yet to gather that important information or to design this project to a level that would allow for a meaningful analysis of the impacts in compliance with NEPA, BLM should rescind the prior authorizations and adopt the no action alternative.

The agencies must analyze the use of mitigation measures to address these impacts, including the use of different materials to reduce impacts. As explained in detail in the Engineering Report previously submitted by groups, "[r]igid foam insulation board (RFIB) can be added to any full-depth embankment design in the EIS and result in substantial gravel reduction. To be more specific, adding RFIB into the current EIS proposed fill design, for moderate soils, would result in about 61% reduction of gravel volume requirements during the construction period."[1122] Although the SEIS mentions that such measures may be considered to

[1119] *Id*. at 8.
[1120] *Id*.
[1121] 1 SEIS at 2-13 to -14.
[1122] 2019 Engineering Report at 1.

mitigate impacts, it in no way analyzes the potential environmental tradeoffs and does not indicate such a measure will actually be employed as part of the yet-to-be-completed final design.[1123]

Use of insulation could reduce the footprint of the roadway itself by 28%.[1124] Although both insulated and "gravel only" roadway surface and shoulder widths will remain the same, an insulated road embankment base will be substantially narrower than a "gravel only" embankment.[1125] A reduced road footprint will impact fewer acres of arctic tundra across the entire length of the road. Use of appropriate insulation will reduce impacts to tundra and permafrost from continual maintenance and AIDEA's contemplated gravel mining for the road in perpetuity, as decreasing the amount of gravel needed for the project by 61% would reduce the number and/or size of mines required for the project.[1126] "Without considering the potential for vastly decreasing the gravel quantity requirements, this EIS does not offer an accurate representation of the potentially different extent of impacts to the environment."[1127] This and other mitigation measures should have been considered in the SEIS. The agencies' lack of ability to analyze these measures, which AIDEA has yet to design, warrants adoption of the no action alternative.

D. The Analysis of Rare Plants and the Risks from Invasive Plant Species Is Still Lacking.

Currently, the natural vegetation in the roadway's area is largely intact. The SEIS acknowledges that there are no comprehensive surveys of baseline information related to vegetation or rare plants that could be along the corridor.[1128] BLM must perform these surveys in order to establish important baseline information. Instead, the SEIS contains conclusory statements that there is "sufficient information," but that does not make it so.[1129] It is unclear what information BLM is citing to as sufficient since the SEIS acknowledges that information has not been gathered. Baseline surveys to determine locations of venerable rare plants and the risks that non-native species might have upon the natural ecosystems should be done prior to authorizing this project. BLM's ROW itself recognizes AIDEA will need to provide that information prior to conducting surface disturbing activities, so it makes no sense that the agencies deferred gathering that baseline data at this stage — when they are required to conduct a site-specific analysis of this project and how to address its impacts.[1130] Those baseline surveys are necessary to appropriately account for the site-specific conditions and be able to establish robust and targeted mitigation measures.

[1123] 1 SEIS at 2-14.
[1124] 2019 Engineering Report at 5.
[1125] *Id*. at 6.
[1126] *Id*. at 5.
[1127] *Id.* at 6.
[1128] 1 SEIS at 3-71.
[1129] *Id*. at 3-71 n.15.
[1130] BLM ROW ex. A at 9.

BLM added some additional content related to rare plants in the SEIS that lists where there have been rare plants identified, as well as an updated map.[1131] However, that new content refers to a "ACCS 2023" study that is not identified in the list of references for the SEIS. It is unclear how comprehensive this new study was, but it appears from the contradictory statements elsewhere in the SEIS that there is still not comprehensive baseline data for rare plans and the SEIS appears to rely on "pre-construction surveys" to identify the presence of such species.[1132]

The SEIS also fails to adequately account for the likely significant spread of non-native vegetation that could occur from the construction and use of a roadway, and the proposed mitigation measures are inadequate to protect against their spread. There are significant risks from invasive species along the Ambler Road under any of the action alternatives. Introduction of invasive species will create competition for the native species and exacerbate the effects of the roadway system.

As the SEIS acknowledges, the spread of invasive species would create a long-term impact from the roadway if uncontrolled.[1133] Both TAPS and the Dalton Highway allowed for the establishment of non-native invasive species.[1134] Invasive species can hitchhike on vehicles and freight.[1135] BLM's maps show the significant concentration of these species along the Dalton Highway.[1136] The Ambler Road would add transportation corridors for these types of vegetation into a previously pristine area. AIDEA still proposes to conduct baseline surveys to identify rare plants and non-native invasive species prior to construction.[1137] But it is not clear from the SEIS if such surveys would happen systematically, how thorough they would be, or when they would occur.

The SEIS also makes the conclusory assertion that impacts from the spread of invasive species could be minimized through baseline and periodic surveys, as well as implementation of an Invasive Species Prevention and Management Plan (ISPMP).[1138] Yet, BLM has not developed this plan and merely proposes general properties and approaches the plan should incorporate — "The ISPMP would incorporate a landscape management approach across landowner boundaries, BMPs, Early Detection Rapid Response . . . , and reporting requirements to land managers. The ISPMP must be approved by the jurisdictional land manager prior to authorization of road construction and operations."[1139] As an initial matter, there are several different jurisdictional land managers across the length of the road corridor, which could lead to different requirements along different stretches of the road. This would be hard for operators and the public to understand and make it hard to enforce meaningful standards. Further, this is exactly the type of

[1131] 1 SEIS at 3-74; 4 SEIS at Map 3-10.
[1132] 1 SEIS at 3-74.
[1133] 1 SEIS at L-186.
[1134] U.S. Fish and Wildlife Alaska, Everyone Loses: Invasive Species in Alaska (June 20, 2017), *available at* https://medium.com/usfws/everyone-loses-invasive-species-in-alaska-e5dace94237c.
[1135] *Id.*
[1136] 4 SEIS at Map 3-11.
[1137] 3 SEIS at N-24, N-27.
[1138] 3 SEIS App. N at N-26.
[1139] 3 *id*. App. N at N-27.

plan that the public should have an opportunity to review as part of this permitting process. The public is unable to give meaningful feedback on the methods proposed to control and eradicate invasive species. Without an actual management plan for review by the public, the SEIS has no grounds to establish that spread of invasive species will likely be mitigated by those measures. The significant risks shown by the Dalton Highway is a clear indicator of the actual risk a roadway presents and which the agencies cannot brush aside without analysis. The agencies should not rely on a yet-to-be-developed plan to assume that will be sufficient to address invasive species. The SEIS needs to be more specific on how the introduction of non-native species to the area will be minimized.

Because the baseline information and project design and mitigation measures related to vegetation are still so unclear and undefined, the agencies should rescind the prior authorizations and adopt the no action alternative.

VII. BLM'S ANALYSIS OF AIR QUALITY IMPACTS IS INADEQUATE.

An adequate NEPA analysis and compliance with the Clean Air Act requires BLM to quantitatively analyze the air pollution impacts associated with each alternative considered in the SEIS, ensure prevention of significant deterioration of air quality, fully analyze a suite of enforceable mitigation measures, and address impacts from greenhouse gas emissions. As described above, BLM is also required to ensure its right-of-way authorization would comply with the Clean Air Act pursuant to its obligations under FLPMA. In order to adequately analyze these issues, BLM should have performed a complete quantitative analysis of criteria pollutants and modeled impacts, but failed to do so in its prior process and in the draft SEIS. Further exacerbating this issue, BLM's qualitative analysis in the draft SEIS is deficient. These issues must be rectified in the final SEIS.

Baseline levels of air quality must be established prior to allowing any road construction activities. In the absence of a baseline monitoring data record that is representative of ambient air conditions in the southern Brooks Range, BLM should ensure that quality-assured monitoring data are collected within the program area in accordance with EPA and State data quality criteria and that the data are made available to the public, prior to allowing any gravel mining or other construction activities to commence. No air pollutant monitoring sites are currently within the analysis area for the proposed Ambler Road; monitoring sites nearest the area are in Fairbanks and Denali National Park and Preserve (Denali).[1140] The final EIS relies on air quality data from Denali National Park and Preserve for its baseline qualitative discussion, but the project is roughly 200 miles north of the closest EPA designated Class I protected area of Denali.[1141] BLM states that this because "[t]there are currently no air pollutant monitoring sites located within the analysis area for this project."[1142] The final EIS does not explain what the differences may be between background air quality within the project area and Denali, which is many miles away and within a protected National Park.

[1140] 1 SEIS at 3-51.
[1141] *Id*. at 3-52.
[1142] *Id*. 3-51.

Understanding background concentrations of pollutants is important to determining whether a project's emissions would violate air quality standards. BLM attempts to waive this fact away by simply stating that "this station is not used to demonstrate compliance with [National Ambient Air Quality Standards],"[1143] but fails to explain how the agency would demonstrate compliance with applicable air quality standards in the complete absence of air quality background data for this region. The Ambler region is home to numerous communities and activities, such as mining exploration, occur in the area.[1144] This project would also dramatically increase emissions along the Dalton Highway. Without background data about the region where the project would be located, or a discussion of how BLM could reasonably account for differences between air quality in Denali and the project area, the agencies cannot adequately consider the incremental impacts of emissions from the project.[1145]

The area of the proposed Ambler Road contains many rural communities, but BLM does not discuss how human-induced air pollutant emissions from industrial processes and mobile emissions may alter the air quality in this region and does not adequately explain its assumptions that background emissions would be similar across these two areas. The lack of relevant background data for the project area is a significant shortcoming that should be addressed during this remand. BLM should deem AIDEA's application incomplete, collect accurate background data to support its air quality analysis, and perform a supplemental EIS using that data before the agencies consider approving the Ambler Road.

After establishing baseline air quality, BLM must complete a comprehensive, quantitative modeling analysis of construction and use of the Ambler Road in this SEIS in order to prevent significant impacts. BLM completed a limited quantitative analysis in the final EIS, but that analysis suffered from multiple, significant deficiencies which must be corrected as part of the SEIS process to ensure compliance with both the Clean Air Act and NEPA.

First, the final EIS failed to analyze all project emissions in its quantitative analysis. The EIS stated that it considered the type, duration, and potential magnitude of air pollutants, and pointed to Appendix D, Table 24 as showing construction and operation activities with the potential to generate air emissions.[1146] But that table only considered emissions from road traffic *after* the project is built.[1147] It did not consider emissions from construction activities, aircraft traffic, gravel mining, camp use, and maintenance activities — which are all within the project's scope. Because AIDEA provided "no specific construction and operations plan," the draft SEIS states it was not possible "to quantify the criteria air pollutants for construction, or maintenance

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[1143] *Id*.

[1144] *See e.g*., 2 FEIS App. H at H-36–37 (Appendix H acknowledging past and present human use of the area but not explaining the severity or magnitude of human-caused emissions on background air quality).

[1145] *Great Basin Res. Watch*, 844 F.3d at 1101; *see also* 2019 PDEIS Agency Response Matrix at 6 ((EPA recommending the FEIS, at a minimum, provide quantitative estimates of emissions along the Dalton Highway).

[1146] 1 SEIS at 3-54.

[1147] 1 SEIS, App. D at D-19.

and operations activities."[1148] By only considering emissions from very limited operational activities, the EIS skewed its analysis and minimized the extent and severity of air quality impacts.

This is also true for its quantitative assessment of greenhouse gases (GHGs), which considered emissions from a narrow, but different, subset of construction and operation activities.[1149] As explained further below, BLM's assessment of potential GHG emissions is deficient.

To comply with NEPA, agencies must determine whether the project would comply with air quality standards, either qualitatively or quantitatively.[1150] To the extent the SEIS quantified a fraction of the project's emissions,[1151] it did not explain how those emissions relate to National Ambient Air Quality Standards (NAAQS), standing alone or in tandem with background air quality. Understanding a project's emissions and how they contribute to background pollutant concentrations is critical to determining whether a project's emissions would violate NAAQS.[1152] No such analysis occurred, but should be completed in the final SEIS.

BLM must independently estimate the emissions inventory, model air pollution impacts associated with each of the action alternatives, and compare these results to the baseline of its no action alternative. The absence of modeling deprives the public and decision makers from being able to understand the air quality impacts of the Ambler Road and evaluate the potential tradeoffs and differences between alternatives, including between the no action and the action alternatives. Air quality modeling is a necessary tool for assessing future air pollutant impacts under NEPA and supporting BLM's conclusion that construction and use of the Ambler Road would be unlikely to exceed health-based NAAQS and thresholds set to protect against adverse impacts to air quality related values. A quantitative modeling assessment of the air quality impacts from the alternatives, based on modeling of emissions associated with the specific assumptions for the action alternatives — including the location of the road, gravel mines, phases of construction, and road traffic patterns — would be needed in order to understand whether or not impacts would be greater under certain alternatives for some pollutants, in some locations. This analysis should be included in the final SEIS.

[1148] 1 FEIS at 3-54.

[1149] 1 SEIS App. D at D-20 (not evaluating GHG emissions from operation of maintenance stations, annual maintenance activities through anticipated life of road, construction and operation of any mines, or vehicle use of road); 1 FEIS App. D at D-21 (considering only GHG emissions from ore transport).

[1150] 40 C.F.R. §1502.2(d) (requiring EIS "state how alternatives considered in it and decisions based on it will or will not achieve the requirements [NEPA] and other environmental laws and policies"); *see also Great Basin Res. Watch*, 844 F.3d at 1103; *Montana Wilderness Ass'n v. McAllister*, 658 F. Supp. 2d 1249, 1256 (D. Mont. 2009).

[1151] 1 SEIS, App. D at D-19.

[1152] *See Tinicum Twp., Pa. v. U.S. Dep't of Transp*., 685 F.3d 288, 294–95 (3d Cir. 2012) (generally explaining Clean Air Act and overlap with NEPA).

The draft SEIS's analysis of the qualitative impacts to air quality is also wildly deficient and falls far short of the agency's NEPA obligation to take a hard look at impacts. As an initial matter, the draft SEIS still entirely fails to consider AIDEA's proposal to develop the road in three phases, with phase one being a pioneer road that will require active maintenance and continual construction. The draft SEIS completely ignores the fact that impacts from traffic and road use would be ongoing at the same time as construction since there will be simultaneous work to maintain the pioneer road and/or construct subsequent of road phases, with associated gravel mining activities. Emissions from these activities would occur at the same time and within the same area, vastly increasing emissions and significantly impacting air quality.

The qualitative analysis was further flawed because it focuses on particulate matter from fugitive dust but overlooks emissions from the extensive vehicle and aircraft traffic needed to support road construction, bridge building, gravel mining, culvert installation, and worker transport.[1153] The non-fugitive dust emissions from these activities are not discussed. To the extent the draft SEIS acknowledged emissions from construction camps and maintenance stations, it merely noted that "[a]ir quality impacts would also result" from these sources.[1154] But the draft SEIS does not identify the types of emissions, their duration, or magnitude.[1155] Similar to the flaws with BLM's limited quantitative analysis, the qualitative analysis also ignored that activities to maintain the Phase I road and construct subsequent phases — with associated gravel mining, construction, and worker transport — would occur while the road is in use, compounding those emissions. The impacts from these emissions occurring simultaneously are not analyzed in the draft SEIS, which treats "operational" or traffic emissions as post-construction.[1156] For these reasons, the draft SEIS's qualitative analysis is insufficient.

By way of comparison, the Greater Mooses Tooth 1 Supplemental EIS modeled air quality impacts from construction and operation of a substantially smaller seven-mile gravel road, one gravel pad, and associated gravel mine. There, the quantitative analysis found there would be increases in nitrogen dioxide (NO2), sulfur dioxide (SO2), and carbon monoxide from construction activities.[1157] Indeed, for the GMT1 project the nitrogen dioxide emissions alone were predicted to reach **89%** of the allowable NAAQS/AAAQS levels.[1158] It is shocking that BLM states that a proposal to build a road approximately **30 times longer** "would not be expected to exceed applicable air quality standards."[1159] The final EIS did not respond to comments questioning how a road approximately 30 times longer with 40-plus gravel mines would not be expected to exceed the NAAQS, or otherwise justify its conclusory assertions that the project would not violate these standards in the absence of accurately quantifying and

[1153] 1 SEIS at 3-55; *Id*. at 2-7 to -10.

[1154] *Id*. at 3-55.

[1155] *Great Basin Mine Watch*, 456 F.3d at 971 (explaining general statements about possible impacts are not a hard look).

[1156] 1 SEIS at 3-55.

[1157] 1 Bureau of Land Mgmt., Final Supplemental Environmental Impact Statement for the Alpine Satellite Development Plan for the Proposed Greater Mooses Tooth One Development Project 261–65 (2014).

[1158] *Id*. at 264.

[1159] 1 SEIS at 3-58.

modeling the project's emissions. These flaws should be rectified in the final SEIS by way of BLM completing a quantitative analysis and modeling all of the Ambler Road's project emissions.

Further, the draft SEIS's conclusory assertions that exceedances of air quality thresholds would be "minimized" because the nearest communities to the road are eight miles away and the winter construction season is "short" are not supported by any analysis in the record.[1160]

Moreover, BLM should consider emissions produced as a result of mining exploration and development activities in the Ambler Mining District. As discussed above, the road and mining development are connected actions and their impacts must be considered together in a single EIS. The draft SEIS merely states that "[i]mpacts from mines in the District will be site-specific and permitted specifically for proposed operations and potential emissions to avoid exceeding air quality standards."[1161] BLM further assumes that mining plus construction of other spur roads and transportation along the road way are "unlikely to exceed regional air quality standards" because otherwise they could not be permitted.[1162] But BLM cannot kick the can down the road, so to speak, on this critical analysis, as any emissions from mining activities will be additive to emissions from construction, operation, and maintenance of the proposed road.

The draft SEIS must analyze or condition construction and use of the Ambler Road on a comprehensive set of required, measurable, and enforceable mitigation measures to ensure there will be no significant impacts to air quality associated with the project. The draft SEIS contained no legitimate mitigation measures directed at minimizing or avoiding air quality impacts. The SEIS points to general requirements that AIDEA create a future dust control plan, but those are merely permitting requirements of other agencies and otherwise not effective, enforceable mitigation measures.[1163] Additionally, specific protective measures regarding use of asbestos must be included in the SEIS, as well as other meaningful, project-specific mitigation measures to reduce impacts to air quality. The draft SEIS appears to rely primarily on rain to avoid accumulation of asbestos on vegetation.[1164] There is no citation for this assumption, but regardless, relying on rain to mitigate impacts is not sufficient to ensure protection of human health and the environment from asbestos, nor does that address other potential effects of asbestos being further dispersed across the landscape via runoff.

Monitoring does not mitigate against impacts to air quality, and BLM should not conflate these requirements. NEPA requires BLM to consider mitigation measures and reasonable alternatives to eliminate or mitigate adverse impacts to air quality. BLM must put forth an alternative that ensures no significant air quality impacts and full compliance with the Clean Air Act. This would include one that fully considers whether there will be unacceptable health risks

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[1160] *Id.*

[1161] *Id*. at 3-61.

[1162] *Id*. at 3-60.

[1163] *Id*. at 3-55 ("To the extent that dust containing NOA may be generated by road use, levels of fugitive dust with NOA on vegetation, such as berries, are likely to remain fairly constant over time, due to the washing effect of rain. The dust would not accumulate on the vegetation").

[1164] *Id*.

associated with criteria and hazardous air pollutant impacts, significant cumulative visibility impacts, or significant deterioration of air quality. BLM should use modeling to determine what specific mitigation measures and pace / location / intensity of construction and traffic patterns on the Ambler Road will be needed to ensure BLM's actions will not cause or contribute to violations of the NAAQS or adverse impacts to air quality related values, and then BLM must include those measures as enforceable mitigation measures in the final SEIS.

Finally, as discussed further in the next section, BLM should adequately address greenhouse gas emissions and climate change impacts from construction of the Ambler Road, its associated mines, and future traffic in the area. The first step for such an analysis requires BLM to quantitatively model the significance of GHG emissions from the Ambler Road project and its cumulative effects.

VIII. THE SEIS DOES NOT ADEQUATELY ADDRESS AND DISCLOSE CLIMATE CHANGE RELATED IMPACTS.

BLM must fully account for the project's direct and cumulative climate impacts, as well as the impacts of climate change on the road and connected mines. NEPA requires that agencies discuss not only a proposed action's environmental effects, but also their significance.[1165] Therefore, in addition to accurately quantifying the GHG emissions consequences of the Ambler Road and associated mining, BLM must put the project's emissions in context. Because any project's emissions appear "individually minor" when compared against global (or even national) totals, quantifying emissions is only a first step; agencies must also explain the project's "incremental impact" on climate change.[1166] In other words, an agency must explain how a project's GHG emissions would move the planet closer or further away from unacceptably dangerous warming, or a "tipping point" at which catastrophic impacts would occur.[1167] In conducting this analysis, BLM must consider high quality and accurate climate science, including the most recent scientific information.[1168] BLM must also disclose what effect a decision to approve the Ambler Road would have on the United States' commitments to limit warming to below 1.5°C. Moreover, BLM should do more than just consider this information: it can and should reach a decision that is in accordance with the science and the federal government's commitment to respond to the climate crisis by selecting the no action alternative.

The proposal to authorize construction of a 211-mile industrial road to access and develop an extensive mining district in a remote region of Alaska, which would require a major

[1165] 40 C.F.R. § 1500.1.

[1166] *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1215–17 (9th Cir. 2008); *see also California v. Bernhardt*, 472 F. Supp. 3d 573, 623 (N.D. Cal. 2020) ("[Agencies] must communicate 'the *actual* environmental effects resulting from . . . emissions' of greenhouse gas, not just quantify [those emissions].") (quoting *Nat'l Highway Traffic Safety Admin.*, 538 F.3d at 1216).

[1167] *See Nat'l Highway Traffic Safety Admin.*, 538 F.3d at 1220–27 (concluding petitioners' argument raised substantial questions about the effects of the agency's action on the human environment).

[1168] 40 C.F.R. § 1500.1(b) (requiring "high quality" information and "[a]ccurate scientific analysis").

build-out of infrastructure and a massive transportation network including trucks, airplanes, helicopters, trains, and ships, must be analyzed in the context of the current global climate crisis.

An overwhelming international scientific consensus has established that human-caused climate change is already causing severe and widespread harms and that climate change threats are becoming increasingly dangerous. The climate crisis, caused primarily by fossil fuel emissions, poses an existential threat to every aspect of society. Fossil fuel-driven climate change has already led to more frequent and intense heat waves, floods, and droughts; more destructive hurricanes and wildfires; rising seas and coastal erosion; increased spread of disease; food and water insecurity; acidifying oceans; and increasing risk of species extinction and collapse of ecosystems. The climate crisis is killing people across the nation and around the world, accelerating the extinction crisis, and costing the U.S. economy billions in damages every year. The harms from the climate crisis and fossil fuel pollution are not felt equally, but instead fall most acutely on communities of color, as well as low-wealth and other frontline communities, thus worsening the environmental justice crisis as well. The vast scientific literature documenting these findings has been set forth in a series of authoritative reports from the Intergovernmental Panel on Climate Change (IPCC) and U.S. Global Change Research Program.[1169] The IPCC, the international scientific body for the assessment of climate change, concluded in its *Climate Change 2021: The Physical Science Basis* report that: "[i]t is unequivocal that human influence has warmed the atmosphere, ocean and land. Widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere have occurred," and further that "[t]he scale of recent changes across the climate system as a whole – and the present state of many aspects of the climate system – are unprecedented over many centuries to many thousands of years."[1170] Without limits on fossil fuel production and deep and rapid emissions reductions, global temperature rise will exceed 1.5°C and will result in catastrophic damages in the U.S. and around the world.[1171]

[1169] Intergovernmental Panel on Climate Change, *Summary for Policymakers, in Climate Change 2021: The Physical Science Basis*, Working Group I Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (2021), https://www.ipcc.ch/report/sixth-assessment-report-working-group-i [IPCC, *Summary for Policymakers* 2021]; U.S. Global Change Research Program, Climate Science Special Report: Fourth National Climate Assessment, Vol. I (2017), https://science2017.globalchange.gov/; U.S. Global Change Research Program, *Fourth National Climate Assessment, Volume II: Impacts, Risks, and Adaptation in the United States* (Rev. Mar. 2021), https://nca2018.globalchange.gov/downloads/NCA4_2018_FullReport.pdf [NCA4 Vol. II].

[1170] IPCC, *Summary for Policymakers* 2021 at 4 and 8.

[1171] IPCC, 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 (2018), https://www.ipcc.ch/sr15/ [IPCC 2018]. IPCC, Climate Change 2022, Impacts, Adaptation and Vulnerability (2022), https://www.ipcc.ch/report/ar6/wg2/; IPCC, AR6 Synthesis Report (2023), https://www.ipcc.ch/report/sixth-assessment-report-cycle/.

Climate change is being acutely felt in Alaska, where parts of the Arctic are warming at four times the rate of the rest of the world.[1172] The effects of warming in Arctic Alaska have been especially severe. The Arctic's average winter temperature has increased by 6°F over the past 60 years, and the Arctic is expected to warm by an additional 10°F to 12°F this century.[1173] In the Arctic, climate change is causing, and will continue to cause, sea-level rise, sea-ice melt, river flow changes, and permafrost thaw.[1174] NOAA's 2022 Arctic Report card explained that "[s]hifting seasons and climate-driven disturbances, such as wildfires, extreme weather, and unusual wildlife mortality events, are becoming increasingly difficult to assess within the context of what has been previously considered normal."[1175]

The recent U.S. Global Change Research Program's Fifth National Climate Assessment (NCA5), published in 2023, identified the risks of climate change that threaten the United States, and explained how a lack of mitigation and adaptation measures will result in dire climate consequences.[1176] That report also confirmed that Alaska is on the front lines of climate change, as it is warming faster than any other state, and faces a myriad of issues associated with a changing climate:

> Since NCA4 was published in 2018, Alaska has continued to experience rapid, widespread, and extreme climate-related changes in the form of ocean warming, record low sea ice, the world's highest rates of ocean acidification, an increasing frequency of extreme events such as marine heatwaves and extreme snow and rain storms in winter. These changes have reduced biological productivity, shifted seasonal timing of productivity, altered food web dynamics, and caused steep declines in prey. In many freshwater environments, these changes result in a combination of reduced summer streamflows, increased summer water temperatures, hypoxia, and decreased prey abundance, which are lethal to many aquatic species. There is no indication that these trends will slow or reverse in the near future.[1177]

NCA4 stated that "[t]he impacts of climate change will likely affect all aspects of Alaska Native societies, from nutrition, infrastructure, economics, and health consequences to language, education, and the communities themselves."[1178]

[1172] Mika Rantanen et al., *The Arctic has warmed nearly four times faster than the globe since 1979*, Communications Earth & Environment (2022)3:168 (Aug. 11, 2022).

[1173] BLM, National Petroleum Reserve in Alaska, Final Integrated Activity Plan and Environmental Impact Statement, Vol. 1 at 3-2 (June 2020).

[1174] *Id*. at 3-3.

[1175] Matthew L. Druckenmiller et al., Arctic Report Card 2022, NOAA at 2 (Dec. 2022).

[1176] U.S. Global Change Research Program, Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II: Report-in-Brief (2018).

[1177] *Id*. at sec. 29.

[1178] U.S. Global Change Research Program, Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II: Report-in-Brief (2018).

BLM should meaningfully consider and address both the potential effects of this project on climate change and the effects of climate change on the project itself and its environmental impacts.

A. The SEIS Should Adequately Address the Potential Effects and Contribution of the Proposed Ambler Road Project on Climate Change.

The Ambler Road proposal includes not only the 211-mile road, from the Dalton Highway to the Ambler Mining District, but also "multiple material sites, temporary construction camps and long-term maintenance camps, airstrips, a fiber optic communications line, radio communications sites, and guard stations."[1179] The term of the requested right-of-way is 50 years.[1180]

The SEIS identifies — without examining — numerous activities that will contribute to climate change, including the permanent destruction of wetlands and permafrost; considerable transportation including trucks, airstrips, helipads, trains, and ships with associated emissions; the significant burning of fossil fuels at the four mine development sites, permanent work camps, and additional infrastructure; and the additional considerable power that would be needed at the eventual smelters.

The SEIS quantifies only a small subset of GHG emissions and other pollutants associated with the Ambler Road, inappropriately minimizing the extent of the emissions associated with the project's construction, maintenance and operations. BLM states that it calculated GHG emissions for the construction phase of the Ambler Road for each alternative based on Federal Highway Administration fuel use factors in new highway and bridge construction.[1181] But BLM does not explain how such general, and presumably nationally applicable, factors could reasonably account for the full scope of activities of building a road in a remote region with little to no existing infrastructure, particularly where mining for gravel could also be happening on-site. Otherwise, BLM provides estimates of GHG emissions from vehicle traffic on the road, noting that GHGs from fuel combustion from vehicles is one of the most likely sources of GHG emissions.[1182] Nowhere does BLM explain why it could calculate these GHG emissions from vehicles using the road, but could not quantify criteria pollutants associated with this same traffic.

Even in the absence of tangible data, the SEIS offers the conclusory assertion that "[w]hile this project itself would not generate sufficient GHG emissions to affect global climate, incrementally with other projects, it would contribute to the accumulation of relatively small emissions worldwide that have together resulted in effects to the global climate."[1183] Not only is this finding unsupported factually, but it is also contrary to BLM's legal mandates under NEPA.

[1179] 1 SEIS at ES-1.
[1180] *Id*.
[1181] 1 SEIS, App. D at D-20
[1182] *Id*.
[1183] 1 SEIS at 3-56.

NEPA requires agencies to "provide the necessary contextual information about [an action's] cumulative and incremental environmental impacts."[1184] For environmental impacts that have a tipping point, quantification of a project's pollutants "is a necessary component" of the agency's analysis but "not a sufficient description of the actual environmental effects that can be expected [from the project]."[1185] Applying this rule in the climate change context, the Ninth Circuit has held that an agency must "evaluate the 'incremental impact' that [GHG] emissions will have on climate change or on the environment more generally in light of other past, present, and reasonably foreseeable actions."[1186] Agencies must consider these emissions in context.[1187] District courts have further explained why quantifying emissions without additional context is insufficient.[1188] An agency "must communicate the *actual* environmental effects resulting from emissions of greenhouse gas, not just quantify them."[1189] BLM must look at the Ambler Road and other projects "in combination with each other,"[1190] to determine "'whether, or how, to alter the program to lessen cumulative impacts' on climate change."[1191] The SEIS's conclusory assertions that the Ambler Road's unquantified emissions would be too small to effect global climate are baseless and contrary to NEPA.

