



U.S. DEPARTMENT OF THE INTERIOR
**BUREAU OF LAND
MANAGEMENT**

Ambler Road

Final Supplemental Environmental Impact Statement

April 2024

Volume 3: Appendices N–S

Prepared by:
U.S. Department of the Interior
Bureau of Land Management

In Cooperation with:
Alatna Village Council
Allakaket Village Council
Evansville Tribal Council
Huslia Tribal Council
State of Alaska
Tanana Tribal Council
U.S. Army Corps of Engineers
U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service

Participating Agency:
National Park Service



Mission

To sustain the health, diversity, and productivity of public lands for the use and enjoyment of present and future generations.

Cover photograph: Middle Fork of the Koyukuk River in fall foliage.

Photograph courtesy of BLM staff

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Acronyms

AAC	Alaska Administrative Code
ACEC	Area of Critical Environmental Concern
ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish and Game
AGL	above ground level
AIDEA	Alaska Industrial Development and Export Authority
ARD	acid rock drainage
BLM	Bureau of Land Management
BMP	best management practice
CFR	Code of Federal Regulations
DOI	U.S. Department of the Interior
EIS	Environmental Impact Statement
GAAR	Gates of the Arctic National Park and Preserve
ISPMP	Invasive Species Prevention and Management Plan
MBTA	Migratory Bird Treaty Act
NAD83	North American Datum of 1983
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NNIS	Non-native Invasive Species
NOA	naturally occurring asbestos
NPS	National Park Service
NTP	Notice to Proceed
PA	Programmatic Agreement
POD	Plan of Development
POL	Petroleum, Oils and Lubricants
ROD	Record of Decision
ROW	right-of-way
SF299	Standard Form 299
SPCCP	Spill Prevention Control and Countermeasures Plan
SWPPP	Stormwater Pollution Prevention Plan

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USACE	U.S. Army Corps of Engineers
USC	U.S. Code

1. Introduction and General Provisions

This document is intended to identify and discuss potential measures to mitigate adverse impacts from the Ambler Road Project. Overall, this broad list of potential mitigation measures is provided to inform the various decision makers of available options for mitigating impacts from the Amber Road Project. The Bureau of Land Management's (BLM's) authority to require and enforce mitigation generally is limited to mitigating impacts to BLM-managed lands and resources on those lands. However, for purposes of the National Environmental Policy Act (NEPA), mitigation measures are also identified and discussed for the range of activities the Alaska Industrial Development and Export Authority (AIDEA) has proposed, regardless of whether the activity occurs on or off BLM-managed land. Overall, this broad list of potential mitigation measures is provided to inform the various decision makers of available options for mitigating impacts from the Amber Road Project. This appendix is generally organized in the same order as the Supplemental Environmental Impact Statement (EIS), with Section 1 providing general background and overall measures, Section 2 providing general measures related to design and construction features of any alternative, and Section 3 providing measures applicable to specific resource categories addressed in the Supplemental EIS.

The following potential mitigation measures were identified through consideration of law, regulation, and plan policy; identified through proposals from AIDEA, other agencies, and/or members of the public; or identified as the BLM has worked through the analysis in the Supplemental EIS. Each agency may select measures such as these for inclusion in decisions related to their own jurisdictions. If the BLM selects one of the action alternatives in its Record of Decision (ROD), the ROD would identify the mitigation measures that the BLM would require. While this document presents conceptual mitigation measures, the road right-of-way (ROW) grant and other authorizations would provide further detail regarding specifics of the mitigation measures listed in this document.

Measures to mitigate adverse impacts that have already been committed to by AIDEA through its project application are considered design features and as such, are presented in Chapter 2, Alternatives (Section 2.4.4), and analyzed as part of the proposed project and alternatives in Chapter 3, Affected Environment and Environmental Consequences, of the Supplemental EIS. To the extent these design features could be modified for clarity or increased effectiveness, the modification is included in this appendix as a mitigation measure.

In this document, the effectiveness of each potential mitigation measure is noted, and in each resource section or subsection below, the expected effectiveness of the mitigation measures if collectively applied is discussed. For this analysis, it is assumed that the measure would be implemented by AIDEA and enforced by the BLM. The discussion includes consideration of whether and how the effectiveness of mitigation on BLM-managed land would be affected if the same mitigation is not applied off BLM-managed land. The landowner discussion is necessary, because the BLM manages only part of the land along each alternative and its authority is limited to mitigating impacts to BLM-managed lands and resources. The BLM would have authority over approximately 3,000 to 3,500 acres of the project on federal lands for Alternatives A and B (out of approximately 15,000 acres for the total project footprint), and authority over approximately 19,000 acres of the project on federal lands along Alternative C (out of approximately 23,000 acres total), as shown in Appendix F, Social Systems Tables and Supplemental Information, Table 5.

Guidelines used for consideration of effectiveness are as follows:

- Highly effective: The impact(s) targeted by the mitigation measure would not occur or would be wholly mitigated in normal construction or operations.

- **Mostly effective:** The impact(s) targeted by the mitigation measure likely would occur at a low level or in minor areas but overall would be avoided in normal construction or operations.
- **Partially effective:** The impact(s) targeted by the mitigation measure would occur despite the measures but would be reduced in effect or spatial extent.
- **Minimally effective:** The impact(s) targeted by the mitigation measure would occur despite the measures, which may have a mitigating effect but not enough to be measurable or otherwise meaningful.

The analysis of effectiveness in some cases are tempered by consideration of atypical events that could occur outside of normal construction or operating conditions and that may cause impacts. An example of an atypical event is an accident, such as a truck rollover that causes a spill.

1.1. General Measures*

1. **Potential BLM Mitigation Measure:** AIDEA would conduct all activities associated with the initiation, construction, operation, and termination of the grant within the limits of the authorized project area.

Effectiveness: This mitigation measure, on its own, would be mostly effective at restricting all impact to the relatively narrow corridor defined by the authorization. Wildlife (including mammals, fish and birds), subsistence, fugitive dust, and water quality impacts would extend beyond the bounds of the authorized project area.

2. **Potential BLM Mitigation Measure:** Any activities on the Ambler Road project area beyond those analyzed in the Supplemental EIS and specified in the authorizations must have prior written approval of the Authorized Officer.

Effectiveness: This mitigation measure, on its own, would be highly effective at preventing AIDEA from taking actions that are not approved under the authorizations without formal approval from the Authorized Officer.

3. **Potential BLM Mitigation Measure:** AIDEA would ensure that the facilities to be constructed, used, and operated would limit or prevent damage to scenic, esthetic, cultural, and environmental values (including damage to fish and wildlife habitat), damage to federal property, and hazards to public health and safety.

Effectiveness: This mitigation measure, on its own, would be partially effective at limiting or preventing damage to the identified resources. AIDEA would need to plan for and implement specific measures to meet this requirement. This Supplemental EIS identifies impacts to the resources addressed in this measure that are unavoidable.

4. **Potential BLM Mitigation Measure:** AIDEA must notify the Authorized Officer in writing 30 days prior to the beginning of any temporary closure and 90 days prior to initiation of permanent closure and reclamation activities.

Effectiveness: This mitigation measure, on its own, would be highly effective at informing the BLM of temporary and permanent closure of the road. This would allow the BLM to prepared for closure activities and put staff in place for oversight and review of closure activities and documents.

5. **Potential BLM Mitigation Measure:** Except as specified in the authorizations, AIDEA would not disturb or destroy pipelines, fuel gas lines, roads, trails, work pads, survey monuments or ROW markers, cathodic protection devices, monitoring rods, drainage/erosion control structures,

or any other facilities or properties existing on public lands. Any disturbance of these facilities or properties by AIDEA in the conduct or operations under this authorized project would be reported to the Authorized Officer and would be restored to the satisfaction of the Authorized Officer.

Effectiveness: This mitigation measure, on its own, would be highly effective at preventing disruption to the listed facilities and their functions on BLM-managed land. The measure recognizes the potential for accidental disturbance to facilities, but clearly leaves responsibility for restoration with AIDEA.

6. **Potential BLM Mitigation Measure:** Except for authorized road/traffic signs, no signs or advertising devices would be placed on the road ROW or on adjacent public lands, except those posted by or at the direction of the Authorized Officer.

Effectiveness: This mitigation measure, on its own, would be highly effective at preventing impacts to visual resources from intrusive and unnecessary features that detract from the natural setting.

7. **Potential BLM Mitigation Measure:** AIDEA would not block or obstruct the ingress or egress along any permanent existing roads or trails, including perennial winter trails and subsistence trails identified by communities, unless explicitly approved by the Authorized Officer. See also Section 3.4.2, Transportation and Access.

Effectiveness: This mitigation measure, on its own, would be mostly effective at maintaining existing access in the project area. The limitations on crossings imposed for safety would not be avoided.

8. **Potential BLM Mitigation Measure:** To ensure monument preservation and aid in the management of federal lands, the points where the road enters, on which the road is located, and where it leaves federal interest lands would be documented. This would be accomplished by locating and measuring to the nearest monuments on either side of the as-built centerline of the road. When on federal lands, if the road centerline falls within 1,320 feet of an existing monument, its position would also be measured and its relationship shown relative to the centerline. These steps would ensure both objectives and would assist in the federal land manager's ability to identify where the road is on federal lands.

Effectiveness: This mitigation measure, on its own, would be highly effective at documenting the road location with respect to federal land and assist the BLM in meeting its land management obligations.

9. **Potential BLM Mitigation Measure:** AIDEA would conduct an environmental briefing with all employees, contractors, and subcontractors so they are familiar with the stipulations. AIDEA would maintain records of participant names and dates for these briefings and would make such records available to BLM on demand. AIDEA would ensure that a copy of the stipulations would be readily available in either hard copy or electronic format to all employees, contractors/subcontractors, and agency staff at all crew quarters and offices associated with road operations (e.g., gatehouses, offices at maintenance camps).

Effectiveness: This mitigation measure, on its own, would be mostly effective at meeting the requirements of environmental mitigation measures set forth in the BLM's ROD that can be influenced by the actions of employees, contractors, and subcontractors. It is possible that, through human error, some stipulations at some times in some locations do not get implemented and lead to adverse impacts that could have been avoided. Instructing workers on the compliance requirements in the stipulations would significantly improve the level of compliance.

10. Potential BLM Mitigation Measure: AIDEA would develop and submit monitoring plans for approval by the Authorized Officer. They would be designed to demonstrate compliance with the approved plan of operations and other federal and state environmental laws and regulations, provide early detection of potential problems, and supply information that would assist in directing corrective actions should they become necessary. Monitoring may be required for water quality, air quality (dust control), slope stability, revegetation progress (during reclamation), noise levels, permafrost thaw or stability, and fish and wildlife mortality, among others. Specific programs required to be included would be itemized in the Grant. Monitoring plans may incorporate existing state and federal monitoring requirements to avoid duplication. However, the submitted monitoring plan needs to include copies of, and clearly reference, these other plans. Appropriate corrective measures would be undertaken should impacts be identified during monitoring.

Effectiveness: This mitigation measure, on its own, would be mostly effective at recording AIDEA's compliance with the mitigation objectives and, if necessary, identifying corrective action to address unanticipated impacts and or ineffective mitigation.

11. Potential BLM Mitigation Measure: AIDEA would ensure that copies of all relevant monitoring plan records are available for BLM review at any project camp, office, or permanent facility at all times.

Effectiveness: This mitigation measure, on its own, would provide the BLM with up-to-date information on monitoring activities. In addition, the measure would build awareness of the importance of compliance at all operational levels of the project.

12. Potential BLM Mitigation Measure: AIDEA would provide to the BLM copies of any permits required by any other Federal or State agencies with jurisdiction (including, but not limited to, the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, the Alaska Department of Fish and Game, the Alaska Department of Natural Resources, the Alaska Department of Environmental Conservation, and the Alaska Department of Transportation and Public Facilities) prior to receiving a Notice to Proceed (NTP) with surface disturbing activities on BLM-managed lands. The terms and conditions of all other agency permits would be incorporated into the terms and conditions of AIDEA's BLM-issued Grant of Right of Way. When other agencies require submission of activity plans or monitoring reports, AIDEA would provide identical and concurrent copies to BLM.

Effectiveness: This mitigation measure, on its own, would be highly effective at providing the BLM with information pertaining to all of AIDEA's environmental commitments for the project and potentially provide efficiencies in compliance monitoring.

13. Potential BLM Mitigation Measure: In accordance with regulation at 43 Code of Federal Regulations (CFR) 2805.11(c), AIDEA may only use the authorized area for the specific use the grant authorizes. AIDEA would ensure that the road, camps, and any other authorized facilities are used only in support of authorized activities. Other uses, including use by hunters, fishers, tourists, researchers, or employee's friends or family members, is not authorized. This does not preclude providing appropriate emergency assistance to anyone in distress, providing assistance and support to law enforcement or search and rescue personnel, or providing support to agency staff and contractors engaged in administration of the authorized project.

Effectiveness: This mitigation measure, on its own, would be mostly effective in constraining use of the road to its intended purpose, allowing for exceptions in the event of emergencies. This measure would avoid impacts from unauthorized use and subsequent environmental degradation.

14. Potential BLM Mitigation Measure: Snow removal and road grading should occur from west to east, to the extent practicable, to minimize the potential for the spread of invasive plant species.

Effectiveness: This mitigation measure would be mostly effective at ensuring that invasive species already present along the Dalton Highway corridor are not introduced or spread into the project area.

Summary of Effectiveness: Together, all measures in this section would be mostly effective in meeting the objectives of securing the road for its intended use, minimizing the effects of the road on environmental resources, and establishing an ongoing program of compliance.

1.2. Reporting Requirements*

1. Potential BLM Mitigation Measure: AIDEA would submit documentation of their consultation with affected subsistence communities to the BLM within 90 days of approving 90 percent road design at each phase of construction and annually by the end of the calendar year for 2 years following completion of construction of each phase, and at minimum every 5 years thereafter for the life of the project. Reporting would include a list of issues raised during consultation, results of road use monitoring, and a summary of how issues will be addressed.

Effectiveness: This mitigation measure, on its own, would be highly effective in recording AIDEA's involvement with affected communities during design, construction, and operation. The BLM would be able to monitor issues and respond appropriately.

2. Potential BLM Mitigation Measure: AIDEA would monitor road use and keep records of numbers of vehicles by vehicle class, trip purpose, and the timing of trips, and would submit this information to the BLM on a quarterly basis. AIDEA would include in its monitoring and record keeping any unauthorized use of the road.

Effectiveness: This mitigation measure, on its own, would be highly effective at allowing tracking of road use with respect to volume, frequency, vehicle types, and trip purpose to compare actual road traffic with AIDEA's application. The BLM would be able to determine whether AIDEA is operating the road as intended.

3. Potential BLM Mitigation Measure: AIDEA would provide the BLM with as-built drawings of the road within 90 days of completion of each construction phase. Data would be in the form of an ESRI shape file(s) referencing the North American Datum of 1983 (NAD83) and would include metadata specifying the timing of construction for each portion of the road.

Effectiveness: 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. The as-built drawings could also be used to monitor compliance with construction specifications and mitigation commitments.

4. Potential BLM Mitigation Measure: AIDEA would provide annual reports of incidents and accidents, including location, date, nature of incident or accident, cause and how determined, whether any administrative or enforcement action was initiated, actions taken by AIDEA in response, and status of response completion. At a minimum, the types of incidents and accidents must include fuel, oil, or hazardous material spills; overturned vehicles or equipment; incidents that resulted in exceeding state water quality standards; incidents that altered stream banks, resulting in the stream leaving its normal channel (i.e., stream blowouts); wildlife injuries or

fatalities; and fish kills. During construction, AIDEA would provide monthly reports of camp locations and dates utilized, fuel storage locations and dates utilized, routes used for off-highway fuel hauls and dates utilized, storage locations for any hazardous materials with dates utilized, and types of materials.

Effectiveness: This mitigation measure, on its own, would be highly effective in documenting accidents and out-of-compliance actions, their consequences, the remediation actions taken, and the residual effects. This information would allow the BLM to monitor and identify ongoing problems and take corrective action with AIDEA, if needed.

Summary of Effectiveness: Together, all measures in this section would be highly effective in documenting AIDEA's design, construction, and operations practices for compliance with environmental commitments included in the ROD.

1.3. General Responsibilities and Plan of Development

5. **Potential BLM Mitigation Measure:** AIDEA would refine, based on the NEPA analysis, the Plan of Development (POD) provided with the Standard Form 299 (SF299) ROW grant application, and the POD would be reviewed and approved by the BLM and made part of the authorization(s) to AIDEA. In accordance with regulations at 43 CFR 2805.12(a)(8)(vi), AIDEA would construct, operate, and maintain the Ambler Road and Related Facilities within the proposed project area in a manner consistent with the authorization, including the approved POD.

Effectiveness: This mitigation measure, on its own, would be highly effective in providing consistency in documenting AIDEA's plan for the road, with the same current information included in the Plan of Development (POD) and Standard Form 299 (SF299). This would eliminate conflict and confusion that could result if the project's guiding documents relied on information obtained during 2 different phases of project development.

6. **Potential BLM Mitigation Measure:** AIDEA's proposed design features, industry best management practices (BMPs), and the BLM adopted mitigation measures listed in the BLM ROD for the Ambler Road Supplemental EIS would be incorporated by reference into the AIDEA's POD and compliance program. Selected design features, BMPs, and mitigation measures would be refined and clarified in the subsequent authorization stipulations.

Effectiveness: This mitigation measure, on its own, would be highly effective in identifying AIDEA's responsibilities for meeting the environmental commitments developed during the application, NEPA review, and permitting processes.

Summary of Effectiveness: Together, the measures in this section would be highly effective in creating a record of AIDEA's design, construction, and operations commitments for reducing environmental impact.

1.4. General Completion of Use (Restoration/Reclamation)*

See also Section 3.3.1, Vegetation and Wetlands.

7. **Potential BLM Mitigation Measure:** Upon completion of use of all, or a very substantial part, of the authorized project area, AIDEA would promptly remove all improvements and equipment, except as otherwise approved by the Authorized Officer, and would restore the project area to a condition that is approved in writing by the Authorized Officer. Road closure would include barriers near either end and at other locations as needed to minimize continued use of the alignment as a transportation corridor by off-road vehicles including snowmobiles.

Effectiveness: This mitigation measure, on its own, would be partially effective in restoring the authorized project area; however, complete restoration would not be possible given the irreversible and irretrievable commitment of resources. In addition, the environmental impacts that could result from removal of road materials could be greater than the effect of leaving some materials in place. The plan for what is being removed and how it would be removed would be important in ensuring the effectiveness of this stipulation.

8. **Potential BLM Mitigation Measure:** When the project improvements (infrastructure, roadbeds, and pads) are no longer needed, the end-of-project reclamation would include removing the fill placed in wetlands, and restoring the original contours of the landscape to return the land to its original condition for fish and wildlife.

Effectiveness: This mitigation measure, on its own, would be partially effective in restoring former wetlands and fish and wildlife habitat. The 50-year life of the project could cause changes to wetlands that may make complete restoration impossible. Recovering the landscape to preconstruction conditions would require removal of massive quantities of road building materials. The removal and disposal of some materials may have more environmental impact than leaving them in place. The lack of resiliency of the arctic environment can make restoration difficult. It can take a considerable length of time for recovery.

9. **Potential BLM Mitigation Measure:** The location and method of disposal of used fill and other waste material removed from the road and associated facilities during closure and reclamation would be subject to pre-approval by the Authorized Officer.

Effectiveness: This mitigation measure, on its own, would be highly effective in ensuring that potentially contaminated waste material is disposed of in accordance with relevant law, regulation, policy, and land use plan requirements.

10. **Potential BLM Mitigation Measure:** AIDEA would develop and submit an initial closure and reclamation plan using the best available science and Indigenous Knowledge. The plan would be developed in consultation with the State, NPS, BLM, ANCSA regional and village corporations owning lands in the ROW, and the Subsistence Advisory Committee (SAC) and would be approved by the Authorized Officer prior to receiving a NTP for construction on BLM-managed land. AIDEA would submit an updated closure and reclamation plan with each submission of as-built designs, at each five-year interval for the life of the project, and upon notification of intent to begin closure and reclamation activities.

Effectiveness: This mitigation measure, on its own, would be highly effective in identifying AIDEA's plans and responsibilities for reclamation. In this process, AIDEA would regularly revisit the plan and methods of closure and update the plan as technologies and conditions of the facilities change.

11. **Potential BLM Mitigation Measure:** Each closure and reclamation plan update would be required to include documentation that AIDEA has notified any local communities authorized to receive goods or services via AIDEA facilities of the plan and anticipated timelines.

Effectiveness: This mitigation measure, on its own, would be highly effective in informing affected communities of AIDEA's plan and schedule for removal of facilities and restoration of the corridor.

12. **Potential BLM Mitigation Measure:** AIDEA would submit a final summary report to the Authorized Officer within 30 days of completion or cessation of operations. This report would include:

- a. Written statement of program completion with completion date.
- b. Summary compilation of incident and accident reports required under mitigation measure #4 in section 1.2.
- c. A comprehensive map showing camp locations and dates utilized, fuel storage locations and dates utilized, routes used for off-highway fuel hauls and dates utilized, storage locations for any hazardous materials with dates utilized, and types of materials.

Effectiveness: This mitigation measure, on its own, would be highly effective in providing a record for the BLM to identify locations of known and potential contaminants on BLM-managed land. The BLM could use this information to confirm complete removal of contaminated materials during the restoration process.

Summary of Effectiveness: Together, all measures in this section would be highly effective in documenting AIDEA's restoration and reclamation plan, keeping the plan current with the conditions of the facilities to be removed, and keeping the affected communities informed of the reclamation plan. The effectiveness of the restoration and reclamation of the road corridor itself would depend on the value of the restoration work versus the environmental effects of the restoration and reclamation activities. It may be only partially effective to remove all materials from the corridor.

2. Alternatives*

This section presents general requirements related to construction of any alternative. Specific design and construction measures are also listed in Section 3, Affected Environment and Environmental Consequences, for protection of individual resources.

1. **Potential BLM Mitigation Measure:** Before BLM would issue a NTP for a construction segment or project, AIDEA would, in a manner acceptable to the Authorized Officer, locate and clearly mark on the ground the exterior boundaries of the road ROW and the location of all related facilities proposed to be constructed as part of that specific construction segment or project.

Effectiveness: This mitigation measure, on its own, would be highly effective in providing the BLM the information needed to confirm the limits of the road ROW, location of all related facilities and footprint of construction, communicating to contractors building the construction segment or project, and allowing the BLM or other agencies to perform compliance inspections to make sure work is occurring in authorized locations.

2. **Potential BLM Mitigation Measure:** AIDEA would provide financial guarantees, such as a performance bond, maintenance bond, and reclamation bond, making funds accessible to BLM to cover the full cost of construction, operation, maintenance, and termination/reclamation in the event they are unable to do so. The financial guarantee mechanisms must meet the requirements of BLM regulation and policy and be approved by the Authorized Officer.

Effectiveness: This mitigation measure, on its own, would be highly effective in securing funding for the construction, operation, maintenance, and termination/reclamation efforts and ensuring that these processes would move forward, whether or not AIDEA is still a financially solvent entity within the State of Alaska.

3. **Potential BLM Mitigation Measure:** AIDEA would submit a plan for approval for the use of explosives on federal land, including but not limited to blasting techniques, and provisions to avoid impacts to caribou, to the Authorized Officer.

Effectiveness: This mitigation measure, on its own, would be highly effective in providing the BLM information pertaining to the use of explosives on BLM-managed lands. The use, locations, schedule, and techniques for blasting would assist the BLM in controlling public access in blasting areas and support environmental and public safety.

4. **Potential BLM Mitigation Measure:** All construction and operations activities would be conducted with due regard for good resource management and in such a manner as not to block any stream or drainage system; change the character or course of a stream; cause the pollution of any stream, lake, wetland, or land area; or cause pollution of the air.

Effectiveness: This mitigation measure, on its own, would be mostly effective in having AIDEA adopt sound practices for providing environmental protections while supporting resource extraction. Environmental impacts cannot be wholly avoided. Requiring “due regard” for the proper management of resources and the avoidance of impacts to water, land, and air would support a culture of avoiding environmental impacts among project participants and reduce overall impacts of the project.

Summary of Effectiveness: Together, all measures in this section would be highly effective in identifying the project limits and AIDEA’s commitments to resource protection, restoration, and reclamation. It would be mostly effective in reducing environmental impacts, but would not result in complete avoidance of impacts.

3. Affected Environment and Environmental Consequences*

3.1. Introduction

This section reflects the Affected Environment and Environmental Consequences chapter of the Supplemental EIS and presents mitigation measures and design features in the same order the topics are addressed in the Supplemental EIS. Note that there is substantial crossover between some sections, such as water, wetlands, and soils/erosion control. Cross references are provided where possible.

3.2. Physical Environment*

3.2.1 Geology and Soils

1. **Potential BLM Mitigation Measure:** Each installation of artificial erosion control media would remain in place and be inspected and maintained weekly during the growing season until sufficient vegetation is established to achieve natural erosion control.

Effectiveness: This mitigation measure is designed to stabilize soils and slopes, reducing sedimentation into wetlands and waterbodies, and reducing erosion. On its own, the measure would be mostly effective at reducing impacts under normal construction conditions associated with erosion and sediment control. Higher than expected precipitation events may result in sedimentation and erosion that exceeds the artificial erosion control media capacity. Extremely wet and dry conditions (or wildfire conditions occurring during construction seasons) may result in insufficient establishment of natural erosion control within the growing season. The Stormwater Pollution Prevention Plan (SWPPP) prepared for the project (see Chapter 2, Section 2.4.4 of the Supplemental EIS) would identify methods, procedures, and remediation measures to reduce these occurrences and repair or replace damaged or insufficient control media. Other

agencies and landowners would likely include this mitigation in their permits and authorizations for the project.

2. **Potential BLM Mitigation Measure:** The monitoring plan included as a potential mitigation measure in Section 1.1 would include a permafrost monitoring plan to detect and respond to issues resulting from permafrost disturbance at any location in the construction or operating right of way, including spur roads, landing strips, and building pads.

Effectiveness: This mitigation measure is intended to address impacts to the infrastructure and impacts to the surrounding area associated with permafrost degradation. This could include surface cracking, embankment settlements, blocked or perched culverts, or drainage changes. On its own, this mitigation measure would be partially effective at eliminating infrastructure impacts associated with the thawing of permafrost sections under and along the road and road facilities. This mitigation measure, on its own, would only be minimally effective at reducing the project's contribution to area permafrost degradation, as identification of issues would be after-the-fact.

3. **Potential BLM Mitigation Measure:** AIDEA would immediately construct the road to full depth embankment (Phase 2), without the prior construction actions to create a pioneer road, to reduce permafrost degradation and associated road quality deterioration.

Effectiveness: This mitigation measure, on its own, would be mostly effective at reducing the permafrost degradation impacts associated with the construction and operation of the pioneer road, for which removal of vegetation and reduced depth of embankment for approximately 2 years would likely accelerate or amplify the warming of the soil regime. The mitigation measure would be minimally effective at eliminating the permafrost degradation anticipated with or without road construction due to climate change during the project lifespan.

4. **Potential BLM Mitigation Measure:** If foam is used to insulate the permafrost from thermal degradation, it would be composed of closed-cell extruded polystyrene or other closed cell foams (e.g., blueboard) rather than non-extruded expanded polystyrene foam.

Effectiveness: This mitigation measure, on its own, would be partially effective at reducing impacts associated with permafrost thawing under the road bed. Alaska road applications have found that closed cell foams are more effective than other foams for thermal insulation.

5. **Potential BLM Mitigation Measure:** Geotechnical investigations would include acid-base accounting for samples collected from material sites, along the road alignment, and at locations of ancillary facilities to identify areas of potential acid rock drainage. Testing also would be done for non-acidic metals leaching. Cuts would be minimized in areas with high potential for acid rock drainage and non-acidic metals leaching. AIDEA would provide a protocol for determining when alternative locations would be needed to avoid such areas and, if avoidance is not possible, how cut material and drainage would be handled.

Effectiveness: This mitigation measure, on its own, would be mostly effective at reducing impacts associated with acid rock drainage (ARD). Decision making associated with the geochemical testing data may result in the development of ARD or metal leaching despite reasonable measures to predict and avoid. In addition, changes to the drainages or presence of neutralizing minerals can change, resulting in ARD and leaching development over time. Management and mitigation of ARD and metal leaching once initiated is difficult and very expensive, resulting in unbudgeted reclamation costs.

6. **Potential BLM Mitigation Measure:** AIDEA would develop and implement a plan to educate workers, regional health care workers, and residents of all communities in the area potentially affected by the Ambler Road, on the health effects of exposure to Naturally Occurring Asbestos

(NOA). The plan would include opportunities for routine risk-based health screening for non-cancerous and cancerous asbestos related diseases of workers, nearby communities, and regular subsistence users.

Effectiveness: This mitigation measure is designed to educate, build awareness, and diagnose health problems early. As such, it would be highly effective at those aims. However, it would be minimally effective at reducing impacts associated with NOA. In combination with measures proposed to require AIDEA to provide testing, training, and safety gear for workers, it would be beneficial and educational for workers, drivers, and local communities. The health related impacts are not changed by routine screenings; however, the opportunities to receive local medical care and screenings within the area communities, enabling early medical diagnoses and interventions, are likely a reassurance to area residents. Asbestosis and lung diseases can take decades to develop, but within the project lifespan.

Summary of Effectiveness: The measures listed above, if implemented collectively, are expected to be partially effective at reducing impacts associated with geologic and soil hazards, and are likely to be implemented along the full length of the proposed road corridor (including non-BLM-managed lands). Additional mitigation measures addressing NOA are identified in Section 3.2.7, Air Quality.

3.2.2 Sand and Gravel Resources*

The majority of the proposed mitigation in this section applies to operation of mineral material sites (i.e., gravel pits). However, some apply to placement and management of mineral materials for road and ancillary facility construction and operation.

1. **Potential BLM Mitigation Measure:** Gravel and other construction materials would not be taken from streambeds, riverbeds, active floodplains, lakeshores, or outlet of lakes unless the taking is approved by the Authorized Officer as per further site-specific analysis.

Effectiveness: This mitigation measure is designed to minimize impacts on waterbodies, including but not limited to bank erosion, channel migration, changes to surface or subsurface flows, changes to flow velocity, and other local hydraulic effects. It addresses impacts to water bodies, water quality, and aquatic habitat. This mitigation measure, where applied, would be highly effective at eliminating impacts that would be caused by such actions, and maintaining distance between the project actions and the waterbodies would reduce impacts to water quality and habitat. It is assumed that obtaining the approval by the Authorized Officer to engage in these actions would require additional design review and sufficient mitigation measures to avoid or reduce impacts.

This mitigation measure would only apply to non-navigable waterways. Many of the rivers crossed within the proposed alternatives have been determined navigable and are State-owned submerged lands. It would be the decision of the State of Alaska whether gravel extraction permits for the beds of State-owned riverbed would be issued. The State has issued gravel extraction permits within active floodplains and riverbeds in the past to expedite rural construction projects, so it cannot be assumed that the State would adopt this mitigation measure on non-navigable or navigable waterways.

Because the BLM manages only portions of the lands proposed within each alternative, if this mitigation measure is not adopted by all land owners, managers, or resource permitting agencies, it is anticipated that there would be impacts to downstream watersheds.

2. **BLM Standard Stipulation for Mineral Material Mining:** 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. The mining and reclamation plan would address all

applicable items in the attached Mineral Materials Mining and Reclamation Plan Proposal form (Attachment A). It would also address what would be done with asbestos-containing materials during reclamation.

Effectiveness: This mitigation measure is designed to provide sufficient time and professional resources to review and identify that land management objectives and mitigation measures are properly applied to all construction activities related to mineral mining on public lands. On its own, it would be highly effective at eliminating and reducing impacts associated with incomplete or incorrect application of land management policies.

3. **BLM Standard Stipulation for Mineral Material Mining:** AIDEA would notify BLM at the beginning and end of active mining operations.

Effectiveness: This mitigation measure, on its own, would be mostly effective at eliminating impacts associated with or land use conflicts on BLM-managed lands. It would be partially effective at eliminating impacts resulting from lack of agency coordination; timely public notifications; and incomplete implementation of approved monitoring, regulatory permit compliance, or reclamation plans associated with the material sites.

4. **Potential BLM Mitigation Measure:** Excavated materials would not be stockpiled in rivers, streams, 100-year floodplains, or wetlands unless approved by the Authorized Officer.

Effectiveness: This mitigation measure, on its own, would be highly effective at reducing impacts associated with placement of fill or materials within a floodplain; disruption of natural floodplain hydrology, floodplain, and wetland connectivity; and changes in fish habitat for temporary storage of gravel and other materials.

5. **BLM Standard Stipulation for Mineral Material Mining:** AIDEA would ensure that the site is developed sequentially in cells. A disturbed cell would be reclaimed prior to opening a new area. Exceptions to allow for thawing of permafrost may be granted at the discretion of the Authorized Officer

Effectiveness: This mitigation measure, on its own, would be highly effective at reducing impacts associated with erosion and sedimentation of soils.

6. **BLM Standard Stipulation for Mineral Material Mining:** AIDEA would ensure that a 100-foot undisturbed buffer is maintained along any lakes or creeks that flow through upland material mining pits. Any approved access roads that bisect the buffer area would be rehabilitated at the close of mining by revegetating the crossing with plant species and densities similar to those in the undisturbed buffer for at least 100 feet from the bank-full elevation. Access roads in buffers originally void of vegetation would be scarified to a minimum depth of 8 inches during final reclamation.

Effectiveness: This mitigation measure, on its own, would be highly effective at eliminating water quality impacts that would be caused by erosion and sedimentation of disturbed soils under high flow events. This mitigation measure also is highly effective at reducing impacts caused by accidental leaks or spills from vehicles and mining equipment.

7. **BLM Standard Stipulation for Mineral Material Mining:** AIDEA would ensure that buffer zones are not disturbed, except by designated crossings. Operation of equipment, placement of overburden or mined material, or storage/placement of any equipment and supplies would not be allowed in any buffer zones identified in the mining and reclamation plan, specified in the Decision Record for this authorization, or required in these stipulations.

Effectiveness: This mitigation measure, on its own, would be highly effective at reducing impacts associated with water quality.

8. **BLM Standard Stipulation for Mineral Material Mining:** Unless separately authorized, AIDEA would ensure that no material site is used for storage of materials and supplies not related to production of mineral from that site. Unless separately authorized, AIDEA would ensure that mineral materials sites are not used for secondary or value-added production processes not related to production of mineral materials.

Effectiveness: This mitigation measure, on its own, would be partially effective at reducing impacts associated with the stockpiling of non-native soils that could alter the pH of the area.

9. **BLM Standard Stipulation for Mineral Material Mining:** AIDEA would ensure that no minerals originating outside the permit area are imported to the permit area, except as may be authorized in approved project plans.

Effectiveness: This mitigation measure, on its own, would be partially effective at reducing impacts associated with the stockpiling of non-native materials.

10. **BLM Standard Stipulation for Mineral Material Mining:** AIDEA would ensure that overburden, topsoil, and vegetation are stockpiled separately in a manner that prevents loss through erosion, preserves them for use in reclamation, and does not impede access to usable mineral materials.

Effectiveness: This mitigation measure, on its own, would be partially effective at reducing impacts on water quality and improving potential for successful reclamation activities. It may require larger acreages to be used for material stockpiling.

11. **BLM Standard Stipulation for Mineral Material Mining:** AIDEA would ensure that work pit sides are sloped to prevent erosion and provide for the safety of humans and animals. Slopes along pit sides and inactive faces would be no greater than 3:1 (horizontal:vertical).

Effectiveness: This mitigation measure, on its own, would be mostly effective at eliminating impacts associated with slope failure on the safety of humans and animals.

12. **BLM Standard Stipulation for Mineral Material Mining:** AIDEA would ensure that site stabilization measures and measures to control erosion, sedimentation, and stormwater are maintained in proper working order throughout the term of the authorization, including during periods of temporary closure or inactivity.

Effectiveness: This mitigation measure, on its own, would be highly effective at reducing water quality impacts associated with improperly placed or maintained controls. The implementation of a SWPPP is standard construction practice and permitting requirement in Alaska. It is included in AIDEA's design features (Chapter 2, Section 2.4.4 of the Supplemental EIS)

13. **BLM Standard Stipulation for Mineral Material Mining:** AIDEA would ensure that BMPs for dust abatement (e.g., graveling, watering) are utilized when deemed necessary by AIDEA, their contractor, or subcontractor, or when directed by a BLM representative.

Effectiveness: This mitigation measure, on its own, would be highly effective at reducing air and water quality impacts associated with dust control. AIDEA has committed in their design features outlined in Chapter 2, Section 2.4.4 of the Supplemental EIS to develop and implement a Dust Control Plan.

14. **BLM Standard Stipulation for Mineral Material Mining:** AIDEA would meet with BLM staff at the end of the life cycle of the material site mine, prior to final reclamation, to define final configuration of the mine.

Effectiveness: This mitigation measure, on its own, would be mostly effective at reducing impacts associated with reclamation activities and potential future impacts to floodplains, vegetation, habitat, and water quality that could result by the final form and condition of the mine site.

15. **BLM Standard Stipulation for Mineral Material Mining:** AIDEA would ensure that reclamation is conducted in accordance with the approved reclamation plan. Deviations or modifications to the approved reclamation plan must be approved in writing by the Authorized Officer prior to execution.

Effectiveness: This mitigation measure, on its own, would be highly effective at eliminating impacts associated with water resources and habitat from not implementing the approved plans.

Summary of Effectiveness: The measures listed above, if implemented collectively, are expected to be partially effective at reducing air, water, wetland, floodplain, and habitat impacts associated with decisions and actions to mine sand and gravel resources on BLM-managed lands in the project area. If applied similarly along the project area, these standard stipulations would extend throughout the project area. Most of these measures are considered standard stipulations for BLM Mining Procedures, and standard construction practices employed within the State of Alaska and have proven effective.

3.2.3 Hazardous and Solid Waste*

1. **Potential BLM Mitigation Measure:** AIDEA or its designee would prepare and implement a comprehensive waste management plan. This plan would be drafted in consultation with federal, state, and borough agencies as appropriate, and would be submitted to the Authorized Officer for approval. Management decisions affecting waste generation would be addressed in the following order of priority: (1) prevention and reduction, (2) recycling, (3) treatment, and (4) disposal. The plan would include:

- Precautions taken to avoid attracting wildlife to food and garbage, including use of bear-resistant containers for all waste materials and classes.
- Protocols for the incineration, backhaul, or composting of all putrescible waste in a manner approved by the Authorized Officer; burial of waste is not permitted. All solid waste, including incinerator ash, would be disposed of in an approved waste-disposal facility in accordance with U.S. Environmental Protection Agency and Alaska Department of Environmental Conservation (ADEC) regulations and procedures.
- Procedures for the disposal of wastewater and domestic wastewater. The BLM prohibits wastewater discharges or disposal of domestic wastewater into bodies of fresh, estuarine, and marine water, including wetlands, unless authorized by an Alaska Pollutant Discharge Elimination System permit.
- Protocols for reporting hazardous material spills according to 18 AAC 75.300.

Effectiveness: This mitigation measure, on its own, if implemented as planned, would be partially effective at preventing avoidable spills and also effective as a means for ensuring employees and contractors who are trained in the plan are able to efficiently and effectively clean up or contain any spills that may occur. Some measures, like reporting of spills, are highly effective at triggering clean up and other obligations but would only be triggered after measures failed and a spill has occurred,

2. **Potential BLM Mitigation Measure:** Construction camps and permanent facilities for maintenance and operations would meet ADEC standards for handling and disposal of solid waste, human waste, gray water, and kitchen sanitation. AIDEA would provide waste disposal, gray water, and sanitation plans with sufficient detail to determine that they comply with ADEC guidelines.

Effectiveness: This mitigation measure, on its own, if implemented as described by the approved plans, would be highly effective at reducing impacts associated with solid waste, human waste and gray water.

3. **Potential BLM Mitigation Measure:** AIDEA would remove all waste generated by road activities, and dispose of waste according to applicable local, state, and federal laws. Prompt removal of discarded or unneeded material, equipment, and debris is required.

Effectiveness: This mitigation measure, on its own, would be highly effective at eliminating air and water quality impacts associated with the abandonment, improper storage, or disposal of construction wastes

4. **Potential BLM Mitigation Measure:** Temporary construction camps, permanent maintenance and operations stations, and all facilities would be maintained in a sanitary manner. Solid waste would be collected in bear-proof containers until hauled away for proper disposal.

Effectiveness: This mitigation measure, on its own, would be mostly effective at reducing impacts to wildlife and human safety associated with the improper handling of wastes.

5. **Potential BLM Mitigation Measure:** AIDEA would transport, store, transfer, and dispose of hazardous waste, hazardous materials, and hazardous material containers in a way that meets legal requirements and prevents release to the environment.

Effectiveness: This mitigation measure, on its own, would be mostly effective at preventing avoidable impacts on soil, air, and water quality from improper or illegal procedures in hazardous waste and handling.

6. **Potential BLM Mitigation Measure:** Hazardous material containment liner material would be compatible with the stored product and capable of remaining impermeable during typical weather extremes expected throughout the storage period.

Effectiveness: This mitigation measure, on its own, would be highly effective at reducing soil and water quality impacts associated with leaks and spills of stored chemicals.

7. **BLM Standard Stipulation for Mineral Material Mining:** AIDEA would ensure that all solid waste and garbage, including incinerated ash, is removed from public lands and disposed of in an ADEC-approved waste disposal facility. No solid waste is to remain on site for more than 90 days.

Effectiveness: This mitigation measure, on its own, would be highly effective at reducing impacts associated with construction and camp garbage and waste.

8. **Potential BLM Mitigation Measure:** AIDEA would ensure that portable toilets are used for human waste disposal, and are regularly maintained anywhere construction or maintenance activity is concentrated, such as at material sites. The disposal of human waste is not authorized on public land.