The Council on Environmental Quality's (CEQ) Guidance on Consideration of Greenhouse Gas Emissions and Climate Change provides guidance on how federal agencies should address and analyze climate change in their NEPA analyses.[1192] The Guidance applies to all federal agency actions subject to NEPA, "including land and resource management decisions."[1193] This guidance should be used by BLM in its reconsideration of the Ambler Road.

Further, various methodologies exist that are generally accepted in the scientific community to use in assessing the significance of such a project. For example, the cumulative lifecycle emissions from the Ambler Road and mines enabled by it, in combination with other fossil fuel production and other emissions, should be put in the context of the global and U.S. carbon budgets, based on climate change thresholds.

[1184] *Nat'l Highway Traffic Safety Admin.*, 538 F.3d at 1217; *see also v. Bureau of Land Mgmt.*, 387 F.3d 989, 995 (9th Cir. 2004) (agencies must analyze the "degree that each [environmental] factor will be impacted").

[1185] *Klamath-Siskiyou Wildlands Ctr.* 387 F.3d at 995; *see also id.* at 997 (setting aside environmental assessments that, among other things, quantified the total amount of spotted owl habitat that the projects would adversely affect but did not discuss "the effect of this loss on the spotted owl throughout the watershed").

[1186] Nat'l Highway Traffic Safety Admin., 538 F.3d at 1216.

[1187] *Id.*

[1188] *California v. Bernhardt*, 472 F. Supp. 3d at 623 (citing Kevin M. Stack & Michael P. Vandenbergh, *The One Percent Problem*, 111 COLUM. L. REV. 1385, 1393 (2011)).

[1189] *Id.* (internal quotation marks and alterations omitted).

[1190] *WildEarth Guardians v. U.S. Bureau of Land Mgmt*., 457 F. Supp. 3d 880, 894 (D. Mont. 2020) (citing Nat'l Highway Traffic Safety Admin., 538 F.3d at 1217).

[1191] *Id.* (quoting *Churchill Cty. v. Norton*, 276 F.3d 1060, 1080 (9th Cir. 2001)).

[1192] *See* 88 Fed. Reg. 1196 (Jan. 9, 2023).

[1193] *Id*. at 1198.

This administration has also admonished: "It is essential that agencies capture the full costs of greenhouse gas emissions as accurately as possible, including by taking global damages into account."[1194] Secretarial Order No. 3399 directs bureaus and offices to "use appropriate tools, methodologies, and resources available to quantify GHG emissions and compare GHG quantities across alternatives," with the "social cost of greenhouse gases" being a "useful measure to assess the climate impacts of GHG emission changes for Federal proposed actions."[1195]

While the SEIS purports to use of the social cost of greenhouse gases to estimate the cost of the Ambler Road's emissions,[1196] such estimates are insufficient. BLM only estimates a subset of the GHG emissions associated with the Ambler Road, as described above, and relies solely on those estimates to assess the social cost of GHGs. Moreover, there is no consideration of the costs of GHGs associated with future mining enabled by the Ambler Road, which is a critical omission that should be rectified in the final SEIS.

The U.S. Environmental Protection Agency ("EPA") has produced the most recent federal estimates for the social cost of carbon to "allow analysts to incorporate the net social benefits of reducing emissions of [] greenhouse gases, or the net social costs of increasing such emissions, in benefit-cost analysis, and when appropriate, in decision making and other contexts.[1197] EPA presented values for social costs of CO_2 from 2020 to 2080, ranging from $120 to $600 (in 2020 dollars per metric ton of carbon dioxide).[1198] These values can help in analyzing the costs imposed by the net GHG emissions that might eventually result from development, especially where BLM monetizes the purported economic benefits of the project.

The social cost of carbon is another method that BLM could use to quantify and disclose the harm caused by the proposed project's greenhouse gas emissions. In fact, in three recent cases where the agency's NEPA analysis quantified greenhouse gas emissions but claimed that it was impossible to discuss the effects of these emissions, courts held that the agency's refusal to use the social cost of carbon to illustrate the impact of these emissions was arbitrary and capricious.[1199]

The EPA social cost of carbon protocol is an appropriate tool for analyzing the climate impacts of the greenhouse gas emissions of the Ambler Road proposal. The social cost of carbon

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[1194] Executive Order 13990, Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis, 86 Fed. Reg. 7037, 7040 (Jan. 25, 2021).

[1195] Secretary of the Interior, Order No. 3399, Sec. 5(b).

[1196] 1 SEIS App. D at D-21 to -22.

[1197] U.S. Environmental Protection Agency, EPA External Review Draft of Report on the Social Cost of Greenhouse Gases: Estimates Incorporating Recent Scientific Advances, at 1 (Sept. 2022).

[1198] *Id.* at 3.

[1199] Sierra Club v. FERC, 867 F.3d 1357, 1374 (D.C. Cir. 2017); Montana Envt'l Info. Ctr. v. U.S. Office of Surface Mining, 274 F. Supp. 3d 1074, 1097 (D. Mont. 2017); High Country Conservation Advocates v. United States Forest Serv., 52 F. Supp. 3d 1174, 1190-91 (D. Colo. 2014).

provides a metric for estimating the economic damage, in dollars, of each incremental ton of carbon dioxide emitted into the atmosphere.[1200] By translating climate impacts, and metric tons of greenhouse gasses in particular, into dollars, the social cost of carbon offers BLM an easy to use and easy to understand tool that would allow the public and decisionmakers to better understand the climate impacts of the proposed project.

Further, NEPA requires BLM to "[i]nclude appropriate mitigation measures not already included in the proposed action or alternative."[1201] Additionally, in considering the environmental consequences of the proposed action, BLM must include a discussion of the "[m]eans to mitigate adverse environmental impacts."[1202] Mitigation includes avoiding the action altogether by not taking a certain action or parts of the action, and minimizing impacts by limiting the degree or magnitude of the action and its implementation, as well as restoration and compensation.[1203] Mitigation must be assessed "in sufficient detail to ensure that environmental consequences have been fairly evaluated."[1204] The SEIS failed to consider a range of mitigation measures sufficient to reduce the Ambler Road's direct, indirect, and cumulative climate impacts. BLM should therefore consider and address in the final SEIS the various ways and methods that these emissions could be mitigated, including the emissions of the indirect and reasonably foreseeable future actions, and develop or include any alternatives focused on lowering these anticipated emissions.

To comply with NEPA, BLM must quantify the overall greenhouse gas emissions that would result from the Ambler Road proposal, including all direct, indirect, and cumulative projects, activities, and impacts, and then meaningfully assess and disclose the impacts and consequences of these additional emissions.

B. The SEIS Failed to Adequately Address the Potential Impacts of Climate Change on the Proposed Ambler Road.

The Ambler Road is proposed in a region already heavily impacted by climate change and would contribute to a continuing worsening climate through additional, significant greenhouse gas emissions that were not properly quantified or adequately disclosed in the SEIS. The SEIS must contain a detailed analysis of the relationship between climate change and the proposed action to comply with NEPA and with the updated Council on Environmental Quality's (CEQ) guidance.[1205]

[1200] U.S. Environmental Protection Agency, EPA External Review Draft of Report on the Social Cost of Greenhouse Gases: Estimates Incorporating Recent Scientific Advances, at 2 (Sept. 2022).

[1201] 40 C.F.R. § 1502.14(e).

[1202] *Id*. § 1502.16(h).

[1203] *Id*. § 1508.20.

[1204] Neighbors of Cuddy Mt. v. U.S. Forest Serv., 137 F.3d 1372, 1380 (9th Cir. 1998).

[1205] National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change, 88 Fed. Reg. 1196 (Jan. 9, 2023).

Continuous permafrost underlies the region of the proposed action, and the Ambler Road is expected to cause soil in the proposed corridors to warm and potentially thaw, as climate temperature trends and permafrost temperatures show a defined increase. BLM acknowledged that increased permafrost temperatures may lead to increased creep rates of soils on slopes and slope failures, and permafrost thawing and warming may lead to development of thaw settlement and thaw ponds.[1206] The road will negatively impact vegetation, permafrost conditions, and waterways in an area already under stress from climate change, making the cumulative effects of the project difficult to predict. As we saw recently with the Denali Park Road, building gravel roads through permafrost areas can lead to serious infrastructure problems with great environmental and financial consequences.[1207] BLM should closely consider the Denali Park Road as an instructive example of how gravel roads in permafrost landscapes will certainly degrade over time, and how such degradation may accelerate dramatically, hastened by thawing of the underlying layers of once-perpetually frozen permafrost. This is a particularly significant concern considering the already high likelihood of permafrost degradation likely to occur from the start of this project if AIDEA is allowed to proceed with its Pioneer Road, as discussed earlier in these comments.

The final SEIS must explain how the continually changing and warming planet will impact this proposed action and its direct, indirect, and cumulative impacts, as NEPA requires. Earlier this year, the CEQ updated guidance on how agencies should consider and analyze greenhouse gas emissions and climate change in NEPA reviews. The guidance states, "NEPA reviews should consider the ongoing impacts of climate change and the foreseeable state of the environment, especially when evaluating project design, siting, and reasonable alternatives."[1208] While the SEIS mentions how climate change induced permafrost thaw presents challenges to "construction of new infrastructure,"[1209] it does not include any specific project-level analysis of this risk. The SEIS also notes that climate change "could potentially affect the practicability and technical feasibility of the action alternatives over time. For example, changing climate conditions could negatively affect the reliability and practicality of a winter construction access trail, which is common to all features of the action alternatives."[1210] But the SEIS then fails to consider the scope and magnitude of these negative effects, and what that might mean in terms of the project design and impacts on the ground. This is insufficient.

To comply with NEPA and the CEQ guidance, the SEIS must provide a more robust analysis of the impacts of climate change on the project. For instance, how will the warming and thawing permafrost impact the road itself, the airstrips, and other infrastructure? How will the increase in precipitation, flooding, and intensity of storm events likely add to the anticipated environmental impacts of the reasonably foreseeable tailings basins, waste rock piles, and open mine pits? How realistic is both funding and effectiveness of perpetual water monitoring and

[1206] 1 SEIS at 3-8.

[1207] Yereth Rosen, Worsening thaw-spurred landslide curtails access to Alaska's Denali park, REUTERS (APR. 26, 2021) https://www.reuters.com/business/environment/worsening-thaw-spurred-landslide-curtails-access-alaskas-denali-park-2022-04-26/.

[1208] 88 Fed. Reg. at 1207.

[1209] 1 SEIS 3-32.

[1210] *Id*. at 2-12.

treatment at the four mine sites in a continuing warming and changing climate including potentially increased precipitation? How would this project impact the integrity of permafrost and what are the climate implications? What sort of reclamation plan can be designed which will be effective 50 years in the future at the end of the road's useful life?

Studies analyzing precipitation in Alaska indicate that extreme precipitation events will increase in frequency and intensity over the coming decades.[1211] This could have disastrous effects on the road's stability and safety, given the numerous water crossings needed the proposed route paralleling the Brooks Range. And because the Ambler Road proposal is for a minimum period of 50 years, the analysis of the potential impacts resulting from the management of wastewater, tailings, and waste rock at the mine sites must consider what is currently being predicted for decades into the future. In fact, recent experience shows that abnormally high levels of precipitation and ensuing flooding can destroy waste dumps, seepage capture systems, and mine access roads; cause impoundments to overflow and dams to be breached; and push water treatment costs over budget or cause releases of untreated water.[1212] In sum, the BLM must consider and analyze all aspects of this proposal in the context of a changing climate and environment and cannot assume conditions in this region over the next 50 years will be the same as the past or present.

IX. THE SEIS FAILS TO ADEQUATELY CONSIDER SIGNIFICANT ADVERSE IMPACTS TO PUBLIC HEALTH.

There are a number of issues related to public health that are not adequately addressed in the SEIS. Impacts to public health could result from changes in diet and nutrition; exposures to contaminants from construction, use of the road, and mining; safety issues along the corridor; acculturative stress; and economic impacts — to name just a few. These impacts extend to not only individuals directly using or working at the mines, but also to nearby communities even if they are not directly connected to the Ambler Road. While the SEIS improved its analysis of subsistence impacts as compared to the prior EIS, BLM still does not sufficiently analyze the impacts on local communities from traffic, construction, operation of the road, gravel mining, and any mining activities' impacts on air quality, including from the potential use of gravel with naturally occurring asbestos, and associated impacts on physical and mental health.

As described herein, the SEIS provides insufficient information regarding the details of this project (e.g., traffic volume, location of gravel mines, construction activities) to engage in a meaningful analysis of the Ambler Road's health impacts. The SEIS is also either inaccurate or inadequate in its analysis of impacts to important resources such as air quality, wildlife, and water quality, which are critically important resources that directly relate to public health. For the communities along the road corridor, changes in subsistence resource availability from the

[1211] *See* K. E. Bennett, *Changes in Extreme Hydroclimate Events in Interior Alaskan Boreal Forested Watersheds*, 197 (Dec. 8, 2014) (unpublished Ph.D. dissertation, University of Alaska Fairbanks).

[1212] *See* W. McCullough, W. Jepson & B. Maehl, *Zortman: Dealing with Extreme Weather Events* at 5, 9-11, 15-16, 19, 26-28 (2011); T. D. Pearce *et al.*, *Climate Change and Mining in Canada*, 16 Mitigation & Adaptation Strategies for Global Change 347, 357-58, 360 (2011).

Ambler Road and associated mines could impact food security and the health benefits of established social networks dependent on wild resources, which can in turn have serious mental health and other ramifications. Moreover, compromised food security has the potential to have direct and secondary impacts to individuals' nutrition and wellness and may increase the risk of chronic conditions, including diabetes and some forms of cancer.

BLM should have required AIDEA to complete multiple-year surveys to provide necessary baseline data for the SEIS and a revised Health Impact Assessment (HIA), but failed to do so. This information is needed to understand adverse health impacts on local communities, and subsistence impacts inherent from this proposed project. As a result, the SEIS provides only a cursory discussion of impacts to community health. In addition to missing information, the SEIS does not summarize or incorporate important findings from the HIA, making it difficult for members of the public to review the documents in a comprehensive way. BLM should require AIDEA to complete a new HIA that contains extensive public input from affected communities. BLM should then incorporate the important findings regarding significant adverse health impacts that are likely to occur as a result of the proposed Ambler Road. BLM should rescind its permits for the Ambler Road until these new studies and analysis are complete.

BLM should have, but failed to, fully revise the analysis contained in the SEIS to address these shortcomings and to adequately characterize impacts to public health. Instead, the bulk of the updated information in this section of the SEIS focuses on economics, particularly highlighting the potential economic benefits of the Ambler Road.[1213] But as described below, this economic analysis is overly rosy and incomplete. To the extent that BLM included new information regarding public health impacts, it minimizes the scope and scale of the potential negative impacts on community health from the Ambler Road. For example, while BLM now acknowledges that social and cultural impacts could occur from prohibited substances entering communities, it nonetheless continues to rely on assertions that AIDEA's staffed gatehouse would preclude such impacts because it would "prevent public access" of the road.[1214] But BLM has already deemed public access reasonably foreseeable in the SEIS. The agency cannot conveniently abandon that acknowledgment here to avoid consideration of the extensive, foreseeable health impacts to local communities from public road access. This includes the risks of increased traffic accidents, as well as higher rates of communicable diseases being transmitted within the communities.

The HIA and SEIS also failed to adequately consider the full range of impacts to public health as a result of the proposed road and mines. For instance, public health in much of Alaska is already under stress from climate change, with health implications related to the introduction of new diseases; damaged water and sanitation infrastructure; an increase in anxiety and depression; and increasingly dangerous hunting and harvesting conditions limiting subsistence activity.[1215] The SEIS provides a short, cursory paragraph that fails to discuss any of these

[1213] 1 SEIS at 3-189 to -190.

[1214] *Id*. at 3-200.

[1215] *See* State of Alaska, Dep't of Health & Social Servs., Assessment of the Potential Health Impacts of Climate Change in Alaska VI-VII (2018).

issues.[1216] The HIA is also largely silent regarding the health impacts of this project in the context of the changing climate, underscoring its inadequacy.

Further, there is naturally occurring asbestos in the bedrock along portions of the proposed route and near the Ambler Mining District, as described elsewhere in these comments. If asbestos-laden gravel is used in road construction, there is tremendous potential for adverse health impacts to anyone involved in road construction, traveling along the proposed gravel road, or in nearby communities. AIDEA intends to use over 42 million cubic yards of gravel for construction and maintenance. Given the size of this project and the high occurrence of asbestos-laden soil in the region, it will be difficult, if not impossible, for AIDEA to locate sufficient asbestos-free gravel sources for construction, as discussed elsewhere in these comments. AIDEA plans to add more gravel annually to the road, which will lead to ongoing gravel mining and construction for the life of the project, increasing the opportunity for exposure to asbestos.

Instead of analyzing the significant impacts asbestos would have on human health in the region, the SEIS and BLM ROW indicate AIDEA plans to do initial surveys to determine the presence of asbestos after project approval. BLM cannot avoid analyzing the significant adverse health impacts to road users and local communities based on AIDEA's bare assertions that it would avoid the use gravel containing NOA, particularly since it is not even clear in light of the lack of baseline studies that there is sufficient asbestos-free gravel to build this project. The SEIS also acknowledged that there is still the potential AIDEA may use gravel with asbestos. BLM needs to fully analyze the potential impacts and risks associated with the use of contaminated gravel, which it has not done in the SEIS. BLM also needs to analyze and include mitigation measures that will provide greater safeguards to protect individuals from exposure.

More broadly, the agencies limited their analysis to considering changes in employment, technology, disrupted subsistence, and an influx of outsiders either working in or living in subsistence communities.[1217] This scope of analysis does not adequately incorporate the values of the affected communities. Adequate analysis will require consideration of additional factors including increased industrial activity's correlation with missing and murdered Indigenous women as well as impacts to the judicial system, cultural and archeological resources, values, and spiritual beliefs. Considering factors such as spiritual beliefs is necessary to fully address the gravity of impacts facing numerous communities in the Southern Brooks Range from this project.

With respect to missing and murdered Indigenous women, the SEIS briefly acknowledges the high risk of violence to Indigenous women and girls and the potential associated sociocultural and public health impacts of oil and gas development.[1218] These impacts are foreseeable and significant and need to be addressed in more depth in general, as well as through mitigation measures. The SEIS discussion is inadequate to address the specific increases in impacts associated with industrial activity, including the increasing rates of missing and

[1216] 1 SEIS at 3-200 to -201.
[1217] 1 SEIS at 3-199 to -200.
[1218] *Id*. at 3-193, -204, -205.

murdered Indigenous women and the subsequent strain on judicial systems.[1219] The introduction of extractive industries often creates 'man camps,' temporary housing communities meant to host a mainly transient male workforce influx.[1220] These transient extractive industry worker populations can cause significant societal disturbance in surrounding communities, with the most vulnerable groups — Indigenous women and children — often suffering the most.[1221] The SEIS inadequately investigates the well-documented relationship between extractive industries and a rise in violent crime, sexual harassment, and exploitation; a connection that has led to a human rights crisis requiring immediate attention.[1222]

To truly understand the comprehensive impact of extractive industries on Indigenous communities, it is crucial to consider the history of colonization, extractive industries, and the historical injustices inflicted upon Alaska Native Women and Children. These complexities include jurisdictional issues when crimes occur on rural lands, especially between federal, state, and Tribal lands. These complications and overwhelming backlogs often result in unsolved crimes and victims being left without justice, indicating a vital need for administrative, legislative, and financial support to allow local court systems to operate effectively and fairly. The SEIS should thoroughly consider these factors to address extractive industries' comprehensive impact on Indigenous communities.

The proposed development's impacts to culturally important lands, resources, and traditional practices for communities within and around the road corridor can also increase stress and harm residents' mental health. Concerns over land use changes, and the associated impacts to particular resources and ways of life, can cause stress, anxiety, and depression. Such impacts should have been fully analyzed and considered in the SEIS, with mitigation measures assessed to minimize and avoid such deleterious health impacts.

Finally, the HIA and SEIS fail to identify meaningful and enforceable management actions to avoid and minimize impacts to physical and mental health in the communities in the vicinity of the road corridor. BLM must not overlook the very important fact that communities in the region will be subjected to severe adverse impacts from pollution and contamination associated with this project, as described elsewhere in these comments describing impacts to air

[1219] National Inquiry into Missing and Murdered Indigenous Women and Girls, "Reclaiming Power and Place: The Final Report of the National Inquiry into Missing and Murdered Indigenous Women and Girls," 2019; *see also* Lily Cohen, *The Role of Environmental Law in Addressing the Violent Effects of Resource Extraction on Native Women*, 47 Harvard Envtl. L.R. 275, 279–84 (2023), https://journals.law.harvard.edu/elr/wp-content/uploads/sites/79/2023/04/HELR-Vol.-47.1-Cohen.pdf.

[1220] Sarah Deer, "Relocation Revisited: Sex Trafficking of Native Women in the United States, 36 William Mitchell Law Review no. 2 (2010).

[1221] Amnesty International, "Out of Sight, Out of Mind: Gender, Indigenous Rights, and Energy Development in Northeast British Columbia, Canada," 2016.

[1222] Sanjay Sharma, *The impact of mining on women: lessons from the coal mining Bowen Basin of Queensland, Australia*, IMPACT ASSESSMENT AND PROJECT APPRAISAL, 28:3, 201–15 (2010); *see also* Cohen, *supra* (discussing the need for NEPA analyses to adequately analyze the foreseeable and significant effects to Indigenous women from resource extraction projects).

quality, wildlife, water resources, and the like. Communities are also likely to experience serious mental health issues associated with the changes to the region and their way of life that have not been adequately analyzed. Despite those serious problems, the SEIS still fails to include meaningful and enforceable mitigation measures to address these impacts. Because the Ambler Road poses a significant threat of adverse impacts on public health that have not been adequately analyzed or mitigated, and that show this project is contrary to the public interest, BLM should select the no action alternative.

X. THE SUBSISTENCE IMPACTS ANALYSIS IN THE SEIS IS INADEQUATE FOR BOTH NEPA AND ANILCA 810.

The analysis of subsistence impacts in the draft SEIS is improved in some respects, as compared to the prior FEIS. Nevertheless, this revised evaluation is plagued by the same overarching problems that have been present from the beginning, including the vague conceptual description of the road project and its various ancillary components, the lack of reasonable alternatives, the lack of adequate baseline data concerning subsistence, fish, caribou, fur bearers, waterways, vegetation, and other activities and resources that would be affected by the project, and the incomplete consideration of reasonably foreseeable future actions, especially mining and transportation. The sufficiency of the subsistence evaluation is also undermined by the lack of detailed maps and narrative describing the true extent of mining claims along the road corridor and surrounding lands and their potential impacts on subsistence, as well as the lack of maps showing lifetime subsistence use areas and key habitat for WAH caribou, especially lichen and low snow cover areas. Moreover, BLM's proposed mitigation measures for subsistence are negligible and would only apply to a very small percentage of the project; as such, they should not be given any weight. BLM's decision-making should take into account the full impacts of the project and related mining development on subsistence, which would be widespread and severe. Finally, there are several unfounded statements in the draft SEIS that portray the adverse impacts on caribou, and hence subsistence, as much less severe than they are, and these should be removed.

In addition to the key subsistence issues highlighted in this section, the deficiencies in the draft SEIS discussed elsewhere in these comments all contribute to the inadequacy of the subsistence evaluation for purposes of NEPA and ANILCA 810. These include without limitation problems with the NEPA review, such as the statement of purpose and need, range of alternatives, connected actions, lack of project design information and baseline data, and many other issues relevant for subsistence; failure to comply with CWA 404 requirements for protecting wetlands and waters important for subsistence; deficiencies relating to NHPA Section 106 consultation and cultural resource impacts that are inextricably intertwined with subsistence; as well as gaps and inadequate analyses concerning the project's adverse impacts on fish, caribou, birds, mammals, vegetation, waters, wetlands, and other resources important for subsistence.

A. The Project Description Is Inadequate to Serve as a Basis for Evaluating Subsistence Impacts.

In order to understand the potential impacts of the Ambler Road project on subsistence, it is necessary to first have a clear understanding of where the project elements will be and what

the construction and operation of them will entail. As discussed elsewhere in these comments, however, a fundamental problem with the draft SEIS is that the project remains in an early conceptual stage, and detailed descriptions are not available for virtually any aspect of it. Massive uncertainty still remains with respect to numerous topics that directly relate to how this project will impact subsistence, including:

- Road engineering design and layout
- Locations where cuts and fills will be needed
- Locations, sizes, and types of bridges and culverts
- Foundation requirements and site-specific conditions for bridges, culverts, and road segments
- Locations and site-specific conditions for gravel extraction sites
- Ability to avoid deposits of naturally-occurring asbestos
- Availability of necessary material types
- Plans to utilize ground insulation
- Staging and sequencing of construction
- Locations, quantities, frequency, and timing of water withdrawals for ice roads, ice pads, dust suppression, work camps, and other uses
- Locations and site-specific conditions for ice roads and pads
- Locations, sizes, and components of work camps
- Locations, designs, and site-specific conditions for airstrips
- Nature and extent of ore trucking operations
- Frequency and timing for air traffic and types of airplanes and helicopters to be used
- Nature and extent of gravel replacement and other long-term road maintenance activities
- Plans for reclamation and likelihood of reclamation ever occurring
- Financial assurance mechanisms

As a result of all this missing information, the analysis of impacts on subsistence resources and subsistence harvesting activities in the draft SEIS is generic, speculative, and lacking in site-specificity, contrary to the requirements of both NEPA and ANILCA 810.

B. The SEIS Fails to Consider Reasonable Alternatives with Reduced Impacts on Subsistence.

The Ambler Road project represents a severe threat to fish, caribou, and other subsistence resources across thousands of square miles and to the dozens of traditional Indigenous communities who depend on them for their very identity and way of life. As acknowledged in the draft SEIS, however, all three of the action alternatives are expected to have a similar degree of impacts on subsistence, although these would be felt in different locations. Alternatives that vary only with respect to the route and phasing of construction are not adequate to satisfy BLM's obligation to consider "all reasonable alternatives" under NEPA and "alternatives which would reduce or eliminate the use . . . of public lands needed for subsistence purposes" under ANILCA 810.[1223] Indeed, as discussed in other sections of these comments, the range of alternatives considered in the draft SEIS is inadequate for many reasons, including its flawed screening process and excessive concern for the costs to the project applicant. As a result, BLM has failed

[1223] 40 C.F.R. § 1502.14(a); 16 U.S.C. § 3120(a).

to consider many other reasonable alternatives, including (1) alternatives with features more protective of subsistence, such as the Tribal alternative proposed by Tanana Chiefs Conference and other alternatives with protective limitations on construction methods, seasonal operations, and other project features; (2) alternatives with different modes of transportation (e.g., railroad, air transport, barging, seasonal ice road access, or some combination thereof) that could have lesser impacts on subsistence; and (3) westerly routes connecting to ports that would considerably reduce harm to subsistence for communities in the central and eastern portions of the study area. BLM's failure to analyze other reasonable alternatives contravenes NEPA and ANILCA 810, and this leaves the no action alternative as the only viable path forward.

C. There Is a Lack of Adequate Baseline Information to Conduct a Subsistence Impact Evaluation.

Without adequate baseline information about present conditions in the region, it is impossible to meaningfully evaluate what the impacts of the Ambler Road project on subsistence would be.[1224] As discussed in other sections of these comments, the draft SEIS is grossly deficient in site-specific baseline data with respect to nearly all of the resources important to subsistence in the region, most notably salmon, sheefish, whitefish, and other fish species, Western Arctic caribou and other caribou herds, as well as moose, bears, wolverines, sheep, berries, vegetation, water, wetlands, and other resources.

The draft SEIS provides some harvest data for the communities it has identified as the 27 "primary" study communities due to their proximity to the road corridor.[1225] However, BLM has relied heavily on data collected by the Alaska Department of Fish and Game (ADF&G), which is generally outdated and limited in scope. As discussed in a report prepared by Dr. Annette Watson, the ADF&G data is also insufficient because it focuses on single-year harvest data points, which fail to reflect long-term subsistence use patterns.[1226] Despite its failure to gather and incorporate lifetime use data into its analysis, the draft SEIS does acknowledge that:

> Lifetime use areas are useful for capturing long-term trends in subsistence use patterns and the extent of traditional land use areas. . . . It is important to include all time periods when establishing a baseline of subsistence uses, as residents may return to previously used traditional areas in the event of environmental or regulatory changes, or changes in resource distribution or migration. . . . Even if a community shows a change in traditional uses over time (e.g., constricted use areas), traditional land use areas are still important to cultural identity, and protection of traditional land use areas ensures the ability of communities to adapt to future changes.[1227]

As Dr. Watson's analysis indicates, gathering and mapping subsistence harvest data using a lifetime temporal scale would have revealed extensive and overlapping ranges for subsistence

[1224] Watson Report at 4, 6.
[1225] *See generally* 3 SEIS App. L.
[1226] Watson Report at 4–6.
[1227] 1 SEIS at 3-207.

use areas throughout Northwest Alaska.[1228] In light of the magnitude of the threats posed to subsistence by the Ambler Road project and associated mining development, the spotty, single-year subsistence harvest data in the draft SEIS is woefully inadequate.