Effectiveness: This mitigation measure, on its own, would be highly effective at eliminating impacts associated with water and soil contamination associated with the improper storage,

handling, and disposal of human and biological wastes on public lands. It is AIDEA's intent to construct long-term maintenance facilities that would likely include septic systems.

Summary of Effectiveness: The measures listed above, if implemented collectively, are expected to be mostly effective in ensuring sites remain reasonably clean and tidy, wildlife is not habituated to human food and garbage, and lands and waters are not polluted by normal operations. See also the following measures regarding unforeseen events such as spills. Effectiveness on BLM-managed land would be compromised if these measures were not in place across the full length of the road. However, laws and stipulations of land owners and permitting agencies, such as ADEC, are likely to result in similar stipulations throughout, although it is possible the State of Alaska or Native corporations could allow landfilling on their lands. The BLM would have much greater authority over regulation and handling of solid and hazardous wastes under Alternative C, because so much more of the route would be located on BLM-managed lands.

Spill Prevention and Response*

1. **Potential BLM Mitigation Measure:** For construction phases, including material site operation, and for operations and maintenance of the road, AIDEA would prepare a Spill Prevention Control and Countermeasures Plan (SPCCP). The plan would be submitted to the Authorized Officer prior to the storage or transport of petroleum products greater than 1,320 gallons. AIDEA would follow the approved plan and update it as necessary throughout the term of Road Activities. One or more other plans would be prepared, submitted for approval, and followed to address special spill prevention and countermeasures associated with other hazardous material known to be transported on the Ambler Road, such as mining chemicals, liquefied natural gas, and mining ore concentrates.

Effectiveness: This mitigation measure, on its own, would be highly effective at preventing impacts on soils, air, and water quality from avoidable spills and accidents. If successfully implemented, it would also ensure employees and contractors are appropriately educated in the plan, trained in the procedures, and sufficiently equipped to identify, clean up or contain any spills, and comply with notification procedures, which would reduce impacts when spills or accidents occur.

2. **Potential BLM Mitigation Measure:** All spills would be contained and cleaned up as soon as the release has been identified. Appropriate spill response equipment and supplies must be on hand when hazardous materials are used. Field crews must have access to these materials, and they must be available at each refueling point. All employees would be trained in general spill-response protocol and reporting requirements. Personnel with a higher level of spill-response training specific the hazardous materials known to be transported on the Ambler Road would always be present at each maintenance station and, if there is an associated airstrip, have oversight responsibility for the airstrip. The release of Petroleum, Oils, and Lubricants (POLs) or hazardous substances other than POLs to any water body is to be reported to ADEC as soon as the person has knowledge of the release. All other releases would be reported in accordance with ADEC spill reporting guidelines (in Fairbanks 907-457-2121, or 1-800-478-9300 outside normal business hours).

Effectiveness: This mitigation measure, on its own, would be mostly effective at reducing impacts associated with spills.

3. **Potential BLM Mitigation Measure:** Notice of any reportable spill (as required by 40 CFR 300.125 and 18 Alaska Administrative Code [AAC] 75.300) would be given to the Authorized Officer immediately.

Effectiveness: This mitigation measure, on its own, would be mostly effective at reducing impacts associated with petroleum spills that need additional response expertise and oversight to ensure timely cleanup and prevent additional exposures.

4. **Potential BLM Mitigation Measure:** AIDEA would be responsible for documenting and assessing any disturbance or damage caused by spill cleanup activities and may be required to implement rehabilitation actions and monitoring to assess the effectiveness of cleanup activities in preventing further resource damage.

Effectiveness: This mitigation measure, on its own, would be mostly effective at reducing long term effects to resources associated with spills.

5. **Potential BLM Mitigation Measure:** ADEC-approved oil spill cleanup materials (absorbents) would be carried by trucks transporting fuel or hazardous fluids on the road and would be available at all fueling points. AIDEA would ensure that communities identified at risk in the SPCCP were trained in emergency preparedness and, where prompt access to the road would be practical, provided spill cleanup materials. The absorbents would be appropriate to the hazardous substances that are used throughout the project.

Effectiveness: This mitigation measure, on its own, would be highly effective at reducing soil and water quality impacts associated with oil spills, and would be effective at educating local community leaders in emergency preparation and spill response.

6. **Potential BLM Mitigation Measure:** AIDEA agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S. Code [USC] 9601, et. seq. or the Resource Conservation and Recovery Act, 42 USC 6901, et. seq.) on the authorization (unless the release or threatened release is wholly unrelated to the authorization permittee/AIDEA/permittee's activity on the authorization). This agreement applies without regard to whether a release is caused by AIDEA, its agent, or an unrelated third party.

Effectiveness: This mitigation measure establishes upfront in clear terms the legal and financial responsibility of AIDEA for all cleanup actions. This should be highly effective at motivating AIDEA to develop detailed plans and procedures, complying with local, state and federal laws, and ensure they and any contractors are training to successfully implement all spill response plans and procedures.

7. **Potential BLM Mitigation Measure:** During construction and operation, "duck ponds" would be placed beneath all parked vehicles at all times. Fuel spill kits would be kept on site wherever equipment is working. An overpack drum would be kept on site wherever drums are used to store or transfer petroleum or other hazardous materials.

Effectiveness: This mitigation measure, on its own, would be highly effective at reducing impacts associated with oil leaks and spills.

8. **Potential BLM Mitigation Measure:** AIDEA would ensure that all spill containment devices, including "duck ponds," liners, and vehicle drip pans, are maintained in good working condition at all times. Spill containment devices that are punctured, torn, or worn beyond serviceability would be replaced within 24 hours of discovery of the unserviceable condition.

Effectiveness: This mitigation measure, on its own, would be highly effective at eliminating impacts associated with spills and leaks.

9. **Potential BLM Mitigation Measure:** Equipment that has been identified as having fluid leaks would have a drip basin under the leak area to ensure no release to the surrounding environment occurs.

Effectiveness: This mitigation measure, on its own, would be highly effective at reducing impacts associated with leaking fluids onto soils and vegetation.

10. **Potential BLM Mitigation Measure:** Prior to allowing any cyanide to be transported on the Right of Way, AIDEA would be a signatory in good standing to the International Cyanide Management Code. AIDEA would also require that any third party permitted to haul cyanide on the Right of Way be a signatory in good standing to the International Cyanide Management Code.

Effectiveness: This mitigation measure, on its own, would be highly effective at preventing avoidable spills.

Summary of Effectiveness: The spill measures listed above, if implemented collectively, are expected to be mostly effective in preventing spills and checking spills that do occur with minimal environmental damage under most circumstances. For spills of large volumes of toxic material that escape into flowing waters before adequate response can be mobilized (e.g., tanker truck rollover), the measures are likely to be ineffective. The measures described above likely would be required by land managers/owners such as the National Park Service (NPS), State, and Native corporations and by permitting agencies such as the U.S. Army Corps of Engineers (USACE) and Alaska Department of Fish and Game (ADF&G). Therefore, effectiveness is anticipated to be relatively uniform across the entirety of the Proposed Action and Alternatives. Failure to implement these measures off BLM-managed land could result in adverse impacts to BLM-managed land if a spill occurs upstream from or in relatively close proximity to BLM-managed land. These measures would be enhanced by the Fuel Handling and Storage measures (see Section 3.2.3.2).

Fuel Handling and Storage

1. **Potential BLM Mitigation Measure:** Transportation and storage of hazardous materials would be handled in a manner to minimize the potential impacts to the environment and human health.

Effectiveness: This mitigation measure, on its own, would be partially effective at reducing impacts associated with fuel spills.

2. **Potential BLM Mitigation Measure:** AIDEA would ensure that all hazardous materials containers, including POL containers, are stored within secondary containment.

- Double-walled tanks would meet secondary containment requirements.
- When containment other than double-walled tanks is used, the containment area would be lined with an impermeable liner composed of material compatible with the substance(s) to be contained. The liner would be free of cracks or gaps and sufficiently impervious to contain leaks or spills.
- If the containment is completely under cover of a roof, then the containment volume must be large enough to contain the capacity of the largest container stored within.
- If the containment is not completely under cover of a roof, then the containment volume must be large enough to contain the capacity of the largest container stored, plus water from a 5-year, 24-hour storm event. The amount of precipitation from a 5-year, 24-hour storm event for a given location can be found at hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_ak.html.

Effectiveness: This mitigation measure, on its own, would be highly effective at eliminating and or reducing impacts associated with leaks or breaks of tanks and containers.

3. **Potential BLM Mitigation Measure:** Transfer of POLS to equipment would be completed in a secure manner to minimize the possibility of contamination of the surrounding environment. At a minimum, secondary containment would be placed under the transfer location to catch overflow and assist the operator in containing a spill, if one occurs.

Effectiveness: This mitigation measure, on its own, would be highly effective at eliminating impacts associated with leaking and spills during fuel transfers.

4. **Potential BLM Mitigation Measure:** Any equipment needing repairs that have the potential to release fluids would be repaired at a designated maintenance station if the equipment can be moved. If such repairs must be conducted in the field, the repairs would be completed over an impermeable liner to ensure fluid migration to the environment does not occur.

Effectiveness: This mitigation measure, on its own, would be highly effective at eliminating or reducing impacts associated with equipment repairs.

5. **BLM Land Use Plan requirement:** No fuel storage or refueling of equipment would be allowed within the 100-year floodplain of a river or lake, unless approved by the Authorized Officer.

Effectiveness: This mitigation measure, on its own, would be highly effective at reducing impacts associated with leaks or spills from vehicles or containers within floodplains.

6. **BLM Land Use Plan requirement:** Fuel barrels and tanks, propane tanks, and all other hazardous substance storage containers must be labeled with the following information: Contractor or Road Operator name, contents of the container (name of the product put in the container, if not in the original container from the manufacturer), and date the product was purchased/put in the container (e.g., Smith [University of Alaska-Fairbanks], Gasoline, September 2008). Fuel handling would be in compliance with all state and federal regulations.

Effectiveness: This mitigation measure, on its own, would be partially effective at reducing impacts associated with spills and leaks from fuel and chemical storage containers. This mitigation measure would communicate important data that would inform handling specifications and response protocols to facilitate safe and efficient cleanup responses.

Summary of Effectiveness: The fuel measures listed above, if implemented collectively, are expected to be mostly effective in preventing spills and checking spills that do occur with minimal environmental damage under most circumstances. For spills of large volumes of toxic material that escape into unfrozen soils or flowing waters before adequate response can be mobilized (e.g., tanker truck rollover), the measures are likely to be ineffective. The measures likely would be required by the NPS, State, and Native corporations and by permitting agencies such as USACE and ADF&G. Therefore, effectiveness is anticipated to be relatively uniform across the entirety of the Proposed Action and Alternatives. Failure to implement these measures off BLM-managed land could result in adverse impacts to BLM-managed land if a spill occurs upstream from waters that flow through BLM-managed land. These measures would be enhanced by the Spill Prevention and Response measures (see Section 3.2.3.1).

3.2.4 Paleontological Resources

1. **Potential BLM Mitigation Measure:** AIDEA would develop a plan addressing inadvertent discovery of paleontological resources as part of its Plan of Development, to be submitted for approval.

Effectiveness: This mitigation measure, on its own, would be minimally effective at eliminating impacts associated with paleontological resources since the mitigation measure only addresses what happens after the resource is inadvertently discovered. Assuming the POD stipulates that if paleontological resources are found, AIDEA would contact the BLM and suspend all operations

in the immediate area and that operations would not continue until the BLM issues a written authorization to proceed, it would be mostly effective at reducing impacts.

3.2.5 Water Resources*

See also related stipulations under Sections 3.2.1, Geology and Soils (permafrost); 3.2.2, Hazardous Waste; 3.3.1, Vegetation and Wetlands; and 3.3.2, Fish and Aquatics.

Water – General

1. **Potential BLM Mitigation Measure:** All stream crossings would be designed based on site-specific information, such as fish species presence, seasonal in-stream flows and peak discharge, and floodplain regime (50- to 100-year flood events). Bridges would be designed to pass the 100-year discharge and culverts to pass the 50- to 100-year flood events, depending on size and fish presence. In developing estimates of flows and discharge for crossing design, climate trends would be used to improve the future discharge estimates and delineation of the floodplains. See also Section 3.3.2, Fish and Aquatics, regarding fish passage culverts.

Effectiveness: This mitigation measure, on its own, would be partially effective at reducing impacts associated with the roadway embankment blocking natural hydrology, changing flow paths, increasing pooling, changing erosion and sedimentation, or reducing connectivity of wetlands and floodplains. This is a typical practice for the design of roads in Alaska.

2. **Potential BLM Mitigation Measure:** Stream crossings would preserve floodplain connectivity to the greatest extent possible. Their design would include setting the invert for overflow culverts at the same grade level as the floodplain, and distributing the overflow culverts to match the flood-flow patterns in the floodplain. Culverts installed for sheet-flow connectivity would be marked so they can be easily inspected to ensure their intended functions.

Effectiveness: This mitigation measure, on its own, would be partially effective at reducing impacts associated with the roadway embankment on connectivity of wetlands and floodplains. These techniques would reduce flow quantity changes at individual culverts and changes to the distribution of flow within a floodplain or wetland area crossed by the roadway embankment. Typical practice for the design of roads in Alaska is to mark all culverts to assist in inspection.

3. **Potential BLM Mitigation Measure:** Mobile ground equipment would not be operated in or on lakes, streams, or rivers on BLM-managed land except when ice thickness is adequate to support the equipment without altering the stream bed or displacing water outside the stream channel, unless specifically approved by the Authorized Officer.

Effectiveness: This mitigation measure, on its own, would be highly effective at reducing impacts associated with disturbance to river and lake beds and wetland areas. This is a typical winter construction and safety practice.

4. **Potential BLM Mitigation Measure:** Following completion of use of ice bridges or ice roads, and before breakup occurs, AIDEA would breach ice bridges or ice roads at primary flow locations.

Effectiveness: This mitigation measure, on its own, would be mostly effective at reducing impacts associated with the blockage of primary flow channels during spring breakup and associated flooding of upstream reaches. This is typical practice for larger streams/ rivers on Alaska's North Slope prior to breakup. Impacts to non-primary flow channels would not be mitigated by this measure, however.

5. **Potential BLM Mitigation Measure:** AIDEA would ensure that the temperature of natural surface water or groundwater would not be changed, beyond those changes happening under

background conditions, by the Ambler Road or by any Ambler Road activities to affect the natural surface water or groundwater, unless approved by the Authorized Officer. Potential mitigation measures include limiting changes to energy pathways to those waters, such as avoiding changes in surface albedo, vegetative cover, reflected solar energy, or areas of pooling.

Effectiveness: This mitigation measure, on its own, would be mostly effective at reducing impacts associated with water temperature changes such as increased permafrost thaw, vegetation health, aufeis growth, or loss of fish habitat. This measure may be difficult or costly to achieve, monitor, and maintain as climate changes continue.

6. **Potential BLM Mitigation Measure:** To comply with Executive Order 11988, and Department Manual 520, disturbance in floodplains would be avoided where practicable. When avoidance is not practicable, floodplain disturbance would be minimized and floodplain function restored to the extent practicable.

- New road construction within 100-year floodplains would be avoided unless no practicable alternative exists. Where the authorized route intersects a stream, it is assumed that road construction in the floodplain is unavoidable. Where new road construction is otherwise undertaken in the 100-year floodplain (e.g., parallel to a stream, in proximity to a lake, or for access to ancillary facilities), AIDEA would provide written documentation to the BLM of the alternative locations considered and rationale for why the alternatives are not practicable.
- Roads through floodplains would cross riparian areas perpendicular to the main channel to the extent practicable.
- Throughout the authorized project area, structural and vegetative treatments in riparian areas would contribute to the maintenance or restoration of proper functioning condition.
- When riparian vegetation is cleared, riparian vegetation diversity and density would be re-established to the extent practicable.

Effectiveness: This mitigation measure, on its own, would be highly effective at reducing impacts associated with construction of the roadway embankment within a floodplain and disruption of natural floodplain hydrology, floodplain and wetland connectivity, and changes in fish habitat.

Summary of Effectiveness: The measures listed above, if implemented collectively, are expected to be partially effective at reducing impacts associated with water resources. Most of these measures are common design and construction practices in Alaska and would be applicable and highly likely to be implemented on all sections of all alternatives. Measures 4 and 5, if only required for BLM-managed lands, would result in higher performing sections on BLM-managed lands but less robust sections if not imposed for other lands. Based on the difficulty and potential high cost of Measure 5, it is unlikely to be implemented on lands outside of BLM management. Measure 6 would result in more of Alternative C being better designed and constructed, but with much of the current alignment including floodplains, may be very costly to redesign or construct. However, it is recommended that these measures be required for all lands for all alternatives.

Water Quality

1. **Potential BLM Mitigation Measure:** The applicant would employ BMPs for stormwater, sediment, and erosion control per the Alaska Storm Water Guide (dec.alaska.gov/water/wnpspc/stormwater/Guidance.html), with particular attention to considerations for linear projects.

Effectiveness: This mitigation measure, on its own, would be highly effective at reducing impacts associated with sedimentation and erosion. These are typical and required stormwater pollution prevention practices in Alaska construction projects.

2. **Potential BLM Mitigation Measure:** Snow ramps or snow bridges and ice thickening used during construction at watercourse crossings would be substantially free of soil and/or debris. The ramps and/or bridges would be breached upon completion of the winter construction season before spring snowmelt begins.

Effectiveness: This mitigation measure, on its own, would be highly effective at reducing impacts associated with sediment and debris entering the water course during construction activities and avoiding flooding by channel blockage during breakup.

3. **Potential BLM Mitigation Measure:** Caissons, coffer dams, or other methods would be used for in-water drilling or pile driving to keep work areas separate from surface waters, to protect water quality. If any drilling muds were used for geotechnical drilling, bridge pile drilling, or other drilling, muds would be kept separate from any surface water. Muds would be disposed of as solid waste in an approved lined pit or in an established landfill and would not be disposed of on the ground surface or in water. See also Hazardous Waste (Section 3.2.3).

Effectiveness: This mitigation measure, on its own, would be highly effective at reducing water quality impacts associated with construction in river channels and floodplains that could introduce foreign materials to watercourses. It is recommended that this measure be required for all lands for all alternatives, especially for major bridge construction entailing bridge piers within the river channel.

4. **Potential BLM Mitigation Measure:** A 100-foot undisturbed vegetation buffer would be maintained along any ponds, lakes, creeks, rivers or higher-value wetland (patterned fens, emergent wetlands, and moss-lichen wetlands). The buffer width would start from the edge of the riparian area associated with waterbodies or from the edge of higher value wetland.

Effectiveness: This mitigation measure, on its own, would be partially effective at reducing water quality impacts associated with construction and roadway operations that could introduce foreign materials to ponds, lakes, creeks, rivers, or high-value wetlands. This measure would also provide a buffer to any hydrologic changes experienced at the roadway or cross drainage culverts prior to entering natural drainage channels. It is recommended that this measure be required for all lands for all alternatives.

Summary of Effectiveness: The measures listed above, if implemented collectively, are expected to be partially effective at reducing impacts associated with construction and operation on water quality. If these measures are only required for BLM-managed lands, Alternative C would benefit the most as it has the most waterway crossings (and BLM managed lands) where water quality can be impacted. Many of these measures are standard construction BMPs and likely to be required by other land owners and managers. It is recommended that these measures be required for all lands for all alternatives.

3.2.6 Acoustical Environment (Noise)*

1. **Potential BLM Mitigation Measure:** As part of the plan of development, AIDEA would develop and submit a Noise Management Plan outlining noise reduction methods and features to be used during construction and operation of the right of way. The plan would be developed in consultation with the State, NPS, BLM, ANCSA regional and village corporations owning lands in the ROW, and the Subsistence Advisory Committee (SAC), and would be approved by the Authorized Officer.

Effectiveness: The Noise Management Plan would likely include measures to reduce noise from construction vehicles and haul trucks, such as good mufflers, directional backup alarm, and limiting use of air brakes; however, the noise from blasting, excavating, grading, vehicle movement, and other construction and maintenance activities would be unavoidable. If mitigation measures in the plan were to be implemented, they would be partially effective at reducing impacts associated with construction and operational noises. The cost of noise barriers would be prohibitive and would not likely be included in the plan.

3.2.7 Air Quality and Climate*

1. **Potential BLM Mitigation Measure:** Prior to receiving an NTP for surface disturbing activities, AIDEA would submit a Dust Control Plan, subject to approval by the Authorized Officer and review by ADEC, that would apply to all road construction and maintenance activities and to construction and operation of all project facilities, including airstrips, construction camps, and material sites. At a minimum, the plan would include: a literature review of the effectiveness and environmental effects of different palliative options; documentation of consultation with the ADEC, ADF&G, USFWS, NPS, EPA, and Tribes that practice subsistence in the project area regarding palliative selection; rationale for selection of palliatives that includes consideration for minimizing effects on fish, wildlife, vegetation, and water quality; and a dust control prescription (BMPs, palliatives, policies, practices, and methodologies, and general schedules) by activity, season, road segment, and construction phase. In developing the Dust Control Plan, the BLM expects AIDEA to achieve 75 percent dust control. Details on palliatives, frequency, and application method would be included in this plan.

Effectiveness: This mitigation measure, on its own, would be mostly effective at reducing impacts to air quality from dust generated or mobilized during construction, operations, and maintenance activities. While AIDEA has committed to employing standard BMPs related to dust suppression to minimize emissions, a requirement to submit a Dust Control Plan subject to approval by the Authorized Officer may further reduce impacts of fugitive dust on air quality, water quality, fish and aquatic life, fish habitat, and vegetation. If the BLM were to require AIDEA to submit a Dust Control Plan only within BLM-managed portions of the routes, this measure would be ineffective at reducing potential impacts for the majority of Alternatives A and B, since much of the land traversed by those routes are not managed by the BLM. Under Alternative C, this measure would be much more effective at reducing potential impacts given the large proportion of BLM-managed lands on that route.

2. **Potential BLM Mitigation Measure:** The Air Quality component of the monitoring plan required in Section 1.1 would include, at a minimum: methods for determining compliance with applicable State and Federal laws and regulations; methods for monitoring dust impacts at sensitive receptors in all potentially affected communities during construction, road maintenance activities, and during road use; and correlating those measurements with dust production by right of way activities; methods for monitoring dust production during all activities that involve disturbance of NOA materials; methods for determining the effectiveness of dust control policies, practices, and methodologies implemented; and actions to be taken in response to adverse monitoring results.

Effectiveness: This mitigation measure would be mostly effective at reducing impacts to air quality from emissions and dust generated or mobilized during construction, operations, and maintenance activities. While AIDEA has committed to employing standard BMPs related to dust suppression to minimize emissions, the requirement to conduct air monitoring, document implementation of plans and practices, and identify corrective actions as necessary, would

enforce the proposed mitigation and address unanticipated impacts or ineffective mitigation. If the BLM were to require AIDEA to submit a monitoring plan only within BLM-managed portions of the routes, or if corrective actions would only be enforced on BLM-managed portions of the routes, this measure would be ineffective at reducing potential impacts for the majority of Alternatives A and B, since much of the land traversed by those routes are not managed by the BLM. Under Alternative C, this measure would be more effective at reducing potential impacts given the large proportion of BLM-managed lands on that route.

3. **Potential BLM Mitigation Measure:** AIDEA would ensure that all construction camps would be located in areas that avoid potential exposure to asbestos, or have been constructed to avoid human exposure to asbestos. AIDEA would ensure that all personnel who work on construction or operation of the road or associated facilities are fully informed of hazardous areas and methods to prevent their exposure to asbestos.

Effectiveness: This mitigation measure, on its own, would be mostly effective at eliminating exposures to asbestos in the temporary construction camps. This mitigation measure also provides training to all personnel working within the project area of the NOA hazard, which would be partially effective at eliminating exposures. This mitigation measure, as expressed, would cover some of the design features that AIDEA has committed to regarding the avoidance of materials containing NOA, as well as conditions of use. This measure would be equally effective at addressing NOA exposure along any of the action alternatives.

4. **Potential BLM Mitigation Measure:** Naturally Occurring Asbestos: Prior to receiving a NTP with surface disturbing activities, AIDEA would submit for approval by the Authorized Officer a comprehensive plan for dealing with and minimizing human exposure to NOA. At a minimum, the plan would address specific details of implementing the relevant design features in their proposal, qualifications of staff providing oversight for NOA-related activities, testing methods, operating procedures and construction techniques specific to areas containing NOA, design criteria (such as capping depths) to be used where NOA materials must be used, documentation of locations where NOA materials are placed, and methods for informing road users and maintenance staff when they are working where NOA materials were used.

Effectiveness: This measure would be mostly effective at eliminating impacts associated with NOA exposure, and reducing impacts where NOA materials are encountered, used, and handled in project construction and reclamation activities. It would be minimally effective at reducing public concern regarding the presence of NOA in visible road dust, since the asbestos fibers are too small to be seen and the health impacts typically too far removed in time.

Summary of Effectiveness: The measures listed above, if implemented collectively, are expected to be mostly effective at reducing air quality impacts associated with particulates, including both fugitive road dust and asbestos fibers from NOA. These measures would reduce human exposures and reduce risk to human health. It is anticipated that these measures would be implemented for the entire length of any alternative.

3.3. Biological Resources*

3.3.1 Vegetation and Wetlands*

See also Section 3.2.1, Geology and Soils, for erosion control measures.

Vegetation – General*

1. **Potential BLM Mitigation Measure:** AIDEA would conduct baseline surveys to identify rare plants, prior to conducting surface disturbing activities to avoid impacts to rare plants species.

Effectiveness: This mitigation measure, on its own, would be partially effective at eliminating impacts associated with rare plants. However, other environmental and engineering considerations may prevent shifting the road alignment to avoid identified rare plants. If the rare plant surveys discovered large local populations of rare plant species that could be avoided, then mitigation would be beneficial. If applied to only BLM-managed lands, the effectiveness would be limited to those lands.

2. **Potential BLM Mitigation Measure:** All restoration and revegetation activities would be performed in accordance with AIDEA's Revegetation Plan, as approved by the Authorized Officer. In order to minimize the risk of introducing invasive species, AIDEA's revegetation plan would rely on use of previously stockpiled topsoil with live native vegetation where practicable, and on planting and reseeding as secondary options.

Effectiveness: This mitigation measure, on its own, would be partially effective at reducing impacts associated with the introduction of invasive species. However, invasive species would likely spread during the restoration and revegetation activities from equipment unless other industry BMPs, such as wheel washes or regular equipment inspections, were implemented. Without any mitigation, non-native invasive species (NNIS) would likely be introduced and spread along the road corridor. If this mitigation measure is applied to only BLM-managed lands, the effectiveness would be limited to those lands.

3. **Potential BLM Mitigation Measure:** AIDEA would ensure that all areas where vegetation is cleared or fill is placed, including road embankments, are revegetated as soon as practicable, unless operation of the authorized road and facilities necessitates the area remaining unvegetated.

Effectiveness: This mitigation measure, on its own, would be mostly effective at reducing impacts associated with vegetation removal and subsequent erosion of topsoil. This is a typical BMP (SWPPP) used to control erosion on Alaska construction projects.

4. **Potential BLM Mitigation Measure:** AIDEA would employ mitigation measures to reduce contamination of roadside vegetation through industry BMPs that prevent and minimize fugitive dust, stormwater runoff, erosion, and spills and leaks. Contaminant monitoring would continue throughout the life of the project, and adaptive management would be employed to modify mitigation measures to reduce contamination.

Effectiveness: This mitigation measure, on its own, would be mostly effective at reducing the risk of contamination of vegetation. This is a standard industry mitigation measure that could minimize, but not entirely eliminate, the contamination of roadside vegetation during construction and operation.

5. **Potential BLM Mitigation Measure:** AIDEA would establish requirements that vehicles used on the road be in good working condition and would do a visual inspection for any signs of leaks.

Effectiveness: This mitigation measure, on its own, would be mostly effective at reducing the risk of contamination of vegetation. This is a standard industry mitigation measure that would minimize or eliminate the release of petroleum products associated with vehicle use.

6. **Potential BLM Mitigation Measure:** At temporary construction camps, permanent maintenance camps, turnouts, or other places of common intended or unintended pedestrian traffic, boardwalks

would be built, used, and properly maintained in areas where repeated trampling would create visible trails or water tracks or would otherwise impede vegetation growth, or the route would be closed and closure enforced.

Effectiveness: This mitigation measure, on its own, would be mostly effective at reducing the risk of vegetation getting trampled and soils being compacted. The use and maintenance of boardwalks in areas of common pedestrian traffic would allow for unimpeded vegetation growth.

7. **Potential BLM Mitigation Measure:** Topsoil and vegetation would be stockpiled separately from overburden in a manner that prevents loss through erosion and allows for their use during the reclamation process.

Effectiveness: This mitigation measure, on its own, would be mostly effective at reducing the risk of erosion of topsoil and vegetation. This is a standard industry measure that would allow these materials to be used during the reclamation process. The use of live native vegetation during the revegetation process would minimize the spread of invasive species.

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| 8. Potential BLM Mitigation Measure: AIDEA would limit vegetation clearing along the right-of-way to the minimum necessary for construction. |
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Effectiveness: This mitigation measure, on its own, would be mostly effective at minimizing impacts to vegetation within the right-of-way and would result in increased benefits to wildlife, water quality, and other ecosystem assets.

Summary of Effectiveness: The measures listed above, if implemented collectively, are expected to be partially effective at reducing impacts associated with vegetation, including rare plants, invasive species, contamination, and trampling. These measures likely would be required by land managers/owners such as the BLM, NPS, State, and Native corporations and by permittees such as USACE and ADF&G. Effectiveness of these mitigation measures across the length of the road would depend on implementation across landownership boundaries. In other words, if implementation of these measures were not continuous along the road corridor, the effectiveness would be reduced.

Wetlands*

See also Section 3.2.5, Water Resources.

1. **Potential BLM Mitigation Measure:** The following mitigation measures would be incorporated to reduce impacts to wetlands and wetland functions by helping to maintain hydrologic connectivity between bisected wetlands and waterbodies. Design measures would be based on geologic and hydrologic studies to freely convey surface water across the road surface.
 - a. Bridges and culverts would be installed at all identified drainage crossings, including rills and ephemeral channels, to help maintain hydrologic connectivity, minimize changes to watershed basin areas, and reduce likelihood of water impoundment degrading permafrost. An adequate number of culverts and/or bridges would be used to maintain hydrologic continuity and existing drainage patterns within wetland complexes, ephemeral channels, and perennial streams.
 - b. Roadside ditches would only be used in limited cut areas where permafrost presence is unlikely. These efforts could help to maintain hydrologic connectivity between bisected wetlands and reduce the effects of diverting surface water flow to minimize impacts.

Effectiveness: This mitigation measure, on its own, would be partially effective at reducing impacts of the project on the hydrologic connectivity of wetlands and waterbodies, and wetland functions. This is a standard industry measure. However, drainage pathways can be difficult to

predict, and there is potential for some drainages to be missed or that culvert installation and/or maintenance would be inadequate.

2. **Potential BLM Mitigation Measure:** In wetlands, tundra mats or other appropriate types of ground protection would be used to minimize disturbance of ground vegetative cover outside the cut-fill footprint during non-winter construction, unless otherwise authorized by the Authorized Officer.

Effectiveness: This mitigation measure, on its own, would be mostly effective at reducing impacts associated with disturbance of the vegetative cover in wetlands. The use of ground protection is a standard industry measure to minimize vegetation disturbance.

3. **Potential BLM Mitigation Measure:** Permafrost stabilization measures would include features to minimize the disruption of groundwater flow through the active layer above the permafrost covered by the roadbed, to protect groundwater-fed wetlands such as fens.

Effectiveness: This mitigation measure, on its own, would be partially effective at reducing risks to groundwater-fed wetlands. If this mitigation measure is applied to only BLM-managed lands, the effectiveness would be limited to those lands.

4. **Potential BLM Mitigation Measure:** Disturbance to uncommon wetlands such as patterned fens and moss-lichen wetlands would be avoided to the maximum extent practicable.

Effectiveness: This mitigation measure, on its own, would be partially effective at eliminating impacts to uncommon wetlands. Avoiding uncommon wetlands, if practicable, is a common industry standard. If this mitigation measure is applied to only BLM-managed lands, the effectiveness would be limited to those lands.

Summary of Effectiveness: The measures listed above, if implemented collectively, are expected to be partially effective at reducing impacts associated with the hydrologic connectivity of wetlands and waterbodies, wetland functions, and disturbance of the vegetative cover in wetlands. These measures likely would be required by land managers/owners such as the NPS, State, and Native corporations and by permittees such as USACE and ADF&G. Effectiveness of these mitigation measures across the length of the road would depend on implementation across landownership boundaries.

Non-native Invasive Species*

1. **Potential BLM Mitigation Measure:** AIDEA would prepare an Invasive Species Prevention and Management Plan (ISPMP) to prevent the introduction and spread of NNIS, including terrestrial and aquatic plant and animals. The ISPMP would incorporate a landscape management approach across landowner boundaries, BMPs, Early Detection Rapid Response (www.doi.gov/sites/doi.gov/files/National%20EDRR%20Framework.pdf), and reporting requirements to land managers. The ISPMP must be approved by the jurisdictional land manager prior to authorization of road construction and operations.

Effectiveness: This mitigation measure, on its own, would be mostly effective at reducing impacts associated with the spread of non-native invasive species (NNIS). Without any mitigation, NNIS would likely be introduced and spread along the road corridor.

2. **Potential BLM Mitigation Measure:** At a minimum, the ISPMP would address the following items:

- Compatibility with the BLM – Alaska Invasive Species Management 2010 Policy, available at:

eplanning.blm.gov/epl-front-office/projects/nepa/37008/44249/47684/AK_BLM_Invasive_Species_Management_Policy_2010.pdf.

- Methods and timeframe for conducting a baseline NNIS survey prior to initiating surface disturbing activities, and periodic surveys throughout the duration of the authorization.
- Methods of NNIS prevention and infestation management. The plan could include multiple methods of control and eradication depending on the size, density, location, and species present within the infestation. Methods of control and eradication could include manual, mechanical, or chemical treatment, or disposal of invasive plants, animals, and infested soil.
- Clear procedures for documenting and reporting detections of species of highest concern (list to be provided by BLM) to the Authorized Officer within 30 days of detection.
- Specific practices, procedures, and BMPs for preventing the spread of NNIS, addressing inspection and washing/brushing of vehicles (including tires and undercarriage), and cleaning of equipment, clothing, and shoes.
- Specific procedures to ensure that aircraft, vehicles/equipment, or materials that have traveled to, parked in, or been staged in areas infested with invasive plants are inspected and certified weed-free prior to being allowed on the right of way.
- A program (procedures, timeframes, and documentation) for training all employees engaged in road construction or maintenance and all drivers authorized to use the road in invasive species awareness and abatement.
- An adaptive management and monitoring framework to mitigate the introduction and spread of NNIS (including terrestrial and aquatic plants and animals) throughout the duration of the authorization and for at least five growing seasons after completion of reclamation.

Effectiveness: This mitigation measure, on its own, would be partially effective at reducing impacts associated with the spread of NNIS. Without any mitigation, NNIS would likely be introduced and spread along the road corridor. If this mitigation measure is applied to only BLM-managed lands, the effectiveness would be limited to those lands.

3. **Potential BLM Mitigation Measure:** Permitted activities, including road and snow maintenance activities, would commence from areas known to not be infested with invasive plants (e.g., western end of the road) and progress toward known infested areas.

Effectiveness: This mitigation measure, on its own, would be partially effective at reducing impacts associated with the spread of NNIS. Invasive species would still likely spread during the permitted activities from equipment unless other industry standard BMPs to clean equipment prior to use were implemented. Without any mitigation, NNIS would likely be introduced and spread along the road corridor. If this mitigation measure is applied to only BLM-managed lands, the effectiveness would be limited to those lands.

4. **Potential BLM Mitigation Measure:** All mineral materials (sand and gravel) used on the project would be inspected and certified weed-free in accordance with the State of Alaska's Weed Free Gravel Certification Program (plants.alaska.gov/invasives/weed-free-gravel.htm).

Effectiveness: This mitigation measure, on its own, would be partially effective at reducing impacts associated with the spread of NNIS. Invasive species would still likely spread during the permitted activities from equipment unless other industry standard best management measures to clean equipment prior to use were implemented. Without any mitigation, NNIS would likely be

introduced and spread along the road corridor. If this mitigation measure is applied to only BLM-managed lands, the effectiveness would be limited to those lands.

Summary of Effectiveness: The measures listed above, if implemented collectively, are expected to be partially effective at reducing impacts associated with the spread of NNIS. These measures likely would be required by land managers/owners such as the NPS, State, and Native corporations and by permittees such as USACE and ADF&G. Effectiveness NNIS management on BLM-managed land would be compromised if these measures were not in place throughout the length of the road. If these mitigation measures are consistently applied across landowner boundaries, NNIS infestations may remain localized and small enough to be eradicated during seasonal monitoring and removal efforts.

Forestry, Timber, and Fire

1. **Potential BLM Mitigation Measure:** Prior to initiating clearing operations on federal land, AIDEA would provide the Authorized Officer with an estimate of the amount of merchantable timber (tree species 5 inches in diameter at breast height or larger), if any, expected to be cut, removed, or destroyed, and would pay the BLM in advance of such construction or maintenance activity, such sum of money as the Authorized Officer determines to be the full stumpage value of the timber to be cut, removed, or destroyed. Prior to any operations AIDEA if required, would enter into a timber sale contract with the BLM for timber designated for cutting within the authorized project area.

Effectiveness: This mitigation measure, on its own, would be mostly effective at reducing impacts associated with merchantable timber resources. If this mitigation measure is applied to only BLM-managed lands, the effectiveness would be limited to those lands.

2. **Potential BLM Mitigation Measure:** AIDEA would prepare and submit for approval by the Authorized Officer a Timber Clearing, Salvage, and Utilization Plan prior to any clearing activity addressing, at a minimum, clearing equipment and methods, minimizing risks to public safety, avoiding fire fuel hazards, minimizing forest health risks, skidding, yarding, and decking management to minimize environmental impacts, erosion and sediment control during timber handling operations, timeframes for removal of timber from public lands, and plans, if any, for making timber available for disposal to the public. All timber clearing would be performed in accordance with the approved plan.

Effectiveness: This mitigation measure, on its own, would be mostly effective at reducing impacts associated with timber resources.

3. **Potential BLM Mitigation Measure:** AIDEA would ensure that removal of timber and other woody vegetation is limited to only that necessary to facilitate activities authorized in the Grant of Right of Way, and that trees that would not be removed are not damaged.

Effectiveness: This mitigation measure, on its own, would be mostly effective at eliminating impacts associated with forestry resources.

4. **Potential BLM Mitigation Measure:** Use of open fires in connection with Ambler Road activities is prohibited on BLM-managed land unless approved by the Authorized Officer and performed in accordance with federal law, except that incineration of solid waste combustibles may be conducted in accordance with the grant stipulations. AIDEA would require all employees, contractors, subcontractors, and authorized drivers to build no fires except in designated fire rings designed for the purpose.

Effectiveness: This mitigation measure, on its own, would be highly effective at eliminating the risk of wildfire. Without this mitigation measure, the risk of wildfire would increase and wildfire impacts could occur across landowner boundaries.

5. **Potential BLM Mitigation Measure:** The federal government would not be held responsible for protection of the AIDEA's structures or their personal property from wildfire.

Effectiveness: This mitigation measure, on its own, would be minimally effective at reducing impacts associated with wildfire.

6. **Potential BLM Mitigation Measure:** AIDEA would employ measures from Firewise Alaska (forestry.alaska.gov/Assets/pdfs/home/firewise09.pdf) to prevent wildfires from overtaking maintenance stations and communication towers.

Effectiveness: This mitigation measure, on its own, would be mostly effective at reducing impacts to maintenance stations and communication towers from wildfire.

7. **Potential BLM Mitigation Measure:** AIDEA would promptly notify the Authorized Officer of any fires that occur on or near lands subject to the terms of the project authorization. AIDEA would comply with the instructions and directions of the Authorized Officer concerning the use, prevention, and suppression of fires on BLM-managed land.

Effectiveness: This mitigation measure, on its own, would be mostly effective at reducing the risk of wildfire, and the impacts of any wildfires that do occur. The prompt notification of any wildfires on or near lands subject to the terms of the project authorization. would lead to more effective wildfire management. Without this mitigation measure, the impacts associated with wildfire could increase across landowner boundaries.

8. **Potential BLM Mitigation Measure:** The BLM, through the Authorized Officer, reserves the right to impose restrictions on Ambler Road activities in any area to prevent the cause or spread of wildfire and ensure public safety during periods when fire danger is severe.

Effectiveness: This mitigation measure, on its own, would be mostly effective at reducing wildfires and their impacts. Without this mitigation measure, the risk of wildfire would increase and wildfire impacts could occur across landowner boundaries.

9. **Potential BLM Mitigation Measure:** AIDEA would be held financially responsible for AIDEA's actions or activities that result in a wildfire. Costs associated with wildfires include, but are not limited to, damage to natural resources and costs associated with any suppression action taken on the fire.

Effectiveness: This mitigation measure, on its own, would be minimally effective at reducing impacts associated with wildfire.

Summary of Effectiveness: The measures listed above, if implemented collectively, are expected to be mostly effective at ensuring responsible forestry and timber management procedures are followed, and mostly effective at reducing impacts associated with wildfire. The measures described above likely would be implemented by land managers/owners such as the NPS, State, and Native corporations and by permittees such as USACE and ADF&G. Effectiveness of these mitigation measures across the length of the road would depend on implementation across landownership boundaries.

3.3.2 Wildlife – General (applicable to Fish and Aquatics, Birds, and Mammals)*

1. **Potential BLM Mitigation Measure:** AIDEA would develop and implement a Comprehensive Wildlife Interaction and Avoidance Plan using the best available science and Indigenous Knowledge. The plan would be developed in consultation with the State, NPS, BLM, USFWS,

ANCSA regional and village corporations owning lands in the ROW, the Subsistence Advisory Committee (SAC), and Tribes that practice subsistence in the project area, and would be approved by the Authorized Officer. The plan should include at a minimum animal crossing policies, animal avoidance on the road, potential for road closures, proper waste and attractant management, animal and human safety, and wildlife observation systems. The plan shall be reviewed at least every 5 years.