With respect to the 38 communities BLM has deemed non-primary — i.e., those farther from the Ambler Road project corridor but reliant on migratory caribou, furbearers, salmon, and sheefish that will be affected by the Road project — the level and quality of baseline data for subsistence harvesting activities is among the worst in the draft SEIS. For three subsistence communities — Livengood, St. Mary's, and Pitka's Point — the draft SEIS presents no harvest data at all.[1229] Additionally, Koyukuk is identified as both a caribou study and fish study community, yet the draft SEIS provides zero information regarding its caribou, Chinook salmon, and chum salmon harvesting practices.[1230] The only harvest data available for Koyukuk relates to sheefish.[1231] These communities are all situated within the Yukon River watershed, which has been hit hard by the recent declines in Chinook and chum salmon populations. As such, they are especially vulnerable to the further disruptions and declines that would result from the Ambler Road project and associated mining development. BLM's failure to gather harvest data for these communities in developing the prior FEIS or this draft SEIS is inexcusable and unlawful. In addition, the draft SEIS largely ignores wildlife dispersal and migration between the boreal and Arctic. This is well known for caribou, but for species like wolverine, impacts to animals in the northern boreal, associated with the proposed road, could have profound impacts for sustainability of populations elsewhere in the boreal or on the North Slope, and thus to communities that benefit from wolverines. Recent data confirms the potential dispersal of wolverines from the boreal to the Arctic slope in this manner. Furthermore, published materials from the neighboring Yukon highlights the importance of harvest refugia such as currently provided by much of the remote portions of the northern boreal.[1232]

For the remaining non-primary communities, much of the available data is grossly outdated and has little bearing on current usage or lifetime usage. The following examples of caribou study communities are illustrative:

> ***Most Recent Caribou Harvest Data:***[1233]
> Atqasuk – 2006 (17 years ago)
> Kotlik – 1980 (43 years ago)
> Nulato – 2010 (13 years ago)
> St. Michael – 2006 (17 years ago)

[1228] Watson Report at 5–6.
[1229] *See generally* 3 SEIS App. L.
[1230] *See id.* at L-154 (note to tbl. 41), tbl. 42.
[1231] *Id.* App. L at tbl. 42.
[1232] P.M. Kukka et al., *Spatiotemporal patterns of wolverine (Gulo gulo) harvest: the potential role of refugia in a quota-free system*, 68(2) EUROPEAN J. OF WILDLIFE RESEARCH 16 (2022).
[1233] 3 SEIS App. L at tbl. 41.

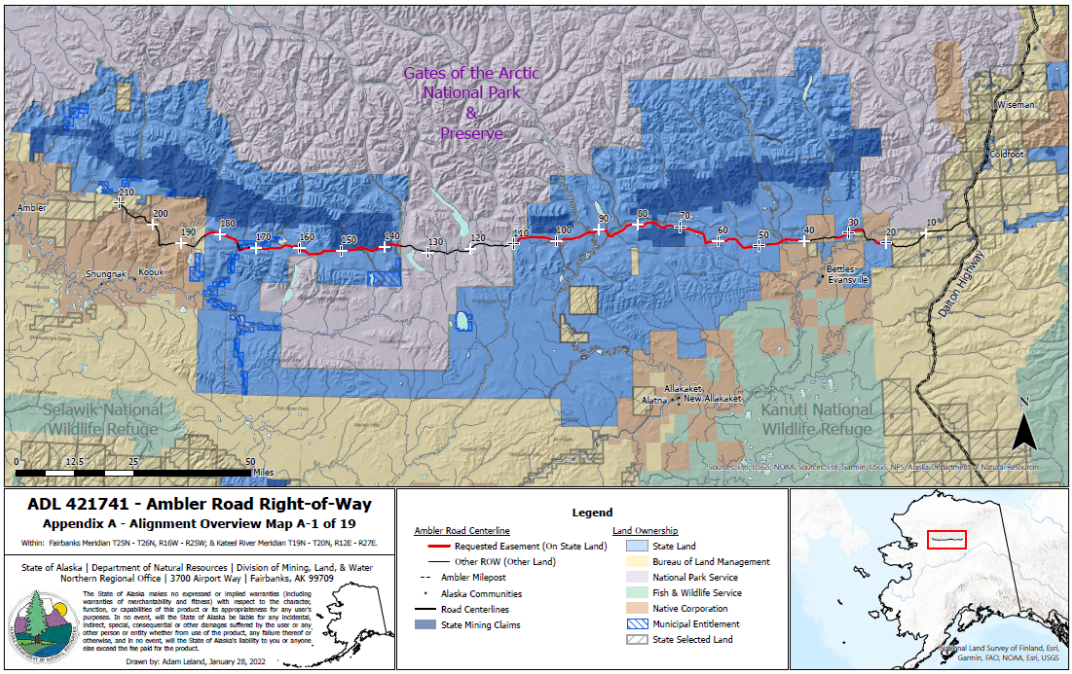
Even worse, the harvest data for fish study communities is vaguely identified as coming from "available study years."[1234] For the 15 non-primary fish study communities with any fish data — Alakanuk, Anvik, Emmonak, Grayling, Holy Cross, Kaltag, Kotlik, Koyukuk, Marshall, Mountain Village, Nulato, Nunam Iqua, Pilot Station, Ruby, Russian Mission — there is no indication of the source or vintage of this data.[1235] In light of the generally outdated nature of the ADF&G data, it seems reasonable to infer that this data is also outdated, limited in scope, and of little or no analytical value. Overall, the baseline data for subsistence harvesting fails to provide a reasonable basis for analyzing subsistence impacts under NEPA or ANILCA 810. Accordingly, the no action alternative is the only viable option for BLM.

D. The SEIS Does Not Adequately Analyze Mining, Transportation, and Other Development Impacts on Subsistence.

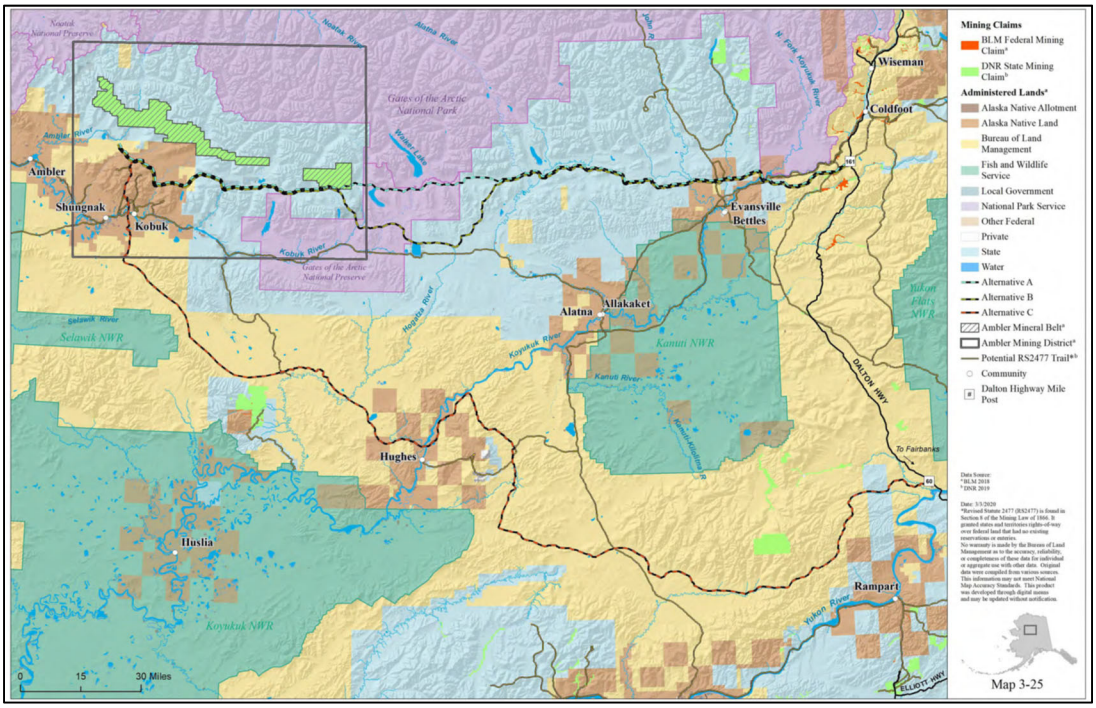
BLM dramatically understates the subsistence impacts of the Ambler Road project by failing to address the full scope of hardrock mining, transportation, and other activities that would be enabled by the project. To begin with, the discussion of hardrock mining in the draft SEIS focuses heavily on mining anticipated within the Ambler Mining District at the western end of the Ambler Road. There are only a few cursory references to hardrock mining development along the easterly portion of the Ambler Road corridor. This represents an enormous gap in the subsistence analysis. Indeed, the draft SEIS briefly acknowledges that the lands to the east of the Ambler Mining District contain another "geological belt that may have potential to be similar to the Ambler Mining District and could be host to copper, zinc, lead, and silver mineralization."[1236]

The potential for large-scale mineral development in this easterly region is discussed in more detail elsewhere in these comments, but a quick comparison the following graphics illustrate the stunning omission of this second mining district from BLM's analysis. A DNR map prepared in connection with its consideration of a long-term easement for the portion of the Ambler Road corridor traversing State lands shows two major concentrations of mining claims in dark blue, those in the Ambler Mining District to the west, and another grouping roughly equal in size to the east:[1237]

[1234] *See id.* tbl. 42.
[1235] *See id.* tbls. 2, 42.
[1236] 2 *id.* app. H., at H-6 (emphasis added).
[1237] *See* Alaska Dep't of Nat. Res., Ambler Maps 2022), *available at* https://dnr.alaska.gov/mlw/ambler-road/pdf/Ambler-Maps.pdf.



In stark contrast, BLM's mining claims map in the draft SEIS highlights mining claims in the region in light green, but the entire collection of mining claims along the eastern half of the road corridor is missing:[1238]



[1238] 4 SEIS at Map 3-25.

Other maps throughout the draft SEIS repeat this glaring omission, including maps of subsistence use areas,[1239] caribou ranges,[1240] salmon habitat,[1241] and sheefish and whitefish habitat.[1242] As a result, the draft SEIS greatly understates and downplays the fact that the Ambler Road would enable widespread mining development and associated access roads along the entire road corridor and surrounding lands.

Mineral development in this massive second claim block is far more than hypothetical. As discussed in other sections of these comments, extensive hardrock mineral exploration in this eastern swath of mining claims is already underway in connection with the Roosevelt Project (a claim block nearly 50 miles in length), as well as the Helpmejack (19,250 acres), and Malamute claims (12,480 acres).

The draft SEIS understates the scope of mining operations in multiple other ways as well, as discussed in more detail elsewhere in these comments. The following are a few examples:

- BLM has failed to provide up-to-date information regarding the number, location and status of mining claims, exploration projects, prospects and related infrastructure within the Ambler Mining District, such as the recent near-doubling of mining claims at the Sun deposit, as well as exploration at West Kobuk;

- The draft SEIS lacks a meaningful discussion of mineral exploration operations and its impacts, including air traffic, vegetation-clearing, drilling, and other disruptive and damaging activities;

- The draft SEIS only briefly acknowledges the extensive additional gravel mining that will need to be carried out throughout the life of the Ambler Road (50 years, or possibly in perpetuity) in order to place an additional 2-inch layer of gravel along the entire road length annually as part of routine maintenance;

- Although the draft SEIS acknowledges that "[h]undreds of smaller claims exist throughout the study area" and that "if the project road were built, further development would be more likely,"[1243] BLM fails to meaningfully evaluate the impacts associated with widespread small-scale mining and associated access roads; and

- The draft SEIS also lacks a proper analysis of the impacts of other types of mining, such as placer and suction dredge operations, which can be very damaging to fish and aquatic habitat that are important for subsistence.

[1239] 3 *id.* App. L, at Map 1.
[1240] *See* 4 *id.* at Map 3-20.
[1241] *See id.* at Map 3-17.
[1242] *See id.* at Map 3-18.
[1243] 1 *id.* at 3-105.

All of these missing elements are directly relevant to the likely subsistence impacts. If the full scope of mining operations were disclosed and analyzed in the draft SEIS, it would become much clearer to the public and decisionmakers that the impacts on subsistence from the Ambler Road project will be exponentially greater than what has been disclosed thus far. Indeed, extensive hardrock mining development along the easterly portion of the Ambler Road corridor would take place in the foothills of the Brooks Range. In addition to the mining development within the Ambler Mining District, the road project would enable yet another sprawling network of mines and access roads in the midst of an extensive network of pristine headwater streams that serve as spawning grounds for salmon, sheefish, whitefish (including the important Alatna River whitefish spawning grounds), and other fish species that are tremendously important for subsistence throughout the region. In an era of crashing Chinook and chum salmon populations, the importance of the spawning grounds for alternate subsistence resources, such as sheefish and whitefish, cannot be overstated. Instead of protecting these headwaters and spawning grounds for the benefit of dozens of Alaska Native subsistence communities, however, AIDEA is proposing a project that is likely to exacerbate the crisis and set in motion the long-term industrialization of the region and gradual disappearance of the traditional subsistence-based way of life.

This spiderweb of mines and access roads sprawling out in all directions along the entire Ambler Road corridor would also span a much greater proportion of the Western Arctic caribou herd (WAH) migration route. The draft SEIS already recognizes that "migrating caribou would encounter a network of active roads and industrial development that does not exist elsewhere in their range" and that it is "much more likely that a system of roads would jeopardize long-distance migration than any single road."[1244] If the full extent of the mining-related industrialization along the Ambler Road corridor were fully depicted and analyzed—i.e., the potential for large-scale mining and access roads across *double* the area evaluated in the current draft SEIS, plus the other types of mining highlighted above—the catastrophic impacts to WAH caribou would have to be described in far more definitive terms. That is, jeopardy to caribou would have to be characterized as virtually certain, as opposed to just "likely."

With respect to subsistence, the most tangible and measurable loss would be the disappearance of caribou as a food source. The draft SEIS explains that use of caribou in the 42 caribou-study communities is "high," with residents harvesting an average of 101 pounds of caribou per household annually and with caribou comprising approximately 25% of the total harvest on average throughout the region.[1245] These high-value subsistence resources could not easily be replaced with fish or other food sources, which are already becoming more scarce and challenging to obtain.

Even more importantly, the loss of caribou, salmon, sheefish, and other subsistence resources would destroy extensive sharing networks that are central to Athabascan and Iñupiat culture. For instance, about half of households in the region participate in hunting caribou, while up to 71% of households give caribou and up to 84% of households receive caribou.[1246] The draft SEIS recognizes that:

[1244] *Id.* at 3-148.
[1245] *See* 3 *id.* at App. L, at L-142.
[1246] Id.

> Sharing is a key value across the study region which is central to subsistence and which strengthens social and kinship ties across communities and regions. Such impacts have already been felt across the region in recent decades due to declining salmon returns . . . , and these impacts could be compounded by the project if there are further reductions in the availability of salmon, sheefish, caribou, and other resources. . . . [S]haring of subsistence resources between households strengthens community cohesion in the region. Furthermore, both participation and sharing are key to the cultural identity of community members.[1247]

Declines in the caribou, salmon, sheefish, and other resources would also reduce or eliminate the ability of Indigenous people to participate in traditional subsistence harvesting activities and the ability of elders to transmit traditional knowledge and skills to future generations. Both participation in and transmission of subsistence ways of life are extremely important aspects of traditional Indigenous culture, as recognized in the draft SEIS:

> Participation in subsistence activities promotes transmission of traditional knowledge from generation to generation and serves to maintain peoples' connection to the physical and biological environment. The subsistence way of life encompasses cultural values such as sharing, respect for elders, respect for the environment, hard work, and humility.[1248]

The draft SEIS also fails to disclose or analyze the full scope of new transportation infrastructure that would be enabled by the Ambler Road project and its impacts on subsistence. Some examples, discussed in more detail elsewhere in these comments, include:

- Spur roads connecting the Ambler Road to the four main mines in the Ambler Mining District (Arctic, Sun, Bornite, and Smucker);
- Potential road connection between the Ambler Road and the DeLong Mountain Transportation System Port;
- Potential road connection to the Port of Nome, a regional hub that is in the process of being expanded into a deep water port; and
- Road infrastructure expansion northward toward the National Petroleum Reserve-Alaska and surrounding areas.

While BLM has taken steps to address the prior FEIS's failure to evaluate the inevitable public access and trespass along the Ambler Road, these discussions have focused almost entirely on increased wildlife disturbance and competition resulting from non-local hunters and fishers. The draft SEIS fails to adequately evaluate the strong likelihood that greater public access and trespass can be expected to result in widespread, damaging, and destructive off-road

[1247] *Id.* at L-25, L-190.
[1248] *Id.* at L-7.

vehicle use in sensitive fish, caribou, and other wildlife habitats, the creation of a myriad unauthorized trails, as well as unauthorized road construction associated with timber and gravel theft, which are already common problems in accessible areas of Interior Alaska.[1249] These activities have the potential to cause harm to subsistence on a broad scale, including degradation of fish spawning habitat through erosion, sedimentation, and fuel spills; trampling and destruction of important caribou forage vegetation, such as lichens; disturbance and displacement of caribou, moose, and other wildlife important for subsistence due to noise, vibration, and odors associated with logging equipment, blasting, off-road vehicles, trucks, and heavy machinery.

Overall, for Athabascan and Iñupiat people throughout Northwest Alaska that have relied on and identified with caribou, salmon, and other subsistence resources for thousands of years, the impacts of expansive mining development along the entire length of the Ambler Road corridor and surrounding lands, and the resulting caribou and fish population declines, would constitute a tragic loss of identity and culture on par with the slaughter of buffalo herds in late 19th century.[1250] The full subsistence impacts of the Ambler Road project and the mining it would enable have not been adequately evaluated for purposes of NEPA or ANILCA 810. If they were, it would be even more impossible for BLM to conclude, as part of its ANILCA 810 Tier 2 determinations, that the proposed Ambler Road project should be allowed to proceed in the face of the calamitous adverse impacts to subsistence. Instead, ANILCA 810's substantive standards compel BLM to choose the no action alternative.

E. The Maps Are Inadequate.

As discussed above, the maps in the draft SEIS are wholly inadequate in that they fail to depict the full scope of hardrock mining that would be enabled by the Ambler Road project and would cause much more extensive harm to subsistence than the draft SEIS acknowledges.

Other aspects of the subsistence evaluation require a more in-depth analysis supported by detailed maps as well. For instance, the draft SEIS acknowledges that "the reduction of lichen-dominated vegetation types would result in disproportionately greater impacts on the WAH than reduction of other vegetation types."[1251] Given the critical importance of lichen cover to WAH caribou in supporting their energy-intensive, long-distance migration and helping them survive the winter, the final SEIS should include mapping illustrating the locations and extent of lichen cover. Mapping should also be created to depict the locations and extent of areas with typically have low snow cover (improving forage availability, predation risk, and movement energetics for

[1249] *See, e.g.*, TCC Native Allotment Trust Program (providing assistance to Native Allotment owners with "timber trespass investigation"), https://www.tananachiefs.org/services/native-allotment-trust-program/; Tom Weaver, Editorial: Gravel Thieves a Disgrace (May 19, 2016), https://www.newsminer.com/opinion/letters_to_editor/gravel-thieves-a-disgrace/article_5e27fa58-1d72-11e6-b1ff-6fa0311f3cc2.html.

[1250] *See* Nat'l Park Service, People and Bison, https://www.nps.gov/subjects/bison/people.htm (last visited Dec. 15, 2023); *see also* Watson Report at 2.

[1251] 1 SEIS at 3-133.

caribou). Clearer understanding of the locations of these key areas would help in evaluating the impacts of the road project on caribou and, in turn, on subsistence, and it would serve as a basis for project modifications or mitigation to avoid these important areas. According to the draft SEIS, there is existing data that would enable the creation of both lichen and snow cover maps.[1252]

Furthermore, as discussed above, the sparse and in many cases missing or outdated single-year subsistence harvest data provided by ADF&G is not adequate to serve as the basis for this subsistence evaluation. Before approving the Ambler Road project, BLM or AIDEA need to gather far more extensive and up-to-date information, including lifetime use data, and use it to create maps illustrating the true extent of traditional subsistence harvest use areas. Post-hoc data gathering efforts concerning subsistence are not adequate to satisfy BLM's obligations under NEPA and ANILCA 810. In the absence of such information, BLM must select the no action alternative.

F. The Mitigation Measures for Subsistence Are Inadequate.

The mitigation measures in Appendix N that are proposed for subsistence focus heavily on post-decisional information-gathering through an AIDEA-managed subsistence working group and other measures aiming to reduce conflicts between road operations and subsistence harvesting activities.[1253] These types of measures do not address the more fundamental threats to subsistence that are inherent in the Ambler Road project and the mining development it would enable, i.e., its anticipated population-level adverse impacts on caribou, salmon, sheefish, and other subsistence resources. These severe and large-scale impacts will result from numerous activities carried out by untold numbers of independent actors, and they cannot be meaningfully mitigated, especially with the weak post-hoc measures that are being proposed.

In its assessment of the effectiveness of the proposed subsistence mitigation, BLM does acknowledge the potential for "major changes to caribou wintering grounds or migration patterns" and concedes that, if such changes were to occur, the "impacts to subsistence communities . . . could be substantial despite the mitigation measures."[1254] Inexplicably, however, BLM suggests "the risk may not be high that such a major change would occur."[1255] The idea that the risk of major impacts to caribou habitat and migration is not high is wholly contrary to the record and unreasonable. Other sections of the draft SEIS acknowledge that "caribou migration may be altered to the point where winter survival and calving success are affected" and that these would "both have major impacts on the herd population."[1256] Moreover, the findings in the ANILCA 810 evaluation state that:

> The road and associated mineral development, in addition to other reasonably foreseeable activities, would likely contribute to cumulative impacts on subsistence resource abundance and availability. The development of mines

[1252] *Id.* at 3-133 to -134.
[1253] *Id.* App. N, at N-47 to -49.
[1254] *Id.* at N-49.
[1255] *Id.*
[1256] *Id.* App. M, at M-10.

> within the District and secondary access roads would result in habitat loss, alteration, and fragmentation of WAH caribou migratory and winter range, which could affect the abundance and availability of caribou to some or all of the 42 WAH WG communities. The mines, mining roads, and secondary access roads would increase habitat fragmentation exponentially. The fragmentation of habitat would further remove usable habitat for caribou during migration and winter, which could force substantial range shifts, increased competition for resources, or increased predation . . . . Impacts to wintering habitat and lichen availability could affect winter survival rates for the WAH. . . . Population-level impacts could extend to the 42 WAH WG communities, particularly those with a moderate to high reliance on the resource . . . .[1257]

These statements express far more certainty that substantial changes to caribou migration and winter habitat will result from the Ambler Road project and associated mining development, and they acknowledge the cascade of adverse effects these changes would have for subsistence.

Similarly unfounded and unreasonable conclusions appear elsewhere in the draft SEIS as well. For instance, the document asserts that "according to ADF&G studies, although delays and deflections of individuals may occur, and changes to localized movement patterns may result with potential impacts to caribou energetics and subsistence harvest, the migratory patterns of the WAH as a whole would likely remain intact unless the road creates a barrier to movement"[1258] and that "the overall migratory routes are expected to remain intact."[1259] The referenced ADF&G studies are not cited. A similar statement is made in Appendix M, with a non-specific reference back to the mammal section of the draft SEIS, which does not contain any support for the statement other than the bare assertion noted above.[1260] These statements are highly misleading and contrary to the record. In fact, the draft SEIS acknowledges the existence of multiple scientific studies indicating that roads and the disturbances associated with construction and traffic do displace caribou and create a barrier to their movement, contradicting the statements above.[1261] Any and all statements downplaying the impacts of the Ambler Road project and associated mining should be removed in the final SEIS to avoid misleading the public and decisionmakers regarding the severity of the project's impacts to caribou and subsistence.

Finally, in the mitigation section, BLM acknowledges that "it is not clear that the State would require AIDEA to undertake such measures on its lands."[1262] This mischaracterizes the situation somewhat. State lands represent the majority of the project route, comprising 59%-64% of the route for Alternatives A and B.[1263] By contrast, BLM lands constitute only 11%-12% of

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[1257] *Id.* App. N, at N-49 (emphasis added).

[1258] 1 *id.* at 3-138.

[1259] *Id.* at 3-231.

[1260] 3 *id.* App. M, at M-17 to -18.

[1261] *See, e.g.*, *id.* at M-9 ("Caribou may see the road as a physical barrier that may alter their behavior or shift their migratory patterns. This may lead to a change in body condition due to increased energy expenditure."). *See generally* 1 *id.* at 3-95 to -97.

[1262] 3 *id.* at N-49.

[1263] 1 *id.* at 3-106.

the route for these alternatives.[1264] The Alaska Department of Natural Resources (DNR) has made it pretty clear that it does not feel bound to adopt or implement BLM's mitigation measures restricting uses of the road segments traversing State lands for the purpose of protecting subsistence or for any other purpose. Indeed, about five years ago, DNR has emphasized that its statutory and constitutional obligations may limit its ability to do so:

> AS 38.05.285 requires the use of state land shall conform to the constitution of the State of Alaska and the principles of multiple use consistent with the public interest. For this project, a road easement authorization per AS 38.05.850 will be required. When an easement application is submitted . . . [DNR] will evaluate the proposed activities for consistency with authorized activities or constraints on state lands. . . . As part of the adjudication process, [DNR] will evaluate multiple-use considerations and restrictions, as well as economic benefits.[1265]

In another letter four years ago, Alaska DNR also noted that it had not made any commitments to "adopt or not adopt specific terms, conditions, and/or mitigation measures."[1266] Given that DNR has not taken steps to make any such commitments in the intervening years, the only fair assumption is that DNR cannot be relied on to do so. As private landowners, Alaska Native Regional Corporations likewise have broad authority to decide whether to adopt or implement any of BLM's proposed mitigation measures for the road segments that cross their lands, which comprise 13%-15% of the route depending on the alternative.[1267] There is no indication that they have committed to implementing BLM's proposed mitigation on their lands either.

In short, BLM's proposed mitigation measures for subsistence are minimal, post-hoc, and weak to begin with. More fundamentally, however, there is no commitment from either the State or private landowners to adopt, implement, and enforce such measures or any others along the 72%–79% of the road corridor that they would control in Alternatives A and B. Thus, for purposes evaluating adverse impacts on subsistence under both NEPA and ANILCA 810, there is no meaningful basis for concluding that such impacts will be reduced by the proposed mitigation at all. The draft SEIS makes clear that the impacts will be devastating for caribou, salmon, sheefish, and other subsistence resources, as well as for the availability and accessibility of such resources to subsistence harvesters. Under these circumstances, the no action alternative is the only viable option.

[1264] *Id*.

[1265] Letter from Marie Steel, Dep't of Nat. Res., to Tim LaMarr, Bureau of Land Mgmt. (Jan. 31, 2018).

[1266] Letter from Faith Martineau, Dep't of Nat. Res., to Tim LaMarr, Bureau of Land Mgmt. (Oct. 29, 2019).

[1267] 1 SEIS at 3-106.

XI. THE DRAFT SEIS CULTURAL RESOURCE EVALUATION DOES NOT SATISFY NEPA OR NHPA SECTION 106.

The Ambler Road is proposed to span a vast region that has been used by Alaska Natives for thousands of years and is replete with yet-to-be identified cultural resources. BLM has worked with Tribes to begin identifying ethnographic resources, but that process remains in its early stages. Overall, neither archaeological nor ethnographic resources are anywhere near fully identified for any of the alternatives and, without such information, it is impossible to conduct a meaningful analysis of cultural resource impacts or a comparison among the alternatives, as required under NEPA and Section 106 of the NHPA. As a result, the agencies must select the no action alternative.

A. Legal Framework

NEPA requires federal agencies take a "hard look" at the environmental consequences of their actions in an EIS, and cultural resource impacts are among those that must be considered.[1268] NEPA "emphasizes the importance of coherent and comprehensive up-front environmental analysis" so that the "agency will not act on incomplete information, only to regret its decision after it is too late to correct."[1269]

Before approving a project, NHPA Section 106 requires federal agencies to consider the potential adverse effects on historic properties and consult with any Tribe that attaches "religious and cultural significance" to such properties.[1270] Federal agencies must assess impacts on properties within the "area of potential effect" (APE) and determine whether they will be adverse.[1271] Effects are adverse if they "may alter, directly or indirectly, any of the characteristics of the historic property" in a manner that would diminish its "location, setting, materials, workmanship, feeling, or association."[1272] Adverse effects include the "[i]ntroduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features."[1273] If the effect comes from the project at the same time and place, it is considered direct regardless of its type (e.g., visual, physical, auditory).[1274] Additionally, adverse effects

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[1268] *See* 40 C.F.R. §§ 1502.16(g), 1508.8(b), 1508.14, 1508.27(a), (b)(3)).

[1269] *Blue Mtns. Biod. Proj. v. Blackwood*, 161 F.3d 1208, 1216 (9th Cir. 1998) (quoting *Marsh v. Oregon Nat. Res. Council*, 490 U.S. 360, 371 (1989)).

[1270] *Muckleshoot Indian Tribe v. U.S. Forest Serv*., 177 F.3d 800, 805 (9th Cir. 1999) (citation omitted); *see* 54 U.S.C. §§ 302706(b), 306108; 36 C.F.R. §§ 800.3-800.6. An "historic property" is "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in the National Register [of Historic Places]." 36 C.F.R. § 800.16(l)(1); *see* 54 U.S.C. § 300308. "Eligible for inclusion" includes "both properties formally determined as such . . . and all other properties that meet the National Register criteria." 36 C.F.R. § 800.16(l)(2).

[1271] *Mont. Wild. Assn. v. Connell*, 725 F.3d 988, 1005 (9th Cir. 2013) (quoting *Muckleshoot*, 177 F.3d at 805). *See* 36 C.F.R. § 800.5.

[1272] 36 C.F.R. § 800.5(a)(1).

[1273] *Id.* § 800.5(a)(2)(v).