Effectiveness: This mitigation measure would allow the management and mitigation measures associated with road impacts to wildlife to be updated in response to new information, changing conditions, and new data collection. The location, timing, and severity of potential impacts on the movement and distribution of wildlife are difficult to predict prior to road construction. This mitigation measure would use the best available information to develop mitigation measures but allow the plan to be updated periodically to ensure the plan is properly focused on the largest impacts based on the current science and Indigenous Knowledge. Properly implemented mitigation measures including animal crossing policies, animal avoidance on the road, potential for road closures, proper waste and attractant management, animal and human safety, and wildlife observation systems have the potential to decrease potential impacts significantly.

2. **Potential BLM Mitigation Measure:** AIDEA would develop and implement a Comprehensive Fish and Wildlife Monitoring Plan based on the best available science and Indigenous Knowledge. The plan would be developed in consultation with the State, NPS, BLM, USFWS, ANCSA regional and village corporations owning lands in the ROW, the Subsistence Advisory Committee (SAC), and Tribes that practice subsistence in the project area, and would be approved by the Authorized Officer. The plan should include at a minimum a process for documenting conditions of fish, birds, and key wildlife species prior to construction to establish a baseline; monitoring changes in habitat conditions, wildlife use, and other key wildlife processes (e.g., movement and resource selection) during construction and operation of the road, including fish passage, to characterize impacts; and assessing the effectiveness of and refining mitigation measures as needed (subject to Authorized Officer approval). The Wildlife Monitoring Plan should also include a process for identifying any critical habitats or sites within the project area that are used by bird species of concern that have been listed by USFWS, BLM, ADF&G, Audubon Alaska, and Boreal Partners in Flight (see Appendix E-17). The plan would include a point of contact for communities, fish and wildlife managers seeking and sharing information on conditions of fish and wildlife in the area affected by the project, and the Western Arctic Caribou Herd Working Group. See also Measure 7, below, regarding the Fish and Wildlife Protection Plan.

Effectiveness: This mitigation measure, on its own, would be highly effective at monitoring changes in the condition of fish and wildlife populations and would be a valuable tool in reducing impacts to fish and wildlife from the project if the program applied to the entire length of the Ambler Road. However, if the plan is only implemented within the BLM-managed portions of the routes, then this measure would be partially effective under Alternatives A and B. Under Alternative C, this measure still would be partially effective; however, given the larger proportion of BLM-managed lands on that route, the area of effectiveness would be larger. It is unlikely that other land management agencies would require a similar but separate commitment from AIDEA. If other land management agencies were interested in monitoring fish and wildlife along the route, it is likely that a collaborative program between the BLM, AIDEA, and other land management agencies would be adopted and this would add significantly to the effectiveness of the program overall.

3. **Potential BLM Mitigation Measure:** AIDEA would ensure that their employees, contractors, and subcontractors do not harass or feed wild animals (including fish, amphibians, birds, and mammals). The threshold for harassment is intentionally causing an animal to alter its behavior. This would be part of training for drivers authorized to use the Ambler Road. Operators would prohibit their employees and the employees of agents, contractors, and subcontractors, while on duty or living at any camp or mobile camp, from feeding wildlife or leaving garbage or other potentially edible items that would attract wildlife, including birds. Garbage would be kept in bear-proof containers while awaiting incineration or backhaul.

Effectiveness: This mitigation measure, on its own, would be mostly effective at reducing impacts to wildlife as a result of harassment by AIDEA employees, contractors, and subcontractors. All best efforts to educate employees would not entirely avoid negative interactions between humans and wildlife. Because this measure would be easy to implement and it would be more difficult to educate employees and contractors where they can and cannot intentionally harass wildlife, it is likely that this mitigation measure would apply to the entire route, so the effectiveness would not vary by alternative. This mitigation measure is likely similar to an AIDEA proposed design feature that would implement a wildlife interaction protocol.

4. **Potential BLM Mitigation Measure:** AIDEA would notify the Authorized Officer within 14 days if an animal is killed during the course of construction or operation of the road or associated facilities, including in defense of life or property. This measure applies to planned closures but is not intended to prevent emergency closures for safety reasons or to avoid disturbance to wildlife, subsistence, or other processes.

Effectiveness: This mitigation measure, on its own, would be minimally effective at reducing impacts associated with wildlife. Although easy to implement and likely to be implemented by other land managers than the BLM, the measure would do nothing to prevent mortality of wildlife and is a measure intended to convey information rather than reduce impacts.

5. **Potential BLM Mitigation Measure:** AIDEA would ensure that food, garbage, and other potential wildlife attractants are kept secured while awaiting their use, removal, or incineration.

Effectiveness: This mitigation measure, on its own, would be partially effective at reducing impacts associated with wildlife interactions. Proper containment and disposal of wildlife attractants such as food and garbage may prevent some wildlife from approaching humans and, therefore, may reduce the potential for injury or mortality of wildlife or humans. It is assumed that AIDEA's proposed design feature to implement a wildlife interaction protocol would include measures to properly contain food and waste. However, if the proposed design feature does not include such measures, this potential mitigation measure would apply only to BLM-managed lands, although it is likely to be implemented also by the State of Alaska and other agencies. If only implemented on BLM-managed lands, it would be minimally effective on Alternatives A and B, but largely effective on Alternative C.

6. **Potential BLM Mitigation Measure:** All field crews, construction workers, maintenance workers, and drivers on the road would follow a wildlife interaction plan prepared by AIDEA or a designee detailing how they are to manage wildlife attractants (food and non-food materials) and respond to human-wildlife interactions. This would be included with the training for authorized drivers of the Ambler Road.

Effectiveness: This mitigation measure is related to an AIDEA design feature. On its own, this measure would be mostly effective at reducing impacts to wildlife as a result of human-wildlife interactions. All best efforts to educate employees would not entirely avoid negative interactions between humans and wildlife. This mitigation measure would apply to the entire route, so the

effectiveness would not vary by alternative. This mitigation measure is likely similar to an AIDEA proposed design feature that would implement a wildlife interaction protocol. Because it is related to an AIDEA design feature, it is expected to apply across all land managing agencies.

7. **Potential BLM Mitigation Measure:** AIDEA would work with the State, NPS, BLM, ANCSA regional and village corporations owning lands in the ROW, the Subsistence Advisory Committee (SAC), Tribes that practice subsistence in the project area, as well as other interested land managers and wildlife agencies to identify construction timing windows to protect wildlife. Timing design features related to this mitigation would be determined during the design/permitting phase.

Effectiveness: This mitigation measure, on its own, would be mostly effective at reducing impacts to wildlife associated with construction of the Ambler Road. If this measure were applied only to the BLM-managed portions of the route it would likely prove costly, burdensome, and minimally effective for Alternatives A and B overall. However, it is likely that the measure would be implemented on the entire route by all land managing agencies under any alternative, so the effectiveness would not vary by alternative or land management composition.

8. **Potential BLM Mitigation Measure:** During the design/permitting phase, AIDEA would develop a Fish and Wildlife Protection Plan that would include measures to maximize opportunities for unfettered wildlife movement and minimize habitat fragmentation during construction and operation (see also Measure 2, above, regarding the fish and wildlife monitoring program). The plan would be developed in consultation with the same parties listed under Measure 2, above, regarding the fish and wildlife monitoring program. Where practicable, this would include design features such as:

- Burying infrastructure or facilities that may deter wildlife movement;
- Creating wildlife escapement design features in excavations;
- Siting and orienting infrastructure and facilities to allow maximum opportunities for unfettered wildlife movement;
- Using overpasses to facilitate wildlife movement and habitat connectivity;
- Using vegetation to provide screened and unfragmented movement corridors around infrastructure and facilities; and
- Following measures to minimize or eliminate visual or soundscape impacts that may deter wildlife movement.

Effectiveness: This mitigation measure, on its own, would be partially effective at reducing impacts associated with wildlife movement and habitat fragmentation. Fragmentation is impossible to prevent. This measure would attempt to reduce the effects of fragmentation on wildlife through project design. If implemented only on BLM-managed lands, this measure would be minimally effective overall on Alternatives A and B, but moderately effective along the route as a whole on Alternative C. It is anticipated that land managers for non-BLM-managed lands would be supportive of implementing the plan.

Summary of Effectiveness: The measures listed above, if implemented collectively, are expected to 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. These measures would be relatively easy and inexpensive to implement that would have partial effectiveness at reducing some impacts. Except as noted above, it is likely that these wildlife measures would be adopted by other agencies or implemented by AIDEA over the length of the alternatives, heightening their effectiveness.

3.3.3 Fish and Aquatics*

See also Section 3.2.5, Water Resources, for related stipulations.

1. **Potential BLM Mitigation Measure:** AIDEA would submit culvert and bridge inspection and maintenance plans to the Authorized Officer for approval prior to construction and would adhere to the maintenance schedules and stipulations outlined in the plans.

Effectiveness: This mitigation measure, on its own, would be mostly effective at reducing impacts associated with the potential for culverts and bridges to affect water quality or fish passage throughout the life of the project. If AIDEA were required to submit inspection and maintenance plans to the Approved Officer that included assessing fish passage conditions for culverts and bridges only within the BLM-managed portions of the routes, this measure would be ineffective at reducing potential impacts for most streams crossed by Alternatives A and B, since much of the land traversed by those routes are not managed by the BLM. Under Alternative C, this measure would be much more effective at reducing potential impacts given the large proportion of BLM-managed lands on that route.

2. **Potential BLM Mitigation Measure:** AIDEA would employ properly installed erosion and sedimentation measures during construction to minimize sedimentation impacts to fish habitat. AIDEA would also stabilize disturbed areas and employ BMPs at construction sites to direct stormwater away from fish-bearing waters.

Effectiveness: This mitigation measure, on its own, would be mostly effective at reducing construction-related impacts associated with increased turbidity and sedimentation and the consequences of those impacts on fish and aquatic life. Employing measures to minimize erosion and sedimentation, stabilizing disturbed areas, and employing BMPs to direct storm-water away from fish habitat during construction is common practice for construction projects in Alaska. AIDEA is required to develop and adhere to SWPPPs during construction as well as maintenance activities along its entire route. If the BLM were to require AIDEA to employ additional measures beyond what is identified in their SWPPPs, such measures may further reduce impacts. If the BLM were to require this only on BLM-managed lands, this measure may be effective at further reducing impacts on streams crossed within a relatively small portion of the road. If limited to BLM-managed lands, this measure would be ineffective at reducing potential impacts beyond AIDEA's commitments for much of Alternatives A and B, but more effective for reducing impacts associated with Alternative C given the large proportion of BLM-managed lands on that route.

3. **Potential BLM Mitigation Measure:** Stream bed structures would be constructed such that the combination of structure height and subsequent water velocity allows all occurring fish species free movement within the water body. Any culvert that otherwise would be designed to convey less than the 100-year peak flood (1 percent exceedance probability) would be designed to convey at least the 100-year peak flood if it was a fish passage crossing.

Effectiveness: This mitigation measure, on its own, would be mostly effective at reducing impacts associated with fish passage, assuming the mitigation measure would apply to all life stages for all species. If the BLM were to require AIDEA to employ such measures only on BLM-managed lands, this measure would be ineffective at reducing potential impacts for much of Alternatives A and B, but more effective for Alternative C given the large proportion of BLM-managed lands on that route.

4. **Potential BLM Mitigation Measure:** All fish-bearing-stream crossings would be natural channel designs (e.g., U.S. Fish and Wildlife Service 2019), follow fish passage design guidelines, to facilitate fish passage for all life stages.

Effectiveness: This mitigation measure, on its own, would be highly effective at reducing impacts associated with crossing structures to affect water quality and passage for all life stages of fish. If the BLM were to require AIDEA to employ such measures only on BLM-managed lands, this measure would be ineffective at reducing potential impacts for much of Alternatives A and B, but more effective for Alternative C given the large proportion of BLM-managed lands on that route. While AIDEA has committed to using stream simulation design principles to design culverts in fish-bearing streams, impacts would be further reduced if BLM implemented this measure.

5. **Potential BLM Mitigation Measure:** AIDEA would protect known or suspected Fish Spawning Beds, Fish Rearing Areas, and Overwintering Areas from sediment where soil material is expected to be suspended in water as a result of Ambler Road activities. Settling basins or other sediment control structures would be constructed and maintained to intercept sediment before it reaches rivers, streams, or lakes. Where disturbances cannot be avoided, proposed modifications and appropriate mitigation measures would be designed by AIDEA and approved by the Authorized Officer.

Effectiveness: This mitigation measure, on its own, would be mostly effective at reducing impacts associated with increased sedimentation on fish spawning, rearing, and overwintering habitats used by resident and anadromous fish during construction, throughout operations and maintenance, and during reclamation activities. If the BLM were to require AIDEA to employ such measures only on BLM-managed lands, this measure would be ineffective at reducing potential impacts for much of Alternatives A and B, but more effective for Alternative C given the large proportion of BLM-managed lands on that route.

6. **Potential BLM Mitigation Measure:** AIDEA would notify the BLM within 48 hours of any observation of dead or injured fish on water source intake screens or in holes used for pumping water. AIDEA would temporarily cease pumping from that hole until additional preventative measures are taken to avoid further impacts to fish.

Effectiveness: This mitigation measure, on its own, would be partially effective at reducing fish mortality from water withdrawal activities. However, the measure would be mostly effective at reducing the potential for such activities to repeatedly cause fish mortality for prolonged periods. If the BLM were to require AIDEA to employ such measures only on BLM-managed lands, this measure would be ineffective at reducing potential impacts for much of Alternatives A and B, but more effective for Alternative C given the large proportion of BLM-managed lands on that route.

7. **Potential BLM Mitigation Measure:** During periods of fish spawning, rearing, and migration, AIDEA's activities on federal land may be restricted by the Authorized Officer with written notice. As needed, the Authorized Officer may furnish AIDEA a list of areas where such actions may be required, together with anticipated dates of restriction. The Authorized Officer would coordinate with ADF&G for appropriate fish habitat protection measures.

Effectiveness: This mitigation measure, on its own, would be partially to mostly effective at reducing impacts from specific activities that could otherwise affect resident or anadromous fish during periods of spawning, rearing, and migration. If the BLM were to require AIDEA to restrict activities that could otherwise affect fish during these periods only on BLM-managed lands, the measure would be ineffective at reducing potential impacts for most of Alternatives A and B, but more effective for Alternative C given the large proportion of BLM-managed lands on that route.

If the activity would have lasting effects on habitats used by fish, but the activity would be restricted while fish are present, the measure would only be partially effective at reducing impacts.

8. **Potential BLM Mitigation Measure:** Dust suppressants or pesticides with ingredients potentially harmful to aquatic organisms should not be used within 328 feet of any fish-bearing waters including lakes, ponds, and off-channel habitats as well as higher-value wetlands (e.g., emergent wetlands, moss-lichen wetlands, patterned fens and shallow ponds) as stated in USACE special condition 23 .

Effectiveness: This mitigation measure, on its own, would be highly effective at reducing the potential for dust control palliatives or pesticides to impact fish and aquatic life within 328 feet of fish-bearing streams and higher value wetlands. If the BLM were to require AIDEA to avoid using dust control suppressants with ingredients potentially harmful to aquatic organisms within this distance of fish streams and high value wetlands only on BLM-managed lands, this measure would be ineffective at reducing potential impacts to fish along the majority of Alternatives A and B, since much of the land traversed by those routes are not managed by the BLM. This measure would be much more effective at reducing potential impacts to fish under Alternative C, given the large proportion of BLM-managed lands on that route, than Alternatives A and B. Further, this measure would be more effective if it were also to prohibit the use of dust control suppressants with potentially harmful ingredients to all fish-bearing waters, including lakes, ponds, and off-channel habitats.

9. **Potential BLM Mitigation Measure:** Bridges and culverts near or over any salmon-bearing streams or habitats would have clear and visible signage disclosing habitat sensitivity.

Effectiveness: This mitigation measure, on its own, would be highly effective at alerting road users to the presence of sensitive waterways.

10. **Potential BLM Mitigation Measure:** AIDEA would use vibratory hammers instead of impact hammers wherever practicable. If impact hammers are required, AIDEA would implement additional mitigation measures to minimize sound pressure impacts.

Effectiveness: This mitigation measure, on its own, would be mostly effective at minimizing sound pressure impacts on fish.

11. **Potential BLM Mitigation Measure:** AIDEA would be required to quantify all dewatering activities from gravel pits, lakes or streams for ice roads, dust control, gravel washing, worker use, and any other relevant water use.

Effectiveness: This mitigation measure, on its own, would be partially to mostly effective at protecting fish populations, including fish spawning and juvenile areas, from harm associated with road-related dewatering activities.

12. **Potential BLM Mitigation Measure:** AIDEA would be required to collect water quality data at the road crossing on all anadromous streams every year prior to construction of the road. During construction and operation of the road water quality data would be collected by AIDEA at the road crossing on all anadromous streams twice annually. Each year a water quality report would be submitted to the BLM from AIDEA. Water quality parameters to be collected would include: temperature, pH, dissolved oxygen, conductivity, turbidity (NTU), dissolved organic carbon, iron, aluminum, arsenic, nickel, zinc, cadmium, copper, mercury, silver, selenium, and lead.

Effectiveness: This mitigation measure, on its own, would be partially to mostly effective at monitoring contamination in anadromous streams which could have adverse impacts on fish and fish habitat.

Summary of Effectiveness: The measures listed above, if implemented collectively, are expected to be mostly effective, where employed, at reducing impacts associated with increased turbidity and sedimentation during construction and maintenance activities; ensuring fish passage is maintained throughout the life of the project for all life stages of fish and through regular inspections of culverts and bridges and that, where needed, corrective actions occur; ensuring all streambed structures allow for the free movement of all life stages of all fish species where fish occur; and minimizing potential impacts to fish during spawning, rearing, and overwintering by restricting activities. If AIDEA were to employ such measures only on BLM-managed lands, these measures would be ineffective at reducing potential impacts for much of Alternatives A and B, but more effective for Alternative C given the large proportion of BLM-managed lands on that route. These measures include design practices, some of which are likely to be required as part of State fish habitat and federal wetland permit conditions and therefore are likely to be implemented off BLM-managed lands. These measures do not remove the potential for aquatic impacts associated with contaminated soils or water from spills or leaks that would not be present under the No Action Alternative.

3.3.4 Birds*

1. **Potential BLM Mitigation Measure:** AIDEA would ensure that vegetation clearing during all phases of construction would be scheduled to minimize impacts on migratory birds and any other birds on the BLM special status species list or watch list (lists to be provided by BLM and updated periodically). The primary mechanism to avoid and minimize impacts is to conduct vegetation clearing outside of the nesting season (typically May 1–July 15 for this region, but may be earlier due to early nesting waterfowl and yearly variation in habitat availability). If AIDEA chose to clear vegetation during this timeframe, then AIDEA would have a qualified biologist survey any area where vegetation would be damaged or removed by the project or associated activities within 48 hours prior to vegetation disturbance. If an active nest is located, an appropriate avoidance area (as determined by the qualified biologist) would be marked and avoided until the biologist determines that the nest has been naturally vacated. This measure is similar to a measure proposed by AIDEA.

Effectiveness: This mitigation measure, on its own, would be partially effective at reducing impacts to nesting birds where implemented. Measures to avoid vegetation clearing during the breeding season and avoid bird nests would greatly reduce the likelihood of direct mortality of nesting birds during road construction.

AIDEA indicated in their application that “Construction on the pioneer road would likely take place year round, other than possible restrictions during spring break-up or bird nesting periods in compliance with the Migratory Bird Treaty Act (MBTA).” This would be consistent with the above Potential BLM Mitigation Measure. The MBTA is currently interpreted as prohibiting incidental take (DOI Solicitor Opinion M-37065) such as would occur during vegetation clearing associated with the Ambler Road construction. Therefore, to comply with the MBTA, AIDEA would be required to avoid construction during bird nesting periods. The BLM special status species policy and Alaska statewide land health standards afford protections to special status species and provide the framework for this Potential BLM Mitigation Measure. However, absent similar directives from other land management agencies, these measures would only be effective on BLM-managed lands, and incidental take of birds due to vegetation clearing could occur along the majority of the right of way for all alternatives.

2. **Potential BLM Mitigation Measure:** AIDEA would ensure that no vertical or near-vertical faces that may encourage bank swallow nesting are left on any slope, including on material stockpiles. If bank swallows establish nests, AIDEA would ensure that the face is not disturbed until after young are fledged or the nests are naturally vacated. If slope management is unfeasible, AIDEA would take steps to deter or exclude nesting bank swallows from the area without causing harm or harassment to bank swallows or other birds. Deterrents or exclusion measures must be installed prior to the breeding season and should remain present for the duration of the breeding season (Ontario Ministry of Natural Resources and Forestry 2017).

Effectiveness: This mitigation measure, on its own, would be mostly effective at reducing impacts to nesting bank swallows, where implemented. This mitigation measure would discourage bank swallows from nesting in areas that may be affected by construction or operation activities, and if nesting were to occur, it prevents impacts to these nests. Because this mitigation measure is dependent on incidental observations of nesting activity, it would not be completely effective at preventing all impacts to nesting bank swallows.

This mitigation measure would only be implemented on BLM-managed lands and it is unlikely that other land management agencies would implement a similar requirement. Therefore, injury or mortality of bank swallows and loss of nesting habitat is possible along a majority of the authorized area under all alternatives.

3. **Potential BLM Mitigation Measure:** AIDEA would use best available technology to prevent facilities from providing nesting, denning, perching, or shelter sites for ravens, raptors, and foxes. AIDEA would provide annual reports on the use of facilities by ravens, raptors, and foxes for nesting, denning, perching, or shelter. Deterrents or exclusion measures meant to prevent the construction and use of nests by ravens or raptors should be installed prior to the breeding season and should remain present for the duration of the breeding season.

Effectiveness: This mitigation measure, on its own, would be partially to mostly effective at reducing nesting, denning, and shelter opportunities for predator species if implemented along the entire project route and minimally to partially effective if only implemented on BLM-managed land. For this mitigation measure to be effective, structures and features that are attractive to predator species would have to be monitored for use on a regular basis. Existing deterrents would have to be properly maintained and new deterrents would need to be placed if additional structures were identified as being used by nest predators. Development of mines and other projects along the Ambler Road could provide similar nesting, denning, and shelter opportunities for predator species if no mitigation is in place at these sites.

4. **Potential BLM Mitigation Measure:** AIDEA would develop and implement a Bird Management Plan. The plan would be developed in consultation with the State of Alaska, USFWS, NPS, BLM, ANCSA regional and village corporations owning lands in the ROW, and the Subsistence Advisory Committee (SAC), and would be approved by the Authorized Officer. The plan should include specific measures to avoid, minimize, and mitigate impacts on migratory bird resources, including conservation efforts during facility design, construction, operation, and maintenance activities using the best available science and Indigenous Knowledge. The plan shall be reviewed at least every 5 years. Examples of specific mitigation measures include designing structures and towers to reduce bird use, scheduling of bridge and road maintenance activities to minimize impacts on nesting birds, developing a lighting plan to minimize attraction of night-migrating birds, implementing methods to mitigate impacts of above-ground powerlines and guy wires for communication towers, and preventing bird entrapment by filling or capping vertical pipes.

Effectiveness: This mitigation measure, on its own, would be partially to mostly effective at reducing impacts of project development on migratory birds, if implemented along the entire project route and minimally to partially effective if only implemented on BLM-managed land. For this mitigation measure to be effective, structures and lighting that could pose collision, or entrapment would have to be monitored for mortality on a regular basis. Locations of bird nests on bridges and other structures would have to be identified at the beginning of the breeding season, and these locations would have to be transmitted to all personnel performing bridge and road maintenance activities so that they could avoid nest sites. Development of mines and other projects along the Ambler road could pose similar collision, entrapment, and disturbance risks to birds using these areas.

Summary of Effectiveness: The measures listed above, if implemented collectively, are expected to be partially effective at reducing impacts to nesting birds along the entire length of the ROW. Identifying and avoiding nests prior to vegetation clearing is highly effective in reducing short-term mortality of or disturbance to individual birds, nests, eggs, and nestlings, but habitat loss and alteration would still impact local populations of birds using the area during various life stages. Because Measure 2 would only be effective on BLM-managed lands, bank swallows may be injured or killed along the majority of the project route for all alternatives.

3.3.5 Mammals*

1. **Potential BLM Mitigation Measure:** During periods of wildlife breeding, lambing, or calving activity, during major migrations of wildlife, and whenever caribou are present, AIDEA's activities on BLM-managed land may be restricted by the Authorized Officer with written notice which can include electronic communication. From time to time, the Authorized Officer may furnish AIDEA a list of areas where such actions may be required, together with anticipated dates of restriction.

Effectiveness: This mitigation measure, on its own, would be mostly effective at reducing impacts to mammals during biologically important time periods. AIDEA's proposed design features (Chapter 2, Section 2.4.4 of the Supplemental EIS) include similar and complimentary measures through the use of wildlife interaction and communication protocols. These measures provide opportunities for adaptive management of wildlife along the road.

2. **Potential BLM Mitigation Measure:** All wildlife would have the right of way on the Ambler Road. Vehicles must slow down or stop and wait to permit the free and unrestricted movement of wildlife across the road at any location. During known caribou migration, the Authorized Officer may require temporary cessation of traffic in alignment with the Comprehensive Wildlife Interaction and Avoidance Plan (see Section 3.3.2). All data on road closures due to caribou, including all recorded caribou observations and other relevant information, must be shared with the State, BLM, and the NPS.

Effectiveness: This mitigation measure, on its own, would be partially effective at reducing the potential for injury or mortality of mammals on the road. This measure is similar to a proposed design feature (Chapter 2, Section 2.4.4 of the Supplemental EIS), but which is limited just to caribou. As such, measures to reduce impacts to caribou would occur along the entire length of the road; however, measures to reduce potential impacts to other wildlife would only occur on BLM-managed lands if this mitigation measure were implemented. It is possible that other land management agencies would implement similar measures designed to avoid impacts to special status species or wildlife that are socially or economically important. Despite this mitigation

measure or the proposed design feature, mortality of caribou and other wildlife should be anticipated as a result of the road because no mitigation measure can be completely effective.

3. **Potential BLM Mitigation Measure:** Snow bank height would be minimized to allow caribou passage. AIDEA would take particular measures to ensure that snow bank height is reduced during spring migrations.

Effectiveness: This mitigation measure, on its own, would be partially effective at reducing delays, deflections, or displacement of caribou and other mammals attempting to cross the road during winter. Snow bank height is 1 of several factors that may influence caribou behavior at the road. Implementation of this mitigation measure only on BLM-managed lands would have almost no effect for Alternatives A or B because very few caribou occur on the east end of those routes. Implementation of this mitigation measure on Alternative C would have a greater, but still limited, benefit to caribou because caribou use of BLM-managed lands along that route is substantially greater.

4. **Potential BLM Mitigation Measure:** Prior to starting activities, AIDEA would obtain the locations of known brown bear dens from current survey data for the purpose of avoiding both human/bear interactions and disturbance of bear dens.

Effectiveness: This mitigation measure, on its own, would be minimally effective at reducing potential impacts to denning brown bears. This mitigation measure would be moderately effective along Alternative C, where much of the route is located on BLM-managed lands. Specifically, this could help to reduce impacts to denning brown bears in the Ray Mountains, where it is suspected that high quality denning habitat occurs in close proximity to the Alternative C route. In contrast, this mitigation measure would apply to a very small proportion of Alternatives A and B that does not include suitable brown bear denning habitat (i.e., alpine areas).

5. **Potential BLM Mitigation Measure:** During survey and construction, cross-country activity is prohibited within 1/2 mile of occupied grizzly bear dens identified by current survey unless alternative protective measures are approved by the Authorized Officer in consultation with the ADF&G. During maintenance and operations, cross-country activity originating from the Ambler Road is prohibited entirely.

Effectiveness: This mitigation measure, on its own, would be minimally effective at reducing potential impacts to denning brown bears. This mitigation measure would be highly effective along Alternative C, where much of the route is located on BLM-managed lands. Specifically, this could help to reduce impacts to denning brown bears in the Ray Mountains, where it is suspected that high quality denning habitat occurs in close proximity to the Alternative C route. In contrast, this mitigation measure would apply to a very small proportion of Alternatives A and B that does not include suitable brown bear denning habitat (i.e., alpine areas).

6. **Potential BLM Mitigation Measure:** Within the Tozitna North and Tozitna South Areas of Critical Environmental Concern (ACECs), aircraft associated with Ambler Road activities would be required to fly a minimum of 2,000 feet above ground level (AGL) from May 10 to June 30, unless doing so would endanger human life or be an unsafe flying practice. From July 1 to May 9, aircraft associated with Ambler Road activities would be required to fly a minimum of 1,000 feet AGL above these ACECs unless doing so would endanger human life or be an unsafe flying practice. Normal landings and takeoffs would be allowed.

Effectiveness: This mitigation measure, on its own, would be partially effective at reducing impacts to wildlife within the ACECs as a result of aircraft activity associated with the Amber Road. Impacts to wildlife from aircraft would still be possible, but this measure would slightly

decrease the magnitude and likelihood of impacts. Aircraft use as a result of the road would be limited; other aircraft not associated with the Ambler Road would not be required to adhere to this stipulation and could affect wildlife in the ACECs. This measure would be limited to Alternative C because Alternatives A and B do not cross ACECs. It is probable that the NPS would implement a similar measure (if Alternatives A or B are selected), but unlikely that other land management agencies would implement similar measures.

7. **Potential BLM Mitigation Measure:** To minimize wildlife entanglement and plastic debris pollution, erosion and sediment control products would be plastic-free, such as netting manufactured from 100 percent biodegradable, nonplastic materials like jute, sisal, or coir fiber.

Effectiveness: This mitigation measure, on its own, would be minimally effective at eliminating impacts associated with wildlife entanglement and plastic debris pollution. The potential for wildlife entanglement in plastic erosion control products is not high. However, this is a measure that would be easily implemented and is not likely to be cost-prohibitive. This measure would do little to reduce impacts under Alternatives A and B, because BLM-managed lands constitute a small proportion of those routes. Under Alternative C, the effect would be greater as a larger proportion of those routes cross BLM-managed land. It is possible that, if the BLM were to adopt this mitigation measure, AIDEA would implement it across the entire route for consistency and ease of implementation. However, if the costs are prohibitive, it would not likely be implemented across the entire route. Other land management agencies, except potentially the NPS, are unlikely to implement a similar measure.

8. **Potential BLM Mitigation Measure:** AIDEA would prohibit all authorized users from hunting, fishing, shooting, or trapping from within the authorized ROW. This includes AIDEA's agents, employees, and contractors, and their respective employees, as well as the agents or employees of any entity allowed commercial use of the road (see also mitigation measures 1 and 2 under Section 3.4.3, Recreation and Tourism).

Effectiveness: This mitigation measure is intended to protect wildlife from increased access and associated hunting pressure on wildlife populations. On its own, this measure would be partially effective in maintaining the status quo in terms of existing hunting effects on wildlife.

Summary of Effectiveness: The measures listed above, if implemented collectively, are expected to be partially effective at reducing impacts to mammals. Because BLM-managed land constitutes a small proportion of Alternatives A and B, if these mitigation measures are not adopted by AIDEA for other land management agencies, then their implementation would do little to reduce impacts across the entire project. Under Alternative C, these mitigation measures would have a greater affect as a result of the greater proportion of BLM-managed lands under Alternative C. No combination of mitigation measures can fully reduce the potential for behavioral disturbance, displacement, injury, or mortality of wildlife as a result of the Ambler Road. Impacts to wildlife would occur regardless, but these mitigation measures would be successfully in at least partially reducing these impacts.

3.4. Social Systems*

3.4.1 Land Ownership, Use, Management, and Special Designations*

For wild and scenic river crossings, see Sections 3.2.5, Water Resources, and 3.4.2, Transportation and Access.

1. **Potential BLM Mitigation Measure:** AIDEA, in final design, would work with private landowners to ensure that surface use on Native allotments and other private parcels is prohibited

unless authorized by allottee. AIDEA would minimize impacts of the road project (including materials sites, access roads, etc.) on nearby Native allotments and private parcels and on any existing development by means such as providing buffer space or using topography or existing vegetation as a screen.

Effectiveness: This mitigation measure is expected to be mostly effective at avoiding overlap of the road and facilities with private property. For properties close to the project area, this measure would be minimally effective at protecting private property from proximity impacts such as noise. It is likely that other agencies would adopt this measure in an effort to protect the private property of allotments.

2. **Potential BLM Mitigation Measure:** AIDEA would minimize impacts within the Gates of the Arctic National Park and Preserve (GAAR) by moving material sites and maintenance stations outside of the Park Boundaries and by reducing the number of communications towers within GAAR boundaries as much as practicable.

Effectiveness: Allowing only the road in GAAR, with necessary bridges and culverts, and not allowing material sites, maintenance stations, and airstrips, and reducing the number of communications towers in GAAR, would be mostly effective in reducing the project footprint, disturbance, and industrial activity within the GAAR setting. If moving the road support facilities outside of GAAR would result in the facilities being located elsewhere along the route (as opposed to reducing the overall number of such facilities), the impacts associated with those facilities would still be incurred, but in locations outside a National Park System unit.

Summary of Effectiveness: The measures above would be mostly effective at minimizing impact to different land ownership and management issues. They could be implemented separately or together. The GAAR measure applies only to Alternatives A and B and is likely outside the jurisdiction of the BLM but could apply to other federal agency decisions. The BLM and other landowning and permitting agencies likely also would be interested in avoiding use of Native allotments, so it is likely the allotment measure would be adopted by others, increasing its effectiveness.

3.4.2 Transportation and Access*

1. **Potential BLM Mitigation Measure:** AIDEA would prepare and submit a comprehensive Access Plan inclusive of construction and operational periods. The plan would be developed in consultation with the State, NPS, BLM, ANCSA regional and village corporations owning lands in the ROW, the Subsistence Advisory Committee (SAC), and Tribes that practice subsistence in the project area, and would be approved by the Authorized Officer prior to construction. The plan would, at a minimum, identify: the mechanisms that will be used to ensure the road is not utilized during sensitive periods, such as when the Phase 1 Pioneer road is impassable during the summer; commercial use(s) of the road and airstrips and would include guidelines for that use; guidelines for authorized and unauthorized monitoring and enforcement; and the controlled access process. The plan would also include types and locations of ramps and other suitable methods for allowing public access across the road ROW for subsistence and local over-snow travel purposes, and for preventing the potential for trespass along the road from crossing sites, road and trail intersections, and other locations (see mitigation measure 2 and 4, Section 3.4.2).

Effectiveness: AIDEA has identified most of these as design commitments for the project. This mitigation measure is adding the preparation of a plan to be approved by the Authorized Officer to ensure continued use across the road ROW to preserve freedom of movement across the landscape, particularly in winter and generally by snowmobile for local residents. On its own, execution of the plan would be highly effective at providing safe road crossings. It would be

partially effective at preserving today's freedom of movement, because it is highly unlikely that sufficient crossings would be identified, marked, and known to address all possible travel routes. Inevitably, travelers would feel less "free," and some likely would cross at unauthorized locations. It is likely that other land management agencies would adopt this or a similar measure to retain common routes and general freedom of movement.

2. **Potential BLM Mitigation Measure:** AIDEA's program to allow drivers to use the road would include education/training about the project stipulations that apply to drivers. AIDEA would maintain documentation of such education/training and make the records available to BLM or other jurisdictional agencies on request. No drivers would be allowed to use the road without such education/training.

Effectiveness: This mitigation measure is designed to ensure those authorized to use the road had the same base of information about use of the road and protection of resources along the road. On its own, this measure would be mostly effective at educating users about relevant project stipulations. This would support limited vehicle access and enhance drivers' awareness of their obligations to mitigate environmental impacts. The program's success would depend on AIDEA ensuring availability of clearly stated information for drivers and ensuring drivers were trained before allowing drivers on the road. It is not clear whether other land managing and permitting agencies would adopt this measure, but it appears it would be effective if any one agency adopted it.

3. **Potential BLM Mitigation Measure:** In keeping with operation of the Ambler Road as an industrial access road not generally open to the public, AIDEA would operate project airstrips for Ambler Road activities only, except for emergency landings. Public access to airstrips for recreation, hunting, or other general uses would not be allowed and would be monitored by construction camp/maintenance camp crews and Ambler Road security. Details regarding methods of restricting access to project airstrips would be included in the Access Plan (see mitigation measure 1, Section 3.4.2).

Effectiveness: This mitigation measure is designed to prevent impacts that could be associated with opening project airstrips to the general public. On its own, this measure would be highly effective at eliminating impacts associated with public access via airstrips. However, several airstrips do not occur on BLM-managed land and enforcement may require other land management agencies to adopt this measure. It is likely the NPS would adopt the measure if airstrips were on NPS-managed lands. The State and Native corporations could have reasons to want airstrips open to non-project uses, but given the overall concern expressed by local communities about public use of the road, impacts to subsistence resources, and potential trespass, along with the desire of AIDEA to limit the airstrips to Ambler Road activities only, it is more likely than not that all landowners would agree to prevent recreational/hunting use of the airstrips.

4. **Potential BLM Mitigation Measure:** AIDEA would make provisions for suitable permanent crossings of the road ROW for the public where the road ROW crosses or runs along existing roads, active trails or routes, easements (including Alaska Native Claims Settlement Act 17b public easements), or other ROWs or known routes identified through AIDEA coordination with subsistence communities in the region, landowners, and land managers. Provisions for crossings would be in place during Phase 1 or combined phasing construction. To ensure continued subsistence access, AIDEA would maintain any current trail in its current location or replace that access as a parallel trail or provide a crossing in a suitable location as determined by the

Authorized Officer. This information would be included in the Access Plan (see mitigation measure 1, Section 3.4.2).

Effectiveness: AIDEA has identified most of these as design commitments for the project. This mitigation measure is adding the preparation of a plan to be approved by the Authorized Officer to ensure continued use across the road ROW to preserve freedom of movement across the landscape, particularly in winter and generally by snowmobile for local residents. On its own, execution of the plan would be highly effective at providing safe road crossings. It would be partially effective at preserving today's freedom of movement, because it is highly unlikely that sufficient crossings would be identified, marked, and known to address all possible travel routes. Inevitably, travelers would feel less "free," and some likely would cross at unauthorized locations. It is likely that other land management agencies would adopt this or a similar measure to retain common routes and general freedom of movement.

5. **Potential BLM Mitigation Measure:** In accordance with regulations at 43 CFR 2805.15(a), BLM would retain the right to access the lands covered by the grant at any time and to enter any facility AIDEA constructs on the right of way. BLM drivers would be allowed entry in authorized driver training and would be authorized to drive the road for grant administration, inspection, and other public land management purposes at no charge. Other agencies or landowners that have permit-compliance responsibilities for the road or mines or that need access for land management and other functions similarly would be authorized to drive the road, after training, at no charge. Requirements to have commercial driver's license that may apply to other classes of drivers on the road would not apply to agency personnel except where they were otherwise required to have such a license.

Effectiveness: This mitigation measure is designed to allow for management and oversight of the public lands and would be highly effective at allowing the BLM and other agencies to meet their agencies' obligations. It is likely that all land management and permitting agencies would adopt this measure.

6. **Potential BLM Mitigation Measure:** Areas of approved restricted public access would be easily identifiable on the ground. AIDEA would provide appropriate signs, flagging, barricades, and other safety measures when regulating or prohibiting public access.

Effectiveness: This mitigation measure is designed to prevent public trespass on the industrial use project area and in construction work zones. On its own, this measure would be minimally effective at retaining public safety during construction and at gateways to the road (guard stations).

7. **Potential BLM Mitigation Measure:** Where the proposed alignment interferes longitudinally with active trails or routes AIDEA would maintain such trails or routes in their current location by altering or refining the Ambler Road design or replacing those facilities with parallel facilities of equal or better condition. Location of security gates would be adjusted to ensure no unauthorized access.

Effectiveness: This measure, on its own, would be highly effective in maintaining access to and use of the trail associated with the first 5.4 miles of Alternatives A and B. The additional cost associated with the design change would be offset by the benefit of allowing continued access to current users in this part of the corridor. Adverse impacts could result from this measure if the trail needed to be replaced or moved, which would require a larger construction footprint and lead to increased impacts to vegetation, habitat, and water resources. In addition, use of the trail could increase, which would have adverse effects on natural resources from increased off-road vehicle

use and foot traffic. In general, other agencies likely would adopt similar measures for existing trails on their lands. Regarding the first 5.4 miles of Alternatives A and B, the measure is specific only to the BLM.

Summary of Effectiveness: The measures listed above, if implemented collectively, would be mostly effective at limiting uses of the road to those intended and allowing for both safe use of the road and reasonable crossings of the road. Residual impacts are likely to include trespass issues where the road is encountered between established crossing locations (e.g., by snowmobile). Maintaining the active trails or routes could have adverse impacts from construction and may increase public access in some segments of the Ambler Road. Most of these measures are likely to be adopted by other agencies to help protect existing access along and across the road and prohibit non-project access. The measures are mostly not interdependent and would be reasonably effective on their own if some agencies declined to adopt some specific measure.

3.4.3 Recreation and Tourism*

1. **Potential BLM Mitigation Measure:** AIDEA would prohibit its agents, employees, and contractors, and their respective employees, from hunting, fishing, shooting, trapping, using vehicles off-road, or camping, while on duty or living at a camp.

Effectiveness: This mitigation measure is intended to protect wildlife and local subsistence practices from new recreation activity. On its own, this measure would be mostly effective in maintaining the status quo and not increasing competition for resources in the area.

2. **Potential BLM Mitigation Measure:** AIDEA's agents, employees, and contractors, and their respective employees, would not use project equipment or personal vehicles, including those used for transportation to and from the job site, for the purpose of scouting for, or participating in, hunting, fishing, shooting, and trapping activities.