[1274] ACHP Office Gen. Counsel, Memo to ACHP Staff, *Recent Court Decision*

include "reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative."[1275] Examples of adverse effects include: (a) physical destruction or damage; (b) changing the character of the property's use or physical features; (c) introduction of visual, atmospheric or audible elements that diminish the integrity of the property's features; and (d) transferring the property out of federal control without adequate and legally enforceable protections.[1276] Federal agencies must evaluate potential project modifications that could avoid, minimize, or mitigate adverse effects.[1277]

B. Baseline Data-Gathering Efforts & Remaining Gaps

Working with Tribal governments in the region, BLM has made significant efforts to start gathering cultural resource information. While a critical first step, these efforts remain in the very early stages, and they do not provide an adequate basis for analyzing and comparing the cultural resource impacts of the action alternatives. In the absence of sufficient baseline data, there is no way to comply with NEPA, and reliance on incomplete or outdated information regarding cultural resources is unlawful. Post-decisional studies and mitigation measures are not adequate substitutes for gathering and evaluating the necessary baseline data because they do not ensure that government decision-makers and the public are well-informed before important decisions are made. For example, where a pipeline project threatened cultural resources along the entire project length and over 1,000 acres remained unsurveyed, the court rejected the federal government's plan to conduct cultural resource surveys on an ongoing basis and identify cultural resources and mitigate harm throughout the process.[1278] The court held that NEPA required the government to gather and evaluate information on the unsurveyed acres before finalizing its decision.[1279]

Section 106 similarly requires federal agencies to make a "reasonable and good faith effort" to identify historic properties, using methods such as "background research, consultation, oral history interviews, sample field investigation, and field survey."[1280] In the Ambler context, cultural resource impacts were identified early on as a key issue. The experts who prepared cultural resource data gap reports in 2014 and 2018 emphasized that "a number of studies will need to be conducted to identify cultural resources and assess project impacts to comply with NEPA and Section 106 requirements."[1281] Instead of doing so, however, BLM unlawfully postponed the entire process of gathering baseline data, evaluating impacts, and developing methods to avoid, minimize, and mitigate such impacts until the post-ROD period.

Regarding the Meaning of "Direct" in Sections 106 and 110(f) of the National Historic Preservation Act, at 2 (June 7, 2019), http://shpo.nv.gov/uploads/documents/OGC_memo_to_ACHP.

[1275] 36 C.F.R. § 800.5(a)(1).

[1276] *Id.* § 800.5(a)(2)(i), (iv), (v), (vii).

[1277] *Id.* § 800.6(a); *see also* 600 DM 6 §§ 6.4(A)-(B), (E), 6.6(B), (D), (J), 604 DM 1.

[1278] *Indig. Envtl. Network v. U.S. Dept. State*, 347 F. Supp. 3d 561, 580-81 (D. Mont. 2018).

[1279] *Id.* (citing 40 C.F.R. §§ 1502.16(g), 1508.8).

[1280] 40 C.F.R. § 800.4(b), (b)(1).

[1281] FEIS Appx. K, at 46.

Since the 2020 ROD was approved, BLM and Tribes have been working together to document cultural resource information in the vicinity of the approved route (Alternative A). To begin addressing the almost complete "lack of research on ethnographic resources" in the study area, BLM has been "conducting interviews with Indigenous communities ... to identify ethnographic resources," including sites of "cultural, religious, and traditional importance."[1282] These efforts have resulted in the identification of "camps, caches, a trail and portage, traditional use areas, house pits, dugouts for hiding, a Native allotment, a caribou hunting area, a Sacred Site, and other places of cultural importance . . . ."[1283]

Three Tribal governments in the region have nominated areas of cultural or historical value to be designated as Areas of Critical Environmental Concern (ACECs). Allakaket nominated the Jim River ACEC expansion area (which crosses Alternatives A and B) based on "cultural values, including traditional fishing and hunting areas that have cultural significance to the Tribe and research to support nomination of [traditional cultural places] in the area confirming the importance of the overall area as one of few areas where salmon are available due to spawning habitat . . . ."[1284] Koyukuk nominated the Koyukuk River Tributaries area because the "river and its tributaries hold significant historical and cultural value to the Koyukon People" and the "fish and wildlife species are important to subsistence use and Tribal traditions . . . ."[1285] Huslia nominated an area to protect "watersheds of the Yukon and Koyukuk rivers and their tributaries, which the Huslia Tribe have traditionally hunted, fished, and trapped and gathered on for thousands of years . . . ."[1286]

Additionally, BLM has compiled significant information concerning Indigenous place names, which serve as indicators of ethnographic resources.[1287] The draft SEIS indicates there are "hundreds of traditional place names across the study area."[1288] The draft SEIS also acknowledges the importance of river corridors as traditional trade and travel routes, including the Kobuk, Koyukuk, Alatna, and John rivers, which traverse the project area.[1289] BLM recognizes that the "documentation of ethnographic resources in the study area is incomplete."[1290] Nonetheless, it concludes that "based on the long history of land use in the region, ethnographic resources likely exist within the study area."[1291] Indeed, "the wide array of individual place names, traditional use areas, AHRS sites, and interviews identified cultural resources, including the Kobuk Sacred Site . . . in the study area demonstrate the potential for these ethnographic resources, such as TCPs and cultural landscapes, to be documented."[1292] The

[1282] 1 SEIS at 3-245.
[1283] *Id*.
[1284] *Id*.
[1285] *Id*.
[1286] *Id*.
[1287] *Id*. at 3-244 to 3-245.
[1288] *Id*. at 3-244.
[1289] *Id*. at 3-242.
[1290] *Id*. at 3-245.
[1291] *Id*.
[1292] *Id*. at 3-247.

same is generally true for archaeological resources. Despite the "lack of previous cultural resources surveys in the region," recent modeling indicates "80 to 90 percent" of the project area is "either high or medium probability for prehistoric and protohistoric archaeological resources, indicating that there is a high likelihood that archaeological resources would be located along any of the routes."[1293]

Conducting interviews and modeling, and concluding that ethnographic and archaeological resources are likely to be widespread throughout the project area, are good first steps, but this is not the same as actually identifying and evaluating such resources. Also, the vast majority of the data available has been developed for Alternative A because that was the route approved in 2020. Some of this data may be relevant for Alternative B, which shares much of the same alignment. However, "[v]ery little cultural resources fieldwork has occurred along the Alternative C corridor . . . ."[1294] Having some preliminary cultural resource information for one, or possibly two, alternatives, but almost no data for the third does not provide a sufficient basis for comparison.

Instead of postponing any decision making until far more cultural resource data has been collected and analyzed, it appears BLM may be planning to simply continue its baseline data-gathering efforts after making a final decision. BLM asserts that "[i]f an alternative is authorized . . . AIDEA would be required to continue to inventory archaeological, historic, and ethnographic resources . . . for the entire route, according to the stipulations in the Section 106 PA . . . ."[1295] This would be unlawful for several reasons, including the following: (1) post-decisional efforts to identify cultural resources is not adequate to satisfy NEPA or NHPA Section 106 obligations; (2) these efforts would continue to be focused on a single alternative, rather than providing enough information to compare the alternatives in advance of project approvals, as required by both NEPA and NHPA Section 106; (3) BLM has given no indication that it intends to amend the programmatic agreement (PA) to expand the unlawfully narrow APE, so the data-gathering would be limited to a 2-mile wide corridor, rather than the 10-mile wide study area that BLM has recognized is needed for the analysis in the draft SEIS, as discussed further below; and (4) as BLM has confirmed, "NHPA deals with a subset of cultural resources known as historic properties," while "NEPA takes a broader approach and addresses both cultural resources and historic properties,"[1296] which means the post-decisional PA-driven process would be too narrow in scope to satisfy NEPA.

In short, there is still nowhere near enough information about cultural resources in the vicinity of the three action alternatives to serve as the basis for a meaningful analysis and comparison of impacts, as required by NEPA and NHPA Section 106. As a result, BLM's only feasible and legal option is to choose the no action alternative.

[1293] *Id*. at 3-244.
[1294] *Id*. at 3-243.
[1295] *Id*. at 3-244.
[1296] *Id*. at 3-246 (citation omitted).

C. Confusing & Inadequate Delineation of Study Area

The draft SEIS takes a very confusing and inconsistent approach to delineating the study area. This approach seems to go back and forth between the areas defined for purposes of the NEPA and NHPA Section 106 reviews, but it also focuses very narrowly on just the road corridor in many respects. These differing standards are unreasonable.

Litigation over the 2020 FEIS and RODs and related decisions included a challenge contending the width of the APE was far too narrow. When seeking approval from the court for a voluntary remand, BLM indicated that it would consider revising the APE. In the draft SEIS, BLM seems to suggest that it has done so, explaining that it has "revisited the APE definition to ensure potential adverse effects are adequately considered, particularly in regard to considering visual, auditory, and olfactory impacts."[1297] However, the APE is defined within the PA, and the PA remains unchanged and is simply attached to the draft SEIS as Appendix J. BLM appears to be leaving the unlawful APE in place for purposes of future cultural resource efforts after a decision has been made. BLM should amend the PA and expand the APE to the same 10-mile width used in the draft SEIS. Regardless of whether the NEPA or NHPA Section 106 process is at hand, the direct, indirect, and cumulative impacts of the project will extend far beyond a 2-mile-wide corridor, and the study area should be commensurate with these expected project impacts.

For purposes of the draft SEIS, BLM is using a 10-mile-wide study area to evaluate the visual, auditory, and olfactory impacts of the road project, but only a 500-foot wide corridor to evaluate on-the-ground impacts to cultural resources from "construction of the road and associated project components (e.g., turnouts, camps, staging areas, material sources, airstrips, access roads, maintenance stations)."[1298] The 500-foot wide corridor is wholly inadequate for many reasons. The following are just two examples. First, as part of its pre-construction fieldwork, AIDEA has proposed an extensive geotechnical drilling program that would involve dozens of drill sites all along the route, numerous work camps, and overland transport of heavy equipment and bulk fuel through sensitive roadless areas during both summer and winter to access these sites. Depending on topography, vegetation, river crossings, and other issues, it may be necessary for many of those haul routes to be perpendicular or diagonal to the road corridor rather than staying contained within it. Overland transport and other activities carried out in connection with geotechnical drilling would involve destructive and damaging on-the-ground activities well beyond the immediate road corridor, and cultural resource investigations would be required anywhere such activities would be taking place. Actual construction would likewise require overland travel to haul heavy equipment and material to numerous construction staging areas all along the 200+-mile route and not necessarily in a linear fashion, given that the road, bridges, and culverts will not have been built yet. To address these issues, the 10-mile width should be used as a general delineation of the study area, rather than arbitrarily distinguishing between on-the-ground and sensory types of impacts and using vastly different study areas based on this unworkable and arbitrary distinction.

[1297] *Id.*
[1298] *Id.*

Second, some of the ancillary project components and activities (gravel extraction, airstrips, helicopter landing pads, communication towers, staging areas, maintenance stations, fuel storage, work camps, etc.) would each have a footprint much larger than 500 feet, and they may not even be situated immediately adjacent to the road corridor. The width of the study area must include a generous buffer zone around all ancillary sites, rather than trying to squeeze such sites into a narrow linear corridor for purposes of cutting off the impacts analysis.

As noted above, another problem with the draft SEIS is that BLM is inconsistent and confusing in its terminology with respect to the study area. For instance, BLM refers to the APE when discussing modeling of archaeological resources and RS2477 trails,[1299] then shifts to the term right-of-way (ROW) when discussing documented archaeological resources,[1300] then shifts to the 10-mile-wide study area with respect to the potential sensory impacts from construction activities,[1301] then uses the vague term "study area" without specifying which type,[1302] and then shifts to "direct and indirect APEs" even though the distinction between the two types of APEs is not discussed in the draft SEIS (although it is in the PA).[1303] This should all be greatly simplified. BLM should define the term "study area" to mean a 10-mile-wide corridor and then use the term consistently throughout the SEIS. BLM should also amend the PA so that the APE is also 10 miles wide to correct its excessive narrowness. Then there would be no substantive distinction between the NEPA and NHPA Section 106 terminology, allowing for a consistent analysis of impacts and for the public and affected Tribes to understand what is being considered.

D. Inadequate Analysis of Adverse Impacts to Cultural Resources

Given the overall lack of cultural resource data available (on top of the lack of project design information discussed elsewhere in these comments), it is not possible to conduct a meaningful impact analysis, and this is manifestly apparent in the draft SEIS. The purported impact analysis is extremely short and full of generic statements of the obvious, such as "direct and indirect impacts to cultural resources . . . are likely under all action alternatives," although there could be "substantial differences in acreages."[1304] Similarly, the impact discussion addresses cumulative mining impacts with a few brief statements that the hardrock mining projects within the Ambler District "would carry a high potential for additional . . . impacts to cultural resources" and "[a]dditional mining impacts could result from development of mining projects outside the District along all action alternatives."[1305] Statements relating to mitigation are just as meaningless. For instance, BLM indicates it would "continue to explore options for minimization and mitigation measures related to ethnographic resources."[1306]

[1299] *Id*. at 3-247.
[1300] *Id*. at 3-248
[1301] *Id*.
[1302] *Id*.
[1303] *Id*. at 3-249.
[1304] *Id*. at 3-247.
[1305] *Id*. at 3-250.
[1306] *Id*. at 3-248.

The impact discussion in the draft SEIS comes nowhere near truly grappling with the nature and extent of the potential direct, indirect, and cumulative impacts of the project and associated mining operations on cultural resources. A proper evaluation would have to address the complex array of ethnographic and archaeological resources involved, the vast variations in site conditions across the 200+-mile lengths of the three roadway alternatives, the multi-faceted road project with its ancillary gravel mine sites and other facilities, and the long list of reasonably foreseeable future actions, including large-scale hardrock mining, secondary access roads, regional transportation infrastructure, oil and gas development, public access, and many others. The draft SEIS makes no real attempt to do any of this, contrary to the requirements of NEPA and NHPA Section 106.

At the same time, however, BLM's collaborative efforts with Tribal governments to start identifying cultural resources appears to have led to a better understanding of what is really at stake with the proposed Ambler Road. Despite the lack of detail and analysis, the following statements show a recognition of the extensive presence of cultural resources throughout the region, as well as the profound cultural and spiritual devastation the Ambler Road project would wreak:

> "The likelihood for encountering previously undocumented cultural resources and historic properties within the APE is high. Archaeological probability modeling suggests that the Alternative A APE contains extensive high and medium probability zones for cultural resources."[1307]

> "Iñupiat, Koyukon, and Tanana Athabascan peoples have traditional and current cultural ties to the study area and the resources that move through it and hold locations within the study area as sacred to their culture. . . . The presence of development in the study area would introduce a cultural impact to these groups because they believe that development would harm the waterways and fish, caribou, and other resources. Any potential impacts on the resources would constitute a cultural effect."[1308]

> "In summary, given the ethnographic information currently available of the cultural importance of the study area, potential impacts on traditional belief systems/religious practices and other ethnographic resources, such as TCPs and cultural landscapes, would be adverse, regional, and long term."[1309]

Given the immense deficiencies that still exist in the cultural resource analyses for the NEPA and NHPA Section 106 reviews, and to avoid tragic and widespread harm to cultural resources that dozens of Tribes hold sacred, the only lawful choice for BLM is the no action alternative. Additionally, the Corps will not be able to rely on the SEIS to satisfy its independent

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[1307] *Id*. Similar statements are made for the other two alternatives as well.
[1308] *Id*.
[1309] *Id*.

CWA, NEPA, and NHPA Section 106 obligations.[1310] Likewise, the same would be true for NPS with respect to NHPA Section 106.

XII. BLM MUST COMPLETE A ROBUST ENVIRONMENTAL JUSTICE ANALYSIS.

BLM must account for the full scope of potential impacts to minority and low-income populations from all phases of the Ambler Road, including all lingering impacts following the project's cessation. Executive Order No. 12898, issued in 1994, requires that all federal agencies "make achieving environmental justice part of [their] mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of [agency] programs, policies, and activities on minority populations and low-income populations."[1311] President Biden's Executive Orders 14008 and 14096 reaffirmed and strengthened this commitment.[1312] Executive Order 14096 in particular directs agencies to, among other things, address climate and environmental burdens from federal activities on communities with environmental justice concerns. The Executive Order instructs agencies to "evaluate relevant legal authorities and . . . consider adopting or requiring measures to avoid, minimize, or mitigate disproportionate and adverse human health and environmental effects (including risks) and hazards of Federal activities on communities with environmental justice concerns." In order to comply with the Executive Order, BLM must properly analyze, minimize, and mitigate the environmental justice impacts of the Ambler Road project. Because it has failed to do so, and because it is unlikely that any mitigation could adequately avoid or minimize impacts to environmental justice communities from the proposed Ambler Road, BLM should select the no action alternative.

In the SEIS, BLM acknowledges that subsistence and public health impacts "would be among the most important high and adverse effects" and that all action alternatives "could have disproportionately high and adverse impacts to residents of EJ communities."[1313] However, the overall analysis of those impacts and ways to address them were lacking in the SEIS. BLM's final SEIS must do a better job of analyzing how the project may lead to additional significant adverse effects on environmental justice communities. For example, according to a one report, large-scale mining projects located in remote, isolated communities are correlated with impacts such as high poverty and unemployment rates, poorer health, lower education attainment, and

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[1310] The Corps' CWA regulations make clear that impacts to historic properties must be evaluated prior to issuance of a 404 permit. 33 C.F.R. § 320.4(a)(1) (listing historic properties has one factor to be evaluated in the Corps' public interest determination); 40 C.F.R. §§ 230.5(f), § 230.54 (explaining the Corps must evaluate special or critical characteristics of a candidate disposal site related to human use, and including areas of historic preservation among human use characteristics to be considered).

[1311] E.O. 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, 59 Fed. Reg. (Feb. 11, 1994).

[1312] E.O. 14008, Tackling the Climate Crisis at Home and Abroad, §§ 219–23 (Jan. 27, 2021); EO 14096, Revitalizing Our Nation's Commitment to Environmental Justice for All, 88 Fed. Reg. 25,251 (Apr. 26, 2023).

[1313] 1 SEIS at 3-202.

long-term out-migration.[1314] As minority and low-income status is the norm in the region proposed for the Ambler Road, such adverse environmental justice impacts are likely to be severe and to reverberate throughout the region. An analysis of the likelihood, magnitude, and duration of all such likely environmental justice impacts is necessary to fully analyze the proposed project.

The SEIS also does not adequately address the extent to which environmental justice impacts would be offset by the purported beneficial impacts. The SEIS indicated that there would be "[s]ome benefits" to minority and low-income populations from the road and mines, including "increased employment opportunities, expanded public services, and reductions in the cost of living due to changes in the logistics of delivering fuel and freight in some communities with high minority and low-income populations, provided the road allowed for commercial delivery of fuel supplies."[1315] In reaching this conclusion, BLM failed to address whether any benefits such as increased construction and mining job opportunities would persist once road construction ends, or after large-scale mining activities cease, or how the agency's finding would differ if the road is eventually opened to the public. In addition, BLM's assertion that impacts would be "[s]ome benefits" lacks specificity. Additional details regarding the extent to which identified benefits may counteract adverse impacts to low-income and minority communities are necessary to transparently analyze the project's impacts and ensure adequate mitigation is required.

The SEIS has not adequately described the extent to which employment opportunities may impact or even be limited for low-income and minority communities. As discussed elsewhere in these comments, economic benefits from the proposed project will be inconsistent, and often have "flickering" effects that lead to a boom and bust economy.[1316] The SEIS states that "communities are not expected to receive project-related employment benefits in greater proportion or degree than other populations in the region or the general state population," but that statement on its own does not adequately recognize that there may not just be equal access to jobs — there may be less. That analysis fails to acknowledge that minority and low-income communities may not realize meaningful benefits from employment opportunities arising in boom years, particularly when offset against the other tradeoffs and negative impacts to other aspects of people's lives in these communities. This is an important dynamic to recognize since, unlike the project's adverse impacts, employment opportunities associated with the project "would not disproportionately fall to EJ communities."[1317]

The SEIS also does not adequately explain the assumption that trucking fuel and supplies hundreds of miles by road would appreciably lower the cost of living within impacted

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[1314] Thomas Power & Donovan Power, The Social Costs of Mining on Rural Communities (Aug. 21, 2019), *available at* https://static1.squarespace.com/static/571f8d69d51cd4590b8328fa/t/5d6f36781f0e4c0001145b5a/1567569534257/Power+Report.pdf.

[1315] 1 SEIS at 3-205.

[1316] Powers Report, *supra.*

[1317] 1 SEIS App. F, tbl. 22, at F-22.

communities.[1318] This explanation is necessary because there are significant unknown costs and impacts associated with use of the road, and AIDEA has been unclear and at times misleading in representing whether and how the road might be used to facilitate such deliveries. Specifically, AIDEA intends to charge yet-to-be determined fees and tolls for all community deliveries.[1319] AIDEA also intends to limit permits for supply deliveries and emergency transportation to "less than 1 truck or bus per week."[1320] For those supply and fuel deliveries that are permitted, there is no clear plan for transporting deliveries from the road to communities. The SEIS speculated that individual communities could hire commercial transportation to move fuel and supplies from the road to "staging areas where the communities could access it" and that local residents might form their own companies to perform this service.[1321] No information regarding the cost of either option, which could include the expense of constructing spur roads, was provided in the SEIS. Even if savings for goods and fuel were realized, any benefits would be limited to Kobuk and two or three other communities.[1322] Thus, the remaining environmental justice communities would see no benefit from reduced costs. It is also misleading for AIDEA to be representing that there would be significant economic benefits when the road in fact would not connect to most of the communities along the corridor, and BLM should not just take those representations on their face. BLM did not include details about the true costs associated with use of the road in order to transparently determine the extent to which communities may realize the purported reduced fuel and supply costs. BLM also needs to clarify the scope and nature of any such plans and analyze the impacts likely to occur from additional use of the road, transport of goods across roadless areas (since the majority of impacted communities will not connect to the road), or the need for additional infrastructure, such as staging areas or spur roads for such deliveries. AIDEA has never been transparent or clear about how the road might be used in this regard, and as such those plans were not adequately analyzed in the SEIS.

In addition, the SEIS has not adequately explained how public services like healthcare and emergency services would be expanded. Although the SEIS states low-income and minority communities could benefit from expanded public services,[1323] the HIA merely indicates that improved access to clinics and lower cost clinical supplies "could occur" without further explanation.[1324] The HIA similarly concludes that more efficient emergency evacuations are a "potential" outcome[1325] without addressing the fact that emergency transportation services will be limited to use the road once a week.[1326] Notably, the consensus among healthcare providers is that any possible improvements in health services would result from mining development — as opposed to the Ambler Road itself.[1327] Because BLM has not considered mining development a connected action in its supplemental analysis, the agency should refrain from accounting for

[1318] Id.
[1319] *Id*. App. H, at H-26.
[1320] *Id*.
[1321] *Id*.
[1322] *Id*. App. F, tbl. 22, at F-22.
[1323] *Id*. at 3-205.
[1324] HIA at 110.
[1325] *Id*.
[1326] 1 SEIS App. H, at H-26.
[1327] HIA at 110.

possible benefits associated only with the mining development scenario in assessing environmental justice impacts. The SEIS also did not adequately analyze how environmental justice impacts might be appreciably offset by expanded public services, including which services could expand and which communities are likely to benefit.

For those impacts that will not be appreciably offset, BLM must adopt targeted mitigation measures. The executive orders discussed above commit BLM to address disproportionately high and adverse impacts on minority populations and low-income populations to the "greatest extent practicable."[1328] In the SEIS, BLM did not include specific environmental justice mitigation measures and instead relied on measures related to subsistence, socioeconomic, and public health impacts.[1329] None of the mitigation measures proposed directly address the significant adverse environmental justice impacts likely to flow from the project including an increase in food-insecure households and psychological stress.[1330] Given these severe impacts, BLM should consider a measure requiring AIDEA to provide monetary support to the communities that will be most impacted. Such a measure would help communities respond by developing programs needed to minimize environmental justice impacts (such as cultural programming, recording of subsistence areas, food assistance, and increased access to healthcare). BLM must also consider road design and proximity to communities with an eye towards environmental justice. Once strategies to minimize impacts are identified they should be developed as tangible and detailed mitigation measures.

XIII. THE SEIS DOES NOT ADEQUATELY ANALYZE IMPACTS TO SOCIOECONOMIC SYSTEMS.

In the SEIS, BLM's socioeconomic analysis should have meaningfully discussed the project's impacts on all relevant communities and accounted for the limited duration of the economic benefits of the Ambler Road and associated mining. In the socioeconomic section of the SEIS, BLM focused on some of the project's economic impacts without adequately addressing community concerns regarding public health, community cohesion, and lost traditions.[1331] In the SEIS, BLM briefly acknowledged community members' concerns about the negative impacts the project would have on traditional ways of life and cultural practices but then dismissed all such concerns as inevitable. The SEIS explains:

> Many comments received during the public comment period expressed concern over how the project would further change the way of life for people living in Alaska Native communities. Citing the cultural practices of their ancestors, subsistence activities that sustain them, and traditions that get passed from generation to generation, the commenters frequently described how these qualities of life have changed since the late 1960s/early 1970s when the Dalton Highway and TAPS were built.

[1328] *See, e.g.*, Executive Order No. 12898, Fed. Actions to Address Envtl. Justice in Minority Populations and Low-Income Populations § 1 (Feb. 16, 1994), *available at* https://www.archives.gov/files/federal-register/executive-orders/pdf/12898.pdf.

[1329] 3 SEIS at N-47.

[1330] 1 *id.* at 3-203.

[1331] *Id.* at 3-155 to -201.

> They also describe a decline in resource availability and relate it to the introduction of roads, mines, pipelines, and competition from sportsmen in recent years. Some comments expressed the changes as having been brought on by people from "outside" (i.e., people who come to this part of Alaska take the resources and leave the communities with unmitigated and long-lasting effects). The effects of climate change on resources were also cited as having an effect on life in the villages. Commenters described the peace, quiet, beauty, and wildness of the land and expressed concern that those qualities of the land are in jeopardy from increased human presence and activities.[1332]

Waving these concerns off, the SEIS simply states that "opportunities for access and development" change "the lifestyle and culture of Alaska Native communities."[1333] BLM then concluded, without explanation, that "isolated communities will continue to experience encroachment in areas that they have relied on for cultural and traditional practices."[1334] This statement sidesteps necessary analysis by presuming the project's negative impacts — degradation of the region's communities, cultures, and ways of life — are inevitable and is not an adequate analysis of the full range of socioeconomic impacts likely to occur from this project. Comments from affected communities, especially those grounded in past experience in the region, are integral to BLM's analysis of socioeconomic impacts. The SEIS failed to meaningfully incorporate those community concerns into its analysis.

Consistent with Joint Secretarial Order No 3403, BLM must incorporate Indigenous knowledge from affected communities into its supplementary analysis. On November 15, 2021, Secretary of the Interior Haaland signed an order requiring BLM to "consider Tribal expertise and/or Indigenous knowledge as part of Federal decision making relating to Federal lands, particularly concerning management of resources subject to reserved Tribal treaty rights and subsistence uses."[1335] In implementing this order, the Director of BLM issued Permanent Instruction Memorandum No. 2022-011 committing BLM to "evaluate and incorporate Indigenous Knowledge in its analysis and decision-making."[1336] In the SEIS, BLM failed to revise its analysis of socioeconomic resources and all other relevant resources to comply with these directives and meaningfully incorporate traditional knowledge.

[1332] *Id*. at 3-199.

[1333] *Id*. at 3-199.

[1334] *Id*.

[1335] Sec'y of the Interior and Sec'y of Agric., Joint Order No. 3403, Fulfilling the Trust Responsibility to Indian Tribes in the Stewardship of Federal Lands and Waters, § 3 (Nov. 15, 2021), *available at* https://www.doi.gov/sites/doi.gov/files/elips/documents/so-3403-joint-secretarial-order-on-fulfilling-the-trust-responsibility-to-indian-tribes-in-the-stewardship-of-federal-lands-and-waters.pdf.

[1336] Director of Bureau of Land Mgmt., Permanent Instruction Memorandum No. 2022-011, Co-Stewardship with Federally Recognized Indian and Alaska Native Tribes Pursuant to Secretary's Order 3403, § 5 (Sept. 13, 2022), *available at* https://www.blm.gov/sites/default/files/docs/2022-09/PIM2022-011%20+%20attachment.pdf.

BLM's supplemental analysis also failed to account for the broad array of socioeconomic impacts that were insufficiently addressed or diminished in the FEIS. According to a recent report:

> Large scale mining projects sited in rural, relatively isolated communities are statistically correlated with long-term out-migration, high poverty and unemployment rates, poorer health and lower education attainment. Market volatility for mineral commodities often leads to significant fluctuations in employment and payroll levels, i.e., a "flickering" economy and ultimately a "boom-bust economy," which often weighs against communities investing in the social infrastructure and prevention plans needed to mitigate the influx of a large, transient workforce. Transient mine employees, typically young, single, males, employed in block shifts (two weeks on two weeks off) are likely to be disruptive to the broader social community and are often associated with:
>
> - Increased alcohol and substance abuse, violence, morbidity, and mortality;
> - Increased violent crime including physical and sexual assault;
> - Increased pressure on law enforcement agencies;
> - Increased presence of convicted felons including drug dealers and registered sex offenders;
> - Undermining of Indigenous peoples' and other residents' ways of life and traditions; and
> - Increased conflict among residents along income, employment, and racial lines as the community fragments under the pressure of substantial transience among workers and residents. [1337]
>
> While the average non-indigenous resident of a community is clearly impacted by the transient nature of the mining industry, for the Indigenous residents this impact may be greatly multiplied. The Indigenous cultural structure is even less similar to the block-structure of the new mining working schedule; subsistence hunting and fishing, oral tradition, traditional jobs, and community relations can be strained for Indigenous people that are hired on by mines.[1338]

Adequate analysis of socioeconomic impacts requires baseline data that BLM is lacking. In the SEIS, BLM failed to provide baseline data needed to contextualize project impacts. For example, the SEIS notes that increased access to communities from the project may "increase the potential for bringing drugs, alcohol, and other prohibited substances into the communities" and referenced the 2019 Health Impact Assessment (HIA) for further information.[1339] However, both the SEIS and the HIA simply reiterate that the project may increase rates of substance abuse.[1340]

[1337] Power & Power, *supra*, at 4.

[1338] *Id*. at 14.

[1339] 1 SEIS at 3–200.