Effectiveness: This mitigation measure is intended to protect wildlife and local subsistence practices from new recreation activity. On its own, this measure would be mostly effective in reducing the ease of access for new hunting and fishing activity.

Summary of Effectiveness: The two measures listed above are expected to be partially effective in limiting change to existing use of the land for recreational purposes based on road-related workers inhabiting the area. The measures would be effective at forestalling competition between road-related workers (as new recreational hunters, trappers, and anglers in the area) and existing subsistence and recreational users. These measures would be relatively inexpensive to establish and are in character with other resource development project restrictions on workers, but these restrictions apply to individual liberties of employees outside while they are not working but still in the area. To achieve full effectiveness, it would be necessary for these measures to be in place throughout the length of the road and not just on BLM-managed land. It is likely the NPS and Native corporations would include similar measures on their lands, but it is not clear the State of Alaska would do so. Without State of Alaska participation, the effectiveness would be substantially reduced, particularly for Alternatives A and B where a larger percentage of the road and more of the camps would be on State lands.

3.4.4 Visual Resources

1. **Potential BLM Mitigation Measure:** AIDEA would submit to the BLM for review and approval a plan to minimize impacts from light fixtures and the appearance of facilities, and paint colors to be used during construction and operations phases of road activities.

Effectiveness: This mitigation measure is designed to minimize the establishment of visually contrasting facilities and of light emission associated with the project in an environment

otherwise influenced almost exclusively by relatively dim natural light (e.g., moon) after sundown in the winter months. The use of approved facility colors would further reduce visual impacts throughout the year, and in particular the summer season, with 24 hours of daylight in the project area. This measure on its own is likely to be partially effective, particularly in influencing the base design of facilities by selection of forms, textures, and colors with low contrast. However, camps and gatehouses would be expected to be new, engineered structure and to be lit and evident whenever the sky was dark, and headlights are assumed to be in use throughout the night on the road. These impacts could not be reduced to near zero without restricting all construction to underground and all activity to daylight hours.

2. **Potential BLM Mitigation Measure:** For temporary and long-term facilities, designs would use the minimum lighting intensity necessary to ensure safety; use localized task lighting; and incorporate measures such as diffusers, lenses, and shielding to reduce nighttime glare, light radiation, and backscatter into the sky.

Effectiveness: This mitigation measure is designed to minimize light emission associated with the project in an environment otherwise influenced almost exclusively by relatively dim natural light (e.g., moon) after sundown in the winter months. The use of approved facility colors would further reduce visual impacts throughout the year, and in particular the summer season, with 24 hours of daylight in the project area. This measure, on its own, is likely to be partially effective, particularly in influencing the base lighting design and minimizing large or glaring lights. However, camps and gatehouses would be expected to be lit and evident whenever the sky was dark, and headlights are assumed to be in use throughout the night on the road. These impacts cannot be reduced to near zero without restricting all activity to daylight hours.

3. **Potential BLM Mitigation Measure:** Structure designs and equipment at temporary construction camps and permanent maintenance and operations facilities would use color, form, line, and texture to reduce contrast with background features. Reflectivity would be minimized.

Effectiveness: This mitigation measure is designed to minimize contrast of built facilities with the natural environment. This measure on its own is likely to be partially effective, particularly in influencing the base design of camps and facilities. However, camps and gatehouses would be expected to have engineered structures, including contrasting towers and boxy buildings that would contrast in line and form regardless. These impacts could not effectively eliminated.

4. **Potential BLM Mitigation Measure:** The exterior of structures associated with temporary construction camps and long-term maintenance and operations facilities would be colored covert green, shadow gray, or a similar color unless another color is specified in the project-specific stipulations as depicted on the BLM's Visual Resource Management Standard Environmental Colors Chart. For more information visit: www.blm.gov/programs/recreation/recreation-programs/visual-resource-management.

Effectiveness: This mitigation measure is designed to minimize contrast of built facilities with the natural environment based on color. This measure, on its own, is likely to be mostly effective. However, structures would be expected to be utilitarian, probably with metal siding and roofs, and to be reflective at certain sun angles, regardless of color.

5. **Potential BLM Mitigation Measure:** Non-enclosed steel structures (e.g., poles, fences, towers) would be powder coated and have a dull galvanized metal finish. Tall structures would be minimized and constructed in locations not conspicuous on the horizon, to the greatest extent possible.

Effectiveness: This mitigation measure is designed to minimize contrast of built facilities with the natural environment based on line and color. This measure, on its own, is likely to be partially

effective by reducing glare and ensuring tall structures were placed consciously. However, tall structures with visually contrasting vertical lines and some reflectivity would be installed, and communications towers would likely need to be placed in relatively conspicuous locations to achieve best communication between towers. Visual impact would occur despite mitigation.

6. **Potential BLM Mitigation Measure:** Other visual impact mitigation measures, subject to consistency with vegetation BMPs, would include:
- Restore the construction zone in a manner that facilitates reestablishment of the adjacent natural vegetation.
 - Use root balls, salvaged native plant materials, and the surface layer removed from the construction footprint for redistribution on disturbed areas where feasible.
 - Maintain a screening of existing natural vegetation between the Ambler Road and its facilities and the Dalton Highway, to the extent possible.
 - Minimize locating Ambler Road facilities, new material sites, and construction or maintenance material stockpiles in areas that would be visible to the public in places with special visual resource values.
 - Blend the Ambler Road facilities into the natural setting to the extent practicable when crossing or passing near places with high visual resource value, including GAAR, ACECs, the Dalton Highway corridor, existing communities, and streams used for recreation and transportation.
 - Use revegetation species that are appropriate for the general area. See also Section 3.3.1, Vegetation and Wetlands.
 - Re-grade construction disturbances to a condition that blends with the surrounding terrain and surface drainage patterns.
 - Monitor reclaimed, disturbed construction areas and take remedial action where expected revegetation success is not achieved.

Effectiveness: This mitigation measure is designed to minimize contrast by requiring use of natural vegetation and natural contours to help the road and associated facilities blend in or be hidden, particularly in areas where people (viewers) are more likely to be present or highly sensitive. This measure, on its own, is likely to be partially effective. However, the road and associated facilities, including bridges on river corridors and lights near the Dalton Highway and certain communities, would be visible and contrasting.

Summary of Effectiveness: The measures above, if implemented collectively, would be partially effective in reducing the visibility of the project, but overall, a new road across a natural environment would be readily visible at a distance from higher elevations and from the air and in foreground views when approached regardless of these measures. Similarly, lighting measures are expected to protect viewers from piercing glare but would not be expected to eliminate the visual effect of new lights in what is currently a natural night sky environment. To best achieve effectiveness, it would be necessary for these measures to be in place throughout the length of the road and not just on BLM-managed land. It is likely the NPS would require similar measures on GAAR lands. It is likely that the State of Alaska and NANA Corporation would require similar vegetation measures, mostly in the interest of minimizing erosion, but may not have the same requirements for line-form-texture-color of facilities. Nonetheless, these measures are not unusual for resource development and road projects and likely would not be unduly expensive to implement if implemented during design. Particularly with Alternatives A and B, the BLM would have authority over a relatively small portion of the road corridor. Therefore, the overall effectiveness of the BLM proposed mitigation measures could be quite low if not also adopted also by other landowners.

3.4.5 Socioeconomics and Communities*

1. **Potential BLM Mitigation Measure:** AIDEA would develop and implement a plan acceptable to the BLM and NPS that provides the following mitigation measures to address effects on socioeconomics:

- Time construction activities to minimize impact to high-use tourist and recreation seasons (e.g., river floating, wildlife viewing, hunting, snow machining, dog mushing) (see also Section 3.4.7, Potential BLM Mitigation Measure #4).
- Time construction activities to minimize impacts to local lodges and other businesses (i.e., minimize summer and fall construction in recreational and tourist areas).
- Identify and promote work opportunities for local residents.
- Develop training programs for local residents so that they could be employed during construction and operations.

Effectiveness: The plan would address community and tourist economic activities affected by the project and prepare area residents for road-related jobs. This mitigation measure, on its own, would be partially effective at reducing economic impacts and enhancing economic benefit. However, impacts to tourist activities and lodges would occur. It is highly unlikely that it would be practical to avoid construction in all areas and at all times that they might be used for tourism. Training programs could be mostly effective in promoting new jobs and preparing residents to apply, where implemented, but it is unlikely to be practical to implement trainings in all communities that might want them or might benefit.

2. **Potential BLM Mitigation Measure:** Avoid locating construction support and operations/maintenance facilities (e.g., construction camps) in places with special visual resource values that would be observable to the general public or that would reduce the visual values of private properties.

Effectiveness: This mitigation measure, on its own, would be partially effective at reducing the impact of the project to private properties and tourism. By shielding project facilities from areas valued for their scenic quality, this measure would reduce impacts to property values. By protecting wilderness views, effects on visitors seeking wilderness experiences would be slightly reduced and the effect on the tourism economy would also be slightly reduced. The road construction and operational activities, however, would remain. If this measure is applied only to BLM-managed land, the effectiveness would be limited only to that portion of the alternative.

Summary of Effectiveness: The measures listed above, if implemented collectively, are expected to be partially effective at reducing impacts associated with socioeconomic conditions and communities. Reduced impacts would be beneficial to communities and tourists at the expense of project schedule delays and added design costs; however, the changes to the wilderness features of the area cannot be avoided. The presence of project construction equipment, constructed facilities, cleared areas, and large haul trucks cannot be reduced to a level of being imperceptible. It is likely that other agencies would adopt similar measures to protect existing businesses.

Public Health

1. **Potential BLM Mitigation Measure:** AIDEA would use only non-persistent and immobile types of pesticides, herbicides, preservatives, and other chemicals. Each chemical to be used and its application constraint would be approved by the BLM prior to use. AIDEA would avoid and minimize construction and operations activities related to chemical applications during sensitive periods in life cycles such as calving, denning, nesting, and migration. The use of pesticides and

herbicides is regulated by ADEC's Environmental Health Division through 18 AAC 90 and may require a permit.

Effectiveness: This mitigation measure is intended to avoid accumulation of chemicals within the ecological system and, by extension, to avoid health risks to humans. This measure, on its own, would be highly effective at eliminating impacts from persistent chemicals. It would not, however, eliminate chemical environmental and health risk from accidental spills and leaks or risks associated with other types of chemicals that may be approved by the BLM and used for the project.

2. **Potential BLM Mitigation Measure:** AIDEA would develop and implement a plan to educate workers, regional health care workers, and residents of all communities in the area potentially affected by the Ambler Road on the health effects of exposure to NOA, pesticides, herbicides, preservatives, and other chemicals. The plan would include opportunities for routine risk-based health screening of workers, nearby communities, and regular subsistence users for non-cancerous and cancerous diseases that could result from exposure to these compounds.

Effectiveness: This mitigation measure is designed both to educate people about risks, so they might avoid the risks, and to screen people for health impacts related to the road. This measure, on its own, would be partially effective at reducing impacts to health. Extending screenings and even education to a broad area because of the construction of a road is outside the norm for road projects and would be potentially expensive to implement. The State of Alaska may be unlikely to implement this measure on a similar level. Screenings may be most effective at providing psychological comfort that diseases have not manifested for those who are concerned about ingesting tainted wild food, for example. However, regular screening may also raise anxiety because people may assume screening means an expectation of health problems.

3. **Potential BLM Mitigation Measure:** AIDEA would prohibit its employees, contractors, subcontractors, and their employees from visiting local communities (to include a 5-mile radius around community centers) while on-duty or while staying at project facilities except for the conduct of official business. When communities are visited for conduct of official business, AIDEA would keep records of purpose, date, location, and participants, and would make such records available to BLM or law enforcement agencies on demand. A system should be established that allows individuals to report violations of the above prohibition, violence against local residents, and other suspicious activities.

Effectiveness: This mitigation measure is designed to protect local communities from undue outside public health influences such as exposure to disease, sexual exploitation, or distribution of alcohol or drugs. This measure, on its own, would be mostly effective at eliminating these risks on BLM-managed lands. However, it is not clear that all land managing agencies would adopt the measure, and the BLM may not have sufficient authority to enforce it outside BLM-managed lands, hence it may not be effective on other lands that are not managed by the BLM.

Summary of Effectiveness: The measures listed above, if implemented collectively, would be partially to mostly effective at reducing the targeted health impacts but would not eliminate health risks. It is likely that all land managing and permitting agencies would share concerns about public health, but as noted above it is not clear that all would implement these or similar measures at the same level.

3.4.6 Environmental Justice

Effects of the project on environmental justice populations would be addressed through implementation of mitigation measures related to subsistence resources (Section 3.4.7), socioeconomics (Section 3.4.5),

and public health (Section 3.4.5). Residual impacts to local communities noted in these areas would disproportionately affect low-income and minority populations.

3.4.7 Subsistence Uses and Resources*

1. **Potential BLM Mitigation Measure:** AIDEA's road construction, operations, and closure/reclamation would not impede qualified rural residents from pursuing subsistence activities (Alaska National Interest Lands Conservation Act, Public Law 96-487).

Effectiveness: This mitigation measure is federal law. The other measures below would help ensure effectiveness.

2. **Potential BLM Mitigation Measure:** AIDEA would consult directly and regularly with affected subsistence communities and ensure that affected communities are represented on the Subsistence Advisory Committee (SAC) proposed by AIDEA (see Chapter 2, Section 2.4.4 of the Supplemental EIS). Formation of the SAC and the ongoing consultation would adhere to the following guidelines:

- In order to ensure that representatives to the SAC are recognized for their expertise and have the ability to speak for the community, all representatives will be nominated and approved by the Tribal Council for the community that they represent.
- AIDEA would consult with directly affected subsistence communities and with the SAC to discuss the siting, timing, and methods of road construction and operations to help discover local traditional and scientific knowledge, including locations needed to cross the Ambler Road, resulting in measures that minimize impacts to subsistence uses, potentially to include ramps for road crossing locations (see also Section 3.4.2, Transportation and Access). To the maximum extent practical, this consultation shall take place in a manner that involves face-to-face meetings with Tribes, preferably in their communities.
- During this consultation, AIDEA will share the results of road use monitoring (both permitted and unpermitted uses). AIDEA will also provide monthly updates on road use.
- At the request of Tribes, AIDEA will negotiate conflict avoidance agreements or similar mitigating measures to ensure that road construction activities and operations and maintenance activities do not result in unreasonable interference with subsistence activities. In the event that no agreement is reached between the parties, the Authorized Officer will determine which road activities would occur, including the timeframes.
- AIDEA will hire project liaisons dedicated to receiving feedback from potentially affected communities.
- AIDEA will hire subsistence monitoring representatives in communities experiencing impacts from the road corridor. These subsistence monitors will communicate with AIDEA or AIDEA's designated project liaison regarding subsistence impacts, community concerns, and subsistence activities occurring in the vicinity of the road. Some subsistence monitoring representatives will work onsite (e.g., in trucks along the road system) as independent wildlife observers, ensuring that impacts are monitored in real time.
- AIDEA will consult with affected communities and regional entities such as the Western Arctic Caribou Herd Working Group in the development of monitoring plans for subsistence resources. Monitoring plans could include regular harvest and food security surveys to identify the magnitude and extent of impacts on subsistence practices.
- AIDEA would provide annual reports on the results of monitoring plans to the affected communities. These reports will summarize the results of the monitoring studies, identify key

changes or trends in subsistence uses and food security, and identify changes to road operations or protocols to address subsistence impacts. AIDEA will consult with communities to identify appropriate report dissemination methods to ensure study results are being adequately communicated to the affected communities. • If monitoring studies identify a loss of subsistence resources to communities through a decrease in harvests or reduced access to traditional harvesting areas, AIDEA will engage with the affected communities to identify mechanisms for replacing lost subsistence harvests. Potential mechanisms would include providing impact funds to hunters to facilitate travel to alternative hunting areas, or providing funds to purchase nutritionally equivalent foods. • The Subsistence Advisory Group will help establish and update mitigation measures across the region (beyond just one community) and will determine, in consultation with AIDEA and BLM, where subsistence crossings are placed. Effectiveness: This mitigation measure is designed to maintain a discussion about the road and subsistence use patterns in the area. The measures, on their own, would be mostly effective in providing road operators and the SAC each with information about what the other is thinking or doing. It may be minimally or partially effective at disseminating information to the broader communities but would be a forum to encourage such dissemination.

3. **Potential BLM Mitigation Measure:** AIDEA would notify workers and road users when subsistence activities are ongoing in the area and direct them to refrain from actions that may affect the activities (e.g., not removing trapline markers).

Effectiveness: This mitigation measure is designed to educate road users and workers about subsistence and, on its own, would be mostly effective at minimizing disturbance to subsistence activity near the road.

4. **Potential BLM Mitigation Measure:** Subsistence activity impact mitigation would also include:

• Identifying locations and times when subsistence activities occur, and minimizing work during these times and in these areas to the maximum extent practicable. • Scheduling work (e.g., blasting) to avoid conflict with subsistence activities when possible. • Managing project-related aviation activities (e.g., minimum altitude limits; reducing air traffic during the peak caribou hunting and migratory seasons) to avoid disturbance of hunters or prey species. • Implementing ground traffic rules to reduce impacts to migrating caribou. These may include traveling in convoys when at all possible, and instructing drivers to stop when caribou are approaching the road (see Section 3.3.5, Potential BLM Mitigation Measure #2). Effectiveness: This mitigation measure, on its own, would be partially effective at reducing impacts to subsistence activities. It is likely that project activities, particularly during the construction process, would affect subsistence activities despite these measures.

5. **Potential BLM Mitigation Measure:** AIDEA would establish a meat recovery plan for wildlife killed as a result of construction activities, truck traffic on the road, air traffic on airstrips, and other project related activity. The plan would be developed in consultation with the SAC, allowing proximate rural residents an opportunity to remove and use the carcasses for subsistence.

Effectiveness: This mitigation measure, on its own, would be mostly effective at ensuring that animals killed accidentally supplemented traditional subsistence harvests and were not wasted.

Summary of Effectiveness: The measures listed above, if implemented collectively, would be partially effective at reducing impacts associated with subsistence. Actual reductions in average subsistence harvests because of the project may be effectively forestalled by these measures, particularly those regarding sharing of information and modifying project activities as a result, and those that promote freedom of movement across the road and across the landscape. Such effectiveness would be enhanced with implementation of wildlife measures. However, some impacts are unknown. If major changes to caribou wintering grounds or migration patterns resulted after the road had been in place for several years, the impacts to subsistence communities avoided by the caribou could be substantial despite the mitigation measures. While the risk may not be high that such a major change would occur, it is possible or likely that no mitigation would alter the new wildlife pattern or restore the subsistence use pattern. It is likely that AIDEA would voluntarily undertake measures to reduce conflict between subsistence activity and project activity, but it is not clear that the State would require AIDEA to undertake such measures on its lands.

3.4.8 Cultural Resources*

1. **Potential BLM Mitigation Measure:** Mitigation measures for historic properties are listed in a Programmatic Agreement (PA; Appendix J of the Ambler Road Supplemental EIS). AIDEA would have to comply with the terms of the PA, which is an agreement with the BLM, USACE, NPS, Alaska Department of Natural Resources, Alaska State Historic Preservation Officer, Advisory Council on Historic Preservation, and AIDEA, related to implementation of Section 106 of the National Historic Preservation Act (NHPA; 16 USC 470 et seq.). A Cultural Resources Management Plan has been implemented and agreed to as part of the PA.

Effectiveness: Per the NHPA regulations, the PA allows for a phased approach to compliance and addresses all project activities, regardless of land ownership, across all phases of the project. The measures outlined in the PA include identifying all cultural resources that may be present in the project area of potential effects, determining if those resources are eligible to the National Register of Historic Places, determining whether the project would adversely affect any eligible resources, and determining how those effects would be resolved through avoidance, minimization, or mitigation. This measure, on its own, would be mostly effective at ensuring that cultural resources were identified and considered; that consultation with PA Signatories and other interested parties occurred; and, for those resources that would be adversely affected, that the protocols and measures outlined in the PA were followed. Following the terms of the PA would satisfy the law. However, where sites or areas could not be avoided, the PA would not eliminate the impact. Instead, the PA would require mitigation measures to be developed through consultation and implemented prior to ground disturbance from the project. It is highly likely that other state and federal agencies would participate in implementing this measure, because all have an interest and mandate by law to protect historic resources and already have worked together to craft the PA.

2. **Potential BLM Mitigation Measure:** AIDEA will consult with the BLM, local communities, Tribes, and ANCSA regional and village corporations owning lands in the ROW to seek ways to avoid damaging or disturbing cultural landscapes, Traditional Cultural Properties, or other places of traditional cultural importance located along the project area route that are locally or regionally important but may not meet the criteria of a historic property. This consultation should take place in the Tribes' villages and will include (at the request of the Tribe) gathering information and data related to Tribes' origin stories and Tribal history of the project area; historic travel routes (e.g., winter trails and river routes); and their lifetime use areas and traditional use areas. AIDEA will enter a data management agreement to secure the sensitive intellectual property of Tribes regarding their information.

Effectiveness: This mitigation measure is designed to ensure consideration of places of traditional cultural importance along the project route that may not be addressed in the Section 106 PA (Appendix J). The measure, on its own, would be mostly effective in ensuring information is shared that is relevant to the protection of culturally important places along the project route. It may be partially effective at avoiding disturbance to those places. Other state and federal agencies may participate in this measure related to the lands they manage, because it is closely related to the PA work the agencies have been working on, but it does not have the same force of law as the PA.

3. **Potential BLM Mitigation Measure:** AIDEA's road construction, operations, maintenance, and closure/reclamation would be coordinated with local communities and Tribes to help ensure these activities would not limit access to Native American religious sites, would not limit use and possession of sacred objects, would protect the indigenous people's freedom to worship through ceremonial and traditional rites (as defined in the American Indian Religious Freedom Act, 42 USC 1996); and would avoid adversely affecting the physical integrity of any Sacred Sites that may be located on federal lands, per EO 13007 (May 24, 1996; 61 FR 26771).

Effectiveness: This mitigation measure, on its own, would be mostly effective at ensuring access to Native American religious beliefs, practices, and sites was not impeded. It is likely other federal agencies would participate in this measure, because the laws behind them apply to all federal lands. State agencies may participate as well for their lands but are not compelled by law.

Summary of Effectiveness: The measures listed above, if implemented collectively, would be partially to mostly effective at ensuring impacts to cultural resources are considered and/or avoided or mitigated. Certain cultural resources are only identifiable by the community sharing the values, traditions, beliefs, or social institutions associated with such places. Therefore, the effectiveness would be partially dependent on the extent of information sharing by Tribes, communities, or other parties about these types of places, if any exist along the project route. In addition, the effectiveness would be partially dependent on the types of cultural significance such places may have and whether impacts can be effectively mitigated.

3.5. Proposed Mitigation Adopted from USACE's 404 Clean Water Act and Section 10 Rivers and Harbors Act Permit Special Conditions*

The following proposed mitigation measures are adopted from the USACE's special conditions to the approved permit application (POA-2013-00396 in Appendix G of the joint JROD) to minimize impacts from the project.

3.5.1 Pre-Construction Meeting*

1. The permittee shall convene a pre-construction meeting with their contractor representatives present, a minimum of 15 days prior to the discharge of fill material into waters of the US authorized under this DA permit. The permittee shall invite the USACE, and appropriate federal, state and borough resource or regulatory agencies within 10 days of the meeting date. The permittee shall provide copies of the DA permit and all attachments to all contractor representatives who shall make the permit copies available at all times in the field during construction activities.

3.5.2 Fill Discharges*

2. The Permittee shall use only clean fill material for this project. The fill material shall be free from items such as trash, debris, automotive parts, asphalt, construction materials, concrete blocks with exposed reinforcement bars, and soils contaminated with any toxic substance, in toxic amounts in accordance with Section 307 of the Clean Water Act.
3. The Permittee shall install erosion control measures along the perimeter of all work areas to prevent the displacement of fill material outside the authorized work area. The erosion control measures shall remain in place and be maintained until all authorized work is completed and the work areas are stabilized. To the maximum extent practicable, plastic-free erosion and sediment control products such as netting manufactured from 100-percent biodegradable materials like jute, sisal or coir fiber shall be used for erosion control. Immediately after completion of the final grading of the land surface, all slopes, land surfaces, and filled areas shall be stabilized using sod, degradable mats, barriers, or a combination of similar stabilizing materials to prevent erosion.
4. Snow and ice clearing operations shall not result in the discharge of vegetation, soil or debris into waters of the U.S. outside of all authorized fill areas.

3.5.3 Mitigative measure to minimize impacts to streams, floodplains, and fish habitat*

5. Culvert widths shall be 1.2 times the bankfull width of the stream plus two feet as recommended in the Washington Department of Fish and Wildlife's Water Crossing Design Guidelines, 2013. Culverts in fish-bearing streams shall be designed to maintain a natural channel and substrates to maintain a natural stream bed character. This embedded stream simulation design shall maintain fish passage by retaining the natural stream slope, meander, and water velocity and depth patterns similar to the natural (undisturbed) stream reaches upstream and downstream of the culvert location.
6. Final cross-drainage culvert locations shall be determined in the field during breakup and locations staked. Existing (natural) drainage patterns shall 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 watersheds, or concentrating runoff flows and to ensure that hydrology is not altered.
7. The applicant shall implement the conservation measures outlined in NMFS February 21, 2020 letter to BLM.
8. Stream crossings shall preserve floodplain connectivity to the greatest extent possible.
9. Overflow culverts should be at the same grade level as the floodplain, and placed to match the flood-flow patterns in the floodplain.
10. Gravel and other construction materials shall not be taken from streambeds, riverbeds, active floodplains, lakeshore or outlets of lakes. Material sites shall be located outside of active channels and active floodplains. A 500' buffer around all streams shall be maintained, within which no material site or access road to a material site shall be located.
11. Where it is practicable, a 100-foot undisturbed vegetation buffer shall be maintained along ponds, lakes, creeks, rivers or higher-value wetland (patterned fens, emergent wetlands and moss-lichen wetlands). The buffer width shall start from the edge of the riparian area associated with the waterbodies or from the edge of the higher value wetland.

12. An Adaptive Management Plan (AMP) for monitoring, maintaining, and repairing culverts over the life of the road shall be developed in consultation with ADF&G and the Corps. The AMP shall include documentation of culvert locations with GPS; regular monitoring during culvert installation and through the road operations; corrective measures which would be taken if concerns are identified; and timeframes for those measures to be implemented. Corrective measures may include installation of additional culverts, increasing culvert size, adding thaw lines, adding deadman anchors or other appropriate measures. AIDEA shall use its proposed AAP subsistence Advisory Committee to help in oversight of the AMP. The permittee shall prepare and submit a culvert monitoring report to the Corps for three summer seasons following completion of the fill placement for the road construction as well as at years five, and every five years after that for the life of the road. The reports shall be submitted prior to July 30 of each year. The report shall include photographs of at least 20% of the crossings to demonstrate the hydrologic conditions at spring break-up time and post break-up (summer conditions). In addition, the report shall include photographs (and locations photographs were taken) and an evaluation of all areas where additional culverts are necessary to retain existing drainage patterns and where culvert maintenance, repair, upgrade, setting adjustments or replacement are necessary.

3.5.4 Mitigation measures to protect thaw-sensitive permafrost soils*

13. The permittee shall construct the road to Phase II standard embankment depths in areas with thaw sensitive permafrost soils and in emergent wetlands, without first constructing the pioneer road.
14. The collection of upstream runoff in ditches shall be minimized to reduce the effects of diverting surface waters to adjacent drainage ways and to reduce the potential for permafrost degradation.
15. The permittee shall use insulation in the roadway where necessary to reduce impacts to permafrost soils (for example, in areas of thaw-sensitive permafrost soils). These areas shall be identified prior to construction and on-site changes made during construction as necessary to protect permafrost soils. These areas shall be identified in the final design and would be provided to the Corps for review 45 days prior to construction. If foam is used to insulate the permafrost from thermal degradation, it shall be composed of closed-cell extruded polystyrene or other closed cell foams (e.g., blueboard) rather than non-extruded expanded polystyrene foam.

3.5.5 Nutuvukti Fen and Nutuvukti Lake Protection*

16. 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 through the active layer to protect hydrologic inputs to the fen and lake. Evidence of soils or vegetation drying downstream of the road, or any changes to fen or lake hydrology would be considered noncompliance with this condition.
17. AIDEA shall locate the road alignment to minimize water quality impacts to Nutuvukti Fen and Nutuvukti Lake.

3.5.6 Floodplains*

18. To comply with Executive Order 11988, disturbance in floodplains would be avoided where practicable. When avoidance is not practicable, floodplain disturbance would be minimized and floodplain function maintained or restored to the extent practicable.
19. A 100-year flood standard (or larger) shall be used for conveyance of all stream simulation and other moderate and major culverts and bridges.

3.5.7 Activities Involving Trenching*

20. Trenches may not be constructed or backfilled in such a manner as to drain waters of the U.S. (e.g., backfilling with extensive gravel layers, creating a French drain effect). Ditch plugs or other methods shall be used to prevent this situation. Except for material placed as minor trench over-fill or surcharge necessary to offset subsidence or compaction, all excess materials shall be removed to a non-wetland location. Revegetation shall follow the process outlined in special condition 29. The backfilled trench shall achieve the pre-construction elevation, within a year of disturbance unless climatic conditions warrant additional time. The additional time must be approved by the Corps. Excavated material temporarily sidecast into wetlands shall be underlain with ice pads, geotextile or similar material, to allow for removal of the temporary material to the maximum extent practicable.

3.5.8 Site Restoration of Ground Disturbing Activities*

21. To prevent erosion, disturbed areas shall be stabilized immediately after construction. Revegetation of the site shall begin as soon as site conditions allow and in the same growing season as the disturbance unless climatic conditions warrant additional time. Additional time must be approved by the Corps. Native vegetation and topsoils removed for project construction shall be stockpiled separately and used for site rehabilitation. Except in areas of top soil excavation, excavated soils shall be sorted into mineral subsoils and topsoil, and stored separately. Topsoil is defined as the upper, outermost layer of soil, usually the top two (2) to eight (8) inches. The depth of topsoil can be measured as the depth from the surface to the first densely packed layer of soil. When backfilling, topsoil shall be placed as the uppermost layer to provide a seed bed for native species. If topsoil and/or organic materials are not available from the project site for rehabilitation, other locally-obtained native materials may be used. Species to be used for seeding and planting shall follow this order of preference: 1) species native to the site; 2) species native to the area; 3) species native to the state.

3.5.9 Airborne Dust*

22. The permittee shall ensure pollution to aquatic resources from road gravel spray and fine airborne dust discharges are minimized to the maximum extent practicable. Dust abatement practices, during dust prone weather and/or seasonal conditions, must be performed for the life of the project (use of the road). Compliance with this condition shall be determined by the absence of visible dust and gravel on wetland vegetation adjacent to the authorized fill areas.
23. Dust suppressants with ingredients potential harmful to aquatic organisms shall not be used within 328 feet of any fish –bearing stream and higher –value wetlands (e.g., emergent wetlands, moss-lichen wetlands, patterned fens and shallow ponds).

3.5.10 Navigation: Section 10 Mandatory (33 CFR PART 320.4(o)(3), and HQ memorandum)*

24. Your use of the permitted activity must not interfere with the public's right to free navigation on all navigable waters of the U.S.
25. You must install and maintain, at your expense, any safety lights and signals prescribed by the U.S. Coast Guard (USCG), through regulations or otherwise, on your authorized facilities. The USCG may be reached at the following address and telephone number: Commander (oan), 17th Coast Guard District, P.O. Box 25517, Juneau, Alaska 99802, (907) 463-2272.

26. The permittee understands and agrees that, if future operations by the U.S. require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee would be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the U.S. No claim shall be made against the U.S. on account of any such removal or alteration.

3.5.11 Historic Properties/Cultural Resources*

27. The permittee shall implement the attached Programmatic Agreement (PA), entitled Programmatic Agreement by and Among the Bureau of Land Management, Alaska State Historic Preservation Officer, and Advisory Council on Historic Preservation Regarding the Ambler Road Industrial Access Road Project, Alaska, dated April 23, 2020. If you fail to comply with the implementation and associated enforcement of the PA the Corps may determine that you are out of compliance with the conditions of the Department of the Army permit/verification and suspend the permit/verification. Suspension may result in modification or revocation of the authorized work.
28. If human remains, historic resources, or archeological resources are encountered during construction, all ground disturbing activities shall cease in the immediate area and the applicant shall immediately (within one business day of discovery) notify the U.S. Army Corps of Engineers (Corps), Alaska District, Regulatory Office at 2715 University Avenue, Suite #201E, Fairbanks, Alaska 99709, (907) 474-2166, or to Regpagemaster@usace.army.mil). Upon notification the Corps shall notify the State Historic Preservation Office (SHPO). Based on the circumstances of the discovery, equity to all parties and consideration of the public interest, the Corps may modify, suspend or revoke the permit in accordance with 33 CFR 325.7. After such notification, the project activities on federal lands shall not resume without written authorization from the Corps, SHPO, and federal manager. After such notification, project activities on tribal lands shall not resume without written authorization from the SHPO and the Corps.

3.5.12 Geotechnical Investigations*

29. AIDEA shall avoid the use of materials containing naturally occurring asbestos (NOA is defined as 0.1 percent asbestos by mass) to the greatest extent practicable. If use of NOA materials cannot be avoided, the fill material and road cuts shall be capped with non-NOA materials in order to not expose NOA to the air, AIDEA shall follow DOT&PF measures as allowed under 17 Alaska Administrative Code 97 and described in May 14, 2015 regulations regarding the use of materials containing NOA.
30. The applicant shall submit a final project plan to the Corps for review prior to beginning any permitted work. This plan shall be based on the geotechnical investigations conducted to identify areas to be avoided due to the presence of naturally occurring asbestos and sulfide minerals that can cause acid drainage in cut and fill areas. The final plan shall incorporate all mitigation measures.

3.5.13 Self-Certification*

31. Within 60 days of completion of the work authorized by this permit, the Permittee shall complete the attached "Self-Certification Statement of Compliance" form and submit it to the Corps (U.S. Army Corps of Engineers, Regulatory Division, 2715 University Avenue, Suite #201 E, Fairbanks, AK 99709). In the event that the completed work deviates in

any manner from the authorized work, the Permittee shall describe the deviations between the work authorized by this permit and the work as constructed on the “Self-Certification Statement of Compliance” form. The description of any deviations on the “Self-Certification Statement of Compliance” form does not constitute approval of any deviations by the Corps.

3.5.14 Modifications*

32. Should any other agency require and/or approve changes to the work authorized or obligated by this permit, the Permittee is advised a modification to this permit may be required prior to initiation of those changes. It is the Permittee’s responsibility to request a modification of this permit. The Corps reserves the right to fully evaluate, amend, and approve or deny the request for modification of this permit.

Summary of Effectiveness: 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. Because these measures are adopted from the USACE’s approved permit application (POA-2013-00396 in Appendix G of the joint JROD), these measures would be implemented along the entire corridor, regardless of land ownership.

4. References*

Ontario Ministry of Natural Resources and Forestry. 2017. *Best Management Practices for the Protection, Creation and Maintenance of Bank Swallow Habitat in Ontario*. Queen's Printer for Ontario, 2017. 37 pp.

USFWS (U.S. Fish and Wildlife Service). 2019. Fish Passage Engineering Design Criteria. USFWS, Northeast Region R5. Hadley, Massachusetts.

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Attachment A. BLM Mineral Materials Mining and
Reclamation Plan Proposal Form

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Attachment A:

BLM Mineral Materials Mining and Reclamation Plan Proposal Form

While there is no requirement to use this form to apply for a mineral material mining authorization, all of the relevant information identified here is required for a mining plan to be determined complete.

NOTE 1: Applicants should contact BLM to request separate authorization for the following activities, which are outside the scope of activities authorized under a mineral material mining plan:

- Establishment and operation of camps on public lands for commercial purposes.
- Storage of materials or supplies not related to the production of mineral materials, including culverts, bridge railings, calcium chloride, or other road maintenance supplies.
- Secondary or value-added production processes, including operation of hot-batch plants, asphalt production, cement production, fabrication of components for off-site use, and similar activities not related to the production of mineral materials.

NOTE 2: Applicants would be required to provide a copy of the following documentation prior to beginning operations.

- The relevant approved Storm Water Pollution Prevention Plan (SWPPP)
- A certified Spill Prevention, Control, and Countermeasures Plan (SPCCP) if required by 40 CFR 112, or a Spill Contingency Plan (SPC) subject to BLM approval.

Providing those, even in draft form, as part of this mining plan would help expedite the analysis and approval.

Applicants would also be **required** to provide a copy of any other permits required by applicable State or Federal regulation (e.g., a Clean Water Act Section 404 permit, an Alaska Department of Fish and Game Fish Habitat Permit, etc.) **prior to** beginning operations. Thus, they are encouraged to pursue those with the relevant agency concurrently with this application.

MINING PLAN

Project Name
Prepared By
Date

Operator Information

Operator Name
Mailing Address
Phone Numbers (Office, Cell, and FAX)
Point of contact

Permittee Information (if different than operator information)

Permittee(s) Name
Mailing Address
Phone Numbers (Office, Cell, and FAX)
Point of contact

General Plan Information

Mineral Material type(s) to be mined
Quantity per Year to be mined (cubic yards)
Total quantity to be mined

General Schedule of Operations from Start through Closure

Proposed date for mobilization to site
Proposed date for start of mining
Estimated date for end of mining
Estimated date for beginning of reclamation
Estimated date for completion of reclamation
Estimated date(s) for period(s) of temporary or seasonal closure
Other relevant milestone date estimates (e.g., planned change of mining method, etc.)

DESCRIPTION OF OPERATIONS

Location

Legal Description: (Township, Range, section(s), quarter section(s))
Highway milepost
Site name (if known)
Are non-native invasive plant species present at the site? (if known).

Equipment and Devices

Provide a list or description of all equipment and devices that would be used in the operations and the purpose/use for each

Operating Practices

Type of action/operation proposed (open pit, quarry, etc.)
Mining methods or techniques proposed (dozer scraping, excavator, drag line, blasting, etc.)
Estimated dimensions of excavation/workings (length, width, depth)

Description of processing/washing/crushing/sorting to be conducted on site
If water-based processes are proposed (washing), a detailed description of the water management plan, including water source, flow control, settling, and discharge rates and locations.
Estimated average daily production (cubic yards)
Estimated depth of overburden above usable materials
Estimated maximum volume of material stockpiles
Estimated volume of material stockpiles at completion of mining
Estimated total surface disturbance (acres); include mining area, access, berms, stockpiles, fuel yards, sanitation facilities, etc.
Description of overburden stockpiling (location, methods to prevent loss from erosion)
Description of dust control practices
Proposed daily hours of operation

Reclamation Plan

Description of proposed reclamation practices and methods

Regrading and reshaping to conform with adjacent landforms
Placement of growth medium and establishment of self-sustaining revegetation
Measures to control erosion, landslides, and water runoff

General reclamation schedule, from start to finish
Description of final pit configuration (reference diagrams)
Reclamation practices for roads/access features
Post-reclamation disposition of access features (reclaimed, left for future access to the pit, etc.)

Monitoring Plan

A monitoring plan must be designed to demonstrate compliance with the approved plan of operations and other Federal and State environmental laws and regulations, provide early detection of potential problems, and supply information that would assist in directing corrective actions should they become necessary. Examples of monitoring programs which may be relevant to a given operation include water quality, air quality (dust control), slope stability, revegetation progress (during reclamation), noise levels (if near visitor services facilities), and wildlife mortality. Monitoring plans may incorporate existing State and/or other Federal monitoring requirements to avoid duplication. However, the submitted monitoring plan needs to include copies of and clearly reference these other plans.

Where applicable, the monitoring plan must include details on:

Type and location of monitoring devices
Sampling parameters and frequency
Analytical methods
Reporting procedures
Procedures to respond to adverse monitoring results

Interim Management Plan

The interim management plan describes management of the project area during periods of temporary and seasonal closures to prevent unnecessary or undue degradation.

The interim management plan must include, where applicable, the following:

Measures to stabilize excavations and workings

Measures to isolate or control toxic or deleterious materials (e.g., if hazardous materials, including POLs, are left on site)
Provisions for the secure storage or removal of equipment, supplies and structures
Measures to maintain the project area in a safe and clean condition
Plans for monitoring site conditions during periods of non-operation
Schedule of anticipated periods of temporary closure during which you would implement the interim management plan

Description of Support Facilities

Office and administrative facilities

Description of structures and locations (reference project maps)

Sanitation needs

Human waste management methods (port-a-john, etc.)

Cleaning and maintenance schedule

Public safety considerations

Proposed fencing, barriers, or barricades and the need/purpose for each

Proposed signage and the need/purpose for each

Description of any other proposed public safety features or devices

Trash and solid waste management

Methods for interim secure storage of garbage generated on site

Schedule for incineration of solid waste combustibles

Schedule for backhaul of non-combustible waste

Description of burning/incineration facilities

SWPPP or other water management plans

Proposed means of stormwater diversion around workings

Diversion ditches and discharge locations in case water is produced during mining operations

Sediment and erosion control methods and devices

Schedule for inspection and maintenance of sediment and erosion control devices

Location of any planned water discharge

Water needs and uses

Water sources, including and methods and rates of water extraction or transfer

Access

Location(s) of each proposed road (reference project maps)

Road type for each proposed road (haul, light vehicle, access, etc.)

Road maintenance methods and schedules

Proposed upgrades to existing roads

The location of reasonable public passage or access routes through or around the area to adjacent public lands

Hazardous materials, including, but not limited to, POLs and explosives

SPCCP or SCP, as applicable
Location of all hazardous materials storage (reference project maps)
Location of refueling areas
Blasting plan, if applicable

Project Maps and Diagrams

Maps must be at an appropriate scale and of sufficient detail for BLM to discern the locations of:

Excavation boundaries
Types and location of material stockpiles
Phasing plan (see attached example)
Processing facilities
Overburden areas
Administrative facilities (office structures, etc.)
Equipment storage areas
Maintenance facilities and/or location
Refueling areas
Fuel storage
All water bodies within the intended disturbance area
Access features
Public safety devices, including proposed fences, barricades, and signage

Diagrams

Pre-mining cross sections
Post mining cross sections
Post-reclamation cross sections

The BLM may require additional, site-specific information when resource status or conditions warrant.