[1340] New Fields, Health Impact Assessment 107 (Sept. 25, 2019), *available at* https://eplanning.blm.gov/public_projects/nepa/57323/20004515/250005370/Ambler_Road_HIA

Neither source provides regional baseline information about existing rates of substance abuse or existing sociocultural impacts from such abuse in affected communities.[1341] BLM also did not address how generational socioeconomic impacts resulting from substance abuse may persist long after the short lifespan of the proposed project. This is especially concerning because the HIA indicates "[t]here are significant concerns surrounding mental health and wellness: particularly alcohol use, marijuana, occasional meth, opioids, a lot of domestic violence, substance abuse resulting in physical injuries in the area."[1342] The project's contribution to these socioeconomic issues cannot be assessed without adequate regional baseline data and analysis assessing the project's short-term economic benefits alongside potentially long-term or permanent negative impacts.

BLM's supplemental analysis also fails to fully evaluate all of the project's socioeconomic impacts. The socioeconomic section of the SEIS largely focuses on economic impacts and, where BLM draws conclusions regarding the project's net effects, those conclusions relate exclusively to easily quantifiable economic impacts. For example, noting the project would create jobs, BLM concludes access to mining jobs would provide an economic benefit for the region (including ANCSA corporations) and reduce food insecurity.[1343] This conclusion is questionable for two reasons. First, because BLM did not consider mining in the Ambler Mining District a connected action, the agency should not rely on the economic benefits of mining in assessing the socioeconomic impacts of the Ambler Road. Second, the agency did not quantify or draw conclusions about the costs associated with various socioeconomic impacts in order to fairly draw this conclusion. For example, BLM notes the project would result in psychological stress and increased communicable diseases but did not address the expense of additional health and community services. These costs may be significant because "[t]here is a lack of law enforcement" and "no behavioral health services available" in the affected communities.[1344] Ignoring social impacts because they are more difficult to express in monetary terms implicitly places a zero value on them. In fact, most social impacts can be quantified. Those social impacts, in no particular order, include:

- The distribution of income: poverty rates and large income differentials;
- Quality of life and environmental quality;
- Crime levels: property crimes as well as violent crimes;
- The relocation of convicted felons to booming mining areas;
- The health of the local population: disability, morbidity, and mortality rates;
- Public service needs;
- Substance abuse levels and overdose deaths;
- Educational achievement;
- Impact of non-traditional mine work schedule on community and family;
- Added stress to local services from the influx of non-local mine workers;
- The impacts of mining on the Indigenous people of the area; and

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[1341] *See e.g.* HIA at 39 (relying on state-wide rates of adolescent substance abuse because regional surveys lack "scientific rigor").

[1342] HIA at 91.

[1343] 1 SEIS at 3-194, 3-199.

[1344] HIA at 91.

• The shift of risk and responsibility away from worker's organizations (unions) and the mining companies and onto the individual miner.

BLM mentions some of these impacts, but fails to analyze them and all related impacts in order to accurately draw conclusions about the project's net socioeconomic impacts, and to develop and consider specific and enforceable mitigation measures to avoid or minimize such impacts.

In addition, BLM's analysis should have transparently addressed the fact that adverse impacts associated with the project will likely persist long after any potential socioeconomic benefits have subsided. In the SEIS, BLM does not clearly distinguish between the temporary nature of possible beneficial aspects of the proposed action (e.g., jobs from construction), and the project's long-term adverse socioeconomic impacts. Specifically, the SEIS states, vaguely, that the effects of mining development on communities are "difficult to forecast" because increased income "could be spent in ways that are beneficial or adverse."[1345] In reaching this conclusion, BLM did not compare the ambiguity of short-term benefits with the relative impact of lasting adverse impacts including the loss of jobs and economic activity when the road is no longer in use and large-scale hard rock mining in the Brooks Range ceases or, alternatively, the long-term socioeconomic harms likely to occur from increased access across this region if the road stays in long-term.[1346] The SEIS notes some potentially serious problems, such as the fact that reliance on mining jobs and commercially delivered goods could "have a negative effect on the lifestyle of the community by building reliance on the cash economy rather than subsistence," and that dependence on mining jobs could lead to residents leaving the community for urban areas once the mines are closed, but does not analyze the socioeconomic impacts that would result from such issues.[1347]

The SEIS also purports to analyze the socioeconomic impacts that would result if the road were to be opened to the public in the future or if additional large-scale mining were to occur in the region and use of the road were to increase dramatically, but its consideration of these impacts is insufficient. For example, the SEIS acknowledges that if the road is constructed, it will see both lawful and unlawful use, and result in additional road construction to connect more communities to the road network.[1348] The SEIS contemplates fuel and commercial freight deliveries to these communities via the road network (although it notes that prices may or may not decline based on factors beyond road access), but does not adequately analyze the impacts that connection to the road network would have on local economies, community cultures, or subsistence practices.[1349] Similarly, the consideration of ongoing mining in the future in the SEIS focuses too narrowly on the uncertain and speculative economic benefits for ANCSA corporations, while only acknowledging in passing that ongoing mining could have devastating impacts on local communities, especially if mining companies were to go out of business over the next one hundred or more years and be unable to respond to continuing harms from

[1345] 1 SEIS at 3-195.
[1346] *Id*.
[1347] *Id.* at 3-188, 3-193.
[1348] *Id.* at 3-196.
[1349] *Id.* at 3-196 to -98.

pollution.[1350] This approach resulted in a lopsided analysis that downplayed the project's negative impacts.

Finally, the socioeconomic section's alternatives analysis must provide enough detail to compare the alternatives on their merits. The sociocultural alternatives section in the SEIS compares economic impacts between alternatives but, regarding social and health impacts, merely listed some "potential" health impacts for each alternative.[1351] BLM is required to "[d]iscuss each alternative considered in detail . . . so that reviewers may evaluate their comparative merits."[1352] A general list of "potential" impacts does not constitute a meaningful analysis.

XIV. THE SEIS FAILED TO ADEQUATELY CONSIDER ECONOMIC IMPACTS.

The SEIS must provide an accurate assessment of the costs of the road and independently verify AIDEA's claims regarding economic benefits and feasibility. These costs should then be compared to the economic and other harms local communities are likely to experience due to the road. Such an analysis is needed for the agencies to take the required hard look at the Ambler road's social and economic impacts, both locally and state-wide. By relying on AIDEA's optimistic assumptions about economic impacts, the SEIS fails to do this.

A 2021 independent study of Ambler Road financing and economic benefits puts many of AIDEA's claims regarding the road's financial viability in doubt ("Powers Report").[1353] According to the study, AIDEA has systematically failed to address the real costs, risks, and liabilities of financing the proposed Ambler Road.

First, current information suggests it is far from certain that the four mineral deposits discussed in the SEIS will be developed if the proposed access road is constructed. The SEIS must recognize the likelihood that economic benefits will be far less than projected due to the financial infeasibility of developing all the deposits.

Second, the SEIS must account for the construction, operations, maintenance, and unknown reclamation costs of the project, and should not rely exclusively on AIDEA's cost projections, which potentially vastly underestimate the project costs. BLM should consider costs for similar road projects, and earlier projected costs for the Ambler Road.

This region of Interior Alaska is largely roadless, making road construction and maintenance extremely expensive because materials and workers would be transported significant distances via a gravel road or by air. Portions of the proposed route are underlain by permafrost, which raises road design and construction costs and technical challenges, as well as maintenance costs for the life of the road. Additionally, the road would require numerous river and stream crossings. Because of the high cost of bringing materials and labor to this remote

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[1350] *Id.* at 3-194.

[1351] *See, e.g.*, *id.* at 3-189 to -90.

[1352] 40 C.F.R. § 1502.14(b).

[1353] POWERS CONSULTING, AN ECONOMIC ANALYSIS OF THE PROPOSED ALASKA AMBLER ACCESS ROAD (Dec. 2021) (submitted on thumb drive).

region and technical challenges with the road proposal, the project's cost estimate should be developed with great care, including utilizing sensitivity analyses that include a range of costs for particular variables.

Finally, the SEIS must acknowledge the risk construction of the road poses to AIDEA's credit rating and to state finances.

A. The SEIS Assumption that Four Mineral Deposits Will Be Exploited Is Unjustified by Current Information.

The SEIS bases the projected economic benefits from the road on a set of overly optimistic and unrealistic assumptions provided by the project proponent. While development and full exploitation of the four mineral deposits discussed in the SEIS is one "reasonably foreseeable" outcome that must be evaluated, it is far from certain. Indeed, it is not the most likely outcome. Of the four deposits, a feasibility study has been completed for only one, and none of the potential mines have gone through any permitting processes for development.

The SEIS appears to base its assumption that all four mineral deposits will be developed after construction of the road primarily on AIDEA's statement that "mines using the road to haul ore to market would pay a user fee that would pay back the financing used for the road's development and construction,"[1354] On its face, this claim is unlikely. As noted in the SEIS, the Smucker and Sun mineral deposit developments are expected to come on line at least 10 years after the Arctic mine. Given the volatility of mineral prices, it is unlikely that reputable companies that can be held accountable for their contracts will agree to obligate their company to millions of dollars of toll fees without an actual mine or mining permits.

AIDEA has not developed a clear and credible financial plan that shows that a contract for toll fees for all four deposits is likely. Indeed, Arctic, the only mine that has done a final feasibility study attempting to lay out costs, underestimates its likely toll and maintenance costs by nearly half. As stated in the Powers Report, "What becomes clear when we use the payments presented by the only mine that has been developed far enough to have a final Feasibility Study, is that the Ambler Access Road, as presented in the FEIS, cannot pay for itself."[1355] Trilogy Metals' operation plan actually projects spending less than half the cost AIDEA projects for them on transportation. BLM cannot simply assume this contract will exist based on AIDEA's statements.

Even if such a contract for all four mineral deposit developments is ultimately signed, it is not a guarantee that all four deposits will be developed. According to Powers "That flow of user fees or tolls from mining companies to AIDEA, however, is not riskless. If metal markets soften and the prices the miners can get for their metal ore concentrates plunge, the Ambler District mines may never get developed. Whether or not they get developed, the mining companies may not be able to make their contractual lease payments to AIDEA, which, in turn,

[1354] AIDEA, Ambler Access – EIS Project (Sept. 2019), *available at* http://www.aidea.org/Portals/0/PDF%20Files/PFS_Amdiar.pdf.

[1355] *Id*. at 7.

may have to default on the bonds it sold to finance the building of the Ambler Access Road."[1356] There are numerous examples in Alaska and elsewhere of planned mines being abandoned or delayed. In this case, it is hard to say that any of the four mines are even "planned." The SEIS should clearly identify which portions of the Arctic, Bornite, Smucker and Sun deposits are inferred, indicated, or measured resources, and identify where each is in the process of permit acquisition,

Even if all four mineral deposits are ultimately measured, it is no guarantee that they will be economical. The SEIS should acknowledge the volatility of mineral prices and the potential impact of that volatility on mine development and lifetime. This volatility and its impacts were illustrated quite clearly last March when Jervois Global Limited, the Australian company that owns Idaho Cobalt Operations, a potential mine near Salmon, Idaho, suspended final construction of the mine. According to news reports, Jervois said the move is "due to continuing low cobalt prices and U.S. inflationary impacts on construction costs." [1357]

Ultimately, the SEIS should make clear that AIDEA's assumption of four mines operating with no halts in production is a best-case scenario. Scenarios in which none, one, two, three or four of the deposits are ever exploited appear equally likely and in its section on indirect economic benefits, the SEIS must clearly acknowledge these scenarios and the likelihood that a road will not lead to the potential financial benefits of four mines.

Although AIDEA often cites to the DeLong Mountain Road to access the Red Dog Mine as a financially successful example of the state building a road to support mining, there are notable differences between the DeLong Mountain road and the proposed Ambler Road that would greatly increase costs for the latter. These differences include the DeLong Mountain road's substantially shorter length, its flatter terrain for construction, its tidewater access, having far fewer water crossings, and perhaps most importantly from an economic standpoint, the Red Dog Mine owner's 1986 signed agreement to reimburse the state for the road's financing, construction, use, operation, and maintenance costs.[1358] Even with those differences that made Red Dog Mine more likely to succeed than any of the possible mines in the Ambler Region, AIDEA was called upon to double its investment in the Red Dog Mine when zinc prices dropped.[1359]

On top of these optimistic assumptions, AIDEA's economic analysis also assumed an additional 20 years of road life without any basis. The SEIS analyzes a road with a fifty-year life,

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[1356] Powers at 7.

[1357] Mary Boyle, *Cobalt mine near Salmon suspending operations*, EAST IDAHO NEWS (Mar. 29, 2023), https://www.eastidahonews.com/2023/03/cobalt-mine-near-salmon-suspending-operations/#:~:text=SALMON%20%E2%80%94%20Jervois%20Global%20Limited%2C%20the%20Australian%20company,was%20scheduled%20to%20be%20fully%20operational%20this%20quarter.

[1358] Agreement for the Financing, Construction, Use, Operation, and Maintenance of the DeLong Mountain Transportation System between the Alaska Industrial Development Authority and Cominco American Inc. (June 30, 1986).

[1359] Powers at 27.

which was also authorized by the terms of BLM's right-of-way.[1360] In most previous analyses, the road's life was assumed to be 30 years because that was the longest-term financial markets allowed for municipal revenue bonds of the sort that AIDEA would sell to finance the construction of the Road. In the FEIS, BLM accepted AIDEA's optimistic assumptions that it would pay off the bonds in 30 years and make another 20 years of profit, even though the mining companies, ore deposits, mining technology, and markets cannot not be identified at this point in time.[1361] There is no basis for this assumption.

To accurately assess and weigh the economic benefits of the proposed Ambler Road, the SEIS must highlight the economic benefits from mineral development scenarios that, given current information, are more likely than the development of all four deposits. Thus, it must consider the possible construction of the road without any successful large-scale mineral development as well as the possibility that only one, two, or three of the primary mineral deposits will be exploited.

B. The SEIS Estimate of Road Costs Is Unreliable.

BLM must develop an accurate cost estimate for the SEIS. If AIDEA does pass the cost on to mining companies, the cost of the road will impact the likelihood of private companies exploiting the mineral resources in the region. It will also impact the potential liability of the state if the state is either forced or chooses to step in to cover AIDEA's bond costs.

In developing a cost estimate, one road-building company stated in 2016 (before the substantial inflation in road building costs of the last seven years) that:

> [t]he realities of road building have much to do with a number of variables: location, terrain, type of construction, number of lanes, lane width, surface durability, and the number of bridges, to name a few, according to the American Road and Transportation Builders Association.
>
> But, in general, it costs much more to build an entirely new road than to rehabilitate or add new lanes to an existing byway . . . . And as you might expect, it costs more to build in mountainous areas than on stable, flat land . . . . Nonetheless, here are the daunting numbers: constructing a two-lane, undivided road in a rural locale will set you back somewhere between $2 and $3 million per mile.[1362]

These cost estimate factors do not account for all conditions for the proposed Ambler Road, which should include the higher costs of: transporting materials and labor to a remote Alaska locale; construction in a permafrost region; and the many culverts and bridges needed to ensure that streams, rivers wetlands, and fisheries are not damaged. An estimate of $479 million (pre-financing) for construction of a road along an unknown route with thousands of stream

[1360] BLM ROW at 1.

[1361] Powers Consulting at 5.

[1362] Frank Elswick, Midwest Industrial Supply Inc., Canton, OH (Jan. 5, 2016), *available at* https://blog.midwestind.com/cost-of-building-road/.

crossings is optimistic at best. This is not surprising: project proponents everywhere consistently underestimate costs. According to Powers:

> Often the initial estimate of the cost of large transportation infrastructure projects is biased downward in order to make the projects look more attractive to government funders and taxpayers. This pattern of underestimating costs of public works projects is so prevalent that it has been the subject of considerable research interest. An article published in the Journal of the American Planning Association sought to determine whether this divergence between project cost at the time of approval and ultimate actual cost was the result of error in the cost estimation or was the result of purposeful misrepresentation. It concluded that cost estimates used to decide whether such [infrastructure] projects should be built are highly and systematically misleading. Underestimation cannot be explained by error and is best explained by strategic misrepresentation, that is, lying. The policy implications are clear: legislators, administrators, investors, media representatives, and members of the public who value honest numbers should not trust cost estimates and cost-benefit analyses produced by project promoters and their analysts.[1363]

BLM must include an accurate cost estimate for the proposed road in the SEIS. As has been done for the Knik Arm Bridge and Juneau Access, there should be a thorough independent analysis of road costs prior to proceeding.

C. The SEIS Assumption that Road Construction Will Not Impact the State's Budget or AIDEA's Credit Rating Is Not Justified.

The SEIS states that AIDEA bonds will not impact the state of Alaska's credit rating and will not obligate the state. This is again an optimistic scenario. While AIDEA can generally secure lower interest financing than mining companies, that is unlikely to be the case when they are attempting to finance a road dependent on the return from speculative mining unless AIDEA backs the loans with state money and/or loan insurance.

In order to sell the bonds associated with the Red Dog transportation infrastructure, AIDEA had to insure its bond repayments by purchasing bond insurance as well as having the Alaska state government provide collateral in the form of state assets transferred to AIDEA.[1364] If the state does not provide that support in this case, AIDEA's bonds for the proposed road will appear riskier than the bonds sold to support the Red Dog access road and port facilities, and interest rates may be significantly higher than AIDEA's current estimate.

If the state does not guarantee the bonds, AIDEA will likely have to, and AIDEA's credit rating will be on the line if the bonds are not repaid. Assuming that AIDEA provides something of value to the state with some of its other financial investments and that its credit rating is therefore important, the state may feel obligated to step in to pay off the bonds. If it does not, AIDEA may be handicapped in carrying out its mission elsewhere in the state.

[1363] Powers at 22 (internal quotation marks and citations omitted).
[1364] *Id.* at 10.

Any financial outlay by the state in the near future would have negative impacts as it would exacerbate the state's fiscal problems and cause reductions in state expenditures in other areas.[1365] The SEIS should analyze how this commitment of state financial resources will impact other state uses of the money, as well as what it would mean if the state or AIDEA's credit ratings goes down should one or more of the mining companies in the Ambler Mining District fail. At a time when Anchorage is planning to shutter elementary schools due to significant budget shortfalls, the state can ill-afford a financial boondoggle like the Ambler Road.[1366] The assumptions behind projected toll revenues need to be included in the SEIS, as well as any commitments by mine operators to pay those costs.

Ignoring the flaws in AIDEA's studies and projections, under a best-case revenue scenario, AIDEA projects a return to the state of 5 to 10 times less than the state would make from simply investing the money in bonds. The Cardno Report, which underestimates the cost of the road by over $500 million, only projects a rate of return on AIDEA's investment of 0.6%, as the Powers Report explains:

> Expressed as a percent of the capital investment in the Ambler Access Road (assumed to be $875 million including the cost of money), the annual net revenue would be about 0.6 percent of the capital investment. Both represent relatively low returns on the investment despite the billion dollars of gross revenues collected in tolls. Over the last decade, the actual yield on relatively safe 30-year, high-quality market corporate bonds has been between 6 percent (January 2010) and 3 percent (April 2021).[1367]

In addition to the low projected returns to the state, the SEIS's assumptions about local employment are thinly supported. The SEIS assume a local employment rate of 20% by relying on an Economic Impacts Report by the University of Alaska dated June 28, 2019. The report spends no more than a footnote justifying its assumptions about the rate of in-region employment, relying on a comparison to Red Dog Mine.[1368] Red Dog Mine, which uses a local hire preference and is connected to the largest community in the region and regional air hub by a fifty-mile road, may not be a fair comparison for jobs along a road (with no local hire preference) or at mines (which may have local hire preferences) that may require an eight-to-twelve hour drive to Fairbanks followed by a flight to one of the smaller communities in the region. The UA report, however, provides no other information. In contrast to this optimistic projection, the Powers economic analysis indicates that the road will provide little to no economic benefit to local communities:

[1365] For a discussion of the state's fiscal problems, *see e.g.*, Andrew Kitchenman, Alaska's State Government Faces Big Budget Cuts, NATIONAL PUBLIC RADIO (July 13, 2019) https://www.npr.org/2019/07/13/741391200/alaskas-state-government-faces-big-budget-cuts.

[1366] Katie Anastas, Anchorage School District Administrators Recommend Closing 6 Elementary Schools, ALASKA PUBLIC MEDIA Oct. 18, 2022.

[1367] Powers at 20.

[1368] University of Alaska, 2019, p.11, fn 6.

> While the multi-national mining companies may see substantial positive economic impacts from the proposed Ambler Access Road mines, the local people and local economies will see little of those projected economic benefits for the simple reason that the small, isolated villages cannot supply either the inputs the projected mines will need to operate or the goods and services on which employees at the mines are likely to want to spend their mining paychecks.[1369]

In other words, third-party economic analysis has determined that AIDEA's continued investments in this project are highly speculative, and that the applicants are pushing this project forward devoid of data that would indicate that the state will recoup its costs, let alone create local jobs and bring significant financial returns to the state. Instead, they are relying on extremely optimistic assumptions regarding financing a massive, environmentally destructive project reliant on at least 50-year of mining activity requiring at least four major mines in a region that has yet to have a single mine that has begun the federal permitting process.[1370] The SEIS must fully consider this information rather than rely on AIDEA's unreasonable estimates of financial feasibility in order to take a hard look at the Ambler Road's economic impacts.

XV. THE SEIS DOES NOT EFFECTIVELY ACCOUNT FOR, OR MITIGATE, IMPACTS TO RECREATION AND TOURISM.

The SEIS does not adequately account for the full range of foreseeable impacts to recreation and tourism. Recreation and tourism activities in the corridors of the proposed Ambler Road rely on the solitude and primitive and unconfined recreation values of the area. Although the SEIS cites these values as pertaining to Gates of the Arctic, they are applicable across the entirety of the project area. There are no trails and most access is by floating, powerboat, or plane. The SEIS acknowledged that the road will materially change the recreationalist and tourist experience, as many tourist destinations are likely to overlap via at least sight or sound with the proposed alternatives.[1371] Travelers' backcountry trips, where they would have multiple days of travel on either side of the road corridor, would be likely to cross the road at some point. Travelers' river trips would be impacted by road bridges, which would affect 6 out of 7 of the most common float trips in the area.[1372] Industrialization of the Southern Brooks Range with this road will forever change the composition of the landscape, and alter recreationalists' and tourists' desires to visit the area.

The SEIS fails to account for the changes in flight patterns due to construction and use that would materially change user experiences. Alternatives A and B for the road would also travel close to areas of high recreational value, near Walker Lake and several wilderness lodges. The lodges offer unparalleled access to nature experiences. The SEIS does not account for the fact that globally there are very few locations with such large swaths of roadless areas available for recreational experiences. The roadway itself, traffic, increased and varied flight patterns, and hardrock and gravel mining along the corridor would all substantially impair these values.

[1369] Powers at 31.
[1370] *Id.* at 17.
[1371] 1 SEIS at 3-174 to -75.
[1372] *Id*. at 3-176.

BLM cites several mitigation measures that appear good in theory, but lack the ability to actually reduce impacts. BLM fails to account for the likely scenario where the road is opened to more development or will allow for individual, private access to the road. BLM makes inconsistent statements about the likelihood of individual use of the road, stating both that "recreational road is not a proposed use" and later adding that "it is likely that Alaskans will seek ways to access the Ambler Road . . . [and] after the useful commercial life of Ambler Road, it may be converted to a public road."[1373] Since the SEIS acknowledges that there is a risk of the road becoming open to anyone, the impacts of public access on recreation should have been fully analyzed.

The SEIS should have included mitigation measures to account for unauthorized poaching and recreation. BLM's proposed mitigation measures to prohibit use of the proposed Ambler Road and airstrips by the public and AIDEA employees, agents, contractors, and their employees for hunting purposes lack measures to ensure enforcement. There is no indication of specific measures AIDEA has planned to prohibit outside hunters from poaching on the right of way. Efforts to curb hunting on the Delong Mountain road have failed to prevent poaching activity to such an extent that AIDEA no longer attempts to enforce restrictions. There is also the risk that people might be incentivized to use areas adjacent to the road in the absence of appropriate and necessary enforcement measures. It is unclear how any restrictions would be implemented or guaranteed here. For enforcement, there is no indication if BLM also intends for AIDEA to coordinate with Alaska State Troopers for enforcement or if the Alaska State Troopers would budget for this task. BLM should have included enforceable measures, to prevent against unauthorized use of the road. There should be defined actions that will be taken in the event of hunting and access violations. AIDEA is responsible for mitigating the issues with poaching caused by opening the area with road access.

BLM should have accounted for the cost, noise, and prolonged disturbance from operation and removal of the road. Any tourism business that manages to survive the construction of the road will then deal with the ongoing transport traffic. It is not clear how many mines will result from the industrial access so it is also unclear how many vehicles per day will travel the transportation route. BLM should have clarified these issues and analyzed the related impacts to recreation.

BLM should have developed a plan to decrease impacts during high-use recreation seasons. Currently the SEIS lists that AIDEA will develop a plan to "minimize impact to high-use tourist and recreation seasons" by timing construction activities.[1374]" This goal is not quantifiable, is so vague as to be virtually meaningless, and fails to comply with NEPA by leaving it to AIDEA to develop a plan after-the-fact. The SEIS should have set out information on who is recreating in the area and when, including businesses that derive income from this recreation. None of that baseline information was collected or adequately analyzed in the SEIS, so there is no way to know if, or how, activities will be minimized. Construction and tourism seasons are likely to have substantial overlap. In the absence of an adequate analysis of impacts and mitigation measures related to recreation in the SEIS, BLM must select the no action alternative.

[1373] *Id*. at 3-175, 3-178.
[1374] 3 SEIS at N-45.

XVI. THE SEIS FAILED TO ADEQUATELY ANALYZE THE IMPACTS ON SOUNDSCAPES FROM CONSTRUCTION AND USE OF THE PROPOSED AMBER ROAD.

Maintaining the natural soundscape along the corridor of any proposed Ambler Road alternative is crucial to retaining the area's values. The SEIS identifies noise as a primary impact of the Ambler Road[1375] but fails to analyze the impacts in a cohesive manner. Namely, the SEIS does not point to a sufficient baseline and uses outdated data that was inapplicable to the majority of the proposed alternatives. The analysis of likely noise impacts during the proposed road's operations is also inadequate and does not sufficiently account for site specific factors, increases in air traffic, or habitat fragmentation. The SEIS does not fully analyze the foreseeable development impacts of road construction, operation, and mining activities on the natural soundscape. BLM must perform soundscape studies for all the alternatives to make an informed decision and ensure noise impacts are adequately mitigated.

First, BLM has not established a baseline soundscape. Other EIS's for roadway impacts in the Arctic provide soundscape analyses that start with a baseline soundscape and then predict the likely change from the road construction and development.[1376] The acoustic environment, or soundscape, is comprised of the terrain, vegetation or ground cover (*e.g.* water, land, foliage), atmospheric conditions (wind/weather), and distance from the sound's source and decibels for perception. All these factors must be established along the roadway corridors under the various alternatives. The project area is largely undeveloped and remote, extending 211 miles for Alternative A, 228 miles for Alternative B respectively, and 332 miles for Alternative C. BLM does not describe the current ambient noise conditions, which will vary across all alternatives based on geographic features, proximity to communities and subsistence use areas (*e.g.* human noises including snowmachines and guns), and frequent flyways (to area communities, Utqiaġvik, Kotzebue, lodges, and backcountry areas). BLM should consider these variables and articulate the sound pressure level, frequency and duration of noise, maximum combined noise, and distance to the background noise from new projects. BLM must establish baseline conditions to assess the intensity of impacts the proposed Ambler Road would have on the soundscape.

BLM's approach to calculating soundscape impacts contained misplaced and incorrect modeling assumptions. BLM requested NPS take data from a previous 2015 study within Gates of the Arctic and apply the results broadly to all alternatives. This small, site-specific data sample is outdated and inadequate to account for the actual conditions of the proposed Ambler Road. The 2015 Big Sky Acoustics study (data collected in 2013 and 2014) only calculates impacts for the northern and southern alternatives through Gates of the Arctic.[1377] While we

[1375] 1 SEIS at ES-5, 3-47.

[1376] *See, e.g.*, 1 Bureau of Land Mgmt., Final Supplemental Environmental Impact Statement for the Alpine Satellite Development Plan for the Proposed Greater Mooses Tooth Two Development Project 295, tbl. 108 (2018)., (presenting existing passive noise at project site); 1 U.S. Environmental Protection Agency, Final Supplemental Environmental Impact Statement for the Red Dog Mine Extension 3-284–285 (2009) [hereinafter Red Dog 2009 Final SEIS] (looking at ambient noise levels).

[1377] Big Sky Acoustics, LLC, Ambler Mining District Industrial Access Road Envtl.

appreciate that NPS updated the Big Sky Study as part of the prior process,[1378] the analysis is still inaccurate. The underlying data is stale, as this region of the Arctic has seen significant changes, including increased warming and climate variability, as well as sound impacts from exploration near the road corridor. These factors are important to determining the impacts of noise. To calculate the temperatures in the area, the SEIS relies on 2014 data from the general source website, Weather Underground, at the Ambler Airport.[1379] It is unclear how these weather conditions are applicable for the entire proposed project — in some instances the road is hundreds of miles away from this point. The weather data provided is insufficient and cannot replace studies that assess the actual baseline conditions in the area.

Second, the SEIS's analysis of impacts to the acoustic environment is still deficient for several reasons. For example, the SEIS does not account for reasonably foreseeable expansions or conditions of the proposed Amber Road. In reality, and as stated throughout the SEIS, the road would be likely to lead to a vast expansion of mining activities and mines across the region.[1380] Limiting the assumptions in these ways does not account for the reasonably foreseeable, and likely use, of the proposed Ambler Road. BLM must use the actual project conditions, and reasonably foreseeable use to analyze soundscape impacts.

The SEIS soundscape analysis also assumes vehicles will travel at the same speed, 45 miles per hour, across the duration of the road.[1381] This is not reflected elsewhere in the SEIS, as no speed limits appear to be identified or required as mitigation measures. The SEIS even acknowledges that the 45 miles per hour assumption was just for heavy trucks[1382], and "[i]f any vehicles travel faster than 45 miles per hour, these models will also underestimate impacts."[1383] Moreover, given the differences in jurisdiction across the road, it is unclear how any speed limit might be meaningfully imposed or enforced. Since BLM appears to assume the road may have different speed limits, these areas must be identified and the appropriate changes to the soundscape considered.

In addition, all alternatives of the proposed Ambler Road stretch for vast distances through the Arctic and require detailed analysis of site-specific conditions. BLM not only applies outdated calculations and incorrect project assumptions, but the 2015 Big Sky Acoustics report information was collected from a small part of the proposed project area within Gates of the Arctic (road sections 26 miles (northern alignment) and 18 miles (southern alignment) long respectively). The study focused exclusively on the area along the Kobuk River corridor and Walker Lake.[1384] As a high human use/recreational area, the ambient noise will be different than the rest of the project area. Sound impacts are very specific to the nearby terrain, and BLM must do baseline and impacts studies to understand the scope and intensity for these impacts. In

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Sound Analysis 5 (Nov. 12, 2015) (hereinafter Big Sky Acoustics).

[1378] 1 SEIS, App. D, att. A (showing continued reliance on 2014 data).

[1379] *Id*. at D-A-1.

[1380] 2 SEIS, App. H. at H-25 to -26.

[1381] 1 SEIS, App. D at D-A-1.

[1382] The SEIS acknowledged that if "additional small vehicles are expected to use the road, these models will underestimate the impact of road development." *Id.* at D-A-2.

[1383] *Id.*

[1384] Big Sky Acoustics at 6.

addition, this data is also viewed through the lens of the NPS, which is required to manage Gates of the Arctic for its natural and pristine qualities. Because of this lens, the majority of discussion on sound is related to recreational activities. BLM must consider differences in management along different parts of the road corridor. This data was extrapolated in the SEIS to represent the soundscape across the hundreds of miles of proposed roadways. But the conditions near the Kobuk River and Walker Lake are not applicable to the rest of the project area, and BLM should analyze noise impacts in different site-specific locations in the SEIS and consider impacts to uses beyond recreation.

Without basis, BLM ties the 2.5-mile buffer distance given in the SEIS for roadway noise to the noise impacts analysis for the Red Dog Mine.[1385] It is unclear how it derived that number. The DeLong Mountain Road for Red Dog sets a different disturbance boundary: a 2.3 mile perimeter.[1386] BLM must explain this inconsistency and perform calculations for buffers that take into account for site-specific factors for the proposed Ambler Road. Red Dog Mine is a much shorter road, in a different part of Alaska, with different operating and project conditions for deriving temporal noise impacts (*e.g.* terrain, proximity to animal and bird habitat and communities, aircraft flight patterns, primary recreation corridors, and reasonably foreseeable/cumulative effects from mine development). BLM should have considered the specific impacts to all potentially affected areas.

Egregiously, BLM's analysis of soundscape impacts and the noise disturbance boundary focus on roadway use but not the multi-year construction phase. AIDEA's Ambler proposal sets construction at different levels of intensity and development including changes to the width of the road from a single and double lane roadway. BLM must consider:

- Blasting
- Pile Driving
- Building Bridges
- Building Communications Towers
- Vehicle Operation
- Gravel Mining
- Construction Camps (AIDEA proposes construction camps every 40-45 miles along the road corridor. These locations would have a helipad and encompass five acres each).[1387]

All the above activities will have different noise parameters and levels of intensity. BLM recognizes that construction would result in high intensity noise but fails to analyze what those would look like across the proposed roadway alternatives.[1388] Those noise impacts will be significant and localized in different areas depending on construction conditions and phases. For

[1385] 1 SEIS at 3-46.

[1386] *Compare id.* (2.5-mile buffer), *with* 1 Red Dog 2009 Final SEIS at 3-287, fig. 3.44 (2.3-mile buffer).

[1387] 1 SEIS at 2-9.

[1388] *Id.* at 3-47, *see also id.* at App. D, tbl. 19 (noting the varying construction equipment noise emission levels).

example, the mining of gravel and number of overflights are both significantly impactful noise activities that will change locations and intensities throughout this period. These activities are not currently considered in the soundscape analysis and will create significant noise impacts. While the SEIS mentioned the noise impacts from all construction, it did not predict the noise impacts for the construction camps. BLM should have analyzed the total number of camps and their projected noise levels. BLM must perform studies and modeling of the soundscape impacts from construction activities for the three phases of the road development for all alternatives.

The SEIS also failed to account for any noise impacts from road maintenance. Maintenance of the proposed Ambler Road will be ongoing throughout the life of this project, and there would be specific noise impacts from grading, sanding, and snowplowing, as well as from additional gravel mining to support maintenance of the road. BLM must consider the noise impacts of this equipment, and the duration and frequency of these activities.

BLM still has not accounted for the noise impacts from reasonably foreseeable increases in air traffic. The proposed construction includes the development of an airstrip every 70 miles along the highway in tandem with the long-term maintenance stations.[1389] BLM predicts there will be one or two flights weekly to each station to change out crews during use and three or four flights per week in the six years of construction.[1390] Planes are one of the most disturbing impacts on the landscape, and BLM must consider the location of these future disturbances. BLM should also look at eliminating the frequency of those airstrips to further minimize the impacts to not only the soundscape, but to other resources as well.

BLM still has not considered areas of frequent use. Just because sound impacts cannot be heard in town at a certain village — specifically, the SEIS cites to Bettles/Evansville and Kobuk at eight to nine miles from the road[1391] — does not mean these residents will not be substantially impacted. Residents frequently travel in the areas surrounding their villages for a variety of activities, including subsistence harvesting. It is foreseeable that residents of these and other communities will be traveling within hearing distance for subsistence and other activities, and that such activities will be curtailed because of the sounds impacts to wildlife. BLM should consult with all communities to ascertain how communities utilize areas with noise impacts.

The SEIS also does not adequately consider habitat fragmentation from noise impacts. The SEIS acknowledges that impacts to "wildlife movement and distribution patterns" will exist, but fails to assess the intensity or duration of any of these impacts.[1392] Merely acknowledging that fact is not sufficient and does not allow for any further analysis to compare the alternatives against each other or to develop potential mitigation measures. BLM should have fully considered the deterrence factors of road noise and potential mitigation of these impacts.

The SEIS fails to consider mitigation to reduce or eliminate noise impacts in the project area and to nearby communities and users of the region. The SEIS states that AIDEA's design

[1389] *Id.* at 2-10.
[1390] Id.
[1391] *Id.* at 3-49.
[1392] *Id.* at 3-48.

features "would reduce noise during construction and operation, such as keeping vehicles and mufflers in good operating condition."[1393] This cites back to Section 2.4.4, which appears to contain a list of vague ways AIDEA might propose reducing noise during construction, such as "use of quieter equipment."[1394] It is unclear how the agency was able to analyze the effectiveness of those design features when AIDEA has yet to design those measures. BLM must define what equipment is considered quieter. BLM suggests that noise may also be mitigated by pointing sources away from noise-sensitive locations, not idling equipment, and driving equipment forward instead of backward. This measure is illogical for road construction as the very nature of road building is back blading (driving equipment backwards) dragging material, scraping, banging, and making excessive amounts of noise and vibration. The cumulative impacts of bombing and dredging during construction would disturb wildlife, subsistence users, and recreational users in the area. As such, BLM must also identify "noise sensitive locations" that it references in this design feature.

Appendix N provides one single measure to reduce noise: that AIDEA would develop and comply with a Noise Management Plan.[1395] This is wholly inadequate to account for reduction in noise impacts during construction and operation of the proposed road. This appears to only be a suggested measure and does not describe any plan of development or what conditions would be required. These purported mitigation measures lack any particulars and contain no restrictive language. BLM needs to require development of this plan up front to ensure it implements reduction techniques that will be effective along the entirety of each proposed alternative. Analysis of any mitigation plan is required to weigh the alternatives and should be laid out in detail in advance of any project approvals.

BLM should consider whether noise barriers are a viable option for the proposed Ambler Road. BLM must consider costs and other impacts for a noise fence instead of dismissing such a tool offhand. Similarly, BLM should consider reduction of vehicle speed as a viable way to reduce noise. This mitigation measure could be applied uniformly or in specific locations where impacts are heightened. The SEIS does not currently mention such a measure. BLM must mitigate noise impacts during both construction and road use.

Additionally, the SEIS's consideration of cumulative effects is inadequate because BLM does not account for the reasonably foreseeable scenario where the road is opened to the public. Public use could lead to increased noise from additional vehicle traffic, hunting, and other human activity along the road corridor. As described elsewhere in these comments, this outcome is likely and will undoubtedly alter most assumptions made in the SEIS and its impacts must be considered in the final SEIS.

In sum, BLM should provide a more robust analysis and studies to consider noise impacts during construction and use of the proposed Ambler Road prior to authorizing any part of this project. BLM must calculate and set disturbance boundaries considering the site-specific conditions along the entirety of all alternative's corridors. BLM should perform a soundscape baseline and analysis that pertains to the conditions and alternatives of this proposed project.

[1393] *Id*. at 3-48.
[1394] *Id.* at 2-17.
[1395] 3 *id.* App. N at N-22.

Attachments

Comments on the Ambler Road Project Supplemental Draft Environmental Impact Statement by the Bureau of Land Management
On behalf of Trustees for Alaska, 1026 W. 4th Ave., Ste. 201 Anchorage, AK 99501

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December 15, 2023

These comments are made in response to an application by the Alaska Industrial Development and Export Authority (AIDEA) to construct a new 211-mile long Road (minimum distance) to the Ambler Mining District. The Supplemental Draft Environmental Impact Statement (hereafter SDEIS) produced by the Bureau of Land Management (BLM) and supporting documents (including the USACE 404 Permit Application) considering AIDEA's application are the focus of this review. Stream, wetland, and floodplain impacts will be extensive as a result of road construction, bridge and culvert placement, gravel mining, and the opening and operation of hard rock mines. The potential for water quality, wetland, and wildlife impacts from the project is high. The selected road alignment will require the installation of between 2,900 and 4,350 culverts and between 41 and 509 bridges, resulting in extensive and long-lasting impacts. In addition, the project would permanently discharge fill material to well over 2,000 acres of jurisdictional wetlands and cause indirect impacts to many more wetlands along the road alignment.

Primary Concerns on the Ambler Road Project:

- The proposed Ambler Road alignment will have severe, negative impacts on aquatic ecosystems along the length of its route, including to rivers, streams, lakes, and wetlands. Roads have well documented ecological impacts on hydrology, soils, and biota, disrupting ecosystems and altering landscapes. The SDEIS fails to adequately assess or document the full extent of these negative impacts, nor are the details provided on measures that might mitigate those impacts provided. Because the alignment of the

Ambler Road runs east to west, it is situated perpendicular to the natural flow of water from the Brooks Range, and will cause significant hydrologic disruption with impacts to the chemical, physical and biological integrity of the waters along the route, which are now in essentially pristine, undisturbed condition. The SDEIS limits the discussion of impacts to a very narrowly defined area adjacent to the proposed road alignment, resulting in a substantial underestimate of impacts. This is based on an unsupported assumption that impacts will be localized to the road corridor itself (i.e., within 10 – 100 m of the road embankment), ignoring, for example, the cumulative impacts to regional hydrology, declines in fish populations, mine drainage impacts, and deposition of fugitive dust.

- The SDEIS does not provide the information or analysis needed to adequately assess the extent and severity of the hydrological impacts of the project. Depending on the road alignment selected, the road will require the installation of between approximately 2,900 and 4,350 culverts and 41 to 251 bridges (Appendix D, Table 17); this will severely reduce stream connectivity, fragment habitats, and pose a barrier to fish passage. The BLM is also inconsistent in how it presents the number of stream crossings needed, for instance on page 3-36 it states that in addition to large river crossings, a total of 44 to 509 bridge (small and medium) and culvert (moderate and major) crossings will be required. While these numbers are calculated using information in Appendix D, Table 17, it is difficult to reconcile the different number of crossings described in different sections of the SDEIS. There is also little quantitative information on the extent of these impacts to the affected ecosystems. Culverts act as barriers to fish movements, leading to the decline of fish populations. The full extent of the project's hydroecological impacts hinges on the design and placement of culverts, however, there is little specific information provided in the SDEIS about measures to mitigate culvert impacts, nor does the SDEIS address the possibility of culvert wash outs and/or road failures during periods of high flows. While the SDEIS presents information on the general impacts of culverts, no data are presented on the site-specific impacts of culverts on these streams, nor specifics on their maintenance. Critically, an assessment of the cumulative impact of placing thousands of culverts in the watersheds crossed by the road is not presented.

A clear evaluation of impacts requires detailed information on the hydrology of the area, and specific information on the project culvert design, sizing, installation and maintenance. In the SDEIS, the BLM analyzed the option of combining Phase 1 and Phase 2 of the project into a single phase so that the Road would be built to Phase 2 standards from the outset (pg. 2-19). Although the SDEIS states that Phase 3 may not be necessary (pg. 3-6), it makes only general statements about the impacts that will be caused by the extension of culverts in Phase 3. During the construction of Phase 3, culverts would be extended in length to accommodate the increased width of the Road.[1] This will generate additional hydrological and water quality impacts beyond those incurred in Phase 1 and 2. This is an important and serious impact that should be fully addressed in the SDEIS.

- Water quality will be impacted by many factors including increased sediment loads (including fine sediments that impact fish and their spawning grounds), contamination by naturally occurring asbestos in mineral deposits, acid mine drainage from mine operations (including drainage containing selenium), the generation and deposition of dust (including the possibility of dust carrying toxic contaminants such as lead and zinc), and the likelihood of petroleum spills that can be toxic to fish and other organisms. Water quality is also impacted by culverts such that upstream stream water chemistry differs compared to downstream.

- The SDEIS states that mining impacts to water quality will include high concentrations of selenium in the mine process water and waste rock runoff (pg. 3-106). At even slightly elevated concentrations, selenium is a highly toxic metal that is subject to bioaccumulation and biomagnification in aquatic food webs. The SDEIS states that water treatment is not likely to remove the selenium and that Ambler Metals plans to dispose of

[1] DEIS at 3-37 ("During Phase 3 construction, the culverts would be extended as needed to accommodate the increased embankment width, which would result in local impacts on water quality by disturbing substrate and temporarily increasing suspended solids. Construction of the culverts in Phase 1 and increasing their length in Phase 3 would result in disruptions to the streambed and banks, and may impact water quality by temporarily increasing suspended solids.")

the selenium-rich water by discharging it to local waterways, such as Shungnak Creek. Here it would be diluted in a mixing zone, after which the water will meet water quality standards. No specifics on the anticipated selenium concentrations of the mine drainage water or the mixing zone. nor the length required for a mixing zone to assimilate some concentration of selenium are given. In an omission of impacts from the project, the risk of selenium toxicity to biota is not addressed in the SDEIS. Wetlands and other waters that become contaminated with selenium can lead to ecotoxic effects; the predictable impacts of selenium toxicity will be felt over a much larger area than the footprint of the proposed Ambler Road.

- The SDEIS and supporting documents are not clear about the extent of wetland impacts that will result. The estimate of the extent of permanent, direct impacts is limited by the narrowly defined project road corridor. In the SDEIS, the extent of the direct impacts is limited to the road construction footprint and the indirect effects of altered hydrology, vegetation and water quality are not specified. Wetlands are critical ecosystems that affect the structure and function of associated streams and rivers; the loss of connectivity between wetlands and other aquatic sites will affect the functions and ecosystem services provided by all of these systems.

- Several wetland delineation reports were completed in support of the effort to assess project impacts. These reports used different study areas along the road alignment to delineate wetlands (for example different widths from the road center), therefore, the described wetland area is not consistent between the reports, making comparisons impossible. More troubling, the SDEIS makes unsupported assumptions about the extent of impacts, and does not clearly document how estimates of the actual acres of wetland fill that will occur with road construction were determined. Finally, there is no delineation for Alternative Route C, making a full and complete assessment of the three alternatives impossible.

- The SDEIS fails to assess or quantify the ecological functions provided by wetlands, making it impossible to adequately evaluate the full extent of impacts that will occur.

While there are several reports on the general functions and values of wetlands that could occur in the project area, they use different methods, making it impossible to compare results and equally impossible to determine what the full extent of wetland impacts will be. In a serious omission, the results of these assessments do not appear to be used in the SDEIS documents. The DOWL (2014) report on "Wetland Functions and Value Assessment" is highly qualitative and does not adhere to standard wetland functional assessment methods. It makes qualitative assignments of functional value based on the extent and the relative commonness or rarity of each wetland type in the landscape. It does not provide information on the ability of the wetlands to provide valued functions or ecosystem services. Functional assessments are a means to objectively assess the ecosystem processes and services provided by wetlands, they are not about the commonness or rarity of a wetland type. In another major omission, the functional assessments do not include wetlands in the eastern 50 miles of the road corridor under Alternatives A and B (pg. 3-64), nor any information related to Alternative C.

- The indirect impacts of the road project are not adequately assessed, nor is the extent of the cumulative impacts due to mining. The requested ROW is 250 feet wide, and up to 400 ft in some areas. The SDEIS defines the area of indirect impacts to be within 328 feet of the road (due primarily to dust impacts). However, impacts due to altered hydrology, habitat fragmentation and impacts to fish communities, and the potential for the downstream movement of pollutants, will extend well beyond this 328-foot distance. The SDEIS admits this by saying that cumulative impacts from mine development are not directly assessed, rather they are given only in "broad terms" (pg. 103).

- Appendix H is meant to present the indirect and cumulative impacts that will accrue from the project. The Appendix gives some descriptive information on the area, provides general information on the different types of mining operations that might be used, and discusses the general types of impacts that might result, including hydrologic and water quality impacts, and the loss of wetlands and other vegetation types. As in other sections of the SDEIS, anticipated impacts are discussed only in very general terms (e.g., mine drainage will occur), but no specific analysis of the impacts that might occur as a result of

mining in the Ambler district are provided (for example, by discharge of metals to surface waters). Assurances are given that any permit specifications made, for example by the Alaska Department of Environmental Conservation, will be adhered to.

- The SDEIS makes no attempt to synthesize and evaluate the potentially significant cumulative impacts that will be generated along the length of the road alignment or at the watershed scale. The assessment must account for the individual impacts caused by the loss of wetlands and their functions, altered stream flows, and the contamination of waters with toxic materials, but it also must consider how, in the aggregate, their adverse effects can multiply, generating larger than expected impacts to aquatic ecosystems and species.

- There is little quantitative data on existing local conditions used to substantiate the findings presented in the SDEIS, which relies on vague language with many statements that details will be worked out during permitting. While some sections of the SDEIS summarize the scientific literature to describe what impacts might occur, it offers no definitive estimates of the specific impacts that are anticipated. The conclusion that Alternative A will have the least impact (excluding the No Action Alternative) appears to be solely based on road length (e.g. pg. 3-39). Unless the anticipated impacts are specific and quantitative, there is no means to make an informed decision.

- Overall, the SDEIS claims that the full impact of the proposed road will be mitigated by the use of BMPs and other mitigation measures that are promised to be used during road construction and maintenance in order to minimize impacts to natural flow patterns and maintain hydrologic connectivity, particularly with respect to culverts (e.g. Appendix N). No details of the mitigation measures are provided and no assurances are given that they will be checked for completeness and proper implementation and maintenance. The SDEIS gives a general description of the fish passage culverts (pg. 3-33), but details are few. Given the ecological sensitivity of the region and the risks posed by the project, the details and plans to minimize and mitigate impacts should be included in the SDEIS.

Review of the Ambler Road Project

The proposed Ambler Road alignment will have a severe, negative impact on aquatic ecosystems along its route, including rivers, streams, lakes, and wetlands. Roads have well documented ecological impacts on hydrology, soils, water quality, and biota, disrupting ecosystems and altering landscapes. The major effects of roads include: alteration of the physical and chemical environment, facilitating the spread of invasive species, soil compaction, changes in the patterns of water movement (hydrology), erosion and sedimentation, dust deposition, and animal mortality (Trombulak and Frissell 2000). Roads introduce pollutants including heavy metals, petroleum products, and salts (Trombulak and Frissell 2000). The spread of dust can alter the composition of adjacent plant communities, particularly those dominated by lichens and moss (Auerbach et al. 1997). Roads alter water flows, cause pooling, erosion and sediment transport, decreasing water quality (Trombulak and Frissell 2000, Raiter et al. 2018). Critically, roads also present barriers to the movement of fish (including migrating anadromous species), amphibians and other aquatic species. The habitat fragmentation caused by roads reduces population densities and community diversity of water dependent species (Johnson et al. 2019). The cumulative impacts of roads are greater than their (linear) length because of the hydrological impacts that extend both upstream and downstream of the road bed, and the migration barriers they cause along the length of the road alignment.

Because the proposed Ambler Road alignments A and B run east to west, they are situated perpendicular to the natural flow of water from the Brooks Range, which will cause potentially major hydrologic disruption, with impacts on the chemical, physical and biological integrity of the waters along the route. The Road will cut through undisturbed wilderness in near pristine condition.

Impacts to Hydrology

Hydrology is the ecological foundation that determines the structure and function of aquatic ecosystems, affecting biodiversity, biogeochemical cycles, energy flux (primary and secondary productivity), and other ecosystem characteristics (Wetzel 2001, Mitsch et al. 2023). Watersheds

contain a hierarchical and interconnected population of waterways that convey water (both surface and groundwater) downstream (Benda et al. 2004, USEPA 2015). The connectivity of the water system controls the exchange of water, sediment, and biota between different parts of the aquatic landscape (Blandon and Marcus 2009), making the structure and function of downstream waters highly dependent on the flux of materials transported from upstream waters (USEPA 2015). Human actions that alter the hydrology of aquatic sites (i.e., rivers, streams, lakes, wetlands) impact connectivity and modify their physical, hydrologic and biotic character. The SDEIS for the Ambler Road Project describes substantial hydrological impacts that will result, with potentially drastic changes to what is now considered pristine wilderness.

The SDEIS states that the selected road alignment will require the installation of between about 2,900 and 4,350 culverts in more than 1,000 perennial streams that support anadromous and resident fish populations (Appendix D, Table 17). The road will also require construction of a substantial number of bridges, including over large rivers, to allow water flow under the road. This represents a massive hydrologic alteration to the region that will reduce stream connectivity, fragment habitats, and decrease biodiversity through vegetation impacts and by presenting a barrier to the passage of fish, amphibians, and other species. Road impacts can be divided into two categories: those from crossings (bridges, culverts) that impede the transfer of water, materials, and biota, and those from the lateral disconnection that results from the construction of road beds longitudinally along stream channels (disconnecting streams from floodplains) or across wetlands. These disturbances create systematic landscape disconnection of what was a hydrologically unified system, with resulting ecosystem degradation (Blanton and Marcus 2009). Some of the major consequences of roads are below (Forman and Alexander 1998, Blanton and Marcus, 2009, Raiter et al. 2018, Walker et al. 2022). These impacts are mentioned in the SDEIS (e.g., pg. 3-8), but no details are given on their anticipated extent or magnitude:

- altered fluvial processes that disrupt the natural pattern of floods and flow pulses. These hydrological differences can occur for some distance both upstream and downstream of the road, leading to scour and shifts in pool-riffle sequences (i.e., degrading habitats and impacting stream diversity);
- the concentration of stream flows that extend the length of exiting channels, increasing erosion and the transport of sediment and other materials;

- the concentration of diffuse overland flow into new channels, disrupting sheet flows that are important to wetland functions;
- long term impacts such as changes to the patterns of channel migration, reducing habitat complexity in the form of backwaters, ponds, wetlands, and oxbow lakes, areas of particularly high biodiversity;
- blocked wetland surface water drainage and groundwater flows raising water levels on the uphill side of the embankment (pooling) and lowering water levels on the downhill side, which can cause vegetation death, changes in plant community composition, and permafrost degradation.

In a study of the impacts of roads and other linear infrastructure on hydrology, Raiter et al. (2018) found erosion was 5 times more likely to occur, and pooling 6 times more likely to occur in the presence of roads, even in relatively flat terrain. In their study, the severity of erosion was greater in the presence of roads, and fully 98% of road crossings had an impact on water movement across the landscape (i.e., only 2% of road crossings did not impact water flows). They conclude the hydrological impacts of a road can be widespread, extending well beyond the direct footprint of a road (Raiter et al. 2018). Thus, statements in the SDEIS that the impacts of the road footprint will largely be limited to the area around the road itself are not supported with the evidence.

There is little hydrological data presented in the SDEIS from which an assessment of impacts can be made. Several USGS and other river gauging station records are referenced, however the stream flow data from those aren't used in the analysis. Appendix D, Tables 8, 9, and 11 present monthly air temperature and precipitation levels at 3 stations, and Table 10 presents monthly temperature data only. While these data are interesting, they don't offer any insight into the hydrological conditions (for example, flow rates or water volumes), of the rivers, streams, and wetlands in the region, nor the anticipated impacts of the road either from crossings or lateral disconnection. There is also no information on the ordinary high-water mark, mean high water mark, and 100-year flood levels for locations of the major bridge crossings to ensure they can maintain navigability. There are also serious problems in the mapping used to assess impacts. For instance, in footnote 32, on page 3-90, the SDEIS admits that what is considered small drainages (less than 12 feet wide) were not all mapped, therefore additional field data will be

necessary to fully document all streams that the road will cross. It's also not clear how a stream that is just under 12 feet wide is considered a small drainage. The lack of information on regional hydrology results in a major underestimate of the extent and severity of wetland and stream impacts.

Wetland hydrology is often expressed in terms of hydroperiod, defined as the pattern of water levels over time that result from the balance of water inflows and outflows (Mitsch et al. 2023). Hydroperiods vary over annual and seasonal cycles and are a primary driver of wetland functions and the provision of ecosystem services, thus changes in the frequency, duration, and timing of wetland inundation can cause significant impacts (Mitsch et al. 2023). Because some drainages might be missed (pg.3-83, 3-90), there will undoubtedly be some streams for which no culverts will be installed. This will exacerbate disconnection and fragmentation of wetlands, alter hydroperiods, cause upstream pooling and impoundments, plant death, and alter wetland functions. This is particularly problematic for those wetlands that rely on diffuse water flows (Winter 1988, Mitsch et al. 2023). To account for this, AIDEA has proposed that culverts be installed at approximately 150 ft intervals in wet areas where wetlands are bisected (i.e., areas without defined water channels: see for example, pg. 3-37). There is no information provided to explain how the 150 ft spacing was determined, or which wetlands will be targeted for culvert installation. Furthermore, no analysis is presented on the effectiveness of any mitigation measures, only that "Culvert spacing and sizing would ultimately be determined during permitting based on additional design information" (pg. 2-17). This is vague and doesn't address the actual impacts that will occur along the distance of the road. The duration of impacts is also not addressed, for example it is estimated that the initial construction of culverts will take 2 years (pg. 3-37) when many construction related impacts can occur. Ultimately, roads present a barrier to water movement even if culverts are installed. This will lead to hydrologic change and system degradation.

For the Ambler Road project, the full extent, and possible mitigation, of hydrological impacts seems to rest on the design and placement of culverts for which specific information is lacking. The SDEIS doesn't present any systematic data on, for example, streamflow volumes or discharge during periods of high flows that would be useful to appropriately size culverts during

culvert design (for example as presented in Childers and Kernodle 1983). Ice jams are common in the spring and many rivers experience overbank flood flows during ice breakup (Kane et al. 2015), causing the expansion of the river system and increasing natural hydrological connectivity between aquatic systems (Leibowitz et al. 2018). This is briefly mentioned in the SDEIS, for example on page 3-27, "These rivers would be expected to experience overbank flows during breakup each year, especially at locations where ice jams impede conveyance," but details on road impacts or mitigation measures are lacking. The SDEIS also claims that culverts will be cleared each year before ice breakup to maintain fish passage (pg. 3-91). This seems an impossible task; how AIDEA will inspect and clear thousands of culverts each winter before ice break up is not addressed, nor does it seem feasible. Thus, the SDEIS underestimates the on-going impacts of culverts to aquatic ecosystems and the salmon and other fish species they support.

The issue of highly variable flows raises questions about the capacity of culverts to handle high flows with the recommended extra capacity to allow debris to pass through to prevent plugging (Nunamaker et al. 2007). It also raises the possibility that washed out stream crossings or road failures may occur during periods of high flows, particularly where construction happens on steep or unstable slopes. Wash-out occurs when a culvert's capacity to convey stream flow is exceeded during high flow events resulting in erosion of the fill and road surface. This can cause road collapse and wash out culverts, possibly moving them downstream (Nunamaker et al. 2007). The issue of wash-out is not addressed in the SDEIS.

A clear evaluation of road impacts and mitigation efforts requires detailed information on the stream and wetland hydrology in the specific areas where those impacts will occur, and information on the design, sizing, installation and maintenance of the culverts. The SDEIS does not present this information. No comprehensive flow data are presented for the impacted streams and rivers in the SDEIS, but as an example, Childers and Kernodle (1983) computed discharge on the Mauneluk River near its mouth at the Kobuk River reporting the maximum evident flood discharge at 34,400 ft^3/sec, compared to only 2,980 ft^3/sec in August. This huge variation in flows exacerbates the problems of water conveyance and the risk of washout. Concerns of culvert sizing are discussed in the SDEIS, and in some cases it is planned that overflow culverts

will be constructed however, these aren't useful for the movement of stream biota. The use of stream simulation design principles is reported in the SDEIS as a solution, stating that using simulation design principles to build wider than traditional culverts will minimize impacts to biota. Stream simulation design is an approach that, if done properly, could lead to road stream crossings that allows passage of fish and other species. However, stream simulation designs depend on much site-specific data and information on stream geomorphology and flows, bed materials and mobility, channel cross-sections and slope, to name a few. This approach calls for designs that can include placing bed materials inside the culverts to mimic stream beds and flows over (for instance) gravels (USDA 2008). The SDEIS does not mention anything more about stream simulation design principles besides a statement that they will be used. There is no plan given on how this approach could be applied nor how the needed (but still missing) data will be collected. Employing this approach takes multidisciplinary design teams to implement (USDA 2008). It strains credibility to imagine that AIDEA will do this for the more than 4,000 culverts that may be required or the road.