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Appendix O. References

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ABR. 2014. *Stream habitat surveys of proposed bridge crossing sites on the Brooks East corridor*. Prepared for DOWL HKM. October 2014.

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ABR. 2017. *Assessment of Potential Changes in Wetland and Riverine Functions for the Proposed Ambler Mining District Industrial Access Project in Gates of the Arctic National Park*. Prepared for AIDEA. Anchorage, Alaska.

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Appendix P. Glossary

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Glossary

Active floodplain: The flat area along a waterbody where sediments are deposited by seasonal or annual flooding; generally demarcated by a visible high water mark.

Aerial: Consisting of, moving through, found in, or suspended in the air.

Affect: To bring about a change. As a verb, affect is most commonly used in the sense “to influence” or “impact.” The adjective “affected” means acted upon or influenced by.

Alluvial: Sedimentary material consisting mainly of coarse sand and gravel; made up of or found in the materials that are left by the water of rivers, floods, etc.

Alternatives: The different means by which objectives or goals can be attained. One of several policies, plans, or projects proposed for decision making. The BLM is directed by the National Environmental Policy Act (NEPA) to “study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources...” (40 Code of Federal Regulations [CFR] 1507.2, Section 102(2)(E))

Ambient: Used to describe the environment as it exists at the point of measurement and against which changes (impacts) are measured.

Ambient air quality standard: Air pollutant concentrations of the surrounding outside environment that cannot legally be exceeded during fixed time intervals and in a specific geographic area.

Anadromous: Fish that mature in the sea and swim up freshwater rivers and streams to spawn (e.g., salmon, Dolly Varden, Arctic cisco).

Aquatic: Growing, living in, frequenting, or taking place in water; used to indicate habitat, vegetation, and wildlife in freshwater.

Archaeological resource: Places where remnants, such as artifacts or features, of a past culture survive in a physical context that allows for their interpretation. Archaeological resources can be districts, sites, buildings, structures, or objects and can be prehistoric or historic.

Aufeis: Thick ice that builds up as a result of repeated overflow.

Biological Assessment (BA): A document prepared by or under the direction of a federal agency; addresses listed and proposed species and designated and proposed critical habitat that may be in the action area and evaluates the potential effects of the action on such species and habitat.

Bureau of Land Management (BLM): An agency of the U.S. government, under the U.S. Department of the Interior, responsible for administering certain public lands of the United States.

Calving area: A large area where large mammals, particularly ungulates such as caribou, congregate to give birth to their young.

Capital expenses: The money spent to purchase or upgrade physical assets (e.g., buildings, roads, machinery).

Caribou Study Community: Any community that is in game management subunits that overlap caribou herd ranges, and which have Federal Subsistence Board customary and traditional use determinations for those herds.

Cubic feet per second (cfs): 1 cfs equals 448.33 gallons per minute.

Class I air quality area: Areas such as national parks over 6,000 acres, wilderness areas over 5,000 acres, national memorial parks over 5,000 acres, and international parks that were in existence as of August 1977, where air quality should be given special protection. Federal Class I areas are subject to maximum limits on air quality degradation called air quality increments (often referred to as prevention of significant deterioration increments). All areas of the United States not designated as Class I are Class II areas. The air quality standards in Class I areas are more stringent than national ambient air quality standards.

Code of Federal Regulations (CFR): A codification of the general and permanent rules published in the *Federal Register* (FR) by the executive departments and agencies of the federal government.

Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA): Authorizes funds administered by the U.S. Environmental Protection Agency (EPA) to identify and clean up hazardous waste sites; also known as Superfund.

Connected action: Connected actions are: a) actions (other than unconnected single actions) that may be: (1) connected actions, which means that they are closely related and therefore should be discussed in the same impact statement. Actions are connected if they (i) automatically trigger other actions that may require environmental impact statements; (ii) cannot or will not proceed unless other actions are taken previously or simultaneously; and (iii) are interdependent parts of a larger action and depend on the larger action for their justification (40 CFR 1508.25(a)(i-iii)).

Conservation system unit: Any unit in Alaska of the National Park System, National Wildlife Refuge System, National Wild and Scenic Rivers System, National Trails System, National Wilderness Preservation System, or a National Forest Monument, including additions and expansions to these systems in the future (Section 102(4) of the Alaska National Interest Lands Conservation Act.

Consultation: Exchange of information and interactive discussion; consultation can be mandated by statute or regulation that has prescribed parties, procedures, and timelines, such as under NEPA, Section 7 of the Endangered Species Act (ESA), or Section 106 of the National Historic Preservation Act (NHPA).

Cooperating agency: Assists the lead federal agency in developing an Environmental Impact Statement (EIS). A cooperating agency may be any agency that has special jurisdiction by law or special expertise for proposals covered by NEPA (40 CFR 1501.6). Any federal, state, tribal, or local government jurisdiction with such qualifications may become a cooperating agency by agreement with the lead agency.

Council on Environmental Quality (CEQ): An advisory council to the president, established by NEPA. It reviews federal programs for their effect on the environment, conducts environmental studies, and advises the president on environmental matters.

Criteria air pollutants: The 6 most common air pollutants in the United States: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (both PM₁₀ and PM_{2.5} inhalable and respirable particulates), and sulfur dioxide (SO₂). Congress has focused regulatory attention on these 6 pollutants because they endanger public health and the environment, are widespread throughout the

United States, and come from a variety of sources. Criteria air pollutants are typically emitted from many sources in industry, mining, transportation, electricity generation, energy production, and agriculture.

Cultural resources: The remains of sites, structures, or objects used by humans in the past, historic or prehistoric.

Cumulative action: Proposed actions, which, when viewed with the proposed action, potentially have cumulatively significant impacts related to 1 or more identified issues. Cumulative actions “should be discussed” in the same NEPA document (40 CFR 1508.25(a)(2)).

Cumulative effect/impact: The impact on the environment that 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 actions (40 CFR 1508.7, 1508.25). Cumulative impacts can result from individually minor but collectively significant actions taking place over time.

Decision maker: The BLM official (also termed authorized official, authorized officer, responsible official, and responsible manager) who has been delegated authority to approve an action and is responsible for issuing a decision to implement a proposed action.

Density: The number of individuals per a given unit area.

Deposit: A natural accumulation, including precious metals, minerals, coal, gas, and oil, that may be pursued for its intrinsic value, such as a gold deposit.

Design features: Measures or procedures incorporated into the proposed action or an alternative, including measures or procedures that could reduce or avoid adverse impacts. Because these features are built into the proposed action or an alternative, design features are not considered mitigation.

Development: The phase of mining operations that occurs after exploration has proven successful and before full-scale production.

Direct effect/impact: “those effects which are caused by the action and occur at the same time and place” (40 CFR 1508.8(a)).

Draft Environmental Impact Statement (Draft EIS): The draft statement of the environmental effects of a major federal action, which is required under Section 102 of NEPA and released to the public and other agencies for comment and review.

Effect: Environmental change resulting from a proposed action. Effects can be both beneficial and detrimental. Direct effects are caused by the action and occur at the same time and place, while indirect effects are caused by the action but are later in time or farther removed in distance, although still reasonably foreseeable. Indirect effects may include growth-inducing and other effects related to induced changes in the pattern of land use, population density, or growth rate and related effects on air and water and other natural systems, including ecosystems. Effect and impact are synonymous, and both are used in this document.

Employment: Labor input into a production process, measured in the number of person-years or jobs; the number of jobs required to produce the output of each sector. A person-year is approximately 2,000 working hours by 1 person working the whole year or by several persons working seasonally. A job may be 1 week, 1 month, or 1 year.

Endangered species: Any species of animal or plant that is in danger of extinction throughout all or a significant portion of its range; plant or animal species identified by the Secretary of the Interior as endangered in accordance with the ESA.

Environment: The physical conditions that exist in an area, such as the area that would be affected by a proposed project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance; the sum of all external conditions that affect an organism or community to influence its development or existence.

Environmental Impact Statement (EIS): An analytical document prepared under NEPA that portrays the potential impacts on the environment of a proposed action and its possible alternatives. An EIS is developed for use by decision makers to weigh the environmental consequences of a potential decision.

Environmental justice (EJ): The fair treatment and meaningful involvement of all people, regardless of natural origin or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic groups, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies. Executive Order (EO) 12898 directs federal agencies to achieve environmental justice as part of their missions by identifying and addressing disproportionately high adverse effects of agency programs, policies, and activities, on minority and low-income populations.

Erosion: The wearing away of the land surface by running water, wind, ice, or other geologic agents, including gravitation creep.

Essential fish habitat (EFH): As defined by the Magnuson-Stevens Fishery Conservation and Management Act, “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” In Alaska, there are 6 federal Fisheries Management Plans that identify EFH for fish species managed under a fishery management unit. For the purpose of interpreting the definition of EFH habitat, “waters” include aquatic areas and their associated physical, chemical, and biological properties; “substrate” includes sediment underlying the waters; “necessary” refers to the habitat required to support a sustainable fishery and the managed species contribution to a healthy ecosystem; and “spawning, breeding, feeding, or growth to maturity” includes all habitat types that a species uses throughout its life cycle.

Ethnographic: Of or pertaining to the descriptive and analytical study of the culture of particular self-defined groups or communities.

Exception: A 1-time exemption to a lease stipulation, determined on a case-by-case basis.

Exploration: The search for economic deposits of minerals, gas, oil, or coal through the practices of geology, geochemistry, geophysics, drilling, shaft sinking, and mapping.

Exploratory unit: A prospective area delineated on the basis of geological or geophysical inference and permit the most efficient and cost-effective means of developing underlying resources.

Federal action: A BLM proposal is a federal action when (1) the proposal is at a stage in development where the BLM has a goal and is actively preparing to make a decision on one or more alternative means of accomplishing that goal (40 CFR 1508.23); (2) the proposed action and effects are subject to BLM control and responsibility (40 CFR 1508.18); (3) the action has effects that can be meaningfully evaluated

(40 CFR 1508.23); and (4) effects of the proposed action are related to the natural and physical environment, and the relationship of people with that environment (40 CFR 1508.8 and 1508.14).

Federal Register (FR): The official daily publication for rules, proposed rules, and notices of federal agencies and organizations, as well as EOs and other presidential documents. The FR is published by the Office of the Federal Register, National Archives and Records Administration.

Final Environmental Impact Statement (Final EIS): A revision of the Draft EIS that addresses public and agency comments on the draft.

Fisheries habitat: Streams, lakes, and reservoirs that support fish populations.

Fishery: The act, process, occupation, or season of taking an aquatic species.

Floodplain: The lowland and relatively flat area adjoining inland waters, including, at a minimum, that area subject to a 1 percent or greater chance of flooding in any given year.

Fossil: Evidence or remnant of a plant or animal preserved in the earth's crust, such as a skeleton, footprint, or leaf print.

Frequency: The number of samples in which a plant or animal species occurs, divided by the total number of samples.

Fugitive dust: Particles suspended randomly in the air, usually from road travel, excavation, or rock loading operations.

Game Management Unit (GMU): A geographic division made by the Alaska Department of Fish and Game for the management of fish and wildlife in the state. Different GMUs have different hunting and fishing seasons, bag limits, and other harvest rules.

Geology: The scientific study of the origin, history, and structure of the earth; the structure of a specific region of the earth's surface.

Geomorphic: Pertaining to the structure, origin, and development of the topographical features of the earth's crust.

Global warming: An increase over time of the average temperature of the earth's atmosphere and oceans. It is generally used to describe the temperature rise over the past century or so and the effects of humans on the temperature rise.

Greenhouse effect: A process by which thermal radiation from a planetary surface is absorbed by atmospheric greenhouse gases (GHGs) and is reradiated in all directions. Since part of this reradiation is toward the earth's surface and the lower atmosphere, it elevates the average surface temperature above what it would be in the absence of the gases.

Greenhouse gas (GHG): A gas that absorbs and emits thermal radiation in the lowest layers of the atmosphere. This process is the fundamental cause of the greenhouse effect. The primary GHGs that are considered air pollutants are CO₂, methane (CH₄), nitrous oxide, and chlorofluorocarbons.

Groundwater: Water found beneath the land surface in the zone of saturation below the water table.

Habitat: The natural environment of a plant or animal, including all biotic, climatic, and soil conditions, or other environmental influences affecting living conditions. The place where an organism lives.

Hazardous air pollutants (HAPs): Also known as toxic air pollutants, those that cause or may cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental and ecological effects. The EPA is required to control 187 HAPs. Examples of HAPs are benzene (found in gasoline), perchloroethylene (emitted from dry cleaning facilities), and methylene chloride (used as a solvent).

Hazardous waste: As defined by the EPA, a waste that exhibits 1 or more of the following characteristics: ignitability, corrosivity, reactivity, or toxicity. Hazardous wastes are listed in 40 CFR 261.3 and 171.8.

Historic property: Historic properties are defined in the NHPA (54 United States Code [USC] 300308) as any “prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion on, the National Register of Historic Places, including artifacts, records, and material remains related to such a property or resource.”

Human environment: Includes the natural and physical environment and the relationship of people with that environment. When economic or social effects and natural or physical environmental effects are interrelated, then the analysis must discuss all of these effects on the human environment (40 CFR 1508.14).

Hydrocarbon: A naturally occurring organic compound composed of hydrogen and carbon. Hydrocarbons can occur in molecules as simple as methane (1 carbon atom with 4 hydrogen atoms), but also as highly complex molecules, and can occur as gases, liquids, or solids. The molecules can have the shape of chains, branching chains, rings, or other structures. Petroleum is a complex mixture of hydrocarbons.

Hydrologic system: The combination of all physical factors such as precipitation, stream flow, snowmelt, and groundwater that affect the hydrology of a specific area.

Hyporheic zone: Where surface and groundwater interact beneath and adjacent to streams; it is critical for salmon spawning and egg incubation and regulates biological activity that affects stream health (see Hancock 2002 for more information).

Impact: See Effect.

Impermeable: Not permitting passage of fluids through its mass.

Impoundment: The collection and confinement, usually of water (in the case of mining, tailings materials), in a reservoir or other storage area.

Indigenous Knowledge (IK): IK is a body of observations, oral and written knowledge, innovations, technologies, practices, and beliefs developed by Indigenous Peoples through interaction and experience with the environment. It is applied to phenomena across biological, physical, social, cultural, and spiritual systems. IK can be developed over millennia, continues to develop, and includes understanding based on evidence acquired through direct contact with the environment and long-term experiences, as well as extensive observations, lessons, and skills passed from generation to generation. IK is developed, held, and stewarded by Indigenous Peoples and is often intrinsic within Indigenous legal traditions, including customary law or traditional governance structures and decision-making processes. Other terms such as Traditional Knowledge(s), Traditional Ecological Knowledge, Genetic Resources associated with Traditional Knowledge, Traditional Cultural Expression, Tribal Ecological Knowledge, Native Science,

Indigenous Applied Science, Indigenous Science, and others, are sometimes used to describe this knowledge system.

Indirect effect/impact: Impact caused by an action but later in time or farther removed in distance, although still reasonably foreseeable. Effects that “are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on water and air and other natural systems, including ecosystems” (40 CFR 1508.8(b)).

Infrastructure: The underlying foundation or basic framework; substructure of a community’s built environment, such as schools, police and fire stations, hospitals, roads, airports, and water and sewer systems.

Insect-relief area: An area with relatively low numbers of insects that caribou use for relief from insects.

Irretrievable: Applies to losses of production, harvest, or commitment of renewable natural resources. For example, some or all of the wildlife forage production from an area is irretrievably lost during the time an area is used as an oil or gas development site. If the use changes, forage production can be resumed. The production lost is irretrievable, but the act is not irreversible.

Irreversible: A term that applies primarily to the use of nonrenewable resources, such as minerals or cultural resources, or to those factors that are renewable only over long time spans, such as soil productivity. Irreversible also includes loss of future options.

Jurisdictional wetland: A wetland area delineated and identified by specific technical criteria, field indicators, and other information, for the purposes of public agency jurisdiction. The U.S. Army Corps of Engineers regulates “dredging and filling” activities associated with jurisdictional wetlands. Other federal agencies that can become involved with matters that concern jurisdictional wetlands include the U.S. Fish and Wildlife Service, EPA, and the Natural Resource Conservation Service.

Landform: Any physical, recognizable form or feature on the earth’s surface having a characteristic shape that is produced by natural causes. Landforms provide an empirical description of similar portions of the earth’s surface.

Land management: The intentional process of planning, organizing, programming, coordinating, directing, and controlling land use actions.

Landscape: The sum total of the characteristics that distinguish a certain area on the earth’s surface from other areas; these characteristics are a result not only of natural forces, but also of human occupancy and use of the land. An area composed of interacting and interconnected patterns of habitats (ecosystems), which are repeated because of geology, landforms, soils, climate, biota, and human influences throughout the area.

Land status: The ownership or management status of lands.

Land use allocation: The assignment of a management emphasis to particular land areas with the purpose of achieving the goals and objectives of some specified use(s) such as campgrounds, wilderness, logging, and mining.

Land use plan: A set of decisions that establish management direction for land within an administrative area, as prescribed under the planning provisions of the Federal Land Policy and Management Act

(FLPMA); an assimilation of land-use-plan level decisions developed through the planning process outlined in 43 CFR 1600, regardless of the scale at which the decisions were developed. The term includes both Resource Management Plans and Management Framework Plans.

Listed species: Species that are listed as threatened or endangered under the ESA.

Local knowledge: Local knowledge refers to a body of knowledge held by an individual or group of people about ecological systems, based on personal and/or cultural experience and observation.

Long-term impacts: Impacts that normally result in permanent changes to the environment such as the loss of habitat due to development of a gravel pit. For each resource, the definition of long term may vary.

Management area: An area delineated on the basis of management objective prescriptions.

Marine: Of, found in, or produced by the sea.

Migratory: Moving from place to place, daily or seasonally.

Mining District: The term “Mining District” applies traditionally to geographic areas described by miners and are often governed under bylaws drawn up by miners. The Ambler Mining District is an informal descriptive term applied to the approximate area mapped in this Supplemental EIS and has no formal or legal standing. In contrast, the many individual mining claims and mining agreements that exist within the mapped area do have legal rights and responsibilities under state and federal law.

Mitigation: Steps taken to (1) avoid an impact altogether by not taking a certain action or parts of an action; (2) minimize an impact by limiting the degree or magnitude of the action and its implementation; (3) rectify an impact by repairing, rehabilitating, or restoring the affected environment; (4) reduce or eliminate an impact over time by preserving and maintaining operations during the life of the action; and (5) compensate for an impact by replacing or providing substitute resources or environments (40 CFR 1508.20).

National Environmental Policy Act (NEPA): An act declaring a national policy to encourage productive and enjoyable harmony between humankind and the environment; promote efforts to prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of humanity; enrich the understanding of the ecological systems and natural resources important to the nation; and establish a CEQ.

National Pollutant Discharge Elimination System (NPDES): A program authorized by Sections 318, 402, and 405 of the Clean Water Act, and implemented by 40 CFR 122. The NPDES program requires permits for the discharge of pollutants from any point source into waters of the United States.

Notice of Availability (NOA): The FR notice that an EIS (draft or final) or Record of Decision is available. Publication of a notice of filing of an EIS by the EPA formally begins the public comment period.

Notice of Intent (NOI): This FR notice announces that an EIS will be prepared. Publication of this notice formally starts the scoping process.

Particulates: Small particles suspended in the air, generally considered pollutants.

Per capita income: Total income divided by the total population.

Permafrost: Permanently frozen ground.

Plant community: A vegetation complex, unique in its combination of plants, that occurs in particular locations under particular influences. A plant community is a reflection of integrated environmental influences on the site (e.g., soils, temperature, elevation, solar radiation, slope aspect, precipitation).

Pollution: Human-caused or natural alteration of the physical, biological, and radiological integrity of water, air, or other aspects of the environment that produce undesired effects.

Preferred alternative: The alternative the BLM believes would reasonably accomplish the purpose and need for the proposed action while fulfilling its statutory mission and responsibilities, giving consideration to economic, environmental, technical, and other factors. This alternative may or may not be the same as the BLM or proponent's proposed action.

Proposed action: A proposal for the BLM to authorize, recommend, or implement an action to address a clear purpose and need. A proposal may be generated internally or externally.

Public scoping: A process whereby the public is given the opportunity to provide oral or written comments about the influence of a project on an individual, the community, and/or the environment.

Raptor: Bird of prey such as eagles, hawks, falcons, and owls.

Reasonably foreseeable action: Actions for which there are existing decisions, funding, formal proposals, or which are highly probable, based on known opportunities or trends.

Record of Decision (ROD): A document separate from, but associated with, an EIS that states the decision, identifies alternatives (specifying which were environmentally preferable), and states whether all practicable means to avoid environmental harm from the alternative have been adopted, and, if not, why (40 CFR 1505.2).

Regulated air pollutants: Pollutants first set forth in the Clean Air Act of 1970 and are the basis upon which the federal government and state regulatory agencies have established emission thresholds and regulations. Regulated air pollutants include criteria air pollutants, HAPs, volatile organic compounds (VOCs), and GHGs. The same pollutant may be regulated under more than 1 regulatory standard.

Regulation: An official rule. Within the federal government, certain administrative agencies (such as the BLM) have a narrow authority to control conduct within their areas of responsibility. A rule (also called a regulation or rulemaking) is a statement published in the FR to implement or interpret law or policy (see Administrative Procedure Act, 5 USC 551(4) [“‘rule’ means the whole or a part of an agency statement of general or particular applicability and future effect designed to implement, interpret, or prescribe law or policy or describing the organization, procedure, or practice requirements of an agency”]). A rule is generally published as a proposed rule and then as a final rule. Once a rule is published in final, it is codified in the CFR and remains in effect until it is modified by publication of another rule.

Resident: A species that is found in a particular habitat for a particular time period, such as winter or summer resident, as opposed to a species found only when passing through during migration.

Resource Management Plan (also known as Land Use Plan or Management Framework Plan): A set of decisions that establish management direction for land within an administrative area, as prescribed under the planning provisions of FLPMA, Public Law 94-579, 90 Statute 2743; an assimilation of land use plan-level decisions developed through the planning process outlined in 43 CFR 1600, regardless of the scale at which the decisions were developed.

Right-of-way: Public lands that the BLM authorizes a holder to use or occupy under a grant (e.g., roads, pipelines, power lines, fiber-optic lines).

Riparian: Occurring adjacent to streams and rivers and directly influenced by water. A riparian community is characterized by certain types of vegetation, soils, hydrology, and fauna and requires free or unbound water or conditions more moist than that normally found in the area.

Scenic River: River designation, under the Federal Wild and Scenic Rivers Program, on the basis of undisturbed and scenic character. Scenic rivers are given special management criteria by federal agencies.

Scoping (internal and external): The process by which the BLM solicits internal and external input on the issues and effects that will be addressed, as well as the degree to which those issues and effects will be analyzed in the NEPA document. Scoping is a form of public involvement in the NEPA process. Scoping occurs early in the NEPA process and generally extends through the development of alternatives (the public comment periods for EIS review are not scoping). Internal scoping is simply the use of BLM staff to decide what needs to be analyzed in a NEPA document. External scoping, also known as formal scoping, involves notification and opportunities for feedback from other agencies, organizations, and the public.

Scoping process: A part of the NEPA process; early and open activities used to determine the scope and significance of the issues, and the range of actions, alternatives, and impacts to be considered in an EIS (40 CFR 1501.7).

Sediments: Unweathered geologic materials generally laid down by or within waterbodies; the rocks, sand, mud, silt, and clay at the bottom and along the edge of lakes, streams, and oceans.

Sensitive species: Plant or animal species that are susceptible or vulnerable to activity impacts or habitat alterations; species that have appeared in the FR as proposed for classification or are under consideration for official listing as endangered or threatened species.

Short-term impacts: Impacts occurring during project construction and operation, and normally ceasing upon project closure and reclamation. For each resource, the definition of short term may vary.

Significant: The description of an impact that exceeds a certain threshold level. Requires consideration of both context and intensity. The significance of an action must be analyzed in several contexts, such as society as a whole, and the affected region, interests, and locality. Intensity refers to the severity of impacts, which should be weighted along with the likelihood of its occurrence. The CEQ regulations at 40 CFR 1508.27(b) include 10 considerations for evaluating intensity.

Sociocultural: Of, relating to, or involving a combination of social and cultural factors.

Socioeconomic: Pertaining to or signifying the combination or interaction of social and economic factors.

Soil horizon: A layer of soil material approximately parallel to the land surface that differs from adjacent genetically related layers in physical, chemical, and biological properties.

Solid waste: Includes garbage and/or refuse.

Spawning: Production, deposition, and fertilization of eggs by fish.

Subsistence: Harvesting of plants and wildlife for food, clothing, and shelter. The attainment of most of one's material needs, such as food and clothing materials, from wild animals and plants.

Substantive comment: A comment that does 1 or more of the following: questions, with reasonable basis, the accuracy of information in the EIS; questions, with reasonable basis or facts, the adequacy of, methodology for, or assumptions used for the environmental analysis; presents reasonable alternatives other than those presented in the EIS; or prompts the BLM to consider changes or revisions in 1 or more of the alternatives.

Terrestrial: Of or relating to the earth, soil, or land; inhabiting the earth or land.

Thermokarst: Depressions and uneven ground settlements resulting from the thawing and melting of permafrost.

Third-party contracting: Contracting for the preparation of NEPA documents that is funded by the non-BLM proponent of an action. The BLM must still approve this analysis.

Threatened species: A plant or animal species likely to become an endangered species throughout all or a significant portion of its range within the foreseeable future.

Waterbody: A jurisdictional water of the United States (see 33 CFR 328.4). Examples of waterbodies include streams, rivers, lakes, ponds, and wetlands.

Water quality: The interaction between various parameters that determines the usability or non-usability of water for onsite and downstream uses. Major parameters that affect water quality include temperature, turbidity, suspended sediment, conductivity, dissolved oxygen, pH, specific ions, discharge, and fecal coliform.

Wetlands (biological wetlands): Those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstance support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands include habitats such as swamps, marshes, and bogs (see jurisdictional wetlands).

Wild and Scenic Rivers: Those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.

Wilderness: A wilderness, in contrast with those areas where humans and their works dominate the landscape, is recognized as an area where the earth and its community of life are untrammelled by humans, where humans are visitors who do not remain. An area of wilderness also means an area of undeveloped federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of human's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least 5,000 acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

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Appendix Q. Talking Circle Summary Report

Note: This entire Appendix is specific to the Supplemental EIS process only. Therefore, none of the text has been highlighted to indicate new or substantially revised text.

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Ambler Road Supplemental Environmental Impact Statement Talking Circle Summary Report

Prepared for:

U.S. Department of Interior, Bureau of Land Management

January 23, 2024

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List of Acronyms and Abbreviations

ANILCA	Alaska National Interest Lands Conservation Act
BLM	Bureau of Land Management
DMTS	Delong Mountain Transportation System (aka Red Dog Road)
EIS	Environmental Impact Statement
NWAB	Northwest Arctic Borough
TCC	Tanana Chiefs Conference
WAH	Western Arctic Caribou Herd

1. Introduction

As part of the public review process for the draft Ambler Road Supplemental Environmental Impact Statement (Supplemental EIS), the Bureau of Land Management (BLM) conducted a series of talking circle workshops in local communities associated with the Ambler Road Supplemental EIS public meetings. The talking circles were held the morning after the Supplemental EIS public meetings and Alaska National Interest Lands Conservation Act (ANILCA) 810 hearings in the communities and offered a loosely structured environment where community individuals were free to discuss and voice their questions, concerns, and comments regarding the Supplemental EIS and proposed Ambler Road Project. Participants were also encouraged to provide any traditional knowledge regarding Supplemental EIS topics, and any input towards potential requirements and conditions (i.e., mitigation) that could address identified impacts should the Ambler Road Project proceed to construction. Based on comments received from previous EIS processes regarding the fact that some local people are hesitant to speak on the record in formal public meetings and ANILCA 810 hearings, BLM intended for the talking circles to be informal, allowing attendees to remain anonymous to encourage information sharing and open dialogue. BLM and their contractors took detailed notes during the meetings in order to capture the questions, concerns, or comments. The quotations provided in this report from the talking circle attendees are based on the notes captured and are as close to verbatim as possible. Lastly, it should be noted that in some instances, the talking circles were attended by individuals who resided in one community but traveled to other communities to observe the process and provide their input. Therefore, questions, comments, and concerns voiced at the talking circles may not always be from someone who is a resident of the particular community. In order to preserve the anonymity of attendees, the responses provided in this report are only identified by the talking circle in which they occurred (e.g., Kobuk Talking Circle, Allakaket Talking Circle, etc.).

This report is being included as a new appendix to the Final Supplemental EIS, and BLM provided the report to the resource authors of the EIS to contribute to any revised/updated analyses in the main body (Chapter 3) as part of the Final Supplemental EIS effort. The following presents the results of the talking circles grouped under the three main headings of the Supplemental EIS: Physical Environment, Biological Resources, and Social Systems; with an added heading for comments directed at the general Supplemental EIS process. Additional subheadings are included for subjects where talking circle attendees focused the majority of their comments. The subheadings are not mutually exclusive and in many cases a number of physical, biological, and social topics were addressed at the same time in attendees' comments (e.g., discussion of warming waters [physical] affecting fish survival [biological] and impacting community harvest [social]). Due to the loosely structured environment of the talking circles, not all discussion from the talking circles is summarized in this report as it focused on less applicable topics such as general descriptions of past subsistence practices, concerns regarding other development projects or regulatory actions outside the scope of the Supplemental EIS, or generalized history and stories from the region.

The descriptions below are direct summaries of the viewpoints of talking circle attendees, and the study team did not editorialize these viewpoints. Thus, even when not specifically called out as direct quotations, the following represents solely the views of the attendees.

2. General Supplemental EIS Process

A large portion of the talking circles focused on questions and comments to BLM regarding the Supplemental EIS process rather than any specific topic. In particular, attendees expressed confusion

about how the EIS process is implemented and how decisions are made. Questions such as “Who will make the final decision in the Record of Decision?” or “How are our comments considered in the decision-making process?” were common, and a regularly voiced concern was that the individuals making decisions were based in Washington D.C. and were not present at the community meetings:

We can talk about how sheefish migrate and where they spawn and how much we are using now and using resources from the land. And so many research in this village. How whitefish migrate and when and where spawn and how much use a household can use. That is already documented. Why are we talking sheefish right now? You saying yes, it will be impacted. “Likely will impact” is really long writing. When we say negotiate, it is if this road destroys our sheefish, who is paying for that to get it back? How will people live? That is the question! I am independent in this. I try to get people to understand. I am not opposing. I try to get everyone a clear opportunity to understand. You can see it. Stop playing games about who you represent. Those guys delegating these tasks to a group like you need to be here. (Ambler Road Supplemental EIS Shungnak Talking Circle)

The large volume of technical information provided in the Supplemental EIS, the short timeline to review the information, and lack of adequate notice of public meetings or conflicts with other community events were other concerns voiced by several communities.

Attendees voiced confusion over the messaging from various parties involved in the Supplemental EIS process including that of the Alaska Industrial Development and Export Authority (AIDEA), BLM, NANA, Doyon, Northwest Arctic Borough (NWAB), Tanana Chiefs Conference (TCC), and a number of special interest groups. Suggestions included making a video with input from multiple parties so that communities know the agreed-upon facts of the Project, and emphasizing that BLM represents a neutral position at the public meetings. As one person stated,

All these different decisions by different people and operating in silos. There definitely could be better efforts and an education part. And consistent messaging that folks agree on. These are the facts of the situation. People just don’t understand. Mine versus road and various landowners and combine them to come together. And million different pieces of information (Ambler Road Supplemental EIS Kotzebue Talking Circle)

Meeting fatigue or hesitancy to attend meetings were discussed in multiple communities. Iñupiat *Ilitqusi* or traditional values include the avoidance of conflict and in more than one instance talking circle attendees identified that the public meetings (or talking circles) were not as well attended because of the desire by individuals to avoid the conflict brought by the proposed road project and inherent to the meetings where differing viewpoints were expressed. Going door to door was offered as a suggestion to not only address the lack of attendance at public meetings but also provide an opportunity for BLM to truly gauge the sentiments of the community, as some expressed that village leadership positions on the Ambler Road Project are not always reflective of community sentiments. The multitude of meetings regarding the road and mining in the Ambler mining district have been occurring for decades, and meeting fatigue also contributes to the lack of community participation. Occurring alongside the decades of meetings are the “new faces” that come to the communities as new mining interests come to the region or new employees replace once-familiar faces. The following responses convey the sentiment of meeting fatigue, avoidance, and new faces:

But with the way our people are very non-controversial a lot don’t want to come to a meeting. Going house to house works better so you actually capture people’s feelings. A lot won’t want to come to a meeting. I know that takes more time for each community. People coming around and

talking to people and going house to house and getting comments and submitting to BLM. (Ambler Road Supplemental EIS Ambler Talking Circle)

You people that come around and hear all the concerns for or against this road...every single person that shows up to these meetings, you won't be a part of the mining EIS. When you listen to us, we come in good faith to talk to you, hoping what we say makes a difference. Then we have to go through it all again with some other people. That is kind of amazing. It makes a lot of people lose faith that government is giving a [xxx]t, pardon my language. We have to jump through hoops to defend our home country, and as Inupiat people trying to defend our sovereign rights as Inupiat. We don't have much left; they took a lot from us. We continually fight stuff like this or fighting offshore drilling. It is so unfortunate. We end up with a chip on our shoulder. We have certain people that are angry. My aunts and uncles have fought for years and years and they are just exhausted. It is pointless and very disheartening. Government to government relationship we are supposed to have, it doesn't feel like it is even there. First time around they try to push this through, and lawsuit made you do it again to take people's comments. Boggles my mind that the supplemental we had to have, because the first time how do you know this is as good as it will get for this process, and how can we trust you have captured everything because you guys had to do it again. (Ambler Road Supplemental EIS Ambler Talking Circle)

Another thing that bothers me is how the tribes split to support the road, and that is not fair, and if you go around, a lot of the community is not in support. How did we flip? And people in villages hanging out with Trilogy Mine, and I don't want my cousin to be middleman, and that we [need to] have a solid lawyer that we trust, and figure ways to have a fair share, and not just clean beds and bring them food while others make billions. Tribes flipped without telling us, and we have people in our tribes meeting with the mine without us knowing what is going on. Can't say "Trust me bro." We need solid people that we trust to mitigate what is happening and give us a fair share.... I think we need to talk more about tribes. Tribal councils flipped. It goes on the news and says Huslia is for road and Allakaket for road. But people are not for the road by far. We found out on the news and that is not fair to actual tribal members....When you get an education, you can come back and sometimes when people say you flip, they say you don't live around here, and that is not what they told us when they told us to go get an education and jobs. You will find those that don't support the road, they don't want to go to the tribal council. They think there will be bad blood. If BLM walked around and talked to people a lot more will feel more comfortable about whether they support or don't support the road. That is something BLM should do. (Ambler Road Supplemental EIS Allakaket Talking Circle)

Several persons questioned whether the current Supplemental EIS process had considered an adequate range of alternatives, such as a transportation corridor to the Red Dog Port from the Amber Mining District, a transportation corridor to Nome, or alternative means of transportation (e.g., railroad, planes, barges, or dirigible). Others thought that a staggered approach of permitting a road without a permitted mine could lead to unauthorized use of the road without the patrols and security that would be present should the road be in operation by a mining company. There was also concern of the potential scenario of a road being developed and never used if mining deposits were never developed. As one individual stated,

The ROW is approved. Construction begins. Meanwhile no mines. It is all exploration so far. So the timeline for permitting for massive mines like that and you suggested up to 10 years and you have a road out there with very little traffic and not like during development phase but that would open up 211 miles of potential airstrip for whatever reason. (Ambler Road Supplemental EIS Evansville Talking Circle)

Other attendees requested that BLM take a step back and take a closer look at certain resources through additional baseline studies. In addition, attendees requested further inquiry into the capabilities of AIDEA

or mining companies, questioning whether AIDEA and the mining companies had the wherewithal or “track record” to develop such a large project. Attendees also raised ethical concerns regarding past practices of mining companies that were proposing to develop in the region. Because of this common theme that BLM take a “step back” before proceeding, many attendees were hesitant to discuss or offer suggestion for mitigation or requirements and conditions regarding potential impacts, as this might imply support for the Project:

A concern would be that in talking mitigation [it is as if] assuming that the road is going to go through. Just having this discussion, I do not want it to be construed to our congressional delegation that we are gaining overwhelming support [for the Project]. AIDEA telling people there is overwhelming support for this Project. Is going into the mitigation phase admitting that it is going to go, and we are going to try to protect as much as we can. I do not want it to be picked up like that by media or congressional delegation. (Ambler Road Supplemental EIS Evansville Talking Circle)

Support for the Ambler Road Project and or neutral positions were expressed more frequently in the public meetings compared to the talking circles, but in general, the majority of input during both the public meetings and talking circles discussed concerns over the potential impacts of the road, weighed the pros and cons of the Project, and/or voiced opposition to the Project in general:

Please take into consideration all of our lives that we depend on where we are and where we live. I know there is somewhere in there, there is a happy medium to coincide with mine and caribou, and I really feel like we can, and we don’t want to make it hard for elders and generations to get food they need to survive. (Ambler Road Supplemental EIS Shungnak Talking Circle)

I am really concerned about this Project. I am not sure if I am for it yet. I am in between right now. Maybe soon I will make my decisions. (Ambler Road Supplemental EIS Shungnak Talking Circle)

3. Physical Environment

This section includes attendees’ observations related to a number of physical environment topics including geology and soils, sand and gravel resources, hazardous waste, acoustic environment (noise), and air quality and climate. The most frequent physical environment topic discussed was that of water resources (see separate heading discussion below). Attendees wanted BLM to be aware that the region is experiencing increased erosion of river and stream banks due to more frequent high water events and thawing permafrost, which are making banks less stable and river channels wider. Attendees also discussed the impacts of thawing permafrost on water levels in lakes, causing some to drain out completely. Attendees stressed that the Project design needs to adequately account for permafrost and requested additional studies regarding that topic.

Climate change awareness seems slow. For years and years I would be scared to use that word, but then I do a talk in states and slide show, and they say have you seen signs of climate change. And I would start explaining willows [increasing in the area as evidence of climate change] and get blank stares...Trilogy Metals is behind the times and there is a catching up period where a lot of things haven’t caught up. Industry has too. There is a catch-up period where they need to put in their calibrations. Acceptance of climate change is coming. (Ambler Road Supplemental EIS Kotzebue Talking Circle)

Material sites would also need to be greater than originally permitted (11 sites) by the U.S. Army Corps of Engineers during the original EIS, with one individual from Kobuk estimating 35-40 material sites

would be needed. That person stated the Project should stockpile gravel for the maintenance that would be required after road construction and also for potential connector roads to communities. Several communities expressed broad general concerns over environmental contamination from hazardous waste. Others voiced broad concern over noise impacts. Often these impacts were discussed within the context of resulting impacts to subsistence users and resources (see discussion below under Social Systems).

3.1. Water Resources

Impacts to water resources were the most commonly addressed topics related to the physical environment. Many attendees identified the linkages between healthy waterways and healthy people and resources. Most attendees focused their discussion on flowing waters such as rivers and creeks because impacts to these waterways could have region-wide implications. The two most common discussion topics were that of increased erosion to river and creek banks and increasing observations of iron or other minerals seeping out into waterways and causing negative impacts to biological resources in the area. Additional discussion regarding water resources as they relate to habitat is under the Fish and Aquatics heading, below. Talking circle attendees worried that an ongoing increase in the frequency and magnitude of flood events posed a concern for Project culverts and bridges and overall road integrity:

Kobuk has been at breakup level in the fall time for so long that it seemed like the normal. Usually if it floods, it is rapid. A lot of water. Two strange water events. Makes me nervous about culverts and bridges. (Ambler Road Supplemental EIS Kotzebue Talking Circle)

We are getting high water events a lot more severe. Just last year alone there were two high water events higher than I have seen. The 1994 flood was epic. But just last year I remember [those events were] higher than previous 40 odd years [other than 1994]. It [should be] arctic, winter, and cold here, but that feels [warm] like I stepped out of the house in Girdwood and climate change is what that will bring.... Koyukuk drainage has a lot of rivers, the Alatna all the way to the South Fork and those tributaries. It is quite a swath of the Brooks Range. They are not local showers. It is a big front coming through. Guessing high [water all around]. Koyukuk [River] was high and John [River] was high. Beginning of September and end of August. We had to postpone our trip up to moose camp because it was so high. (Ambler Road Supplemental EIS Evansville Talking Circle)

We noticed a lot of climate change type information and even that some of my concerns with something like that is that since we are seeing more and more climate change, and the animals back there, and everything going on, even culverts to your road because of the spring melt and all of that--is that road going to be able to handle that? We have seen more and more snow than in a long, long time. Look outside, and we haven't had this snow for a while, and we don't get it until December and January and now several feet of snow. (Ambler Road Supplemental EIS Shungnak Talking Circle)

Attendees alerted BLM to increasingly frequent observations of minerals leaching into waterways and posited that road and mine disturbances could exacerbate and increase the amount of minerals being leached into the waterways. These observations were coupled with observations of increased potential harm to surrounding vegetation and microorganisms:

Have you flown around here in the summer? That upper region—climate change there is [resulting in] a lot of iron leaking happening now. Aluminum. And the water quality is down, so what happens when you start digging stuff up? What else will leach into the rivers? And that is a question I have. It is getting bad the last five years, the iron leach covers the rivers, and not sure what it does to [water] quality or fish. (Ambler Road Supplemental EIS Kotzebue Talking Circle)

Other thing I noticed was that in camp on north Huslia...and we could drink out of that water year round and you could drink water and it is crystal clear and tiny bug that squiggles like that, and it is really good water and [there are] little live bugs in there, and now last 10 years it is rust color to the ice and those lakes are leaching out and old organics are leaching out, and once it melts it won't freeze up again and when you get ice out the river it is yellow and you can't drink it and there is no more living things in it. Something causes it to spoil like and oily sheen. You can't drink it, nothing alive in it. (Ambler Road Supplemental EIS Allakaket Talking Circle)

More scary things I interviewed was a group that was studying a phenomenon called rusting rivers. Where water in the Brooks Range, so it is the research of Roman Dial and Patrick Sullivan, and this summer they took a crew to remote place in Brooks Range and fly in and dropped off somewhere, and hike 60 miles inward and find areas where they believe the permafrost thaw was creating dead zones where there was no fish. Patrick Sullivan described, he called it apocalyptic because look like ground was burned and water orange as a result of PH buffering, PH of 2 and electric conductivity of 5,000, and loaded with metals.... There are other subsistence hunters in the region that have told me of orange rivers and their concerns. Some could be attributed to a rust, a fungal rust from spruce trees. Some hunters are experiencing rusting, orange, like tributaries that flow into larger bodies. (Ambler Road Supplemental EIS Ambler Talking Circle)

Several long-time residents of the region had witnessed or heard of negative downstream effects from past mining in the region stemming as far back as the gold rush days and drew potential parallels to the Ambler Road Project and associated mining developments. One person suggested that BLM or AIDEA include design measures of bridges with tall side walls to help lessen the chance for vehicle tip overs and spills into waterways.