The stream segments that lie upstream of the road are not well accounted for in the draft SDEIS; roads can result in stream impacts for much longer distances on the upstream side of the road than are reported. However, on pg. 3-109 it acknowledges the issue by stating that: "the road embankment would change overland flow, change surface and groundwater flow patterns, and in some cases, it would cut off or reduce access to wetland and low-lying off-channel habitats (e.g., seasonally flooded areas) that may support rearing and feeding fish seasonally," and on page 3-91 it states that the flow paths of over 1,000 mapped streams will be intercepted and re-routed (note there is no mention here of the unmapped drainages). A claim is again made that AIDEA has committed to installation of stream simulation culverts to help maintain fish passage and that an adaptive management plan for monitoring and maintaining culverts will be implemented. This assurance is not meaningful without details on the approach and how it will be achieved. Overall, this indicates a high potential for a dramatic decline in biological diversity with road construction with impacts to already declining pacific salmon species.

The SDEIS mentions that culverts will be extended when moving from Phase 2 to Phase 3 of the project. This is necessary in order to accommodate the wider road (moving from a single-lane to

a 2-lane road), which the SDEIS says will cause "disruptions to the streambed and banks, and may impact water quality by temporarily increasing suspended solids" (pg. 3-37). If Phase 3 is constructed, no details are given about how the culverts will be replaced, nor what measures will be taken to address the additional impacts this will cause. Given the extensive impacts that culverts have, both during construction and after they are in place, it is difficult to believe that the impacts will be limited to a temporary effect on stream sediment loads and local channel disruption. The SDEIS fails to address these impacts, which will be as or more severe as impacts of placing the first set of culverts. This omission should be addressed.

Finally, the SDEIS and associated documents fail to fully describe or assess the specific measures that might be used to mitigate the described impacts. Instead, only general statements are made in Appendix N, for example on page N-52 where it says existing drainage patterns will be maintained throughout all construction and operation periods by the installation of culverts in all authorized fill areas in sufficient number and size to prevent ponding, dewatering, water diversion between waterbodies, or concentrating runoff flows and to ensure that hydrology is not altered." The mitigation plan also says that the culverts installed for sheet flow connectivity would be marked so they can be easily inspected to ensure their intended functions." No specific information is given; how often will these culverts be inspected? How often will culverts along stream channels be inspected? What mitigation will take place if culverts are not functioning as planned? Overall, Appendix N presents potential BLM mitigation measures that could be used to mitigate adverse impacts, but it is essentially a thought experiment about the possible effectiveness of mitigation measures if they were to be used, and no quantitative information is presented. Mitigation effectiveness categories are presented (highly, mostly, partially, minimally effective) and each BLM mitigation measure is assigned to a category. There are many caveats, for instance that the degree of effectiveness will depend on whether the mitigation measure is applied only to BLM-managed lands or along the whole route (e.g., pg. N-24). Summaries of effectiveness ratings are also given, for example for wetland impacts, which are reported to be 'mostly effective'. This rating is not quantified, and the report goes on to say that if the measures are not used along the length of the road, the effectiveness would be reduced. The SDEIS must do better to assure mitigation of impacts.

Recent work evaluating the consequences of roads in the circumpolar north indicate that these omissions make the SDEIS inadequate. For example, Povoroznyuk et al. (2023), report on standardized methods to evaluate if culverts are adequate for fish passage. In a survey of the Trans-Labrador Highway in Canada, fully 53% of newly installed culverts posed a barrier to fish passage due to problems with their design and installation, and a lack of environmental oversight Gibson et al. 211). Even with culvert remediation to increase the likelihood of fish passage has shown that different species respond differently to culvert design. The requirements of all species must be understood when designing or remediating culverts (Goodrich et al. 2018).

The cumulative impacts of so many hydrological alterations are also not quantitatively addressed. Defined as the "incremental effect of an impact added to other past, present and reasonably foreseeable future impacts" (USEPA 1999), cumulative impacts account for the effects of an action added to or interacting with other actions or effects. While one action may be insignificant, the accumulation of impacts can lead to environmental degradation (USEPA 1999, USEPA 2015). All action alternatives will impact fish species abundance and distribution. Given the length of the roadway, the up to 4,350 culverts that are required to cross a diversity of aquatic ecosystems, and the evidence that culvert failures are common, it is highly likely that substantial impacts will occur.

Ultimately the functions and biodiversity of watersheds is driven by the connectivity of streams, rivers, and wetlands with downstream waters. All are connected physically, chemically, and biologically through the downstream transport of water, materials, and biota, and through lateral exchanges with connected wetlands (Fausch et al. 2002, USEPA 2015). The impacts of the Ambler Road will be long lasting and extend geographically well beyond the ROW.

Impacts to Water Quality

The quality of waters in the region will be impacted by many factors including increased sediment loads (including fine sediments that impact fish and spawning grounds), naturally occurring asbestos (NOA) in mineral deposits, acid mine drainage from mine operations, dust

(including the possibility of dust contaminated with metals such as lead, zinc, and selenium), and the likelihood of petroleum spills that are toxic to fish and other organisms. The SDEIS describes the general probability of these pollutants entering waterways and gives general guidelines about some measures that might be taken to mitigate the impacts, but fails to provide any specific information on the anticipated changes to water quality. There are no quantitative predictions about the severity or extent of the impacts.

There are almost no water quality data presented in the SDEIS, and no quantitative assessments of how water quality might change. This is in part because there seems to be agreement that waters in the region are very clean, with little to no human impacts. A quick review turned up several sources of information on water quality, for example a report by Childers and Kernodle (1983) who report that water in the Kobuk River basin is excellent based on basic measures of water chemistry (e.g., pH, conductivity, dissolved oxygen) and surveys of the diversity and composition of the macroinvertebrate community, from which the authors conclude the water is 'pristine.' While several decades have elapsed since this work, the lack of development in the region and the fact it is still wilderness make it likely that the water quality has not changed appreciably since that time. (It should be noted that this report also provides hydrology information that might be useful such as unit runoff values and river discharge at various points in the watershed, including at Walker Lake). Durand et al. (2009, 2011) studied water quality in the Kobuk River watershed more recently and also present data on water chemistry and the macroinvertebrate community, which they also found to be diverse and of high quality. This information might be useful as a baseline against which to assess impacts in the SDEIS.

Water quality concerns include the following:

- Roads are known to increase soil erosion and sedimentation in streams. This occurs through processes such as scour around culverts and the concentration of flow in ditches that concentrate storm water runoff and cause erosion (Nunamaker et al. 2007). The SDEIS reports that any changes in turbidity from increased sediment loads will be similar to the turbidity levels that occur naturally during high flow events, but they offer no evidence to support this claim (pg. 3-21). It is unclear if there are data to support this statement. If high flows move sediments, and the road causes more sediments to be present in the system, it

follows that overall sediment movement (and turbidity) should be higher during high flow events.

The effects of higher sediment concentrations (particularly fine sediments) on aquatic life can be substantial, with impacts to fish, their eggs, and spawning habitat (pg. 3-54). In a review of the literature, Chapman et al. (2014) conclude that increases in sediment concentrations (suspended and deposited) negatively affect feeding behavior, spawning success and fish community diversity. In a study in boreal forest roads in west-central Alberta, Maitland et al. (2016) found water quality characteristics were significantly different in streams with culverts compared to those with bridges or those without any crossings (including water velocity, fine sediments, turbidity, and water temperature) and within a culverted stream there was a significant difference in upstream compared to downstream water quality (mean water depth, the percent of pools and riffles, turbidity, water temperature, and dissolved oxygen content). In addition, most fish populations had significantly lower densities (measured as the number per m^2) in upstream compared to downstream locations.

The SDEIS makes the claim that habitat within a distance of up to 5 times the width of culverts and bridges will primarily be affected. It seems unlikely that impacts such as scour, sediment movement or deposition, or channel alterations will be limited to this small spatial scale. No \source is given for this information, rather the SDEIS says this is based on observations that suggest this area of impact.

- All routes cross areas of naturally occurring asbestos (NOA), which is found in mineral deposits. (pg. 3-6, with maps of NOA mineral deposits found on Map 3-2 in Vol. 4). There is no assessment of impacts using data gathered from other projects with similar NOA mineral deposits. While the Ambler Road alignment is remote, NOA is considered an emerging environmental threat with large implications for public health (Culley et al. 2010), particularly airborne asbestos, which the World Health Organization categorizes as a human carcinogen.

- Acid mine drainage (AMD) is a pervasive problem associated with mining and is expected to be an important component of the cumulative impacts of the project, particularly when mines are open in the mineral belt. Mine operations generate AMD by exposing rock that will generate acid runoff that solubilizes metals, such as iron, manganese and other trace metals. At higher pH levels, metal solubility decreases causing the formation of metal oxide precipitates known as 'yellowboy' that can accumulate and suffocate life on stream bottoms (Fennessy and Mitsch 1989, Coil et al. 2014). Once the formation of AMD is initiated it can persist for decades making amelioration or mitigation nearly impossible.

  Based on the information presented in the SDEIS, the indirect and cumulative impacts of AMD are likely to be severe; for instance, four mine projects are on tributaries that drain directly to the Kobuk River. Once AMD is initiated through rock disturbance, it is extremely difficult to stop its formation and can persist for decades or longer (note there are mines from the Roman era that are still producing AMD; Coil et al. 2014). To exacerbate the situation, the AMD from the mine sites is predicted to enter the Kobuk River at the river's only sheefish spawning grounds (with only 11 sheefish spawning grounds in the state). This is a severe impact to a species that is important for subsistence users, and once impacted the spawning grounds are unlikely to be restored. The SDEIS states that the road, if not properly constructed or maintained, will "have very substantial, long-term impacts to fish and aquatic life…" leading to very substantial impacts on subsistence use practices (pg. 3-112). While the SDEIS acknowledges that AMD may require treatment of toxic mine water and is likely to affect the size of the sheefish population, no specifics are provided about mitigation. Appendix N includes a statement saying testing will be done to identify areas of potential acid rock drainage and minimize cuts to these areas" (pg. N-10). Given the geology of the area this will be very difficult to manage. On page 3-106, the SDEIS acknowledges that water quality issues will be difficult to mitigate, citing a study of 25 modern mines in the U.S. that were selected for study, and stating that "100 percent of mines predicted compliance with water quality standards, but 76 percent of mines exceeded water quality standards as a direct result of mining, and 64 percent of mines employed mitigation measures that failed to prevent water contamination". The report next states that predictions made about impacts to surface and groundwater quality are more accurate when it is assumed no

mitigation will take place (i.e., there is no means to mitigate the impacts of mine drainage). The finding that mitigation measures will not reduce impacts to surface and groundwater quality illustrates the risks that the Ambler Road presents to water quality and biota, particularly the sheefish spawning grounds that are adjacent to proposed mine sites (3-105). Clearly, the environmental impact of mine drainage from this project will be high.

The SDEIS states that mining impacts to water quality includes high concentrations of selenium in the mine process water and waste rock runoff (pg. 3-106), and that water treatment is not likely to remove the selenium. In 2018, Ambler Metals planned to dispose of the selenium-rich water by discharging it to Shungnak Creek, where it would be diluted in a mixing zone and so meet water quality standards. No specifics on the anticipated concentrations in the mine drainage or in the mixing zone are provided, nor is any information on the length of the mixing zone needed. The risk of selenium toxicity to biota is not addressed in the SDEIS. Wetlands and other waters that become contaminated with selenium can cause severe ecotoxic effects in biota. Flushing does not mitigate selenium contamination, nor prevent serious adverse toxic impacts.

- The SDEIS makes a brief mention selenium, stating that mining impacts to water quality will include high concentrations of selenium in the mine process water and waste rock runoff (pg. 3-106) Selenium is a highly toxic metal that is subject to bioaccumulation and biomagnification in aquatic food webs. It is essential as a trace element needed for normal growth and development in animals, including humans. However, it quickly becomes toxic at levels that are only slightly higher than beneficial concentrations (i.e., the window between being essential and toxic is narrow; Hamilton 2004). When selenium is uncovered in the mining process, it can be mobilized and transported as dust or in particulate or soluble forms in the aquatic environment. Once released it can be transported over long distances, leading to contamination of areas currently considered unimpacted (Etteieb et al. 2020). Cianciolo et al. (2020) found that 75% of streams contaminated with selenium from coal mining showed no evidence of dilution with distance downstream, and that fish and salamanders were bioaccumulating potentially toxic levels in streams impacted by mining. Clearly, streams can transport selenium well beyond the source.

- Other water quality issues are raised in the SDEIS, including the deposition of dust (including toxic dust) that will be generated, deposited in the road corridor, then be washed off into adjacent waters. The SDEIS accounts for dust impacts up to 100m of the Road (or 328 feet). Petroleum products are also of concern. These will enter from vehicle use and accidental spills, both small and large. Petroleum projects and their byproducts, such as PAHs, can persist in sediments for years and are also highly toxic to aquatic organisms. The SDEIS addresses the threats these pose (pg. 3-92) with plans to develop a Spill Prevention Control and Countermeasure Plan (SPCCP), but only for the storage or transport of petroleum products greater than 1,320 gallons (pg. N-16). Smaller spills, which can also have large impacts on aquatic life, are not addressed by the SPCCP (pg. 3-18).

The SDEIS raises serious concerns about AIDEA's proposal to mine gravel from floodplains along the Road alignment, and offers sound support from the scientific literature about the degradation this will cause, saying that "removing gravel from a stream channel changes the structure of its natural habitat for aquatic species, sediment transport dynamics and flow processes; degrades quality and habitat function upstream and downstream of mined areas; and alters fish and invertebrate communities" (pg. 3-96). Alternative A proposes gravel mine sites in floodplains that are directly adjacent to known salmon and whitefish streams. Nearly half of the material sites under Alternative A would be in a floodplain or within 500 feet of fish streams. Alternative B crosses very close to sheefish and white fish spawning grounds and has nearly the same number of gravel mine sites in floodplains as Alternative A. In the SDEIS, the BLM recognizes the severity of this impact, and points out that if AIDEA would refrain from gravel mining in active floodplains during road construction, the impacts to fish communities would be greatly reduced (pg. 3-96). The BLM notes that special condition 10 could be used, which prohibits material mining from stream and river beds, active floodplain and lakeshores. As this appears to be a legal requirement, the SDFEIS should present information on where the mines will be located (since they won't be located in floodplains). This information is not given, so the impact of the gravel mining is not accounted for in the SDEIS. There is no indication that AIDEA intends to avoid mining material sites in floodplains as part of impact minimization.

Finally, the SDEIS states that the road will be removed and the area reclaimed, either after 50 years of operations "or when mineral exploration and development activities in the District conclude" (pg. 2-11). There is no specific information given about methods of Road or fill removal, how culverts and bridges will be removed, or how the area of the Road alignment will be reclaimed. The excavation and removal of fill will cause impacts, therefore measures to minimize and mitigate those impacts will be required. These topics are not addressed in the SDEIS. Wetlands and their ecosystem services may be restored, but this takes time and often has limited success. Forested wetlands require much longer for recovery as the vegetation communities mature (Zedler 2000, Turner et al. 2001, Fennessy et al. 2008).

Impacts to Wetlands

The area around the Ambler Road project supports extensive areas of undisturbed wetlands. There is a diverse mix of wetland types that support a multitude of species. These wetlands are part of the larger hydrologic system of the region, providing important functions and ecosystem services. Wetlands affect the structure and function of streams and rivers, and the loss of connectivity between wetlands and other aquatic sites will negatively impact the functions and ecosystem services they provide, such as the improvement of water quality, regulation of water supply (groundwater exchange, surface water storage, contribution to stream base flow), organic matter production and export, carbon sequestration, flood protection, support of biodiversity, and the provision of heritage services and recreational activities (Mitsch et al., 2023). As ecosystems, wetlands and shallow waters are particularly efficient at delivering ecosystem services, providing up to 40% of the global, land-based ecosystem services while taking up less than 10% of the global land area (Costanza et al. 1997).

Wetlands are particularly important in maintaining biodiversity by supporting many species of vegetation and wildlife. Many in-stream fish populations depend on riparian vegetation to control stream conditions, and the influx of woody debris and leaf litter provides habitat and food chain support (NRC 2002). They are often considered regional biodiversity 'hot-spots' or areas of concentrated biodiversity (Naiman et al. 2005).

The SDEIS acknowledges impacts to wetlands will occur, saying the "primary effects to wetlands from these activities would be the direct and permanent loss of wetlands and wetland function from the discharge of fill and the degradation of wetlands and wetland function through indirect impacts (e.g., dust deposition). Direct impacts were considered to occur within the project footprint and a surrounding 10-foot buffer" (pg. 3-69). This statement is inconsistent with claims discussed above that impacts would extend to five times the width of each culvert and bridge (which in itself seems an underestimate) and that dust deposition impacts occur for more than 300 feet beyond the road bed. There is no basis for the assumption that direct impacts will only extend 10 feet from the project footprint. Roadways block surface and subsurface (groundwater) flows that sustain wetlands. They compact soils, reducing permeability and decreasing drainage capacity. This can raise the upslope water table, killing vegetation by root inundation, and lowing the downslope water table (Forman and Alexander 1998). Thus, roads act as a lateral dam, fragmenting wetlands, reducing connectivity with streams and floodplains and other surface waters and potentially impeding downgradient groundwater flow. There is no justification to expect that these alterations will be limited to 10 feet from the road. This assumption clearly underestimates wetland impacts.

The SDEIS and supporting documents are not clear about the wetland impacts that will result from the road. The number of wetland acres that will be lost due to the placement of fill are given (i.e., direct wetland impacts), but it is not clear how these numbers were determined. The indirect effects of altered hydrology, vegetation and water quality to wetlands in the area of the Road are not clearly presented or quantified (see below). According to the SDEIS, the acres of wetland lost due to the direct footprint of Alternative A is large, with the loss of 2,059 acres of wetland, 20.6 acres of waterbodies (ponds, lakes, and riverine systems), for a total of 2,079.2 acres lost. The totals for Alternatives B and C are higher. The loss and degradation of wetlands to a distance of 328 ft (100 m) dwarf these, with a total impact area of 10,837.1 acres for Alternative A and 15,905.0 acres for Alternative C. These losses do not include losses due to mining, which are not accounted for in the SDEIS.

The SDEIS raises a specific concern about impacts to Nutuvukti fen, located in Gates of the Arctic National Park and Preserve (GAAR). It is described as a pristine, patterned fen located

only 0.25 mile downgradient of the Alternative A road footprint (pg. 3-64). It is anticipated that water quality impacts will occur from road runoff, and the NPS (2019) reports that upstream impoundments due to the road could have hydrologic impacts that reduce groundwater recharge of the fen. The NPS Gates of the Arctic wetland delineation report (2017) states that altered drainage through the glacial outwash soils to the north could disrupt groundwater recharge of the fen (Alternative A alignment will be at the top, northern edge). The SDEIS says that "the fen is recharged by drainage through glacial outwash moraine crossed by the proposed road alignment. This fen has been reported to provide many important functions in GAAR such as regulating flood flows; removing sediment, nutrient, and toxicant; and providing habitat for birds, mammals, and fish." Nutuvukti Fen is the largest of only a few patterned fens in all Interior Alaska (pg. 3-64). Patterned fens are peatland mosaics with alternating peat ridges and hollows that are oriented perpendicular to the flow of groundwater. As such, they are highly vulnerable to the type of hydrologic disturbance described here. The result is drying, shifts in vegetation and altered rates of peat accumulation (Slaughter, and Cohen, 2010), in sum, the significant degradation of this important habitat within a National Park. The SDEIS states that the road will be designed to minimize disruption of water flows but as with other assurances discussed above, this statement is vague and impossible to evaluate. No specific information is given on how this might be done, nor to what extent it could limit impacts. The SDEIS also states that if evidence of soils or vegetation drying is noted, or any hydrology changes are noted, this would be considered non-compliance with the condition. It does not say what could be done to remediate such damage, possibly because restoring ecological damage to peatlands is extremely difficult and is not likely to succeed. This is wholly inadequate.

Wetland Delineation Reports

There are several reports describing delineation of wetlands in the study area. These include a preliminary wetland delineation report by DOWL (2014), a desktop delineation study by DOWL (2016), and a delineation report for the Gates of the Arctic National Park conducted by the National Park Service (NPS) and ABR, Inc. (2017). Each of the reports focuses on different sized study areas, and each reports different wetland extents, making comparisons difficult. Since the land area assessed differs in each, it is not surprising that they report different acreages. However, the SDEIS reports a different number of wetland acres planned to be impacted by the

alternative road alignments than the delineation reports present. It is not explained how the numbers in the SDEIS were determined. These numbers are critical since these are the acreages that are used in the USACE 404 Permit application, so an explanation of how they were arrived at is necessary. Furthermore, the SDEIS cites DOWL (2019) for wetland delineation mapping but that report hasn't been published (DOWL 2019. Unpublished data, DOWL mapping under preparation). Finally, none of the reports provide a wetland delineation for Alternative Route C, and there is only a cursory desktop delineation report (i.e., without field verification) for the eastern most 50 miles of Alternatives A or B – one quarter of the length of the proposed road. This precludes a complete assessment of the three alternatives. Without more specific information, it isn't possible to make an informed assessment or comparison of the impacts of the three alternative Road alignments.

For comparison, the wetland delineations and the SDEIS report the following:

Wetland acreages reported:

- DOWL 2014. Preliminary Wetland Delineation and Functions and Values Assessment:
    - Study area was a 2,000 foot-wide corridor centered on the proposed Road alignment (includes proposals for maintenance stations, etc.).
    - The 68,067-acre Study Area is comprised of:
        - 39,949 acres of potentially jurisdictional wetlands,
        - 1,115 acres of Waters of the United States, and
        - 27,003 acres of uplands.
    - The report doesn't give an estimate of the acres that will be impacted by any of the Road alignments, and the acres of wetland in the study area is much smaller than in other reports.

- DOWL 2016. Desktop Wetland Delineation Study (note this was a desktop mapping exercise):
    - Study area was 1,000 foot-wide corridor centered on the proposed Road alignment
    - The study area is comprised of
        - 3,752 acres of wetlands,
        - 58 acres of open water, and
        - 2,717 acres of uplands.
    - The report doesn't give an estimate of the acres that will be impacted by any of the road alignments.

- The BLM SDEIS 2023:
    - Alt A for direct project footprint wetland impacts are:
        - 2,058.6 acres and
        - 20.6 acres to other waterbodies (ponds lakes rivers).

        - Total = 2,079.2 acres
        - Note: indirect impacts due to fugitive dust: 17,891.1 acres

    - Alt B for direct project footprint wetland impacts are:
        - 2,391.3 acres and
        - 24.6 to other waterbodies (ponds lakes rivers).
        - Total = 2,415.8 acres.
        - Note: indirect impacts due to fugitive dust: 19,829.5 acres

    - Alt C for direct project footprint wetland impacts are:
        - 3,822.6 acres and
        - 67.4 to other waterbodies (ponds lakes rivers).
        - Total = 3,890.0 acres.
        - Note: indirect impacts due to fugitive dust: 26,092.3 acres

  Note that the USACE 404 Permit Application uses these acreages in the application for wetland impacts.

- The NPS ABR GAAR Wetland Functions report for the Gates of the Arctic National Park (2017) reports that the DOWL HKM (2014) report for wetland impacts in GARR amount to:
    - Alternative A: 130.6 acres of wetland fill and 225.6 Waters of the US impacts
    - Alternative B: 193.6 acres of wetland impacts and 174.8 Waters of the US impacts.

The permitting agencies must be clear on how these numbers were determined and resolve any inconsistencies between these reports.

Wetland Functional Assessments

Several assessments of the functions and values of wetlands in the project area were completed over the past 5 years, but as with the delineation reports, different methods were employed in the different studies, giving differing results. Despite the work invested in the assessments, the results do not appear to be used in the SDEIS documents. Assessing the functional values of wetlands is a foundation for establishing mitigation requirements so the information in these reports could be a source of information of the wetland classes that are present. The functional assessments presented in the reports are not rigorous so it is unlikely they would be useful in helping to establish mitigation requirements. Furthermore, there are no functional assessment reports for the eastern most 50 miles of Alternatives A or B – one quarter of the length of the proposed road. This makes a full assessment of impacts impossible.

In general, wetland assessments are based on wetland ecological characteristics including geomorphic setting, water source, and vegetation. As Wardrop et al. (2007) explain, in a wetland assessment, indicators are used to evaluate the characteristics and functions of a wetland and determine how human disturbance affects the ability of the wetland to perform those functions. Indicators can be measured qualitatively or quantitatively using a standardized assessment protocol (Smith et al. 1995).

In order to score the capacity of a wetland to provide a function, the functions must be scaled against reference standard wetlands. Reference standard wetlands are sites having no (or the least amount of) human disturbance and they provide the standard for comparison. By definition, reference standard wetlands perform functions to the full extent expected for that wetland class, and so are given the maximum score (Smith et al. 1995). In many methods, indicators are scored from 0 to 1, so the top score would be 1.0. As Fennessy et al. (2007) explain: "ultimately, if a wetland is functioning as an integrated system with a high degree of ecological integrity it will perform all of its characteristic functions at the full levels typical of its class (i.e., at the level of the reference condition)."

The DOWL (2014) report on Wetland Functions and Values Assessment is highly qualitative and lacks rigor. It makes qualitative assignments of functional value based on the extent (i.e., the relative commonness or rarity) of each wetland type in the landscape, and does not present an assessment of the ability of the wetlands to provide certain functions. For example, the report states that "The overall functional value for this habitat is high, due to its relative rarity, except in HUC 19050303 where it is more common and thus considered of moderate value" (pg. 20). Functional assessment is not about commonness or rarity, rather it is meant to be an actual evaluation of the function/benefits or ecosystem services that a wetland provides. The report provides information on wetland plant communities, but the information on functions provided in this report is not useful. Overall, functional assessment is an important part of evaluating adverse impacts to wetlands (He 2019). A full understanding of wetland functions is needed so that impacts can be avoided, minimized where avoidance is not possible, and finally mitigated where there are unavoidable impacts (for example, under Section 404 of the Clean Water Act

(USEPA accessed Dec. 15, 2023). Without such accounting, the goal of no-net loss of wetland functions cannot be achieved.

The ABS (2017) report on wetland and riverine functions defined 15 functional wetland classes, then used the Aquatic Function Ranking System to assess each class for 12 wetland functions. It is unlikely that there are enough detailed data to support such fine-grained distinctions.

The authors raise a key point on page 9–not all wetland classes will perform all functions. It could also be said that, for any given function, wetlands of different classes naturally perform functions at different levels in their undisturbed state. This is why classification is so useful; by grouping like-kind wetlands, the comparison of functions can be made by comparing "apples to apples." The method used in this report work differently. For example, scores for the 2 indicators on diversity, mammal and bird habitat suitability, were scored as the ratio of the number of species expected to occur within each wetland class relative to the total number of species expected to occur regularly within the study area as a whole. If 100 bird species are expected to occur in the area and a particular wetland type supports 50, then a score of 0.5 was assigned. This penalizes wetland classes that may be naturally lower in the diversity of birds they support; for example, if an emergent marsh provides habitat for 50 species, and if all 50 species were present, then the site should be given full credit for the support of bird habitat suitability. In this case, the class was not given a full score of 1.0, but rather the low score of 0.5, clearly short-changing the functional value of the site. A more rigorous approach to functional assessment is seen in the approach outlined by Brinson (1993) and developed (for example) by Brinson and Rheinhardt (1996) and the USACE Hydrogeomorphic Guidebooks for Assessing Wetland Functions see https://wetlands.el.erdc.dren.mil/guidebooks.cfm). Included is a guidebook for the North Slope of Alaska (Berkowitz et al. 2017); this was not used in the SDIES.

Information to complete the assessment was gathered in part through a literature review using the following steps.

- Scores for each wetland class were generated by averaging the individual function scores for each class (i.e., no weighting). These 'functional capacity index' scores were multiplied by the acreage of each class in the study area.
- A direct impact is the wetland acreage filled by the gravel fill within the Road footprint and the gravel extracted to construct it; indirect effects are calculated for the 328-foot buffer (a similar procedure was used for rivers and streams). There is no rationale provided for the use of this distance to assess indirect effects.
- The method uses a qualitative BPJ assessment of wetland function then subjects those scores to several iterations of calculations to arrive at what are presented as very precise values for the amount of functional capacity lost due to impacts to each wetland class. Given the approach used, these results are not scientifically defensible. There is no logic to explain why wetlands that are considered pristine don't receive the maximum score of 1.0 for the functions they support. For example, sediment removal for slope spruce forest receives a score of 0.40 (out of 1.0). It is unclear if this is relative to other wetland types, or if something occurred to this class that has lowered its ability to perform this function.
- In the method for rivers, the impact of culverts is considered a short-term impact (Table 12). Again, it is difficult to know what rationale the authors have for this score, given the long-term nature of the project and the evidence about the long-term effects of culverts. Similarly, the score for the biology function in rivers is 0.83 (out of 1.0). It is unclear why this would be the case. There is no evidence that these rivers are somehow not meeting the biological expectations of major rivers in the region, and no reason to suspect they are impaired.

The finding of this report that there will be essentially no long-term impacts to major rivers or streams (e.g., Table 13) are not reasonable, scientifically sound, or supportable. Unfortunately, this report adds little to the understanding of wetland functional performance in the area.

Summary and Conclusions

The proposed Ambler Road alignment will have severe, negative impacts on aquatic ecosystems along its route, including to rivers, streams, lakes, and wetlands. Roads have well documented

negative ecological effects on hydrology, soils, and biota and can lead to degraded ecosystems and altered landscapes. The SDEIS for the proposed Ambler Road fails to adequately assess or document the full extent of the impacts, nor does it provide details of the measures that might mitigate those impacts. Overall, the information presented in the SDEIS tends to be general and does not present predictions of the specific impacts of the Road.

A major impact of the road will be caused by the installation of 2,900 - 4,350 culverts and many bridges. This represents a major hydrologic alteration that will severely reduce stream connectivity, fragment habitats, and pose a barrier to fish passage. The SDEIS lacks detailed information on the hydrology of the area, or specific information on culvert design, sizing, installation and maintenance that might mitigate impacts. Water quality impacts will occur from changes such as increased sediment loads (including fine sediments that can impact fish and spawning grounds), naturally occurring asbestos in mineral deposits, acid mine drainage and toxic metal contamination from mine operations. Wetland impacts will be extensive and the SDEIS and supporting documents do not clearly present how the number of wetland acres to be filled were determined, nor is there detail on the indirect effects of altered hydrology, vegetation, or water quality to wetlands, nor on plans for mitigation. The cumulative impact analysis presents general information on the nature of the impacts that can occur during mining, but makes no quantitative predictions of what those impacts might be. Given this, while it is clear that impacts will be substantial with serious impacts to aquatic ecosystems, it is difficult to make an informed assessment about the impacts of the proposed Ambler Road based on the SDEIS.

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Attachment 2

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Re: Expert Analysis regarding the Supplemental EIS (SEIS) for Ambler Road and Mining District

December 18, 2023

Thank you for the opportunity to comment on the recent supplemental EIS (SEIS) regarding the proposed road to the Ambler mining district. My expert analysis is based upon my professional experience as a geographer conducting intensive ethnographic field research in the region being proposed for the road and mining district, and teaching Native American politics in my role as an Associate Professor of Political Science at the College of Charleston, SC, where I have been teaching since 2008. Over the last 20 years I have worked directly with 8 of the Alaska Native villages within the project corridor, on a variety of projects that documented their subsistence lifeways, including identifying relevant traditional ecological knowledge (or Indigenous Knowledge) for wildlife management. I am the main author of one of the resources cited extensively in the SEIS (Watson 2018), having conducted the 8-village study for the National Park Service called "Ethnographic Overview and Assessment of Gates of the Arctic National Park and Preserve: Subsistence Land Use of the Kobuk Preserve."

These remarks are organized as follows:

1) I contextualize the most significant impacts as documented through the SEIS, relative to the social systems of the local cultures, and their current subsistence economy within the United States. Next;

2) I offer commentary and caution on the SEIS methodology to assess these impacts; I will argue how the methodology underestimates the impact that the project could have in the region and for subsistence economies. Next;

3) I will implore agencies to cultivate more transparent communication with tribes that clearly outlines the tradeoffs articulated in this SEIS. Lastly, I will :

4) Argue that the mitigation measures listed are insufficient given the "significant restriction of subsistence uses" (pg. M-27, M-33).

1) Contextualizing the Impacts identified by the SEIS

It is important to underscore the magnitude of the changes that the current SEIS outlines for Native America as a whole. This SEIS has evaluated 66 communities, including the city of Fairbanks, finding that to some degree all of these may directly or indirectly be affected by the proposed road construction and operation of the Ambler mining district. Almost all of these 66 communities are federally recognized

tribes, or are largely comprised of tribes (e.g., Evansville is the tribe co-located with the Bettles community; Nome is a city hosting members of multiple tribes)—thus minus Fairbanks, 65 communities in the SEIS represent almost 11.3% of the 574 federally recognized tribes in the United States.

Furthermore, this 11% of Native America currently represents some of the most intact subsistence economies that remain in the United States. By "intact" I mean that the communities partake in traditional cycles of regular hunting, fishing, and gathering regimes over the same area for millennia, and every year produces a diverse diet of foods that continue to nourish the people calorically and spiritually. This SEIS recognizes that subsistence is as much about cultural identity and the spiritual/religious lifeways of tribal communities as it is about caloric provisioning. These cultures have intact traditional sharing and trading networks of subsistence foods that span the region (and beyond), which have persisted for generations, and these sharing networks affirm the social and familial relationships—and the identities—of these Inupiat and Athabascan cultures.

These northern Alaska subsistence regimes are intact in large part because of the lack of road infrastructure that would fragment the habitat—a continued complaint of tribal communities in the "Lower 48" states of the US, who try to subsist in much greater fragmented and less rich ecological systems than did their ancestors. These "Lower 48" Indigenous peoples experienced their history of displacement and habitat fragmentation during 19th century settlement of the United States, when the goal of Indian policy was to assimilate tribes into the Western way of (economic) life. In those colonial times, reducing indigenous access to subsistence resources like the buffalo was the policy goal of assimilation. So it is concerning that in this era of government-to-government relationships with tribes of the US, 11% of Native America would be similarly faced with a reduction of access to their key subsistence resources.

The effects from this road upon the northern Alaska subsistence regime should be understood within the context of other large scale development projects in the United States and its impact upon Native American lifeways on the continent. Once the main and local access roads are built for the Ambler mining district, the regional subsistence system will change regardless of whether or not that road is "reclaimed" in 50 years. This is because the SEIS recognizes that the project will alter migratory routes (caribou and moose) and the right of way would likely remain clear for future snowmachine transportation across the region, in perpetuity. But this SEIS also notes that "no detailed reclamation plan has been developed," and won't be developed until the road use ceases (SEIS vol 1, pg 2-11)—this is a lot of uncertainty. Potentially 50 years—the projected lifetime of the mining district and the lifespan of the road—is more than one generation of people who will experience a great change to the resource patterns that they learned as children, and who will have to adapt to the rapidity of the change brought about by a road system to be built in just 2-3 years.

The 65 communities that have direct or indirect impacts of the road system constitutes a massive spatial scale, with the road itself being 211 miles for Alternative A, 228 miles for Alternative B, and 332 miles for Alternative C. But the 65 communities comprise a spatial scale of well over 43,300 square miles, with the Koyukuk River draining over 31,000 square miles, and the Kobuk River draining over 12,300—this is an area larger than nearly half the states in the US, and is about 8% of the land mass of the state of Alaska. A comparable distance would be constructing a road between Washington DC and New York City—development which displaced and changed a variety of Indigenous cultures that once lived (and some who still live) along this corridor of the continent. Therefore I want to caution that language

included in the SEIS that refers to the road as a "relatively narrow corridor" (pg. N-2) serves to hide the magnitude of the impact relative to Native America and even to general US geography.

Yet the SEIS has determined through its methodology that out of the 66 communities, only 30 may experience "a significant restriction in subsistence uses" (pg. M-27) if the project is pursued through either Alternatives A or B. If Alternative C is chosen, this "may result in a significant restriction to subsistence uses" for 31 communities (pg. M-33). Alternative C is deemed to have greater impact on fish species than Alternatives A and B, which affect both fish and caribou more than other resources. But these are all key resources to these Inupiat and Athabascan communities in terms of their caloric and religious way of life. Ecologically, it is the whole drainage of these two river systems that could be affected by the changes and vulnerabilities specified in the SEIS, and for this and other reasons I'll specify below, this finding of "a significant restriction" should be applied to all 65 communities (minus Fairbanks) and their subsistence way of life.

It should also be underscored that the current National Environmental Policy Act process, going on for over the last 5 years, has already been impacting indigenous families of the region, who are finding themselves opposed to each other on their support of the road and development of the mining district. The conflict has been erupting in a variety of governmental and non-governmental spaces where members of the communities have discussed their future, outside of the facilitated NEPA or AIDEA community meeting process, such as during regional nonprofit meetings and Denakkanaage (an annual elder-youth conference). These conflicts have been based on inaccurate or incomplete information of costs and benefits that are articulated in this SEIS. The social impacts of the project have already begun, long before any ecological impacts, and this disruption is only intensifying with the passage of time and will be exacerbated if the project is permitted. I am not exaggerating to say that some families and communities are being torn apart with this conflict—though these rifts can be repaired if the final decision is No Action.

2) Assumptions in the Methodology of the SEIS and Lacking Indigenous Knowledge

The methodology to assess impacts in this SEIS has major shortcomings that underestimate the impact the project will have on these federally-recognized tribes and their subsistence economies. Based on my argument that follows, 65 communities (minus Fairbanks) included in this SEIS will be significantly impacted by this project. The methodological shortcomings of the SEIS have to do with their simplification of the complicated social-ecological system of the subsistence economy, and the way in which Indigenous Knowledges are being only partially incorporated in the SEIS and not into the quantitative scoring rubric that calculated "impacts." While the NEPA process engaged many communities, the ultimate method used to calculate impacts does not reflect best practices of working with tribes and their Indigenous Knowledge systems.

The SEIS overall is starkly divided between its qualitative assessment of impacts of subsistence and its use of a quantitative scoring rubric to assess the impact of the project per community. Many statements in the qualitative section M describing the impacts to the subsistence regime do not inform the quantitative scoring, statements such as "Any changes in residents' ability to participate in subsistence activities, to harvest subsistence resources in traditional places at the appropriate times, and to consume subsistence foods could have long-term or permanent effects on the spiritual, cultural, and physical well-

being of ... communities by diminishing social ties that are strengthened through harvesting, processing, and distributing subsistence resources" (Appendix M, subsection 6.4.1).

Using "community" as the unit of analysis, the quantitative method first determines how many subsistence resources are used per community, identifying which communities most frequently harvests which species, and then identifies whether the subsistence use area of that community would be "bisected" by the road. But there are a lot of assumptions being smuggled into this quantitative assessment, leading to conclusions that are totally disconnected from the stated qualitative realities of the social-ecological system. NEPA processes dictate that all assumptions need to be transparent when developing a methodology for an EIS, but I did not read any discussion of assumptions for these quantitative methods. So I outline below what I see are the major assumptions of the methodology.

The quantitative method assumes that the social-ecological systems are completely static, that the ecological conditions at the present moment are those that communities expect and desire into the future. Therefore the assessment assumes that a community at the "periphery" of a given range of animals (such as caribou) will always be at the periphery—even when the qualitative section of the SEIS had documented how the Western Arctic Caribou herd had a different pattern of "core" and "peripheral" range, and that over long time scales these ranges do change. Inupiat people who created the communities of Alatna and Evansville/Bettles did so because they could rely on caribou during the founding of those towns—since Inupiat are a caribou people, culturally (they historically migrated to co-exist with caribou). But the SEIS quantitative methods do not include a longer scale temporal dimension of the ecological dynamics of the region, and assume that because caribou are currently "peripheral" to some communities, then the communities are assumed to be less impacted by a future road development.

Relatedly, the quantitative scoring of the SEIS also assumes that climate change does not exist, even while the qualitative narrative suggests that any road alternative may produce cumulative effects upon the subsistence regime. The quantitative methodology lacks temporal depth either into the past or into the future, and the "snapshot" perspective is cloaking tremendous uncertainty when considering such a large scale engineering project. The BLM failed to develop an SEIS that could have included the scientific consensus regarding the expected changes to the boreal forest ecology, and how these might interact with the road project and the subsistence economy. Instead of leaving these as completely uncertain, the SEIS could have better analyzed what that interaction is likely to produce for subsistence economies in the future.

The qualitative description of the road acknowledges that the road may some day be open to the public (Appendix H, Section 2.2.2), yet the final methodology determining risks are not accounting for that future when the corridor will become public. Even if it's 50 or 100 years hence, that is still a short amount of time compared with the thousands of years of history that the Inupiat and Athabascan peoples share on the land. The SEIS methodology is short-sighted, and assumes a short time horizon for their assessment of impacts, but it is not explicit about this assumption.

The quantitative SEIS methods also assume that the longer the distance away from the road, the fewer impacts will be felt by a given community. This, coupled with the method's accounting of which subsistence resources are most harvested in a given community, has resulted in their analysis that only 30-31 of the 66 communities will face significant restrictions in subsistence use, while the other communities are deemed to have minor and less significant impacts. The assumption that greater

distance equals less impact is problematic because of the dynamic movements of both animals and people across the social-ecological system.

Importantly, the "community" is not the same as either a "tribe" or a "culture" when thinking about the complexity of Native American identity. The SEIS methodology completely ignores the cultural and social dimension of the subsistence economy—and the quantitative method assumes that people will not move between communities. This couldn't be further from the truth. Again, there is a large disconnect between the qualitative narrative of the SEIS which recognizes the cultural dimension, but even the qualitative narrative misses such dynamics in the analysis of impacts.

Indeed, these cultures have for thousands of years moved through the landscape in semi-nomadic camps scattered across the region, and their populations have only been measurable within these contemporary "communities" since the early 1900s. Some of the villages in the project region were not formed until the late 1950s; the formation of villages as we know them today are only what Western map-makers can see, and census-taking techniques are not reflective of the traditional movements of these semi-nomadic cultures. Many of the people in the region never stopped moving with the formation of villages (Watson 2018). Although the adaptation to village life means that *some* of the people of the cultures end up living in a given village for their entire lives, and a given community phone list might have the same family names on the list, it is not accurate to expect that a "community" will have exactly the same people living there throughout their lives, or that the "community" as depicted is the appropriate unit of analysis for assessing impact. A "community" in this region is not isolated from each other in the ways being assumed in the SEIS.

In reality, people of these Inupiat and Athabascan cultures move in and out of the different communities throughout the region (and in and out of urban centers) due to intermarriage and social relationships, subsistence and educational/job opportunities—these patterns of social movements are well documented in the ethnographic literature. Some move between communities for a season, or a year, or a few years—or less, with the advent of air travel. Sometimes these movements are major and long-lasting—for marriage, for example—while other times a shorter "visit" (1 week to a season) corresponds to cultural ceremonies like a potlatch, governmental meetings, or the birth of a grandchild. Since not all people are engaged in year-round cash jobs (and indeed many people find seasonal cash work), they have more flexibility to spend time across the greater region where their ancestors also lived and traveled. Sometimes major movements occur more than once during a lifetime—especially for the "shorter" (up to a season) trips. Inter-community settlement and subsistence patterns are not considered in this SEIS methodology, though data such as the overall trading and sharing network can be used to represent the geographic extent and intensity of these familial relationships across the region.

To provide an illustration: A village that the SEIS found to have significant impacts, Huslia, has numerous resident households made up of either a husband or wife who grew up in a downriver community of Galena, Koyukuk, Nulato, or Kaltag—villages that the SEIS has catalogued as *not* experiencing a significant impact from the proposed project. But because of the dynamics and geography of the social system, it is inaccurate to parse out the impacts differently between these villages. One of the reasons that "***Koy-yukon***" people are called thus is because they are a single culture that continually merges the people who live along the ***Koy***-ukuk and ***Yukon*** rivers. With intermarriage frequent between upriver and downriver communities, this means that potentially grandparents, siblings, and cousins (and so on) are traveling from village to village, downriver to upriver (and vice-versa), and a family member might stay in

a village that they are not "from" for anywhere from a few days (to partake in funeral or potlatch ceremonies) to weeks, through months or even years at a time, partaking in the subsistence regime in those places where they are not "from."

The population of all 66 communities in the SEIS experience this short term and longer term cycle of immigration/emigration, along with having some residents in a given village living in that village all their lives. To limit the most significant impacts to only the population of the people currently living in a given community at the present moment is not accurately understanding the dynamics of the social and cultural system over time. Therefore, it is more accurate to include the full 65 communities (minus Fairbanks) when thinking about what families are feeling these impacts most significantly.

I want to underscore that a NEPA process of including reference to Indigenous knowledge shared during community meetings is not the same thing as employing Indigenous Knowledge as a framework through which to understand the same information. While this new SEIS has improved by including the perspectives of indigenous communities and some of their Indigenous knowledge in the qualitative narrative, it is important to underscore that the methodologies used nevertheless lie within a Western scientific knowledge framework, and as such must be understood as only representative of a Western perspective. Researchers using an Indigenous knowledge framework through which to understand the same information may not produce the same conclusions as this SEIS, and the current SEIS methods do not adequately represent the lifeways of these subsistence-based cultures.

Some of the temporal and spatial critiques that I have offered above might have been brought up if the methodology were better informed by Indigenous Knowledge systems, in a process of research called "knowledge co-production" that is more frequently being used to incorporate both Western and Indigenous knowledge systems, and which is supported as best practices for research in the UN Declaration of Rights of Indigenous Peoples. The community and tribal engagement process should have co-produced the overall evaluation methodology and scoring criteria for the SEIS. At the very least, based on my professional experience in working with traditional knowledge holders, it is likely that Indigenous frameworks of analysis would not have privileged the "community" as the unit of analysis to determine impacts, and a knowledge co-production approach likely would have yielded a whole host of other considerations regarding the project.

3) BLM Should Transparently Discuss Road Project Tradeoffs

These communities have been regularly discussing the potential road for about a decade now, between the BLM NEPA process and the AIDEA-led community meetings, but tribal members across the region have consistently expressed dissatisfaction with the ways they have been engaged and how little their knowledges have been informing the project evaluation. Years of these forums has meant that much of the same information has been shared, and serves to heighten an emotional conflict that is currently being felt across the communities.

In the first place, when any meeting is called to discuss the road, many community members may not be able to distinguish the differences between the agencies conducting such meetings, or the goals for such meetings. The AIDEA-facilitated meetings seem to promote the project without carefully articulating the exact costs and benefits to the communities. I have attended a few AIDEA meetings over the years (in

Fairbanks, Allakaket, and Huslia), and most recently attended one of these meetings in Huslia in March 2023. At that meeting, AIDEA representatives and their village liaisons were full of promises and sandwiches, explaining a timeline of the project and a desire to consult with tribes, but no real plans on how, and no facts about the actual job opportunities or what road development could look like. I also know that AIDEA has in the past excluded tribal leadership that has expressed opposition to the road. BLM, as the permitting agency, should ensure that AIDEA is being transparent when holding such meetings, and be inclusive of all stakeholders regardless of their position on road development.

BLM should also carefully communicate some of the key findings of this SEIS when it holds ANILCA 810 hearings. The residents need to be explained in detail which of the benefits are short term versus long term, and which costs to their ways of life are to be felt short term versus long term. Namely, that:

1) "The road" will also include a variety of spur access roads, and hundreds of smaller mines are anticipated to be developed all along the road corridor, including within sensitive fish spawning habitat to the north of the road in the creeks and waters of the Brooks Range foothills, and
2) The main road access will purportedly exclude the "public." The excluded "public" includes residents who will only have specified crossings for subsistence use access north of the road. However, many commercial and governmental uses will be allowed, and widespread trespass can be expected to occur given the long distances and remote locations involved.
3) The road may some day be legally opened to the public for non-industrial purposes (Appendix H, section 2.2.2), possibly before or after the mines have reached their lifespan (an uncertain timeline). The road may be "reclaimed," but residents will need to know what "reclamation" looks like, and that the right of way will be accessible for public snowmachine travel at the time of reclamation. AIDEA is not being transparent about this potential life of the road corridor or how its use may shift.
4) A cash job "boom" may happen for 2-3 years during road construction, but then only 9-13 full time jobs will be available for individuals from across the region for the projected 50-year life cycle of the mining district, and that most of those jobs will likely be concentrated in the NANA region.
5) Likewise, a larger proportion of the fiscal benefits of the mining project will benefit the shareholders of the NANA region, and less for the Doyon shareholders. This means the financial benefits are not concentrated in the communities that will bear the brunt of the costs of the project to their subsistence lifeways.
6) Subsistence resource use is expected to significantly decline for the *cultures* who live across 65 communities (minus Fairbanks) considered in the SEIS, due to the adverse impacts the road will have on subsistence resources.

Each tribe's and community's perspective needs to inform the BLM's final decision whether to approve the project, and the people need to first understand these short and long term tradeoffs. But it is not realistic to think that the residents from all these 66 communities are reading all 400+ pages of this SEIS; these points above and other determinations of the SEIS need to be verbally explained in each community. These are societies that historically passed down information orally from generation to generation, as part of their Indigenous knowledge traditions, and many elders in these communities speak English as a second language, or experience disabilities that prevent them from accessing the text of the SEIS. Since transparent communication of tradeoffs is not happening within AIDEA's process, the

BLM would need to ensure to hold community meetings to share the results of the SEIS and listen to each tribe before making their final decision.

4) Mitigation measures are not sufficient for the losses expected to Subsistence

If the BLM permits the project to proceed as Alternative A, B, or C, the SEIS outlined a series of mitigation measures that would need to be enacted; yet only some of the listed mitigation measures in Appendix N address needs for the subsistence economy. So in this final section of my analysis I will argue that these mitigation strategies are in fact inadequate given the costs to the subsistence economy and to the cultural identities of the federally-recognized tribes in the region.

How does one fully mitigate the impact that comes from having no control over your changing identity? It should be noted that the genesis of the project itself is "top-down" rather than "bottom up." Plans for this road corridor to the Ambler mining district long predates the birth of most contemporary subsistence users who will be most negatively affected by the road corridor's impacts. It is not a "grassroots" project with wide community support from subsistence users. These subsistence users will have to adapt to the changes being thrust upon their subsistence resources and economies, and the SEIS qualitatively acknowledges the spiritual and cultural lifeways that will forever change as a result of this project.

But in the first place, Appendix N of the SEIS defers mitigation to some future process, despite the agencies being poised to potentially approve the Ambler Road now. This is a problem because BLM assumes it can only require mitigation on its own lands, and there are no clear mechanisms to carry out the series of mitigation measures listed. It is disconcerting to read in the SEIS that a lot of the mitigation measures and restrictions on things like worker hunting competing with local subsistence use are only seen as effective insofar as that would be the rule within BLM-managed lands only. A significant portion of the project is on State of Alaska lands, and it is completely unclear whether DNR will implement/enforce similar mitigation measures. The SEIS therefore doesn't consider how effective these measures would be given those caveats of being assured only on BLM-managed lands. What would really be the impact if other land managers choose different mitigation strategies? So many of these assurances of ability to mitigate remain rife with uncertainty as to the level of actual mitigation being provided.

And more concerning is that Appendix N of the SEIS suggests that the limited role that community members are to have in governing the design and monitoring of the road through their service on committees mitigates their loss of tribal self-determination, and the loss to the spiritual lifeway from participating in the subsistence economy. These measures do not mitigate these losses to their religious and cultural lives that revolve around the natural world; they don't even mitigate the potential loss of caloric sustenance. No subsistence user would rather serve on a governing board than being out at a hunting or fishing camp, yet this is framed as sufficient mitigation. It is not sufficient mitigation for the subsistence way of life.

It is unclear how these measures of having governing boards will meaningfully shape the future of the project, especially given the insufficiencies in the AIDEA-led meetings I noted above. If the project moves forward, these efforts at inclusion in governing boards will need to be robust. The SEIS states that AIDEA

will include residents in forming a variety of oversight and planning committees regarding the road construction and wildlife management, and formalizing these committees forthwith will be necessary. As noted in this SEIS, community liaisons need to be selected, but they need to be selected by the tribal governments in the region (not by corporations or cities/towns), so that these liaisons are not just boosters for AIDEA but are more likely to fairly represent subsistence lifeways and tribal governments.

Section 3.2.2 of Appendix N lists 2 potential committees for wildlife interaction/avoidance and for general wildlife monitoring, with clear roles articulated for local community members, but other committees listed for mitigation would also need tribal representation. For example, a Fish and Wildlife Protection Plan needs to also include participation of local subsistence users from across the project area, who would best know wildlife behavior in these locations along the route. Likewise, section 3.4.2 on Transportation and access, point 1 is asking for a Comprehensive Access Plan—and this needs also to be completed in consultation with tribes and through tribal representation.

The SEIS also lists the importance of engaging with Indigenous Knowledge (pg N-30), but I want to caution that having one or two community representatives serve on a committee does not guarantee that all the relevant Indigenous Knowledge is informing the governance at hand. A lot of Indigenous knowledge is held by different families in addition to different subsistence users that tend to specialize in which resources they harvest. So each committee needs to develop a robust plan for formally collecting relevant Indigenous Knowledge for their purposes, and their tribal representative(s) are there to help the board guide their interpretation of the results of Indigenous knowledge studies. Just as a biologist is employed to proffer biological knowledge for a board's consideration, there are experts that can offer all these boards robust studies that engage the Indigenous knowledges of the region.

The SEIS mentions the potential for developing an adaptive management plan, and if coordinated with the multiple agencies and land managers across the region, could be an opportunity to develop a useful plan that can be attentive to multiple knowledge systems and help understand the feedbacks that will come with a changing climate. But there is currently no assurance as to whether the other land managers would join in such a planning effort. Additionally, and as noted earlier, this SEIS does not account for projected climate change, but any future planning committee must include scenarios of potential climate trajectories, and consult with the proper experts of Indigenous and Western sciences to assist with planning in times of uncertainty. Therefore, this adaptive management approach would require significant funding for the cycle of monitoring, analysis, and discussion of management possibilities that is required of any formal adaptive management program.

But wanting community representation on these governing boards is one thing—assuring meaningful participation requires careful planning and a budget that accounts for the logistical challenges of governing the over-200 mile road corridor. Per diem and travel for such meetings, especially across such a large region, is going to be required, and it is important that per diem payments come directly from the BLM as a more neutral party, since these are in effect oversight governing boards. Many of the individuals who are qualified to serve on wildlife boards are already committed to serving in other wildlife governance boards, and there might be difficulties in scheduling the different working groups, and obtaining participation from the community of subsistence users, but it would be essential to ensure their participation. There could also be a large burden upon subsistence users to subsidize the true cost of their participation in such working groups if their travel costs are not accurately accounted for or per diem/honoraria not adequate to the time they spend as an expert for the working group. Waiting for

travel reimbursements can sometimes cost individuals interest on their credit cards (if they have them!), and their service on these boards will cost them the opportunity to work for a wage. A plan for administering community participation needs to be developed that provides an adequate budget for the logistical constraints and requirements for participatory management—including a neutral paycheck office.

As noted by the SEIS, the ability to mitigate the impact to cultural resources depends most on building a trusting and open relationship with the tribes and traditional knowledge holders who have the ability to share their knowledge of cultural sites (pg. N-50). So it is essential to build trusting relationships with the peoples along the project corridor—through ensuring that community participation is adequately administered, as I just noted, and through transparency on costs/benefits as I articulated in the prior section.

This SEIS suggests that mitigation will prevent an influx of alcohol and drugs from having greater access to the communities due to the road, but this is based on inaccurate assumptions about the social system in the region. Section 3.4.5.1 of Appendix N, on mitigating Public Health risks, articulates that no employee will be permitted to visit a local community except for conducting official business, to minimize impacts to public health such as transfer of disease or importation of drugs and alcohol (pg. N-47). The SEIS contends also that "this measure, on its own, would be mostly effective at eliminating these risks." But this will be a difficult rule to adjudicate if the employee is related to any family in the area or had a history of residence in one or more of the local communities, since hiring locals is a goal of the project. Certainly after the 50-year projected lifespan of the commercial road, but possibly sooner, bootleggers and dealers will use the corridor to transport their goods. Even in the immediate term, the SEIS admits that illegal use of the road can't all be prevented. The mitigation measure as written inaccurately assumes that drugs and alcohol come into the villages through a faceless bootlegger who is a natural "outsider" to that community. But this is not an accurate understanding of the contemporary illegal trade of drugs and alcohol in the villages, which is a far more complicated social problem than assumed in this SEIS. Rather, the people who would illegally transport drugs and alcohol into villages via the road corridor would be people who have a history of living in at least one of those villages, and/or have family to visit in the village where they will illegally sell drugs and alcohol. This is why the drug and alcohol problem is so difficult to deal with across indigenous communities, and why this mitigation measure of "no employee can visit a community on unofficial business" will be inadequate in addressing the increased access to drugs and alcohol into the villages closest to the road. Further mitigation would be necessary for villages to deal with what will assuredly be a greater influx of drugs and alcohol into the villages.

Most significantly, I do not believe this SEIS articulates enough mitigation measures that will make restitution for the loss of subsistence opportunities that dozens of tribes will face. It is suggested that the socioeconomic mitigation measures include "training programs for local residents so that they could be employed during construction and operations," and the SEIS suggests that mitigation measure would be "partially effective at reducing economic impacts and improving economic benefits" (pg. N-46). But if the mining activities are only expected to employ 9-13 individuals at full operation, this means that very few of the communities will have a single person employed as a result of the project. And it is likely that most of these jobs will be concentrated in the NANA region, rather than the Doyon region. Likewise, most of the actual profits of the project will be disbursed across all shareholders—NANA more than Doyon—which does not concentrate benefits in the communities that are bearing the majority of the risks and

economic burdens of the project. So how, exactly, are the costs to subsistence users being mitigated financially?

If the project is permitted, it is important to note the limitations to the cash benefits that might accrue across the region, just as it is important to recognize the significant costs to the subsistence economy. The SEIS essentially outlines a "boom" of cash jobs related to the 2-3 years of road building, with then only 9-13 full time equivalent jobs being expected from the project during mining operation. But these "boom" cycle of jobs have not generally benefitted subsistence ways of life. The gold rush, as one historical example in the region, was a 2-3 year boom that produced famine once the gold rush economy busted (Watson 2018); these cash opportunities listed in the SEIS do not provide an adequate substitute for what is expected to be a radical and permanent change in subsistence economies.

The SEIS notes that migratory patterns of species such as caribou and moose are likely to change in response to the road construction and operation—how much more gasoline will subsistence users have to purchase in a given season to harvest successfully? In Allakaket and Alatna, gas is over $11 per gallon, and hunters often have to spend over $300 at a time for a single hunting trip. This is a large burden for people who live under the poverty line. It is likely that people would have to go farther, potentially spend more time outside of the village to access their traditional foods, or have to go on more trips, or otherwise forgo hunting that year, given the significant changes to subsistence resources that are projected in this SEIS. Likewise, the ability to pass on Indigenous knowledge of the region will be impacted, as longer trips might mean that harvesters cannot bring youth with them on harvesting trips. The literal cost of harvesting subsistence resources are to increase for the whole 50 years or more of the project—a whole generation or more—and where is the majority of that money for gas going to come from? Not from the 9-13 regional jobs being promised. Not from shareholder distributions diluting the financial benefits of the project. Not from per diems for wildlife governance.

This SEIS has missed a number of issues to mitigate because the methodology did not co-produce knowledge of the social-ecological system. As just one example of a mitigation measure left out, additional "culture camps" for youth and elders to share their traditional knowledge of the land and animals will need to be funded, at a minimum, for each community, to help mitigate the loss to the cultural system.

In closing, I thank you for the opportunity to provide these comments and cautions for the project. I hope my analysis has sufficiently underscored the massive amount of uncertainty that remains regarding the project, and that the subsistence way of life for 65 communities are facing a radical change if this project is permitted.

Sincerely,

Annette Watson

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