4. Biological Resources

This section includes a summary of talking circle attendees' discussions related to biological resource topics including vegetation and wetlands, fish and aquatics, birds, and mammals. Fish and caribou were the most frequently discussed topics followed by vegetation, moose and other mammals, and birds.

4.1. Vegetation and Wetlands

Vegetation topics during the talking circles primarily focused on subsistence resources of berries and medicinal plants, however, general vegetation topics were also discussed. These more general topics included observations of more vegetation in the region, particularly by residents of Kotzebue and Allakaket; concerns regarding invasive plant species being brought to the region; and concerns regarding impacts to lichens, which are a key food source for caribou. Several individuals noted that the timing and location of berry harvests have become less predictable due to their susceptibility to warmer temperatures, particularly in inland locations. This results in reduced harvest opportunities or increased costs and time to harvest adequate amounts of berries. As one individual explained,

Salmonberries. In 10 years there, we only picked two years. Because they are ready by July 14 normally. And we get there on July 10 or 11, and when we get there most of the time the berries are cooked white from the sun. No longer edible. But ones on the side of banks we go for [shaded]. That is how we stay afloat with salmonberries.... So a lot of berry pickers from inland are now coming to the coast. Or if they can't make that, thank God for Facebook, we can share and trade. It is just crazy what climate change is doing not only to caribou; it is our land and everything is changing. We need to let our people know that. A lot of people have it in our heads

that some white dude from Kentucky is getting a trophy. We can't keep that thought. It is global warming [not hunters] and what they need to know is our temps are rising two to three times faster. So, we are just like literally getting life sucked out of us. (Ambler Road Supplemental EIS Kotzebue Talking Circle)

Concerns regarding impacts of dust and contamination on berries and medicinal plants were also expressed by talking circle attendees. Communities on either end of the Project, such as Kotzebue (west) and Evansville (east), discussed the importance of medicinal plants that can be found along the corridor and the benefits that they provide to local communities:

There is a lot of tundra tea and stinkweed (wormwood). There are a lot of things out in the country we use for medicinal all the way to the tree sap. Everything from land. Little or big. The land helps us. Every which way. Whether we realize it or not. (Ambler Road Supplemental EIS Kotzebue Talking Circle)

4.2. Fish and Aquatics

As discussed above, talking circle attendees reported observations of increased erosion and slumping of riverbanks due to thawing permafrost and increased flood events. According to participants, the slumping of riverbanks increases the amount of sedimentation in the water and could potentially change fish habitat, particularly for fish more accustomed to less silty and more gravelly waterbeds. Concerns related to warming waters were specifically called out by a number of talking circle communities. According to attendees, warm waters can affect spawning habitat and also affect oxygen levels. Sheefish were identified as one of the most vulnerable fish populations that are sensitive to changes in habitat; salmon were also discussed as vulnerable fish species:

Just don't dig in the streams. Can't dig in that sediment, [it will] come down and those fish goes as far as they can and then before it freezes-up they come out. They go a long way. When they hurt the rest of the salmon, they hurt the other fish like grayling and whitefish and if not, little sheefish, they will die off. They eat little salmon too. Sheefish are predatory. I don't think it is stressed enough how important those spawning grounds are. (Ambler Road Supplemental EIS Shungnak Talking Circle)

I think huge ice wedge melted; [there are a] lot of slumps. Warm water and algae stick on gills of salmon, and they can't get oxygen and they die. Sheefish. That tall guy Bill talked about the sheefish trying to spawn up the Hunt River and cooler spring water and the water cooler than Kobuk is, and climate change having impact on these fish. Salmon and sheefish in particular. I think rest [of fish] are sturdy. (Ambler Road Supplemental EIS Kotzebue Talking Circle)

The vulnerability of key fish species in the region to changes in habitat prompted attendees to discuss their concerns regarding the proposed Project and potential impacts to these fish species.

[There is a] high incidence of accidents on Dalton Highway and lot higher volume...tremendous amounts of fuel. [Ambler Road] cutting across drainage after drainage...[it is not if] a spill happens but roll the dice and where. Spawning grounds are susceptible. This is not driving down the interstate. A pioneer road is a challenge. Driving the Dalton Highway with a vehicle is [difficult]. Heavy loaded rig takes talent and skill. Have numerous accidents and amount of energy...this is not the time for this kind of industrial growth. We as a nation and humanity need to spend money to reigning in our excesses. Our priorities are misplaced in a lot of areas. (Ambler Road Supplemental EIS Evansville Talking Circle)

Fuel, they have got lots of spills on the Haul Road already; it's a regular occurrence and the fish on that road has declined tremendously. There used to be lots of fish....Sheefish and whitefish are in some ways very resilient, they can go places that other fish won't go or can't go, and one thing is that a major spill could wipe [them] out... and I think they come always back to where they were born, so if there was a spill in the wrong place then it could wipe out...(Ambler Road Supplemental EIS Alatna Talking Circle)

A number of attendees believed that, with the ongoing changes and impacts occurring to key fish species in the region, the risk of further impacts from the Ambler Road Project was not worth the potential reward. As one individual explained,

If the salmon are hanging on to a shoestring, and depending on spawning grounds, [why] put them at risk [with road Project]? That is a risk I am not willing to take. There are other things that are driving that [change currently]—[We need to consider] science [studies] in the ocean and the warming oceans and how that might be impacting [fish]. (Ambler Road Supplemental EIS Evansville Talking Circle)

These concerns and impacts that are already being observed brought up a common talking circle theme of asking BLM to “step back” and look at the broad picture of impacts to fish. Attendees noted that fewer baseline studies had been conducted for sheefish and other whitefish species compared to salmon species, and requested additional studies for non-salmon fish species most likely to be affected by the proposed Project in addition to less-studied salmon habitat areas such as those for chum salmon on the Kobuk River:

Regarding the resource the recent concern, and this is coming from salmon because we monitor every fish that is coming into the Yukon, ...and right now, with the salmon crash, we are scratching our heads going “what the hell happened?” We don't know. So that's a cautionary tale about something where we have A LOT of information. The thing about the sheefish population, ... for sheefish and for whitefish it's much, much worse. We know next to nothing, we have no idea. (Ambler Road Supplemental EIS Alatna Talking Circle)

Yukon and Kuskokwim have kings and sockeyes and not in massive numbers like on the Kenai or Kasilof. On the Kobuk River, our primary salmon species is chum. The collapse of chum on the Yukon and Kuskokwim signals that the Kobuk is next. There are not a lot of fish counts or studies on the Kobuk River [because there are a] lack of people in this region. The Yukon and Kuskokwim get a lot of focus because [they] flow to the Bering Sea which accounts for 40 percent of world's seafood [which] comes from the Bering Sea. Big number. [There is] not a lot of focus on chum salmon and how the population is doing. You don't buy chum salmon [at the store]. You get sockeye and king. To most people chum salmon is dog food. Bu that is our only source. I have never seen a king or sockeye pulled out of the Kobuk River. (Ambler Road Supplemental EIS Kobuk Talking Circle)

4.3. Birds

Talking circle discussions also addressed birds but to a lesser extent than other biological resources. Attendees that discussed birds primarily focused on impacts of disturbance to migratory birds. Potential impacts included general disruption to distribution and migration patterns and concerns over contamination. Observations were as follows:

I hope that you guys would take a look at—I know there was a study recently released, migratory waterfowl nesting was interrupted by North Slope development. I think they also took a look at, it wasn't Red Dog, but it was a mining operation, and it seemed to be the noise and the activity, but

also the artificial light. And I know that is something that in coastal habitats is really well understood. The thing about this far north is that the season changes rapidly and the weather is severe, so if you could throw off the migration cycle of an animal, a bird, by a few days that could be devastating. That could mean death. (Ambler Road Supplemental EIS Alatna Talking Circle)

Fish and Game do it too. They land out by willow lake country, by the slough area, and geese would have a bunch of babies out there, and huge geese area, and last 5-10 years they had a tent and canoe and collared geese when molting and put stuff on them. We have seen them out there, and we found out about it, and now the geese left; they bothered them too much. They disturbed the environment and sometimes when figuring them out, you drive them away. (Ambler Road Supplemental EIS Allakaket Talking Circle)

Not necessarily [concerned about] competition, but the birds themselves. You could probably see how some of these birds would maybe become contaminated in the first place while flying back up; this is not the only development they would be encountering. Birds and waterfowl, they would land in any type of lake or water like that. I've actually seen birds in what we call our holding cells for our washeteria. They can become contaminated. We have heard about bird flu and that is a threat, but also waterfowl is a part of our subsistence resource diet. (Ambler Road Supplemental EIS Alatna Talking Circle)

One individual called attention to impacts to the smaller songbirds and drew parallels to impacts that would affect other biological resources and the interconnectedness of the ecosystem:

The birds, the little tweety birds, along the roads if you sample up and look at them that are next [and] closer to roads, they are always skinnier. The noise disrupts them so much they are stressed out all the time. If it affects all of them, think of all the effects to all the organisms that go through. We all live here and get affected even if it is just one set of something that gets affected, something eats that. Everything is connected. (Ambler Road Supplemental EIS Ambler Talking Circle)

4.4. Mammals

4.4.1 Caribou

As mentioned above, caribou were a major topic that talking circle attendees addressed in all communities. A primary topic of concern was the continued decline in the population of the Western Arctic Caribou Herd (WAH), including potential causes for the decline, and concerns that Ambler Road impacts will exacerbate the decline. Two primary causes cited for the decline of the WAH were that of climate change and sport hunters. Several attendees who discussed causes related to climate change attributed the decline to higher cow and calf mortality rates caused by icing events, delayed movements, and lack of insect relief habitat due to decreasing snow packs in the summer range. Local people are also harvesting more cows due to the delayed arrival of the herd during rutting season and the preference to avoid rutting bulls due to their poor meat quality. The following observation discussed the interplay between climate change and caribou mortality:

There are two reasons [caribou] population is crashing. Mortality rate of cows; when you have a higher mortality rate of cows it goes down. And also on calves. Bulls are doing great. Cow [mortality] can be explained by climate change. The herd is up north much later now and rarely come down in the fall like they used to, and it is not because of outside hunters. We have closed this federal area [to outside hunters] for a number of years because of low numbers and even when closed, they still don't come through. Ricky Ashby says it is because it is too warm. They

don't like bugs and warble flies and botflies and mosquitoes, and they go from snow cap to snow cap to snow cap to get away from flies. They won't come to bug country when it is warm, and climate change is keeping it warm in this area [lower elevations] and they [don't] come down until when it cools off. Caribou come down late into our country, like October 10-15 and that is when bulls start rutting, and we don't hunt bulls for food when rutting, and then as the herd decides to come down, we get the cows, and they are not rutting, and they are good meat. The take of cows has increased big time because they don't come through [earlier in the year like they used too when bulls were not rutting].... But [ADF&G] found calves were dying in the summer range. Why dying in the summer range? My theory is these caribou move from snowpack to snowpack and yearlong pack and climate change [is resulting in] no more snowpacks, and these caribou get in big groups like penguins because they get in big aggregate groups. Calves get separated from their mom and when separated from mom they lay down and don't get up, and then eagles, ravens, foxes, bears, and wolves will get them. Calves are getting separated. (Ambler Road Supplemental EIS Kotzebue Talking Circle)

One individual discussed how even a seemingly small change related to disappearing hummocks on the tundra due to thawing permafrost can have a large effect on caribou habitat and abundance. According to this individual, caribou can more easily remove snow from hummock tundra to access vegetation underneath, but when those hummocks are no longer present, the caribou have a harder time accessing their food source:

It was high humps alongside of lakes and those wintering caribou would paw those high humps and [would] snow fall off and they could get to lichen and over the last 20 years the lakes turned into meadows, and those humps that grow up and permafrost grows up and pushes humps up, and once permafrost melt the humps turn flat, and the caribou don't want to come around no more because caribou moss is not as good, and they can't knock snow down, and that has affected our wintering herds. (Ambler Road Supplemental EIS Allakaket Talking Circle)

Many discussed the impacts that sport hunters are also having on the caribou both in terms of overall abundance and in regard to distribution impacts. Several individuals discussed an increase in the overall numbers of sport hunters coming to the region to harvest caribou. They attributed the increase in hunters due to the influence of social media. Others reported sport hunters having better means of travel and funds to travel north into the Brooks Range above the local communities in the region, and disrupting the first herds that were trying to move south, thus diverting the caribou from the communities' traditional hunting grounds which are based on thousands of years of knowledge regarding the annual migratory patterns of caribou near their community. The impact of sport hunters to caribou (and moose) and the local communities were discussed as follows:

It is 100 miles from Huslia to that Ambler Road. When we hunt, we move around a lot and so there is a lot of deep knowledge that we use today from those people that moved around. We might not walk, but we use snowmachines and those caribou are important to our culture. [The caribou] slowly started to go away over the years. The numbers are going down. Hunters dropped in. Sport hunting is becoming way more popular. Internet and pictures of antlers [are attracting people to the area]. Advertising, and [people] travel all over and people make money, and more hunters are coming in I think these days.... And a guy from Galena would drop [hunters] down. It is a guy with a conex full of antlers, and he would drop hunters and they cleaned out those moose and [there are] no more moose in that valley. No more moose; that guy from Galena dropped them [hunters] off. He didn't take every single one, but he disturbed enough, and then they left. They [moose] will not hang out [in one place] till they all die [due to hunting]. (Ambler Road Supplemental EIS Allakaket Talking Circle)

At our meeting [he] recommended we need to sue the State of Alaska or federal government because they are not doing anything to protect our people because of the disruption of the migration of our herds. But what we saw in Jim Dau's presentation is that collared caribou can be disrupted up to two months if the first herd doesn't cross easily. If no problem, the rest will go. If disrupted first herd, they will disrupt the ones behind them. [They are] coming in November [but used to come earlier]. (Ambler Road Supplemental EIS Shungnak Talking Circle)

The impacts of roads on caribou movement was also emphasized during talking circles. Information provided by attendees stated that roads can affect caribou migration in a number of ways including overall avoidance, delayed migration, or fragmented and sporadic migratory events:

2015 year was the second worse bouncing year, and we [Delong Mountain Transportation System (DMTS) trespass monitoring group] were there till October first, and we make sure the lead caribou cross. Teck was getting pressure; ..., and Kivalina was like, "Let us on the road", and we said we have to let the caribou come through. Jim wanted 10,000 to come through and 2,000 came through. So anyways after 2,000 crossed, they pulled us. NANA pulled us. They said, "you come home," and the trespass group came home. And I talked to Brandon the biologist, and he said, "dude, it was the second worse bouncy year. You held back so many people for so long, and it was tons of people on road [after NANA pulled the trespass monitoring group], and trucks on road, and hunters on road..." I think a study will be important for that. [That is a] huge issue impacting us in Kotzebue for years and years now. (Ambler Road Supplemental EIS Kotzebue Talking Circle)

They have been collaring caribou for the last 40 years. They watch how they cross the Red Dog road. One came to road this year and turned back and finally crossed, and it was shot. One of the first ones. We know they were hesitant when they came up to the road. Biologists five years ago said they go to the farthest bend to the south where they cross the road. (Ambler Road Supplemental EIS Shungnak Talking Circle)

I think something that is really fair to ask in the Supplemental EIS is that when you hear from people in the impacted communities, and they all say we used to have a very predictable caribou migration and then they put in the Dalton [Highway] and then we have never seen them since. It's totally life altering. I don't think that has really ever been investigated or gone into. I saw in one of these Supplemental EIS [inaudible] where it shows that the caribou population started tanking just coincidentally right after [the highway was built], and I think it was even used to bolster the claim that we don't know why caribou populations change, but it was kind of funny because you could see that, the construction date of the Dalton [Highway] it just... I mean that deserves, clearly it's true, but it deserves to be recognized through western scientific means, too, that that area has already experienced a construction related crash of caribou and migration. (Ambler Road Supplemental EIS Alatna Talking Circle)

Also discussed was the topic of fragmentation of the herd, which can affect calf mortality if the fragmentation makes caribou less able to defend against predators. One talking circle attendee summarized their hypothesis of how climate change and road impacts could affect the abundance and availability of caribou and the access of local people to this important resource:

A hypothesis of why this happened is that it's because they eat themselves out of house and home, and they know that they shouldn't do that and so they move to other places. If there is a road in the way of some of their habitat, which is not well mapped on here, it's going to be a problem for them because they are not going to have alternative routes to go on and ways to supplement their feed. This is going to be extra problematic as we see the climate changing and as we see permafrost changes. Another issue with caribou is that it's really hard when we see these,

and maybe some of our community members can speak to this a little more, as we notice the changing landscape on the ground, you will see these pockets develop that are basically tundra surrounded by moats. And they can be pretty deep, you know they can be taller than I am, and it's just full of mud. Caribou have a really hard time passing through that area and I don't know what that is going to look like in the coming years, especially with climate change. So if we are going to funnel and force the caribou into certain sections between Red Dog Road and Ambler Road, to squeeze through these areas, if climate change also affects these areas in a way that they become essentially impassable or they become so calorically expensive for the caribou to move through these areas that they die in the process, that is really going to affect all three--availability, abundance and access issues--because a population really is just not going to be able to handle that kind of change. (Ambler Road Supplemental EIS Alatna Talking Circle)

4.4.2 Other Mammals

Caribou were not the only mammal that talking circle attendees discussed. Other mammals of concern included moose, Dall sheep, hares, seals, and various predators. Several communities identified that freezing rain events have not only affected caribou, but Dall sheep as well. Climate change has also affected hare population patterns due to increased flood events. Whereas hares typically have a population cycle of every seven years, massive flood events have been killing large numbers of hares that inhabit willow habitat along banks of the rivers. This has allowed the environment to sustain a hare population rather than leading to over-foraging and massive die offs, as traditionally occurs in a seven year cycle. The moose population has also been observed to be in decline according to one individual who stated that moose numbers are declining due to overgrazing of willow habitat and predators:

Used to be more moose but they have declined as well. They are cyclical. The willows that they browse on are cyclical and willows emit acidity in their bark as a defense mechanism, and rabbits, and moose, and ptarmigan eat the willows and they [willows] get bitter. And then moose move on to a different area.... A lot of grizzly bears and their numbers have spiked dramatically in this county. All they think about is getting calves. Not one but 20-30 calves per bear. They won't quit and they will get that sucker. They don't stop. (Ambler Road Supplemental EIS Kotzebue Talking Circle)

One individual said that impacts to caribou have resulted in focusing more on moose harvests:

Last year I had to settle for moose because we didn't get any caribou. I worked in Coldfoot for one hitch during caribou time, but with a job I did send \$500 for gas money. Last year we had to basically, a lot of us upriver families, had to depend on and settle for moose. Because they [caribou] didn't come. (Ambler Road Supplemental EIS Kotzebue Talking Circle)

Discussions regarding the Ambler Road Project centered around impacts to apex predators including land-based predators such as wolves and wolverines, as well as ocean-based predators such as seals, that are downstream from the development area. Several people noted that apex predators could be a focus for potential contamination studies in the future because they are the top of the food chain and accumulate toxins from organisms lower in the food chain. One person discussed how seal oil and seal meat is a widely shared resource throughout the region, including inland communities near the road, and thus potential downstream impacts to bearded seal and other seal species in the Kotzebue region could affect a wider range of communities:

You look at Doyon region, they struggled to get the traditional foods they used to have and then you cap off the top of them if that road goes through. And it is scary enough for us because it affects Kobuk River and a lot of villages on that river. I am at the bottom of the river and lake [system], but the food we eat and fish go up that river. The bearded seal that are in there; first

year they go along the Kobuk Delta and get all their foods that they eat at the Delta of the Kobuk, and that is our main staple at the bottom, and we share our dried bearded seal with everyone. Any village can tell you they will have family members that can send what we call black meat, and we know we will share. Bearded and spotted seal are already on the endangered list. (Ambler Road Supplemental EIS Ambler Talking Circle)

For trapping species, a cleared road corridor will attract predators because other animals are drawn to the corridor for ease of movement. This affects prey abundance and redistributes predators, directly affecting trappers when furbearers move away from previous areas to concentrate along cleared road corridors where people will not be allowed to trap. The concept of concentration of trapping species along the road corridor was explained in this way:

Just the existence of a road becomes a superhighway for predator travel, and animals will travel the path of least resistance. Predators will not get hit, but they will stop [at the road] and [that will be] super damaging to trapping [reroute predators along road]. Predators will start to thrive in greater numbers. Other animals will struggle. They will not let you set a trapline on the ROW. It creates an imbalance that cannot be cured. (Ambler Road Supplemental EIS Evansville Talking Circle)

5. Social Systems

This section includes attendees' observations relevant to social system topics including land ownership; transportation and access; socioeconomic; environmental justice; subsistence uses and resources; and cultural resources. The most frequent social system topics discussed were socioeconomic, environmental justice, subsistence uses and resources, and cultural resources.

5.1. Land Ownership, Use, Management, and Special Designation

Discussion regarding land ownership, use, and management were solely focused on concerns over road responsibilities, the possibility of transferring road ownership to the State of Alaska, and concerns regarding additional developments springboarding off of the road. Many individuals expressed fear of the road becoming public and based their concern on what they considered to be a parallel in the history of the Dalton Highway. Others worried that even if AIDEA kept the road for industrial use only and intended to reclaim the road after mining development ceased, other landowners of the road would not reclaim the portions of the road that occurred on their land, leading to more road development in the future. Others voiced concern that the Ambler Road would facilitate mining developments in other areas along the road and not just within the Ambler Mining District. Additional discussion of land ownership, road use, and management issues is included in the following sections as they relate to access, socioeconomic, environmental justice, subsistence and cultural topics.

5.2. Transportation and Access

Transportation and access topics included safety issues, impacts to existing transportation networks, and concerns that potential benefits in access for local communities would not be realized. Several attendees discussed the challenges of trucking in Alaska's Arctic environment. Drawing on experiences from working along roads such as the Dalton Highway or the DMTS from Red Dog Mine to the Red Dog Port, attendees identified a number of hazards that could lead to potential impacts to the environment particularly from any spills or wrecks of trucks transporting ore and hazardous supplies and chemicals. The lack of skilled drivers for large trucks was also raised. For some people, the exploration of mineral deposits in the Ambler Mining District is already creating transportation issues to the existing airline

infrastructure, with mining companies and related contractors using local commercial airlines (e.g., Bering Air) to transport employees, resulting in a lack of available seats for local people. While some acknowledged there could be a benefit to local communities if the proposed road allowed communities to bring in local goods at reduced rates from current shipping methods, others questioned the feasibility of communities gaining access to the road to benefit their communities, many of which are located many miles from the road corridor and the likelihood of their community to be able to design, pay for, or build a connector road to the Ambler Road. As one person stated,

I think that it is one of the big policies of the conversation that happens is that any time there is talk of there being an access benefit [inaudible] it's not achievable, it's \$4 million per mile so for Alatna that's 260 million dollars away from ever connecting to this road. And the impacts of the industrial development would so greatly damage the resource, I just don't see it. (Ambler Road Supplemental EIS Alatna Talking Circle)

Additional discussion of transportation and access issues is provided below in other sections as they relate to socioeconomic, environmental justice, subsistence, and cultural topics.

5.3. Socioeconomics and Communities

Of all of the topics addressed in the talking circles, socioeconomic was most frequently discussed in the context of potential benefits that the Ambler Road Project could bring to communities in the region. Common economic complaints raised by attendees included the high cost of living in rural communities for a multitude of goods and services, including fuel, housing, flights, ammunition, food, vehicles, and so forth. Phrases such as “tired of paying \$18 a gallon for fuel” were frequent. Several attendees stated that economic hardships in rural communities juxtaposed against the lower costs of more urban areas such as Fairbanks, Anchorage, and the Mat-Su Valley were a real concern to community leaders because families and individuals moved away due to the high costs. Acknowledgement of the potential economic benefits from the Project included statements such as:

Not a lot of our people are miners. It is not part of our repertoire. [It is] not like the tech center has a mining class. We are not going to get those high-end jobs until we set up training. There were 50 to 70 people last summer who didn't go to work. Trilogy said no more exploration if the road thing is looking [like it will not be permitted]. No exploration and no jobs. Ok man, how does that impact [my] sons? There are no other jobs there [even for cooking or janitor]. The cost of goods—Ambler is \$18 a gallon and NANA has NMS, a commercial company. NANA can go and get food and fuel for communities. What will the cost of food for them and fuel be? Much cheaper. Can they bring broadband to those villages, can it come along the road? If the road is near Oogoluktok Creek they get all that energy from [hydro project]. (Ambler Road Supplemental EIS Kotzebue Talking Circle)

Last night I said I am not for or against the road; I am for people. I am not paying \$18 a gallon. Maybe they [Upper Kobuk villages] want it because they are tired of paying \$18 a gallon. Cost of stove oil, there is a diesel shortage. Big question is can subsistence and development co-exist? The Arctic is the last great place to do development, right? Can it coexist? I think with Teck, with our region, that co-existed very well. (Ambler Road Supplemental EIS Kotzebue Talking Circle)

The topic of “missing out” on potential benefits was raised as a potential reality as attendees from at least one village in the region recalled having opposed the Trans-Alaska Pipeline Project and then being excluded from benefits associated with the Trans-Alaska Pipeline. Others wondered whether the economic benefits or “perks” to communities from the Project would be fully realized in terms of reduced cost of goods such as fuel. The benefit of jobs was realized as another potential economic benefit, but

even these benefits were questioned by Talking Circle attendees. Attendees stated that most jobs that come to individuals residing in the region are low paying entry-level positions that do not offset the impacts of the Project.

Co-stewardship and co-management are important. I hear this and I don't want jobs monitoring traditional land. Indigenous people don't need crappy jobs. They need time and space to heal. My children will be overqualified. We don't need this [monitoring jobs]. That is not a future I envisioned for my children, unless [there is a] co-management structure and right of tribal government to say no. (Ambler Road Supplemental EIS Evansville Talking Circle)

Based on experience with the nearby Red Dog Mine, attendees also observed that those who do secure jobs in the mining industry often move away and therefore the benefits are not being realized at the local community level. As one person explained,

I try to ask at NANA meeting how many that have jobs at Red Dog actually live in village. All the ones that work and are educated move somewhere cheaper. They are off in Anchorage or Wasilla. More than 50 percent of our shareholders live not in region. But they get to help make decisions about what happens in the region where we live and pay a high cost of living and hustle to making a living and do subsistence and send them their box [of subsistence foods]. (Ambler Road Supplemental EIS Ambler Talking Circle)

Broadly, a number of attendees voiced their concern that economic benefits (even if realized at the local level) will not outweigh potential impacts from the road and mining development:

To some other people it is money, money, money and for some of us it is how we live and are born and raised, and I can't go for money, money, money, and I am perfectly happy with the way I live, and I don't need that resource [money]. (Ambler Road Supplemental EIS Shungnak Talking Circle)

One thing I considered with this is I have four boys, and someday they might have kids, and we have all been poor and hungry, and we survived because of our subsistence. That is in jeopardy. If this goes through when they take from the mine and haul it across the roads, and they're all done, what will we have left? What will our future generations have when [we are] gone and old? We are already losing so many that are not learning subsistence and the importance of protecting our lands and animals. Being stewards like our ancestors. I understand [there are] hardly any jobs. Up here you have such high costs of everything, but like [individual] said yesterday, we have made it this far with our subsistence. People have fought to protect our subsistence rights. (Ambler Road Supplemental EIS Shungnak Talking Circle)

It is a strong argument because you do need money for subsistence. There are still people willing to pay those prices to not have that road. They will pay \$15 a gallon to provide for family and they would choose that over possibly lowering cost of living. That is a powerful message, I think. They don't want the road no matter what they pay. (Ambler Road Supplemental EIS Ambler Talking Circle)

There is always going to be a lack of employment and that is how the NANA people got it going, they have got it made, and then there is some progressive tribes within, in our own area that are probably going to go pro [road], and they think that they could get their people trained and get involved and get more employment and stuff like that, which is great, but then again it has got to come from inside the person to actually get educated like you folks sitting here at the table, and make use of their opportunities. But not everybody is born like that. Some of them are still going to be wandering downtown in Fairbanks or anywhere else, and not look forward for what they want to do, and you will see the social and economic impact, and that is where we are going to be

stumbling around and the road will be right there, and we will be robbed again and it won't be the first time that is happening. It's going to happen all over. (Ambler Road Supplemental EIS Alatna Talking Circle)

Looking farther into the future, a final concern regarding socioeconomic (and subsistence) topics was that the road could eventually lead to non-rural status of communities located along the road corridor if it was not reclaimed, and that there could be resulting socioeconomic and subsistence impacts from such a change.

5.4. Environmental Justice

Environmental justice topics were a key focus of the talking circles. Past development in Alaska has resulted in a number of substantial generational impacts to Indigenous communities and people, and talking circle attendees had ample examples of past injustices that they feared would be repeated with the proposed Ambler Road Project. Topics included the influx of outside workers to the region and the many societal issues that come with that influx. Based on previous experience with other roads in Alaska (e.g., Minto Road) these impacts included murder of Indigenous people, sexual assault, increased availability of drugs and alcohol, food security, degradation of the land and camping areas, and inability to enforce traditional tribal land management practices. Drugs and alcohol were one of the primary topics discussed, with attendees fearing an increase in the availability of these substances in communities that were already grappling with these issues:

Mining to me is the most scary thing, and I know what that mining in Bornite did to me, and I saw influx of alcohol and change them from [being] loving and caring people to [having a] social illness. Big impact. Once you get in that addiction, it hurts our people. Every one of you know northwest Alaska has the highest rate of social illness for the longest time. Kotzebue is one of the most dangerous places to live in. (Ambler Road Supplemental EIS Ambler Talking Circle)

I was trying to think of how to find a way to address it, but my biggest concern about this road is about drugs and alcohol. Last year, from, I can't remember when, but we had about a week's search for two teenagers. One didn't make it and the other one we found barely, and he was barely alive, but he made it. And I want to just, like, ask how could they be sure that the security for drugs and alcohol [will be adequate]? (Ambler Road Supplemental EIS Selawik Talking Circle)

Women and children were seen as particularly vulnerable to sexual assault and murder due to the influx of outsiders and associated social ills:

One of my concerns is the women that will be at risk. My mother was raped and murdered. She lived in this region. I was in Kotzebue when she got raped and murdered, I was ten. This is the type of stuff that mining can bring to our women. How do we protect them? How do we protect our women to not have this type of thing happen to them?... I know Red Dog is doing a great job of protecting women, but this will be so much bigger than Red Dog. NANA had bigger importance with Red Dog and [there is the] potential to have so much more mines, that we may not have as big a voice and our women not as protected like at Red Dog. If they open the road it brings in more drugs and more substance abuse. (Ambler Road Supplemental EIS Shungnak Talking Circle)

When it comes to fishing and hunting, I work for them to teach them. Every generation is less and less and the way I see this road is another big hurtful impact to our culture that we are already losing. Not just with food. But with drugs, because you know people will go on that road and carry drugs in. I am talking about drivers, dude. These kids will be raising themselves like I had

to raise myself. They will deal with traumas, molestations, drunks and drug addicts ten times worse than now and then they have to learn how to be adults and heal from that and a lot won't. It will compile a cycle of abuse. I have been working so hard to be the change for my children. So they will never understand what I went through. (Ambler Road Supplemental EIS Ambler Talking Circle)

Food security impacts were also on the minds of talking circle attendees. Impacts to food security focused mostly on impacts to subsistence foods, particularly caribou which are a mainstay of the regional diet and a primary source of feeding families that may be faced with food hardship.

Our caribou is our prime rib. We be real concerned about our caribou. We know it is going later and later. We Iñupiat are patient and wait for them. When it comes it comes. If it don't come, then we have problems, and people go hungry. You will hear it on VHF if the family can't survive. They will say, "We have a family in need," and that is all they say [and they are given caribou]. (Ambler Road Supplemental EIS Shungnak Talking Circle)

Others spoke on the inequities and conflicts between federal government law and tribal law as environmental justice impacts. From a longer and broader perspective, attendees felt that this Project could repeat past injustices and continue a cycle of exploitation of Indigenous communities, leading to loss of culture and identity. Two individuals expressed their concerns regarding the longer-term impacts as follows:

I see that a lot with tribal land management [not being able to be enforced]. Abandoned resource exploration roads. The reality is there is jurisdictional disagreement for those that should police it and even if we do the investigations, we can't get prosecutions. I also wanted to make mention of the way this type [of development] adds up to bigger picture to go hunting and teach children to be able to be Indigenous. The western world offers an alternative rife with stereotypes and horrifying statistics. You don't want to bury your children. You want them to exist and be proud of who they are. These projects are a practical impediment to that. People are trying to heal from mission type encounters, and they took your mom at 10 [to boarding school], and the story of coming home. Our young children are in an effort for language reclamation. Our son has never seen or caught a king salmon. [Our] language, with forty terms so specific and experiential, and how do you teach them where they can't access that [king salmon]? That is why you are hearing so much about what this was like in the past and fight to recover it, and reclamation of communities and lifestyle. How do you do it? Language with no word for a "mine" and 40 words for conditional based sheefish. How do you hold on to a world that can't include these things? (Ambler Road Supplemental EIS Evansville Talking Circle)

I hate to use this word but genocide. I see this road as genocide against us. There is nothing that enriches us. It is taking from land and destroying land and how are animals and us supposed to cope with that? We can't. Animals can't. They can't speak up and fight against that. They can't stop that triple seven coming down that highway, stop that excavator or dozer. Once that land is ripped up and torn apart there is no fixing it. Yeah, you can grow vegetation and plant trees and cover scars. Those plants won't be the same. Never be the same. (Ambler Road Supplemental EIS Ambler Talking Circle)

5.5. Subsistence Uses and Resources

Across Alaska, subsistence is an integral part of Indigenous communities' way of life. Subsistence meets nutritional, spiritual, material, and cultural needs and talking circle attendees were keen to express just how impactful the potential Ambler Road Project could be to not only subsistence users, but also subsistence resources. Primary discussion topics included impacts to various subsistence resources, access

from outside hunters, effects to spiritual and emotional well-being, and a lack of true local involvement in the Project. Impacts to subsistence resources are discussed above under biological resources, but in general residents focused on impacts to caribou and fish because of their wide distribution and migratory patterns that could be impacted due to the linear nature of the road and the potential for downstream effects. In addition to the physical presence of the road itself, attendees discussed potential impacts of noise from traffic and construction on wildlife resources. While some acknowledged that resources may not completely avoid the road, they stated that disturbances could affect the predictability of knowing when resources will be available in traditional hunting and fishing grounds, and change local residents' hunting patterns. As one person said,

I think roads are a detriment to access to subsistence resources, they change the traffic, they change the predictability [inaudible] Native hunters aren't road hunters, they are real hunters. (Ambler Road Supplemental EIS Alatna Talking Circle)

Several individuals emphasized that subsistence resources are already being impacted from other sources such as climate change, making these resources even more fragile and susceptible to potential road impacts.

It is important to highlight that when you hear us talking about where we used to go here and there, that there has already been things impacting abundance and population. One, it is important to keep memory of these places, but two, [in order] to close the colonization gap and teaching them to return to that lifestyle, and the scarcity and impacts of climate change which are reflective of government to respect ANILCA rights. Climate related events. They are having to travel farther. (Ambler Road Supplemental EIS Evansville Talking Circle)

Outside hunters utilizing the road was one of the most frequently voiced impacts that residents were concerned about, despite assurances from AIDEA that outside hunters use of the road would be prohibited. As with other topics, attendees drew parallels to impacts resulting from the Dalton Highway as the basis for their concern over the Ambler Road saying,

When they developed the Dalton Highway they said for commercial use only, and now they opened it up for all people to traverse up and down this road, and now we are talking about Ambler Road and they are probably looking at commercial again, for transporting just what they need for the Ambler Road for development there. How is this going to be feasible for them to say this and see what they are standing on. Looking back at the nation that we grew up with the United States we look at how many darn treaties they make with different [Indigenous] people throughout the lower 48 and all these ones are broken. And it's similar to the Dalton Highway, and how [name] was just talking about outside hunters which is what I'm trying to follow up on. If it's going to be developed then how can this road be controlled, and making sure that not everybody is just popping in and out and we wouldn't know who they are. Then looking again at the drastic human nature that is going on currently throughout the world and throughout the states now. We see how many dumb ass is shooting people, and then again people popping up left and right [in our region] just because they think they are going to be getting away from the lower 48 and get away to Alaska. Again, how can we control the road once it is going to be developed? (Ambler Road Supplemental EIS Alatna Talking Circle)

The added pressure of people coming into the area has impacted people looking for moose. [It was] warm out and really high water and he went through 100 gallons of gas and in this neck of woods it is \$15 a gallon. Families are spending huge amounts, and they ran out of fuel in Allakaket when people were going out hunting. This is people with new four stroke engines that are much more efficient. One hundred gallons of gas and no sign [of moose]. (Ambler Road Supplemental EIS Evansville Talking Circle)

If we were to build a road, there is hardly any room for them now to hunt on the Haul Road. [There are] 20,000 soldiers that want to go hunting. They get a right of way to go hunting. If we build a road, they will come to this road. By Kogoluktuk we know they will hunt. That will be coming. If you can protect that on this Project, that is all we are asking for. (Ambler Road Supplemental EIS Shungnak Talking Circle)

Material and nutritional concerns regarding subsistence were not the only ones voiced. Many attendees focused on the spiritual aspects of engaging in subsistence and the mental and emotional benefits of doing such, and worried about possible impacts to mental health and overall well-being. Subsistence sharing of foods is a key value and component of subsistence that residents also voiced concerns about. Concern for incremental loss of traditional lands, a decline in religious and spiritual connections to the land, and declining ability to engage in traditional activities due to development were frequently repeated in talking circles. Attendees expressed the following regarding the topic of spirituality and subsistence:

God's honest truth when I saw what Reed River looked like all my problems went away for the moment. I felt at home, and I felt at peace and felt like I was doing something. The most healing. I have traveled a lot. Reed River has got to be the most beautiful spot in the world. No people, no nothing, mountains around and pretty beautiful colors. That is what makes me want to lean toward opposing of the road. Because it deals with all of our people from inside out. Right. When you go berry picking, you think about all the things you can do better. Letting go of all the worldly things affecting me. It is a place where I go, and it is just sorting out my thoughts. Sort out my life. Invisible therapist. What our nature provides. Whether out on loop road or Reed River or Jade Mountains. The land has that power to keep us whole as a person. I think. Once that land is disturbed then we get disturbed. (Ambler Road Supplemental EIS Kotzebue Talking Circle)

I'm just getting to the fact of how important subsistence use is and how my people are different in my community and how we are so strong and communal and so giving, and we need this subsistence because it will keep us going. (Ambler Road Supplemental EIS Alatna Talking Circle)

I still pick berries because I see the happiness of those that I give [berries to]. I don't know how to explain. It saves our soul with happiness and peace when we give. (Ambler Road Supplemental EIS Kotzebue Talking Circle)

We [were] raised with grandparents hunting and fishing and feeding families and giving and if someone needs something you helped them, and they help you, and go out in ocean. And I married a white man, and I have half breeds that I have to teach how to hunt seals, and I learn how to hunt seals and know my country again as an adult. This time my soul came back to me, and my husband realized at that moment he could never take me out of Kotzebue. To me it is a very spiritual soul type of feeling that I hope my children feel. (Ambler Road Supplemental EIS Ambler Talking Circle)

Don't forget we are the poor people. We say poor in the context of what we have, but rich in knowledge and the spiritual realm is the most beautiful thing you will ever have in your life. Money is good and needed. Yes, we need gas. Do the least damage to lands and waters. Four years I spent in Lower 48. The central part of our concern is that food is shared to elders and others and is satisfying to us and is a human life connection. It is a spiritual connection. (Ambler Road Supplemental EIS Ambler Talking Circle)

Working along road [the spiritual side is so sad]. We can't really do anything if our spirit is broken. That is just like cutting me in half and expecting this side to keep walking. But I just

wanted to give voice to not all of our people but those who are like me. (Ambler Road Supplemental EIS Kotzebue Talking Circle)

Talking circle participants identified Project engagement concerns including a lack of consultation regarding road design, the importance of scientifically defensible baseline studies, and concerns regarding the subsistence advisory committee put in place by AIDEA as a result of the previous EIS. Concerns regarding the subsistence advisory committee included the way in which individuals are selected to serve on the committee, the committee having a pro-road bias, and AIDEA exerting excessive control over the proceedings. One individual expressed their concerns regarding the subsistence advisory committee as follows:

AIDEA does have Subsistence Advisory Committee. It is a farce. It is not a subsistence-based forum. It is jobs and pro-road format and that is all they speak about. I am an outlier. I derail their conversations. That is pretty much development of opportunity for employment. It is tough to live in these villages because it's tough to earn money except for seasonal work. Limited. We rely more on the subsistence lifestyle to supplement the food shortage. It is expensive to fly and buy food. (Ambler Road Supplemental EIS Evansville Talking Circle)

One participant suggested that the subsistence advisory committee should be comprised of Tribally-vetted representatives who have real decision-making power and not just an “advisory” role, but one grounded in co-stewardship. This organization was envisioned as being able to function independent of AIDEA. Lastly, several communities looked further into the future and provided comments on their apprehension for mining related infrastructure including a tailings dam and other contamination pathways that could result from the eventual mining activity. Even the presence of trash as a result of Project activities was seen as a contamination pathway and in direct conflict with Indigenous values of leaving no trace on the land. Finally, the talking circle attendees discussed wanting more details regarding how negotiations would unfold for addressing impacts in real time should the Project move forward.

5.6. Cultural Resources

The final topic regularly addressed in talking circles centered around impacts to cultural resources. Discussion ranged from concerns regarding specific sites, such as Eagle Rock near Evansville and Avataraq near Kobuk, to culturally important rivers, such as Reed River, and larger landscape-level concerns. Comments regarding specific sites included the following examples:

My grandpa was almost 100. He always wanted to go up Alatna to his sheep [hunting area]. '96 I came up here in March and was bringing caribou from Indian Mountain and caribou meat. He thought it was August. He gets up and takes tea and says “You ready?” I say, “look grandpa it is March.” He wanted to go up to his mountain. Right where the road will collide. That is where he [would] start from and spread out. It is a good gathering spot. At the mouth of Malemute. Right by John's place. They gather there to split up into groups and all the tributaries coming into the river. Up there the creeks are closer together and they would hunt and split up and meet up at Unakserak [River]. That is a big smoke house. They would fill it up and make a raft and start floating back home before the ice come. (Ambler Road Supplemental EIS Allakaket Talking Circle)

Because my family ancestors, they had camping areas near the lake. Avataraq on the upper Maniluq. East side. They walk there to hunt caribou certain times of the year. (Ambler Road Supplemental EIS Kobuk Talking Circle)

There is one place called “ahna-sigh-uh” they say there is a very large smokehouse. I have never been there. They used to fill that smoke house up with meat. Then they would build rafts and

bring the meat down. They made these caches, and there is a certain way that they made these caches. I never learned this, but they are made out of poles and some were made with rocks. The way the story goes is that they built these caches so well that even a wolverine couldn't get into it. And after it froze they took dog teams and they went and got that meat and they gave it out to everybody in the village. That is how our people took care of each other that's how we lived. (Ambler Road Supplemental EIS Alatna Talking Circle)

Historically, [Eagle Rock is] a prominent feature on river to Coldfoot. [It is located on] my grandfather's allotment that he chose roughly 6 to 7 miles upriver from us here. It was always a vantage point, and the crossing will be 1.5 mile upstream and it was always a historical area to observe the river when mining and gold rush days [occurred] for Wiseman. It was always a hunting vantage point. Always eagles and peregrines that we can watch and see what they are going after. Similar to the Mesa Site. It was a used place when I was a kid. Grandpa had trails all over on his allotment. Since then it has been overgrown and was protected. As a kid I remember everyone would go up river out of town and Waynes father and mother and there would be 15 or 12 people and several boats all go up river and getting out of Bettles and away from generators. A couple people [in meeting last night] mentioned being out in that country and as a tourist that goes here they are blown away. To go out there and listen to silence and nature. You hear so much more. That is the feeling and connection that Eagle Rock has given to Evansville. Everyone use to go up there late 70s and 80s [for] big community events. That was a big thing, and go to Eagle Rock, and have cook outs and hang out there with family, and then a lot of people would bring canoes and float back to here. [It is important] recreationally and for connecting back with our ancestors too. Pretty much just what we had brought here with moose and caribou and have a cookout and a community and family events... I do not know who named it that, but I asked [elder] and she didn't know. (Ambler Road Supplemental EIS Evansville Talking Circle)

Principle among cultural resource topics, particularly in the upper Kobuk River region of the Project, were discussions that revolved around the sacredness of little people (*iñuguluurak*) sites and discussions that addressed the prophecies of the shaman Maniilaq in the late 1800s. In several communities, large portions of the talking circle were devoted to telling accounts related to the little people and the need to avoid locations they inhabited. All comments stressed the importance of avoidance of these areas:

Also there are people in the mountains. They are about three feet high. If that road comes across where they live. It would be good to say if road going through here and you find a community that we hardly see surviving there, so instead of road going this way it go around. Let the numbers of [road miles] go up. It would be good if we leave them alone. (Ambler Road Supplemental EIS Kobuk Talking Circle)

I think from our first people say to leave them (*iñuguluurak*/little people) alone. If we ask the project manager if they encounter (them), we need to make a big detour around them. They haven't bothered us. We keep that tradition going. (Ambler Road Supplemental EIS Shungnak Talking Circle)

[Regarding avoidance of little people sites] I think for that section there needs to be consultation with the tribes. Not only affected area immediately but also knowledge from other tribal entities in the region. Different encounters from Iñupiat and Indian interactions with them. That will set the radius of how far you should stay away. Just for that section tribal consultation will be key. (Ambler Road Supplemental EIS Kobuk Talking Circle)

It would help in planning stage before they start pushing dirt you find out where they are and some of their places might be visible. You might see an opening about so high [low cave]. If only one that would most likely be an animal. If you see more than one probably one of their

communities. When we were at Allakaket the Chief start talking to me, and we were outside, and do you guys come over our area a lot? I said no. I was going to ask you the same thing. He said why? He said I thought Eskimos trying to scare us throwing rocks and stuff. That is where I found out they too encounter them [little people]. I told my co-mates those little people about three feet high. So it is them then. (Ambler Road Supplemental EIS Kobuk Talking Circle)

The Maniilaq prophecies, which originate from an Iñupiaq shaman living in the Kobuk River area in the late 1800s, were also a common topic in the upper Kobuk River region. Several participants identified parallels with the prophecy and future mining scenario and negative impacts to surrounding communities and the environment:

That is why we say we hate to see that road come through [because of his prophecies]. He talks about a mine coming around and that things will get bad. The world will get really rugged not too long after mining happens. (Ambler Road Supplemental EIS Allakaket Talking Circle)

Maniilaq prophecies. According to his prophecies Ambler will be a large city and I think it is because of that road. Whales will come up the river and be in front of town here. We have already had three beluga in the river in front of here. [Another prophecy was] a flying canoe will come up this way, which ended up being planes. (Ambler Road Supplemental EIS Ambler Talking Circle)

You know, a long time ago, elders, and even way before our last elders, you know, they had this story that we are going to change. And you know? Our life is changing, drastically, with the internet and the phones, and you get to see your family on a phone or whatever. But when we are changing, the animals change also. They know what is going on. And our elders say respect our animals, when we treat them right, we don't waste any food or anything, our lives appreciate that way of living. We have a hard time sometimes, but we live with our different animals. But I believe this road will happen. I know not for a long time, but the elders a long time ago say it's going to change. Ambler is going to get big. You know, Maniilaq, I believe in the Maniilaq story, change is going to happen. It may not be in our lifetime, but the younger generation, maybe they will even get our own animals. (Ambler Road Supplemental EIS Selawik Talking Circle)

The final discussion topic of relevance to cultural resources addressed cultural considerations, such as a lack of cultural sensitivity to local hires conducting cultural resource field surveys, and difficulties with obtaining cultural information. One talking circle participant identified the lack of cultural sensitivity by not allowing traditional ways of respecting ancestral sites, such as leaving gifts at a site, which conflicts with AIDEA's policy of "leave no trace." This individual suggested that a more nuanced perspective to rules regarding respecting the land and past cultures may be warranted. One such suggestion was that of an end of year meeting with all tribal liaisons to discuss the successes and challenges of the previous field season and to identify ways to be more culturally sensitive. This person explained,

We have a bunch of rules. We had my rules and Native law. We find this village, but I leave my respect and left cigarettes, sugar, coffee, and candy. They said, you can't leave it here. Bulls[xxx]! I don't care who I get in trouble with, and this is the way I was taught and because of Native land and Native features I had to follow our [Native] protocol. I didn't care if it was BLM or State of Alaska [land]. It was just crazy because a lot of the things that we learned as people are so different from how you grew up, and you grew up in city with 10 million stop lights. It is different. Those set of rules that I decided to follow on the Project were our rules. It is like a war game inside. Whose rules do I follow? I won't go live in Anchorage, and I will follow my rules I was taught. I wondered if you guys had any rules about that [allowing Natives to follow their traditional customs]? (Ambler Road Supplemental EIS Kotzebue Talking Circle)

Lastly, several individuals observed that the cultural resource interview process, while necessary, is a difficult one. Some knowledgeable elders and individuals are not always comfortable discussing

important cultural sites to outside interviewers, and one attendee suggested the interviews be done by local people or to have elders in groups rather than one-on-one as they will often confer together regarding what information they should share. One individual succinctly summarized these concerns and the importance of balancing the protection of culturally important places while also trying to share and convey the sacred importance of these places to Indigenous people saying,

Justify the entire traditional use areas of our map. We are still interviewing people. Still trying to get people to open up, and lot of our culture and stories are sacred and tied to location where we have villages, houses, and battle sites and sacred sites that cover the land and looks like nothing, and they said we didn't see one road, and we just see fuel [trees seen by firefighters]. Like Uncle [name] said, they can touch it, but we won't touch it. We won't go there and dig around. There are old sites that are hutlaanee [taboo] for different reasons...we lost someone there...they killed an animal. They were poisoned. For example tuberculosis, we don't want to disturb the site where that happened, and we are aware of contamination from ancient stuff. We don't go because of woodsmen—every area has its own hutlaanee.... The whole point is to connect stories with sacred locations. Our highest value is clean up after yourself. That is why [looks like no one is on the land]. Padded down camping area, no trash. You don't see that from the air. No trails from air. We are having difficulty because we can't access some elders and they hold sacred [knowledge]. How will we tell our kids in the future? (Ambler Road Supplemental EIS Allakaket Talking Circle)

6. Summary

In summary, the talking circles that were held in local communities nearest the proposed Ambler Road Project provided important knowledge, information, and concerns directly related to a variety of Supplemental EIS topics. Even the general NEPA process and the deficiencies and difficulties that local communities have when engaging in this process were discussed in great length. The following provides a brief bulleted summary of “take-aways” directly expressed by attendees during the talking circle proceedings.

General Supplemental EIS Process

- Local communities do not believe that they are provided with the necessary details to understand how the Supplemental EIS process is implemented and how decisions are made.
- The Supplemental EIS process has too much technical information, a short timeline to review the information, and a lack of adequate notice of public meetings or conflicts with other community events.
- There is confusion over the messaging from various parties, stakeholders, and special interest groups involved in the Supplemental EIS process.
- Meeting fatigue or nervousness to attend meetings affects community turnout.
- Alternative transportation approaches were thought to have not been fully considered .
- Baseline studies were thought to be lacking, particularly for sheefish and other whitefish.
- Support for the Project was voiced, but often was paired with concern for the potential impacts and whether the Project would be “worth it” to local communities or would only benefit outsiders.

Physical Environment

- Physical environment topics included geology and soils, sand and gravel resources, hazardous waste, acoustic environment (noise), and air quality and climate. The most frequent physical environment topic discussed was water resources.
- The two most common water topics were increased erosion to river and creek banks, and increasing observations of iron or other minerals seeping out into waterways and causing negative impacts to biological resources in the area.
- Downstream effects from the road and future mining operations were the primary concern related to waterways.

Biological Resources

- Fish and caribou were the most frequently discussed topics followed by vegetation, moose and other mammals, and birds.
- Vegetation topics focused on subsistence resources of berries and medicinal plants, and concern regarding potential contamination particularly from dust.
- Other vegetation topics included more vegetation in the region, concern regarding invasive plant species being brought to the region, and concerns regarding impacts to lichens, which are a food source for caribou.
- Slumping of riverbanks increases the amount of sedimentation in the water and could potentially change fish habitat, particularly for fish more accustomed to less silty and more gravelly waterbeds. Warming waters also affect fish habitat.
- Sheefish and salmon are among the most vulnerable fish species to potential impacts and are already facing challenges due to other human and environmental impacts.
- Birds were discussed to a lesser extent than other biological resources and primarily focused on impacts of disturbance to migratory birds, including general disruption to distribution and migration patterns and concerns over contamination.
- The continued decline in the population of the WAH, potential causes for the decline, and concern of impacts from the Ambler Road exacerbating the decline was a primary topic in the talking circles.
- Two primary causes cited for the decline of the WAH were climate change and sport hunters.
- Roads can affect caribou migration in a number of ways including overall avoidance, delayed migration, or fragmented and sporadic migratory events.
- Other mammals discussed during the talking circles included moose, Dall sheep, hares, seals, and various predators with a focus on climate change related impacts.

Social Systems

- Discussion regarding land ownership, use, and management focused on concern over road responsibilities, possible transferring of ownership to the State of Alaska, and concern regarding additional developments springboarding off of the road development.
- Transportation and access topics included safety issues, impacts to existing transportation networks, and concerns that potential benefits in access for local communities would not be realized.
- Socioeconomic topics addressed potential benefits that the Ambler Road Project could bring to the communities in the region.

- Broadly, a number of attendees voiced their concern that economic benefits (even if realized at the local level) will not outweigh potential impacts from the road and mining development.
- Environmental justice topics centered on an influx of outside workers to the region and societal issues that come with that influx including murder, sexual assault, increased availability of drugs and alcohol, food security, degradation of the land and camping areas, and the inability to enforce traditional tribal land management practices.
- Primary subsistence discussion topics included impacts to various subsistence resources, access from outside hunters, effects to spirituality and emotional well-being, and lack of true local involvement in the Project.
- Talking circle participants identified Project engagement concerns including a lack of consultation regarding road design, the importance of scientifically defensible baseline studies, and concerns regarding the subsistence advisory committee formed by AIDEA as a result of the previous EIS.
- Cultural resource concerns ranged from specific sites, to culturally important rivers, and larger landscape level concerns.
- Principle among cultural resource topics, particularly in the upper Kobuk River region of the Project, were discussions that revolved around the sacredness of little people (*iñuguluurak*) sites and the prophecies of the shaman Maniilaq in the late 1800s.

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Appendix R. Analysis of Data Availability per 40 CFR 1502.22

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Acronyms

ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish and Game
AIDEA	Alaska Industrial Development and Export Authority
ANILCA	Alaska National Interest Lands Conservation Act
ATSDR	Agency for Toxic Substances and Disease Registry
BLM	Bureau of Land Management
BMPs	Best Management Practices
CA	Cooperating Agency
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
DHSS	Department of Health and Social Services
DOI	Department of the Interior
DOT&PF	Department of Transportation and Public Facilities
EIS	Environmental Impact Statement
GAAR	Gates of the Arctic
HIA	Health Impact Assessment
IDT	Interdisciplinary team
LiDAR	Light Detection and Ranging
NEPA	National Environmental Policy Act
NNIS	Non Native Invasive Species
NOA	Naturally Occurring Asbestos
NPS	National Park Service
PA	Programmatic Agreement
SME	Subject Matter Expert
TK	Traditional Knowledge
USACE	U.S. Army Corps of Engineers
WAH	Western Arctic Caribou Herd

1. Background

In accordance with Council on Environmental Quality (CEQ) National Environmental Policy Act (NEPA) regulations (Title 40, Code of Federal Regulations [CFR], section 1502.22, stated below), this document provides an analysis of incomplete and unavailable information identified in resource assessments developed for the Ambler Road Environmental Impact Statement (EIS) that remain relevant for the Draft Supplemental EIS. During the initial phases of the Supplemental EIS development, the BLM re-evaluated the available data relative to the key issues and deficiencies identified in the remand and during internal, cooperating agency, and public scoping. This process resulted in the BLM compiling a list of new or updated information that needed to be incorporated into the Supplemental EIS. Where obtainable, the BLM worked with resource specialists, cooperating agencies, and AIDEA to acquire these new and improved sources of information. Based on public comments received for the Draft Supplemental EIS regarding data gaps, the BLM is including this appendix in the Final Supplemental EIS to provide additional documentation on the decision making related to data used and collected for the Supplemental EIS. Although the resource assessments and comments consider the strengths and weaknesses of available scientific data, BLM analysts were able to complete thorough analyses of potential impacts of the proposed Ambler Road and to draw informed conclusions from the information available.

2. Methods

This document catalogs the potential data gaps and recommended studies identified in the Data Gap Analysis Report and, by extension, in the Supplemental EIS, providing a structured analysis of those potential data gaps and recommended studies that track with the requirements of 40 CFR 1502.22. Each such item of “incomplete or unavailable information” underwent a review process to ensure consistency with 40 CFR 1502.22, the relevant text of which reads:

1502.22 Incomplete or unavailable information.

When an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an environmental impact statement and there is incomplete or unavailable information, the agency shall always make clear that such information is lacking.

(a) If the incomplete information relevant to reasonably foreseeable significant adverse impacts is essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant, the agency shall include the information in the environmental impact statement.

(b) If the information relevant to reasonably foreseeable significant adverse impacts cannot be obtained because the overall costs of obtaining it are exorbitant or the means to obtain it are not known, the agency shall include within the environmental impact statement: (1) A statement that such information is incomplete or unavailable; (2) a statement of the relevance of the incomplete or unavailable information to 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. For the purposes of this section, “reasonably foreseeable” includes impacts which have catastrophic consequences, even if their probability of occurrence is low, provided that the analysis of the impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason.

A potential data gap or recommended study was considered relevant if it could be connected to reasonably foreseeable significant adverse impacts described in the EIS. All relevant potential data gaps and recommended studies identified by agencies and in public comments were evaluated to determine whether the information was essential to a reasoned choice among alternatives. To be essential, the information must provide a means for making a clear and meaningful distinction between alternatives. Lastly, if missing information was determined to be relevant and essential, the potential means of obtaining the information was evaluated to determine whether the cost of obtaining the information would be exorbitant.

Environmental analysts used a structured review approach illustrated by Figure 1. This approach, taken directly from the language of 40 CFR 1502.22, consists of 3 steps. Each step asks a question, the answer to which determines whether the analysis of the potential knowledge gap and recommended study either progresses to the next step or requires no further review. Where analysts answered “Yes,” they documented and moved on to the next question. Where analysts answered “No,” they recorded the reasoning behind the answer, often concluding the review of that potential knowledge gap and recommended study. The completed analysis for all catalogued statements was then reviewed by supervisory and legal specialists, who confirmed the analysis and determined that it satisfied 40 CFR 1502.22 (and Department of the Interior NEPA regulations at 43 CFR 46.125).

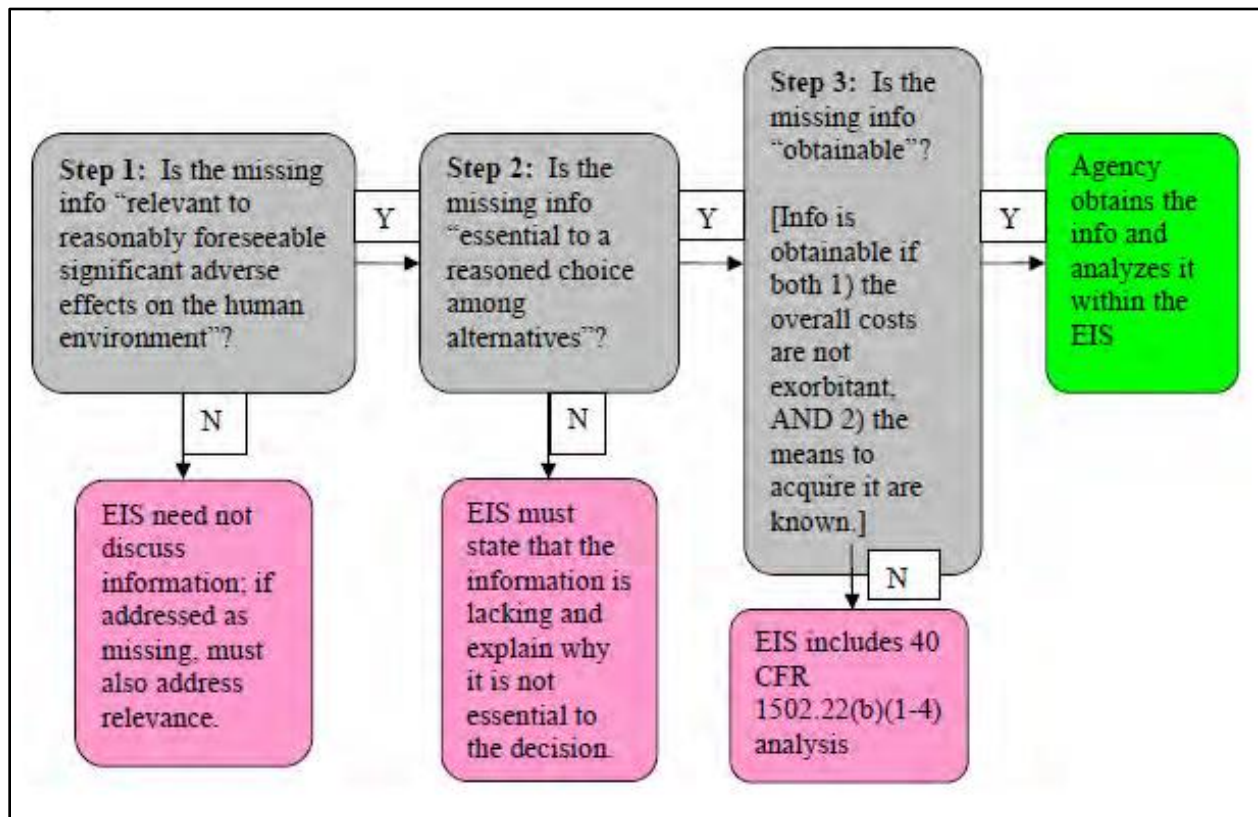


Figure 1. Three-step process used to evaluate data in accord with 40 CFR 1502.22

3. Results

Some cataloged potential knowledge gaps and recommended studies did not progress to Step 2 of the 1502.22 incomplete and unavailable information analysis, because they were determined to not be relevant to reasonably foreseeable significant adverse effects on the human environment described in the

Supplemental EIS. Relatively few potential data gaps and recommended studies progressed to Step 3 of the analysis, because analysts determined that while many were broadly relevant to the important issues at hand, many were not essential for making a reasoned choice among alternatives. Step 3 required discussion about “whether the cost of obtaining the missing information is exorbitant, or the means of doing so unknown.” Formal cost estimates were not generated, but the BLM considered the extent of the study area, the timing and duration that the study would require, and the level of effort for accomplishing the data collection and analysis. Means of doing so typically were not an issue, but time and the cost related to the time needed, especially considering the length of the 3 alternatives (211 to 332 miles) and the broad area of Interior Alaska under study, were cost-related considerations. In many cases, it was noted that the information may not be highly relevant and especially may not be essential to a reasoned choice among alternatives, nonetheless, because it was readily available it was obtained and used in the Supplemental EIS.

Considerations included:

- There will always be some level of incomplete scientific information (especially regarding dynamic ecosystems). However, there is often enough information to formulate and support sound scientific judgments. Scientists frequently agree on larger issues and trends despite the lack of a particular detail of the information. Also, some information is not of a type that would alter scientific judgments or otherwise affect decision making. Additionally, some information is not significant or relevant enough to be considered essential to a reasoned decision among alternatives.
- Whether there are some adverse effects that would certainly occur under the specific circumstance to which the incomplete information applies. For instance, it is already presumed that a large fuel spill could cause significant adverse impacts on wildlife and other resources, through direct and indirect effects; thus, it is not essential for the decision maker, who is already made aware of the probability and severity of these potential impacts, to understand every particular mechanism through which these adverse impacts could occur. Additional information specific to how spilled fuel may affect caribou foraging, for example, is not required for an understanding of the probability and severity of risks associated with each alternative.
- Whether there is a commonality of potential impacts among all action alternatives, which lessens the utility of incomplete information to the decision-maker. For example, in the unlikely event of a large spill, it is well-understood that environmental impacts could be severe. The severity of potential impacts would be nearly identical under any action alternative; therefore, very specific types of information relevant to species, particular life history traits, or behavior do not help substantially in distinguishing among alternatives.
- Whether the existence of other environmental laws and regulations would prevent or mitigate significant adverse effects on particular resources. For example, comprehensive regulatory standards under the Clean Air Act are presumed sufficient to preclude air quality impacts from reaching a level of significance for potential future mines. A lack of specific information regarding air quality impacts related to potential future mines is in this sense less useful to the decision-maker, who is assured that no matter which alternative they select, significant adverse effects on air quality will be further studied in subsequent NEPA and permitting process and likely be avoided or minimized through those processes, but also that each of the alternatives would result in the same indirect impacts in the Ambler Mining District.

The Yes/No responses for each potential knowledge gap or recommended study and the reasoning supporting each “No” response are provided below.

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Table 1. Analysis of data availability*

Topic	Suggested Data Gaps	1502.22(a) Is the missing information relevant to reasonably foreseeable significant adverse impacts on the human environment? Why or why not?	1502.22(a) Is the missing information essential to a reasoned choice among alternatives? Why or why not?	1502.22(b) Is the missing information obtainable (based on cost or means)? Why or why not?	If required, discussion of existing credible scientific evidence; if not, citation to applicable Supplemental EIS section	If required, the BLM's evaluation of impacts based on theoretical approaches or research methods generally accepted in the scientific community; if not, citation to applicable Supplemental EIS section
Phys	Provide floodplain information in the form of regional rating curves using Rosgen methods to delineate the bankfull height, area, and width of channels as well as the area and width of the area prone to flooding.	Yes, floodplain information is relevant because blocking streams would cause flooding (potentially catastrophic). However, this level of engineering detail would not typically be generated at the NEPA stage. Standard engineering practice is well established to provide cross drainage. This level of information is a design issue for refinement of the crossings.	This level of detail is not essential to a choice among alternatives. All alternatives would be designed to the same standard. This level of design detail is not necessary during NEPA but would be considered during refinement of crossings during design. AIDEA has committed to providing the requisite engineering.	Not applicable because not essential.	3.2.5	3.2.5
Bio	Vegetation communities should be evaluated to Viereck Level III, at a minimum, and wetlands delineation should be evaluated to NWI subclasses with appropriate modifiers (e.g. water regime), at a minimum, in order to be able to assess impacts from all alternatives equally and meaningfully.	Yes, vegetation and wetland information is relevant, particularly wetlands, because project footprint would impact plants and fill wetlands that nationally are scarce.	More detailed vegetation information is not essential to choice among alternatives. Wetlands mapping essential especially to USACE decision making regarding permitting has been obtained. Existing RMP 2013 vegetation mapping is available for all alternatives and is comparable to Viereck Level III mapping. Field-verified wetland mapping is available for all of Alternatives A and B except for the eastern 50 miles, and desktop wetland mapping was prepared for Alternative C and the remaining areas of Alternatives A and B. Desktop-level wetland mapping is suitable for the Supplemental EIS analysis.	Not applicable for vegetation because not essential and existing vegetation mapping is sufficient. Wetland mapping is obtainable and was obtained from aerial photography for all alternatives and was used in the EIS and Supplemental EIS.	3.3.1	3.3.1
Bio	Less-refined stream mapping data available for Alternative C compared to Alternatives A and B. Provide additional stream mapping coverage in GIS (also see Vegetation and Wetlands section).	Refined stream mapping for Alternative C is relevant.	Determined important to have additional data so Alternative C had same relative information as Alternatives A and B.	It was determined through consultation with USACE to have desk-top wetland mapping effort which would also provide improved knowledge of streams for Alternative C.	3.2.5 Water; 3.3.1 Wetlands; 3.3.2 Fish	3.2.5 Water; 3.3.1 Wetlands; 3.3.2 Fish
Socio	Long-term subsistence mapping studies are most useful for documenting the location and timing of subsistence activities. Due to the lack of long-term use area mapping studies within the last 10 years, a data gap exists for updated long-term subsistence mapping studies in the 4 study communities of Manley Hot Springs, Rampart, Shungnak, and Tanana.	The missing information could be relevant to understanding use patterns and impacts to subsistence in the named communities.	The missing information is not essential because information does exist for impacted communities (e.g., long-term subsistence use areas for earlier time periods; more recent 1-year mapping studies by ADF&G). The BLM determined it was possible to characterize impacts and make a reasoned choice based on existing data.	Not applicable because not essential. Further, the missing information is not reasonably obtainable because of time constraints and cost, considering the broad area and number of communities involved. Mapping studies typically require more than one season.	Appendix L Subsistence Technical Report; EIS 3.4.7	Appendix L Subsistence Technical Report; EIS 3.4.7
Socio	Twelve subsistence study communities are lacking updated comprehensive household harvest surveys in the last 5 years: Alatna, Allakaket, Ambler, Bettles, Coldfoot, Evansville, Huslia, Kobuk, Manley Hot Springs, Minto, Shungnak, and Wiseman. The community of Huslia has harvest data that are greater than 20 years old.	The missing information could be relevant to understanding use patterns and impacts to subsistence in the named communities, some of which are located near the alternatives and are particularly relevant.	The missing information is not essential to a choice among alternatives because information does exist for impacted communities, and the BLM determined it was possible to characterize impacts and make a reasoned choice based on existing data.	Not applicable because not essential. Further, he missing information is not reasonably obtainable because of time constraints and cost, considering the broad area and number of communities involved. Comprehensive household harvest studies typically require more than one season.	Appendix L Subsistence Technical Report; EIS 3.4.7	Appendix L Subsistence Technical Report; EIS 3.4.7
Socio	For WAH WG communities, the data gap assessment recommends updated caribou harvest surveys for communities lacking recent caribou harvest surveys (i.e., within the last 5 years). There are 26 WAH WG communities lacking recent caribou harvest surveys. Seven of these communities are within 50 miles of the project and are also being recommended for updated comprehensive household harvest surveys. The remaining 19 communities recommended for caribou-only harvest surveys are Atkasuk, Elim, Fairbanks, Galena, Golovin, Kaltag, Kivalina, Kotlik, Koyukuk, Noatak, Nome, Noorvik, Nulato, Shaktoolik, St. Michael, Unalakleet, and Wales.	The missing information could be relevant to understanding use patterns and impacts to subsistence in the named communities, some of which are located near the alternatives and are particularly relevant.	The missing information is not essential to a choice among alternatives because information does exist for virtually every community. The BLM determined it was possible to characterize impacts and make a reasoned choice based on existing data.	Not applicable because not essential. Further, missing information is not reasonably obtainable because of time constraints and cost, considering the broad area and number of communities involved. Comprehensive household harvest studies and caribou harvest studies typically require more than one season. Information does exist for virtually every community. The BLM determined it was possible to characterize impacts and make a reasoned choice based on existing data.	Appendix L Subsistence Technical Report; EIS 3.4.7	Appendix L Subsistence Technical Report; EIS 3.4.7

Topic	Suggested Data Gaps	1502.22(a) Is the missing information relevant to reasonably foreseeable significant adverse impacts on the human environment? Why or why not?	1502.22(a) Is the missing information essential to a reasoned choice among alternatives? Why or why not?	1502.22(b) Is the missing information obtainable (based on cost or means)? Why or why not?	If required, discussion of existing credible scientific evidence; if not, citation to applicable Supplemental EIS section	If required, the BLM's evaluation of impacts based on theoretical approaches or research methods generally accepted in the scientific community; if not, citation to applicable Supplemental EIS section
Socio	Prior to any workshops, existing sources of TK, including scoping testimony, should be reviewed for their relevance to the project so that they can be incorporated into the Supplemental EIS.	Existing sources of traditional knowledge are not a data gap. They are important and were reviewed.	Existing sources of traditional knowledge are not a data gap. They are important and were reviewed.	Existing sources of traditional knowledge were obtainable. They are important and were reviewed and used. The BLM also commissioned a workshop and engaged in government-to-government consultation to supplement existing information. In addition, the BLM held Talking Circle workshops in association with the Ambler Road Supplemental EIS public meetings, prepared a report of these workshops, and incorporated Indigenous Knowledge from these workshops into relevant Supplemental EIS sections.	Traditional Knowledge subsections have been included in Mammals (3.3.4) and Subsistence (3.4.7) sections. Rural Lifestyle subsection has been added in Socioeconomics (3.4.5)	
Bio	Sufficient and up-to-date information on raptor nest locations, nesting habitat, and species assemblages for all alternatives. Consider aerial raptor nest surveys, following appropriate survey methods, within approximately 3.5 miles of all alternatives to provide commensurate data.	No, missing raptor data is not relevant to significant adverse impacts on birds. No rare raptors suspected to occur. Individual raptors could be affected, but population effect highly unlikely. Mitigation measures can influence final design and construction effort to protect raptors. No catastrophic impact expected.	No, raptor nest data not essential to choice among alternatives. Alternatives would be treated the same in terms of stipulations for bird protection.	Not applicable because not essential. However, fieldwork for bird surveys over some 500 miles of alternatives would be cost and time intensive.	3.3.3	3.3.3
Bio	The following recommendation was raised: migratory bird and/or breeding bird surveys be conducted for all alternatives throughout all major land cover types present, at a level of effort sufficient to complete an analysis of potential impacts to migratory birds in the Supplemental EIS. This may be done prior to construction, but for the environmental analysis phase, a stipulation such as the following may suffice: all vegetation clearing and habitat disturbance should occur outside the nesting window.	No, bird nest survey data are not relevant to significant adverse impacts on birds. At least 1 rare species (gray-headed chickadee) may be present in the project area. Three additional BLM sensitive species (olive-sided flycatcher, rusty blackbird, and Smith's longspur) occur in the project area. Individual birds could be affected but population effect highly unlikely. Stipulations can be used during final design and construction effort to protect individual bird nests. No catastrophic impact expected.	No, bird nest data not essential to choice among alternatives. Alternatives would be treated the same in terms of stipulations for bird protection.	Not applicable because not essential. However, fieldwork for bird surveys over some 500 miles of alternatives would be cost and time intensive.	3.3.3	3.3.3
Bio	A suggestion was made to collect data pertaining to waterfowl use of the project area.	No, waterfowl use data are not relevant to significant adverse impacts on birds. Individual birds could be affected, but population effect is highly unlikely. Stipulations can be used during final design and construction efforts to protect nesting waterfowl and their habitats. No catastrophic impact expected.	No, waterfowl data are not essential to choice among alternatives. Alternatives would be treated the same in terms of stipulations for bird protection.	Not applicable because not essential. However, fieldwork for bird surveys over some 500 miles of alternatives would be cost and time intensive.	3.3.3	3.3.3
Bio	A suggestion was made to collect better baseline data and/or perform habitat suitability modeling for where birds could occur in the project area.	No, bird use or habitat suitability data are not relevant to significant adverse impacts on birds. Individual birds could be affected, but population effect is highly unlikely. Mitigation measures can influence final design and construction effort to protect birds. No catastrophic impact expected.	No, bird use or habitat suitability data are not essential to choice among alternatives. Alternatives would be treated the same in terms of stipulations for bird protection.	Not applicable because not essential. However, habitat modeling and surveys over some 500 miles of alternatives would be cost and time intensive.	3.3.3	3.3.3
Bio	The Allakaket Tribal Council suggested that AIDEA collect additional data at fish spawning locations within the corridor before and after project construction.	Yes, fish spawning habitat data is relevant to potential impact on fish populations and by extension for subsistence because large accidental spills (e.g. tanker rollover, mine accident) could be toxic to fish and spawning beds and could catastrophically affect population.	No, additional data at fish spawning locations are not essential to choice among alternatives. All alternatives would have the same traffic and general risk of spill. Large toxic spills in water possible but unlikely. Data exists on salmon and sheefish spawning habitat in the project area. Refinement of data would be collected to support ADF&G permitting, which provides adequate protection.	Not applicable because not essential. However, fieldwork for fish spawning in hundreds or even thousands of water crossings over some 500 miles of alternative alignments would be cost and time intensive.	3.3.2	3.3.2

Topic	Suggested Data Gaps	1502.22(a) Is the missing information relevant to reasonably foreseeable significant adverse impacts on the human environment? Why or why not?	1502.22(a) Is the missing information essential to a reasoned choice among alternatives? Why or why not?	1502.22(b) Is the missing information obtainable (based on cost or means)? Why or why not?	If required, discussion of existing credible scientific evidence; if not, citation to applicable Supplemental EIS section	If required, the BLM's evaluation of impacts based on theoretical approaches or research methods generally accepted in the scientific community; if not, citation to applicable Supplemental EIS section
Cultural	Historic aerial photographs, topographic maps, and high resolution LiDAR imagery should be examined to understand where areas of high archaeological potential may be located and to guide pedestrian field survey in the Project area.	Probability of archaeological sites could be relevant to helping understand likelihood of significant impact but would not be determinative.	No, not essential to choice among alternatives. All alternatives would be treated the same per the PA which provides a programmatic approach to complying with Section 106. Ground surveys would be undertaken. Design would avoid sites discovered wherever possible. Treatment of sites would be per PA. However, knowing more about general probability would be helpful in comparing alternatives. Studies for probability of historic sites have been undertaken.	Not applicable because not essential. However, the BLM did undertake studies for probability of historic properties.	Probability modeling reported in 3.4.8	3.4.8
Socio	If a new borough forms within the project area, how might it impact the project? Conduct additional research to identify status of new borough.	A new borough is not part of the existing affected environment and is not reasonably foreseeable and therefore is not relevant.	NA	NA	NA	NA
Phys	While there are some limited studies on the potential ranges of exposures to asbestos from driving or living near a gravel road with measurable amounts of asbestos in the gravel, and in asbestos found in fish and wildlife tissue, the lack of data about asbestos concentrations in the possible gravel sources along the alternative routes, means these are data gaps at this time.	Sufficient data is available to indicate that NOA occurs along all alternatives. The missing information about what is specifically in the proposed material sites could be relevant to understanding the likelihood of asbestos material being used in road construction and thus to the potential for health effects.	No, the missing information is not essential to a choice among alternatives. All alternatives are known to have NOA occurrences. AIDEA has stated it has identified approximately twice the gravel actually needed in order to be able to avoid NOA and has committed to following guidelines meant to avoid and minimize asbestos in road dust. All alternatives are treated the same on this topic, and material testing would occur during final design.	Not applicable because not essential. However, fieldwork to sample more than 100 potential material sites would be cost and time prohibitive.	3.2.1, 3.2.2, 3.2.3, 3.2.7, 3.3 in general, 3.4.5, 3.4.6, and 3.4.7. Also Health Impact Assessment.	3.2.1, 3.2.2, 3.2.3, 3.2.7, 3.3 in general, 3.4.5, 3.4.6, and 3.4.7. Also Health Impact Assessment.
Socio	Use of asbestos-laden gravel is a concern, especially related to potential human health impacts. Gravel material source site identification should assess presence/absence of asbestos.	Sufficient data is available to indicate that NOA occurs along all alternatives. The missing information about what is specifically in the proposed material sites could be relevant to understanding the likelihood of asbestos material being used in road construction and thus to the potential for health effects.	No, the missing information is not essential to a choice among alternatives. All alternatives are known to have NOA occurrences. AIDEA has stated it has identified approximately twice the gravel actually needed in order to be able to avoid NOA and has committed to following guidelines meant to avoid and minimize asbestos in road dust. All alternatives are treated the same on this topic, and material testing would occur during final design.	Not applicable because not essential. However, fieldwork to sample more than 100 potential material sites would be cost- and time-prohibitive. AIDEA has committed to testing materials as they move through the design phase and avoiding using materials at a level lower than State law allows.	3.2.1, 3.2.2, 3.2.3, 3.2.7, 3.3 in general, 3.4.5, 3.4.6, and 3.4.7. Also Health Impact Assessment.	3.2.1, 3.2.2, 3.2.3, 3.2.7, 3.3 in general, 3.4.5, 3.4.6, and 3.4.7. Also Health Impact Assessment.
Socio	Numerous scoping comments identified the need for an updated HIA as well as address the concern for increased substance abuse and violence due to bringing in more drugs and alcohol.	Sufficient information exists in the existing HIA prepared for the 2020 Final EIS. Additional public health information could be relevant to understanding health baseline and trends in the study area and determining health impacts.	The information is not essential to a choice among alternatives.	Not applicable because not essential. However, an HIA was completed for the 2020 Final EIS which collected project area data and addressed these topics.	Health Impact Assessment and Public Health sections of 3.4.5	Health Impact Assessment and Public Health sections of 3.4.5
Socio	No known data on the relative risks of eating/drinking foods with asbestos. Investigate and consult with Agency for Toxic Substances and Disease Registry (ATSDR) and others.	The information could be relevant to health effects of asbestos-laden dust. Breathing asbestos is known to cause significant health effects in humans, but ingesting through food and drink is less known.	The information is not essential to a choice among alternatives. All alternatives are known to cross areas of NOA. AIDEA has stated it has identified approximately twice the gravel actually needed in order to be able to avoid NOA and has committed to following guidelines meant to avoid and minimize asbestos in road dust. All alternatives are treated the same on this topic, and material testing would occur during final design.	Not applicable because not essential. However, a Health Impact Assessment was completed and addressed asbestos. Asbestos also considered separately in the Supplemental EIS based on existing information.	3.2.1, 3.2.2, 3.2.3, 3.2.7, 3.3 in general, 3.4.5, 3.4.6, and 3.4.7. Also Health Impact Assessment.	3.2.1, 3.2.2, 3.2.3, 3.2.7, 3.3 in general, 3.4.5, 3.4.6, and 3.4.7. Also Health Impact Assessment.

Topic	Suggested Data Gaps	1502.22(a) Is the missing information relevant to reasonably foreseeable significant adverse impacts on the human environment? Why or why not?	1502.22(a) Is the missing information essential to a reasoned choice among alternatives? Why or why not?	1502.22(b) Is the missing information obtainable (based on cost or means)? Why or why not?	If required, discussion of existing credible scientific evidence; if not, citation to applicable Supplemental EIS section	If required, the BLM's evaluation of impacts based on theoretical approaches or research methods generally accepted in the scientific community; if not, citation to applicable Supplemental EIS section
Phys	For future investigations of asbestos content of soils, rocks, and gravel, it is recommended to perform both an analysis that does not involve grinding/milling of the soils, such as the ASTM 7521 method, and a milling sample preparation technique, such as the draft CARB 435 method, be used to analyze soils for asbestos content.	Sufficient data is available to indicate that NOA occurs along all alternatives. The missing information about what is specifically in the proposed material sites could be relevant to understanding the likelihood of asbestos material being used in road construction and thus to the potential for health effects.	No, the missing information is not essential to a choice among alternatives. All alternatives are known to have NOA occurrences. AIDEA has stated it has identified approximately twice the gravel actually needed in order to be able to avoid NOA and has committed to following guidelines meant to avoid and minimize asbestos in road dust. All alternatives are treated the same on this topic, and material testing would occur during final design.	Not applicable because not essential. However, fieldwork to sample more than 100 potential material sites would be cost and time exorbitant.	3.2.1, 3.2.2, 3.2.3, 3.2.7, 3.3 in general, 3.4.5, 3.4.6, and 3.4.7. Also Health Impact Assessment.	3.2.1, 3.2.2, 3.2.3, 3.2.7, 3.3 in general, 3.4.5, 3.4.6, and 3.4.7. Also Health Impact Assessment.
Cumult	Obtain any mine-related air quality monitoring data to assess whether mine emissions would be great enough to affect regional air quality, or perhaps parks and other regional natural resources, through long-range transport of emissions. Monitoring data availability unknown at this time. Further investigation needed to identify and obtain any data. If not available, qualitative assessment will focus on emissions of existing mines, together with scale comparison of existing and potential new mines.	Mining air quality data from ADEC or other agencies is relevant to understanding the types of secondary impacts from mines. Given the assumed good natural air quality of the project area, it is unlikely the data would be relevant to significant air quality effects but would be helpful in understanding types and magnitude of impact.	The data are not essential to a choice among road alternatives, because all action alternatives would result in the same secondary mining activity and mining emissions, and because emissions are not likely to be significant except perhaps at the local mine area.	Not applicable because not essential. However, some comparable existing data are available, and the BLM has obtained it and included it in the Supplemental EIS. Local air quality data is not available.	EIS 3.2.7, and Appendix D	EIS 3.2.7, and Appendix D
Phys	Available air quality data regarding existing mining operations in Alaska are likely quite limited, but some have been obtained in prior studies and can be obtained from ADEC. Determine availability of this kind of air quality data.	Mining air quality data from ADEC or other agencies is relevant to understanding the types of secondary impacts from mines. Given the assumed good natural air quality of the project area, it is unlikely the data would be relevant to truly significant air quality effects.	The data are not essential to a choice among road alternatives, because all action alternatives would result in the same secondary mining activity and mining emissions, and because emissions are not likely to be significant except perhaps at the local mine area.	Not applicable because not essential. However, some existing information is available, and the BLM has obtained it and included it in the Supplemental EIS.	EIS 3.2.7	EIS 3.2.7
Phys	Air quality data are needed to help assess baseline conditions. Obtain the most representative AQ data for rural, undeveloped locations in the region (e.g., Denali National Park monitoring data). Obtain any air quality monitoring data in close proximity to the Dalton Highway, to provide an indication of the project's potential operational AQ impacts. A recommendation was made to measure air quality along the Dalton Highway to provide baseline data and assess impacts, especially for fugitive dust. Model emissions for proposed road traffic.	Existing air quality data could be relevant to understanding patterns in the study area. However, significant AQ effects from the road project alone are highly unlikely. It is reasonable to assume good air quality in this undeveloped project area. Baseline air quality data is relevant but not necessary.	The baseline AQ data is not essential to a reasoned choice among alternatives, because it is reasonable to assume good baseline AQ in this undeveloped area. Dalton Highway air quality data could be a corollary to the proposed road but is not essential to a choice among alternatives. To the extent air quality data exists and is reasonably available, it should be obtained.	Not applicable because not essential. However, to the extent that existing data could be obtained without exorbitant cost or time, the BLM obtained it and used it in the Supplemental EIS. The BLM modeled dust production for the alternatives. It was determined exorbitant in terms of time and cost to collect data specific to the Dalton Highway when it is plainly known that gravel roads cause dust and when it is possible to model without such a measurement.	3.27	3.2.7
Socio	A data gap exists regarding current levels of competition that occur between local and outside hunters and an analysis of ADF&G's Wildlife Harvest Ticket Database can characterize existing levels of competition near project alternatives related to land mammal harvests.	The harvest ticket data may be relevant to understanding who is harvesting wildlife in the project area currently. It is unlikely this would directly address significant impacts to hunters from the project but would help establish the current situation/affected environment.	The harvest ticket data are not essential to a choice among alternatives because the road will not be open to the public and thus a major increase in outside hunting pressure is not anticipated. It is clear from scoping that there is concern about competition for resources and that it applies to all alternatives equally.	Not applicable because not essential. Competition data also appear in other sources, including subsistence surveys. It is possible to address competition without these data.	Appendix L Subsistence Technical Report; EIS 3.4.7	Appendix L Subsistence Technical Report; EIS 3.4.7
Bio	Data gap: locations of spawning and rearing habitat for Koyukuk River Chinook salmon (Stock of Concern) within the proposed corridors. Consider acquiring or developing EIS-level data to identify spawning and rearing areas to address ADF&G's scoping comment/issue of concern.	The data likely are relevant to understanding Chinook salmon, although the likelihood of significant adverse impacts is relatively low.	The missing information is not essential to a choice among alternatives. All alternatives would cross salmon streams, and protections for fish would be built in to any action alternative equally via stipulations in the ROD, and these are assumed to include further field data gathering for stream characteristics (including fish surveys) for the selected alternative during design.	Not applicable because not essential. Fieldwork on hundreds of streams would be exorbitant in terms of time and cost. The BLM has obtained readily available existing data and included it in the Supplemental EIS. The BLM also held a workshop with subject matter experts from state and federal agencies to discuss the available data.	3.3.2	3.3.2

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Bio	Chum data gap per ADF&G's scoping comment. The ADF&G stated that while data indicate the Koyukuk River may be the largest single contributor to the summer chum salmon run on the Yukon River and these fish regularly enter the John River, other rivers within the proposed (Dalton Highway) road corridor have not been consistently monitored.	The data likely are relevant to understanding Chum salmon, although the likelihood of significant adverse impacts is low.	The missing information is not essential to a choice among alternatives. All alternatives would cross salmon streams, and protections for fish would be built in to any action alternative equally via stipulations in the ROD, and these are assumed to include further field data gathering for stream characteristics (including fish surveys) for the selected alternative during design.	Not applicable because not essential. Fieldwork on hundreds of streams would be exorbitant in terms of time and cost. Any readily obtainable existing data has been obtained and included in the Supplemental EIS. Additional data will be collected during permitting, which will provide the design level details necessary to adequately mitigate for potential fish impacts.	3.3.2	3.3.2
Bio	Data gap: lack of detailed salmon spawning and rearing areas for several streams along Dalton Highway corridors (per ADF&G's scoping comment). ADF&G recommends AIDEA identify spawning and rearing habitat for salmon throughout streams within the proposed corridors, with an emphasis on Koyukuk River Chinook salmon.	The data likely are relevant to understanding Chinook and other salmon, although the likelihood of significant adverse impacts is low.	The missing information is not essential to a choice among alternatives. All alternatives would cross salmon streams, and protections for fish would be built in to any action alternative equally via stipulations in the ROD, and these are assumed to include further field data gathering for stream characteristics (including fish surveys) for the selected alternative during design.	Not applicable because not essential. Fieldwork on hundreds of streams would be exorbitant in terms of time and cost. Any readily obtainable existing data has been obtained and included in the Supplemental EIS. Additional data will be collected during permitting, which will provide the design level details necessary to adequately mitigate for potential fish impacts.	3.3.2	3.3.2
Bio	Data gap: lack of detailed salmon spawning and rearing areas for several streams along all project alternatives (ADF&G Issue of Concern). ADF&G recommends AIDEA identify spawning and rearing habitat for salmon throughout proposed corridors.	The data likely are relevant to understanding other salmon, although the likelihood of significant adverse impacts is low.	The missing information is not essential to a choice among alternatives. All alternatives would cross salmon streams, and protections for fish would be built in to any action alternative equally via stipulations in the ROD, and these are assumed to include further field data gathering for stream characteristics (including fish surveys) for the selected alternative during design.	Not applicable because not essential. Fieldwork on hundreds of streams would be exorbitant in terms of time and cost. Any readily obtainable existing data has been obtained and is included in the Supplemental EIS. Additional data will be collected during permitting, which will provide the design level details necessary to adequately mitigate for potential fish impacts.	3.3.2	3.3.2
Bio	In order for the NEPA analysis to address comments received during scoping, additional data that identify specific salmon spawning and rearing areas, spawning areas for sheefish and whitefish species, and suitable winter habitat may be necessary.	The data likely are relevant to understanding salmon, sheefish, and whitefish, although the likelihood of significant adverse impacts is low.	The missing information is not essential to a choice among alternatives. All alternatives would cross fish streams, and protections for fish would be built in to any action alternative equally via stipulations in the ROD, and these are assumed to include further field data gathering for stream characteristics (including fish surveys) for the selected alternative during design.	Not applicable because not essential. Fieldwork on hundreds of streams would be exorbitant in terms of time and cost. Any readily obtainable existing data has been obtained and is included in the Supplemental EIS. Additional data will be collected during permitting, which will provide the design level details necessary to adequately mitigate for potential fish impacts.	3.3.2	3.3.2
Bio	Based on the lack of data in the Alaska Freshwater Fish Inventory (AFFI) dataset, it appears that fish sampling has not been recently conducted in the streams along the Alternative C corridors. However, further coordination with ADF&G would be necessary to confirm. According to ADF&G during the 7/10/18 Cooperating Agency meeting, ADF&G conducted fieldwork this summer. Need to inquire with ADF&G about this data.	The data likely are relevant to understanding fish, although the likelihood of significant adverse impacts is low. [Note that this comment is about existing data and does NOT appear to be suggesting development of original data]	The missing information is not essential to a choice among alternatives. All alternatives would cross fish streams, and protections for fish would be built in to any action alternative equally via stipulations in the ROD, and these are assumed to include further field data gathering for stream characteristics (including fish surveys) for the selected alternative during design.	Not applicable because not essential. However, any readily obtainable existing ADF&G data has been obtained and is included in the Supplemental EIS. Additional data will be collected during permitting, which will provide the design level details necessary to adequately mitigate for potential fish impacts.	3.3.2	3.3.2
Bio	While some salmon spawning location data appear to be available, locations of salmon spawning areas do not appear to be available for streams within all project corridors.	The data likely are relevant to understanding salmon, although the likelihood of catastrophic adverse impacts is low.	The missing information is not essential to a choice among alternatives. All alternatives would cross salmon streams, and protections for fish would be built in to any action alternative equally via stipulations in the ROD, and these are assumed to include further field data gathering for stream characteristics (including fish surveys) for the selected alternative during design.	Not applicable because not essential. Fieldwork on hundreds of streams would be exorbitant in terms of time and cost. Any readily obtainable existing data has been obtained and is included in the Supplemental EIS. Additional data will be collected during permitting, which will provide the design level details necessary to adequately mitigate for potential fish impacts.	3.3.2	3.3.2
Phys	Other than the alternative routes, the proposed mining developments have the most potential for effects on air quality, and can be qualitatively assessed by comparison with any similar mines in far northern latitudes (see cumulative impacts in Section 6). Obtain air quality data from other similar mines in far northern latitude.	The data are relevant to understanding the indirect AQ impacts of mines but not relevant to the direct AQ impacts of the road, because the proposed (road) action would not result directly in mining emissions.	The missing information, or other similar information, is essential to a choice between No Action and any action alternative but is not essential to a choice among action alternatives, because all alternatives would result in the same mining development.	AQ data on similar mines at northern latitudes exists and is obtainable. Other EIS documents describing mining related impacts were collected. Enough existing data has been obtained to reasonably complete the Supplemental EIS and make a reasoned choice among alternatives.	3.3.7	3.3.7

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Bio	Data gap: data on fine-scale movement of large mammals across alternatives. Consider terrain modeling to identify probable wildlife movement and use areas. Identify specific issues of concern that cannot be adequately addressed with caribou collar data (or existing data for other species) and work with wildlife management agencies (BLM, ADF&G, NPS, USFWS) to develop approaches for use in EIS evaluation.	Terrain modeling/modeling of paths of least resistance for large mammals likely is not relevant for determining impacts of the action alternative. It is likely sufficient information is available on mammal behavior to assess impacts without understanding the nuances of the effects of terrain adjacent to these specific alternatives.	The missing information is not essential to a choice among alternatives. It is reasonable to assume that all alternatives cross wildlife movement corridors and that there will be impacts.	Not applicable because not essential. Modeling of terrain and habitat type is possible where sufficient terrain and habitat data are available. Such data may not be suitably refined for the project area. Even if it were, modeling wildlife movement over hundreds of miles of the alternatives would be exorbitant in terms of time and cost.	EIS 3.3.4	EIS 3.3.4
Bio	Gap: data on caribou distribution and movement. Obtain access to ADF&G and NPS collar data. If collar data from ADF&G is not available, formal interviews with key ADF&G staff could be done with the goal of being able to map general seasonal movements, key habitats and mountain passes, funneling points, etc. Work with experienced caribou researchers to accurately analyze and interpret data. Obtain summer range caribou data and other habitat sets from the BLM.	Collared caribou data are relevant to potentially significant impacts to caribou from the road and its traffic, because such data would help define patterns of movement, at least in the year(s) studied.	The data are not essential to a choice among alternatives but are assumed to be informative. These data are not essential because enough is known about caribou behavior from other existing studies to predict impacts without these data.	The BLM has obtained available data about collared caribou from relevant agencies and included it in the Supplemental EIS.	EIS 3.3.4	EIS 3.3.4.
Bio	Review and evaluation of monitoring, peer-reviewed reports, and other related data pertaining to invasive species, sensitive species, and vital wildlife habitats. Literature review. Review non-native plant species data points for invasive plans can be downloaded from AKEPIC. The BLM and NPS have a NISMs database for invasive plant species that may include more than points. Action items: obtain NISM data from NPS and the BLM; review the 2013 Alaska Rare Plant Guide; submit a request for rare plant occurrences data from the Alaska Natural Heritage Program (or have the BLM make the request); review the 2019 BLM Alaska Special Status Plant and Animal Species List. (see: https://www.nps.gov/gaar/learn/nature/published-research.htm and https://science.nature.nps.gov/im/units/arcn/Monitoring.cfm)	Data/literature about occurrences of invasive species, sensitive species, rare species, and important habitats is relevant to understanding these species and wildlife habitat, although the likelihood of significant impacts is low. Such data/literature exist.	Data/literature about occurrences of invasive species, sensitive species, rare species, and important habitats are essential to establishing what is known about the study area vegetation and, although not expected, could be essential to a choice among alternatives (e.g., if one alternative affected multiple sensitive areas and another affected few or none).	Data/literature about occurrences of invasive species, sensitive species, rare species, and important habitats from agencies and in literature have been obtained and are included in the Supplemental EIS.	Principally 3.3.1	Principally 3.3.1
Phys	Meteorological data are needed to describe existing conditions in the project area, as well as trends in recent decades. Search for and obtain online, any agency (state, federal) and private meteorological data sets for analysis.	Raw meteorological data could be relevant to understanding the weather and climate of the project area but are not highly relevant to identifying significant impacts. That is, significant impacts to weather and climate are highly unlikely to be caused directly by the project. The influence of weather and climate on the project and other resources is relevant information. Baseline data could be relevant to air quality modeling efforts if undertaken. Wind data could be relevant to predicting distribution of road dust and other pollutants.	Data sets (raw data for analysis) are not essential to a choice among alternatives. Existing weather and climate summaries are adequate and even then are not essential to a choice among alternatives, because the project is not expected to have any significant effect on local weather and climate.	Not applicable because not essential. However, weather and climate summaries are readily obtainable without exorbitant time or cost, and the BLM has obtained them and used them in the Supplemental EIS. Raw data sets for analysis need not be acquired and are not readily available for the specific project area. Such data would be exorbitant in terms of time and cost to collect in the field. Analysis of any raw data readily available would be time- and cost-intensive and is not warranted.	3.2.7	3.2.7
Bio	The Alaska Natural Heritage Program should be contacted to request any updated information on rare plant species.	Data about occurrences of rare species is relevant to understanding these species, although the likelihood of significant impacts is considered low.	The missing information is essential to establishing what is known about the study area vegetation and, although not expected to be significantly impacted, could be essential to a choice among alternatives (e.g., if one alternative affected multiple sensitive areas and another affected few or none).	Obtaining existing rare plant information is not exorbitant in terms of cost or time, and the data updated to 2023 have been obtained and included in the Supplemental EIS.	Principally 3.3.1	Principally 3.3.1

Topic	Suggested Data Gaps	1502.22(a) Is the missing information relevant to reasonably foreseeable significant adverse impacts on the human environment? Why or why not?	1502.22(a) Is the missing information essential to a reasoned choice among alternatives? Why or why not?	1502.22(b) Is the missing information obtainable (based on cost or means)? Why or why not?	If required, discussion of existing credible scientific evidence; if not, citation to applicable Supplemental EIS section	If required, the BLM's evaluation of impacts based on theoretical approaches or research methods generally accepted in the scientific community; if not, citation to applicable Supplemental EIS section
Cumult	Obtain information on scale (raw ore processing rates, mineral production rates) and types of minerals for likely mine developments. Compare with existing mines (and annual emissions potential) in Alaska or northern Canada to develop order-of-magnitude projections of potential emissions. Emissions data should be available in ADEC databases or annual company submittals.	The scale and types of mining operations expected are relevant to determining the secondary and cumulative impacts of the mines. Mining AQ data is also relevant to understanding the types of secondary impacts from mines. Mine impacts in total could be significant, although air quality impacts are less likely to be significant because the baseline is assumed good air quality.	The data are not essential to a choice among road alternatives, because all action alternatives would result in the same secondary mining activity and mining emissions, and because emissions are not likely to be significant except perhaps at the local mine area. However, the data generally are essential to understanding mine operations and a suite of impacts, some of which may be significant.	Not applicable because not essential. However, information on similar mines is available and has been collected. Limited data exist about the prospects in the Ambler Mining District, but the existing information has been collected. The BLM developed a reasonably foreseeable development scenario specific to the Ambler Mining District to help supplement the data.	Appendix H 2.1; specific to mine air quality, EIS 3.2.7, and 3.3.7	Appendix H 2.1; specific to mine air quality, EIS 3.2.7, and 3.3.7
Socio	Scoping comments state that visitor and resident land use motivations/recreations are under-documented. Such data might include hunting (total number of commercially supported hunters; number of permitted guides; determining access by plane, boat or foot); total number of commercial operators; backcountry service locations; and number of sightseeing tour operators. Inquire with state and federal land management agencies (ADF&G, DNR, BLM, USFWS, and NPS) regarding visitation numbers for the project area. Scoping comments also identified a lack of quantifiable recreation use data for seasons other than summer.	Recreation visitor numbers and use patterns are relevant to better understanding of the scope of use in the area and of potential significant impacts but may not be relevant to determining whether or not impacts will occur.	The data regarding numbers of users such as those specifically listed are not essential to a choice among alternatives but would be informational, to the extent they are available. The general types and patterns of recreational use are essential, and information about types and patterns of use are available.	Obtaining the data regarding numbers of users such as those specifically listed is not applicable because it not essential. However, existing information is obtainable within some agencies (particularly federal agencies) and in other recreation information. These data have been obtained, found to be adequate to make a choice among alternatives, and used in the Supplemental EIS.	3.4.3	3.4.3
Socio	Scoping comments included concerns about visual impacts. Some project-specific visual impacts analysis has occurred (for Gates of the Arctic), though baseline visual data do not exist for the full project area. Without these data and a means to assess changes in the regional viewscape, there is no way to assess visual impacts. Obtain BLM Visual Resource Inventory and determine if additional information is needed to assess recreation impacts. Inquire with other agencies for similar information.	The information is relevant to visual impact and recreation impact assessment, but the project is mostly about the difference between having no development and having road development. A substantial visual change is expected and formal assessment is not needed to make this determination.	The information is not essential to a choice among alternatives. All alternatives would create a dramatic visual change in an almost-entirely natural visual environment. The NPS visual analysis is sufficient as a proxy for other parts of the project area.	Not applicable because not essential. Existing data, however, such as the NPS visual analysis, exists and is obtainable without unreasonable cost or expenditure of time. The BLM has acquired it and used it in the Supplemental EIS. Completing new fieldwork via helicopter throughout some 500 miles of alignments would be exorbitant in terms of time and cost without adding substantially to the knowledge base.	3.4.4	3.4.4
Socio	Public comments identified a concern for the project impact on area viewsheds, including and beyond national parkland boundaries. This would require performing a visual resource inventory along the alignments and evaluating impacts at key observation points.	The information is relevant to visual impact and recreation impact assessment, but the project is mostly about the difference between having no development and having road development. A substantial visual change is expected and formal assessment is not needed to make this determination.	The information is not essential to choice among alternatives. All alternatives would create a dramatic visual change in an almost-entirely natural visual environment. The NPS visual analysis is sufficient as a go-by and proxy for other parts of the project area.	Not applicable because not essential. Existing data, such as the NPS visual analysis, exists and is obtainable without unreasonable cost or expenditure of time. The BLM has acquired it and used it in the Supplemental EIS. Completing new fieldwork via helicopter throughout some 500 miles of alignments would be exorbitant in terms of time and cost without adding substantially to the knowledge base.	3.4.4	3.4.4
Socio	Past or draft visual resource management maps for the eastern half of the project would be needed to consistently evaluate lands for all alternatives.	Visual Resource Inventory and Visual Resource Management mapping is relevant to understanding how the project may affect management of the visual resource but not necessarily relevant to whether there would be catastrophic visual impacts.	The VRI and VRM mapping is not essential to a choice among alternatives, but it provides good context for discussion of visual impacts and management direction.	Not applicable because not essential. VRI and VRM exist for the eastern portion of the project area and are easy to obtain. The BLM used this information in the Supplemental EIS. Where such data does not exist, management has not been determined and would require a formal planning process by the BLM. This is not considered reasonable for completing a Supplemental EIS.	3.4.4	3.4.4
Cumult	Ecological impacts of changes in fire suppression strategy (whether it's from better access to the area, routine use of the road as a line of defense, reduction in natural fire size, or increased fire starts due to increased human activity.) Ability to use existing data and models to simulate is unknown at this time.	Simulation of fire suppression data and models is one methodology of assessing the impact of the project on the agency and ecology related to changes in the fire regime.	Simulation of fire suppression strategy is not essential to a choice among alternatives. All alternatives would affect fire patterns and fire suppression. Qualitative discussion of fire and fire suppression has been determined adequate for the EIS.	Not applicable because not essential. Creating new data through modeling and simulation could be done, but costs and time would be exorbitant considering the extent of the project area and unknowns regarding usefulness of existing data and models.	3.3.1	3.3.1

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Bio	The 2019 BLM Alaska Special Status Plant and Animal Species List provides a list of sensitive species within the state. This data would be useful to understand what sensitive plants species may occur within the vicinity of the proposed alternatives as well as to assess potential impacts to those species.	Data about occurrences of special status species is relevant to understanding these species, although the likelihood of significant impacts is considered low.	The missing information is essential to establishing what is known about the study area and its species and, although not expected, could be essential to a choice among alternatives (e.g., if one alternative affected multiple sensitive areas and another affected few or none).	Existing information on special status species is available, and the BLM has acquired and used it in the Supplemental EIS.	3.3	3.3
Cumult	There is a body of literature on landscape fragmentation, and a few data sets around, but nothing specific to this project. Some data sets compiled for the Central Yukon RMP on landscape connectivity and ecological integrity are available through the BLM, but they will not cover portions of the Ambler road project. The Northwest Boreal LCC has funded more extensive work and may be able to provide relevant data.	Information on landscape fragmentation specific to the study area may be relevant to impacts to ecological integrity. As a 'first road' into the study area, impacts are likely and a certain level of fragmentation assured, but significant/ catastrophic effects to ecological integrity are not expected from a single road with relatively low traffic levels.	The information is not essential to a choice among action alternatives. Any of the action alternatives would create similar fragmentation impacts, and all would be treated the same in terms of stipulations to protect ecological integrity.	Not applicable because not essential.		
Phys	Because "surficial deposits" are necessary for road bed materials, as well as being the preferred substrate for the routes, the majority of the alternate routes are placed along surficial deposits. This results in a large data gap from having little to no available information regarding whether or not there are significant concentrations of asbestos in the sand or gravel along the routes. Limited site-specific information on material with NOA. Understanding how far NOA has spread from their original bedrock sources into surficial deposits would be useful for minimizing route exposure and impacts from the material. A potential resolution of this data gap would be examining maps or other information that show the direction and limits of glaciers that would have distributed the material, and comparing to the DGGs map of asbestos presence (Solie and Athey 2015). Also, suggest augmenting existing maps to estimate NOA presence in surficial deposits using glacier maps (if available).	Sufficient data is available to indicate that NOA occurs along all alternatives. The missing information about what is specifically in the individual proposed material sites or in other surficial deposits could be relevant to understanding the likelihood of asbestos material being used in road construction and thus to the potential for health effects.	No, the missing information is not essential to a choice among alternatives. All alternatives are known to have NOA occurrences. AIDEA has stated it has identified approximately twice the gravel actually needed in order to be able to avoid NOA and has committed to following DOT&PF guidelines meant to avoid and minimize asbestos in road dust. All alternatives are treated the same on this topic, and material testing would occur during final design.	Not applicable because not essential. However, the work needed to create a model for transport of material from bedrock sources to existing surficial deposits would be costly and time intensive and not likely dependably accurate.	3.2.1, 3.2.2, 3.2.3, 3.2.7, 3.3 in general, 3.4.5, 3.4.6, and 3.4.7. Also Health Impact Assessment	3.2.1, 3.2.2, 3.2.3, 3.2.7, 3.3 in general, 3.4.5, 3.4.6, and 3.4.7. Also Health Impact Assessment
Phys	Given the gravel surface and the likelihood that construction techniques would be similar to those of the Dalton Highway, and given that there has been measurable warming in northern Alaska in recent decades, it will be important to assess whether permafrost changes or other climate-related changes may have caused either improvement or degradation in the Dalton Highway function and in maintenance needs over a several-decade period of measured warming in northern Alaska.	Information about the Dalton Highway is not relevant to understanding effects of climate change/permafrost thawing on the proposed road. The effects are well documented in literature without collecting the maintenance records.	The missing information is not essential to a choice among alternatives, because all alternatives in general would traverse permafrost areas. It would be the responsibility of the applicant to keep the road maintained to a useable level or close it.	Not applicable because not essential.	3.2.1	3.2.1

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Phys	For assessing the role of climate change on gravel road maintenance and sustainability, maintenance and cost trend data will be requested for the Dalton Highway to assess whether maintenance costs have been potentially affected by measured warming in northern Alaska, which has been occurring since approximately the opening of the Dalton Highway in the 1970s. The quality and consistency of any such maintenance and cost data are unknown at this time, pending further investigation.	The requested information about the Dalton Highway is not relevant to understanding effects of climate change/permafrost thawing on the proposed road. The effects are well documented in literature without collecting the maintenance records.	The missing information is not essential to a choice among alternatives, because all alternatives in general would traverse permafrost areas. Standard engineering practices are expected to enable construction of the road in the arctic environment. It would be the responsibility of the applicant to keep the road maintained to a useable level or close it.	Not applicable because not essential.	3.2.1	3.2.1
Bio	It is possible that focused wood frog surveys could be conducted through field surveys, eDNA analysis (Spangler et al. 2017), and/or remote acoustic recordings (ABR 2015b). Consultation with nongame wildlife managers regarding wood frogs should be conducted to determine if focused surveys are warranted or feasible.	Data regarding wood frog presence is relevant primarily to assessing impacts to wood frogs. Wood frogs are considered to be widespread in the study area, and no significant impacts to wood frog populations are expected.	Data regarding wood frog presence are not essential to a choice among alternatives. All alternatives traverse wood frog habitat and would affect that habitat but none would be expected to threaten wood frog populations. Stipulations to protect aquatic life would be equally applied to all action alternatives.	Not applicable because not essential. Fieldwork to assess wood frog presence would entail exorbitant cost and investment of time, given the broad extent of aquatic habitats across the project area. NPS GAAR wood frog information has been acquired and referenced for the Supplemental EIS. Available, vegetation mapping data was collected and used to evaluate impacts in the Supplemental EIS.	3.3.2	3.3.2
Phys	Limited baseline noise data exist. Without these data and a means to assess noise propagation through the environment, baseline assumptions from data collected elsewhere would need to be accepted to assess the level of impacts from noise. Recommend consideration of a qualitative noise impact analyses using data available from Gates of the Arctic. Agencies may require individual inventories, collecting field data in both summer and winter according to protocols agreed upon by the BLM and participating agencies.	Baseline sound level data are relevant to understanding the potential for noise impacts. Given the status of the project area as almost entirely undeveloped, the main impact is likely to be presence vs. absence of road noise and to be an important impact on that basis rather than a quantified change basis.	Sound level data are not essential to a choice among alternatives, because all alternatives would create new road noise where currently there are few human-caused noises. All alternatives would operate similarly with similar traffic levels and thus similar noise levels.	Not applicable because not essential. However, NPS sound level data were obtained and used in the Supplemental EIS. Gathering new baseline data in the field over some 500 miles of alternatives and an expansive project area was judged exorbitant in cost and time investment and not pursued. The NPS data works as a proxy for other undeveloped portions of the study area.	3.2.6	3.2.6
Phys	It may be sufficient to use Gates of the Arctic noise measurement data to qualitatively characterize the existing noise environment along all the alternatives.	Baseline sound level data are relevant to understanding the potential for noise impacts. Given the status of the project area as almost entirely undeveloped, the main impact is likely to be presence vs. absence of road noise and to be an important impact on that basis rather than a quantified change basis.	Sound level data are not essential to a choice among alternatives, because all alternatives would create new road noise where currently there are few human-caused noises. All alternatives would operate similarly with similar traffic levels and thus similar noise levels.	NPS sound level data were obtained and included in the Supplemental EIS. Gathering new data in the field over some 500 miles of alternatives and an expansive project area was judged exorbitant in cost and time investment and not pursued. The NPS data works as a proxy for other undeveloped portions of the study area, and NPS modeling was extended the length of each alternative.	3.2.6	3.2.6
Bio	The University of Alaska Fairbanks has conducted some analysis of impacts along existing roads to permafrost alterations, hydrologic changes and dust for some amount of distance from the right-of-way; however, data is not available or sufficient to estimate the effects in the boreal forest. An analysis of data on what worked and didn't along the Dalton Highway should be conducted.	An analysis of what worked and what didn't along the Dalton Highway regarding permafrost alterations, hydrologic changes, and dust may be relevant to understanding effects on the proposed road and effects of road construction on the surroundings. However, such effects are generally well documented in literature without collecting new information about highway effects and maintenance records.	The missing information is not essential to a choice among alternatives, because all alternatives in general would traverse permafrost areas. It would be the responsibility of the applicant to keep the road maintained to a useable level or close it.	Not applicable because not essential.	3.2.1	3.2.1
Bio	Field and/or office based functional assessment data within a 2,000-foot study area surrounding the alternatives. This is needed for all of Alternative C; portions of Alternatives A and B.	Wetland functional assessments for all alternatives is needed for the development of compensatory mitigation in the USACE Section 404 wetland permitting process but is not required for the comparison of alternatives in the Supplemental EIS.	Wetland functional assessment data are not required for the Supplemental EIS.	The applicant prepared a fine-scale wetland map for all alternatives suitable for the effective analysis of wetland impacts among alternatives. The desktop mapping was used in the analysis.	3.3.1, and Volume 4 Maps	3.3.1, and Volume 4 Maps

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Bio	A wetland functional assessment completed for all alternatives in the EIS using a consistent and USACE-approved methodology is required to evaluate avoidance and minimization of high-value wetlands and impacts to wetland functions among all alternatives. These data may be needed to support compensatory mitigation planning for the selected alternative. Consider field- and/or office-based functional assessment data within a 2,000-foot study area surrounding the reasonable alternatives. A recommendation was made that wetland and vegetation mapping and reporting efforts should be supported by fieldwork as well as available LiDAR and high-resolution imagery. (Data gap: a lack of USACE-approved wetland functional assessment for Alternative A, aside from the work completed by ABR in 2017)	Wetland functional assessment and mapping are relevant to understanding wetlands in the project area and relevant to wetland and waters impacts, which could be significant. Relevance is primarily to support compensatory mitigation planning in the Section 404 wetland permitting process and not for the alternatives analysis in this Supplemental EIS.	The missing data are not essential to a choice among alternatives. Functional assessments have been provided for most of the Alternative A/B alignments and are broadly applicable to the study area as a whole.	Not applicable because not essential. The cost and time required to complete further functional assessment work was deemed exorbitant in light of the added value that would be provided. This decision was made in consultation with the USACE.	3.3.1 and Volume 4 Maps	3.3.1 and Volume 4 Maps
Cumulative	Data need: Baseline information on past and present levels of activity on key issues: public access, hunting levels, fishing activity, caribou movement, fish, socioeconomics, visual resources, and recreation covering all reasonable alternatives. Collect additional data.	Information on activity levels of people on the land would be relevant to understanding hunting/fishing pressure on wildlife and recreation and local/regional economic activity. Because use levels are low and because the road would not be open to public traffic, impacts would not be significant/catastrophic.	Actual activity levels are not essential to a choice among alternatives, but an understanding of activity types and locations may be essential, because it is possible some areas have more activity or more sensitive activity than others. Sufficient information exists to understand activity types and locations.	Collection of new data was deemed to be exorbitant in terms of cost and time. The BLM collected existing information as needed to complete impact analysis.	3.3.2 Fish; 3.3.4 Mammals; 3.4.3 Recreation; 3.4.4 Visual; 3.4.5 Socioeconomics and Communities; 3.4.7 and Appendix L Subsistence	3.3.2 Fish; 3.3.4 Mammals; 3.4.3 Recreation; 3.4.4 Visual; 3.4.5 Socioeconomics and Communities; 3.4.7 and Appendix L Subsistence
Bio	The literature review should also include reports pertaining to monitoring and minimization of invasive species, avoidance and minimization of impacts to rare plant species sensitive to disturbance, and impacts to vital wildlife habitat such as lichen vegetation communities and shallow waterbodies important to wood frogs.	Literature pertaining to Invasive species, rare plants, and wildlife habitat is relevant to understanding the biological environment and may be relevant to significant impacts.	The information could be essential to a choice among alternatives, because some alternatives could affect areas of greater importance or rarity than others.	The BLM collected existing information as needed to complete impact analyses in all sections.	Multiple sections of the EIS	Multiple sections of the EIS
Socio	Baseline data investigation may be needed to determine background concentrations of asbestos in air and water in villages, as well as in subsistence foods along the routes.	Background concentration of asbestos in air, water, and food could be relevant to health effects related to the project adding asbestos to the system through NOA in gravel used for road construction, and then through dust in the air and in water. Asbestos occurs naturally and is in the air but is a known health risk if breathed in concentration.	The background concentrations are not essential to a choice among alternatives. Health of the populations are generally known and does not appear to be impacted by asbestos-related conditions compared to other areas, despite known NOA near communities. All alternatives would cross areas of known and likely NOA, and would be treated the same in terms of asbestos stipulations.	Not applicable because not essential. Fieldwork on hundreds of people, the subsistence foods, and for air and water in dozens of communities would be exorbitant in terms of time and cost. The BLM has contracted with asbestos experts to examine the impacts for the project using available data.	3.2.1 Geology & Soils; 3.2.3 Hazardous Waste; 3.2.5 Water Resources; 3.2.7 Air Quality; 3.4.5 Socioeconomics and Communities; 3.4.7 and Appendix L Subsistence; and Health Impact Assessment	3.2.1 Geology & Soils; 3.2.3 Hazardous Waste; 3.2.5 Water Resources; 3.2.7 Air Quality; 3.4.5 Socioeconomics and Communities; 3.4.7 and Appendix L Subsistence; and Health Impact Assessment
Phys	There are no large-scale bedrock and surficial geology maps for the selected routes. Consider desktop and field studies to compile large-scale bedrock and surficial geology maps for the selected routes.	Geology maps are relevant to understanding sources of construction materials and potential geologic hazards, including NOA and acid rock drainage risks.	Geology maps exist. A unified geology map at a single or most-desirable scale for the entire lengths of all alternatives may not exist but is not essential to choice among alternatives, because sufficient information does exist.	Not applicable because not essential. Developing original new data for some 500 miles of alternatives and a vast project area was determined to be exorbitant in terms of time and cost. The BLM collected known geologic data/mapping that was reasonably available and mapped key geologic issues based on existing data: permafrost and asbestos potential.	Volume 4 Maps; 3.2.1 Geology; 3.2.5 Water; 3.2.7 Air Quality	Volume 4 Maps; 3.2.1 Geology; 3.2.5 Water; 3.2.7 Air Quality
Bio	GIS data that include salmon spawning locations and associated habitat data collected by Lemke et al. (2013). Request GIS data and associated habitat information from Lemke et al. (2013) to avoid the need to digitize these important data.	Salmon spawning locations and habitat data are relevant to impacts related to the project. There is potential that salmon/habitat impacts could be significant. However the Lemke data were specific to earlier alignments of Alternatives A/B and did not address C at all.	The missing data are not essential to a reasoned choice among alternatives, because in general the data were nominated to the ADF&G Anadromous Waters Catalog and are presumed to be present there and because the alignments changed from the specific alignment studied.	Not applicable because not essential. However, the BLM did collect the most up to date ADF&G compilation of spawning data from the Anadromous Waters Catalog. Road and facility design near and across salmon streams are common engineering design issues in Alaska and would be addressed further in final design and permitting.	3.3.2; Volume 4 Maps	3.3.2; Volume 4, Maps

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Phys	Consult with geologists to develop order of magnitude likelihood of asbestos being present based on distances from source bedrock.	Consulting with asbestos experts could be relevant to health effects related to the project adding asbestos to the system through NOA in gravel used for road construction, and then through dust in the air and in water. Asbestos occurs naturally and is in the air, and it is a known health risk if breathed in concentration.	Consulting with asbestos experts is not essential to a choice among alternatives. All alternatives would cross areas of known and likely NOA, and all would be treated the same in terms of asbestos stipulations.	Not applicable because not essential. However, it is obtainable to consult with experts regarding existing knowledge on the topic. The BLM contracted with asbestos experts to examine the issue for the project using available data.	3.2.1 Geology & Soils; 3.2.3 Hazardous Waste; 3.2.5 Water Resources; 3.2.7 Air Quality; 3.4.5 Socioeconomics and Communities; 3.4.7 and Appendix L Subsistence; and Health Impact Assessment	3.2.1 Geology & Soils; 3.2.3 Hazardous Waste; 3.2.5 Water Resources; 3.2.7 Air Quality; 3.4.5 Socioeconomics and Communities; 3.4.7 and Appendix L Subsistence; and Health Impact Assessment
Phys	A preliminary evaluation of Alternative C and segments of Alternatives A and B with respect to acid rock drainage (ARD) issues is needed to evaluate alternatives consistently. The evaluation would be based on general bedrock geology and chemistry and aerial photo interpretation.	Evaluation of the alternatives for ARD potential may be relevant to explaining impacts of ARD on water quality, vegetation, etc.	The missing information is not essential to a choice among alternatives, because ARD potential is known for each build alternative, and all alternatives would be treated the same in terms of stipulations to address ARD risks.	Not applicable because not essential. ARD potential would be tested during geotechnical investigations on the selected alternative and addressed by mitigation measures.	3.2.1	3.2.1
Phys	Research will be required to determine acceptable ARD potential and methods to prevent or decrease ARD from material with ARD potential.	This gap is applicable to final design but is not necessary at a NEPA level to understand and disclose impacts from ARD. With proper engineering design, significant/catastrophic impacts would be avoided.	The missing information is not essential to a choice among alternatives, because ARD potential is known for each build alternative, and all alternatives would be treated the same in terms of stipulations to address ARD risks.	Not applicable because not essential. ARD potential would be tested during geotechnical investigations on the selected alternative and addressed by mitigation measures during design.	3.2.1	3.2.1
Phys	Each alternative should be searched for the presence of existing hard rock mines, and nearby surface water bodies should be analyzed for low pH and elevated metals concentration.	It is not clear that specifically discovering the presence of hard rock mines or determining existing acidity of surface waters would be relevant to significant impacts of the proposed road project. This appears to be concerned with impacts that may have occurred from past or present mines, which could be cumulative with road-related ARD impacts.	The missing information may be helpful in understanding the affected environment but is not essential to a choice among alternatives. It is not essential because it is not closely related to impacts of the project, but rather is related to future mine development in the Ambler district.	Not applicable because not essential. Fieldwork to assess water bodies for acidity in thousands of streams over some 500 miles of alternatives was determined to be exorbitant in terms of time and cost. Reasonably available existing data about risks of ARD were obtained and included in the EIS.	3.2.1	3.2.1
Alternativ es	Operations: Develop estimate of current costs of transporting fuel, supplies, equipment, modules, mineral process chemicals, and mineral concentrate over the various route alternatives and distances, and compare among reasonable alternatives.	It is not clear that costs to the applicant or road users are relevant to determining significant/catastrophic impacts of the project. The BLM has systems in place to ensure the financial ability of the applicant to take on the project, but this is not an impact of the project.	The information is not essential to a choice among alternatives, because it is about costs incurred by the applicant and not costs (impacts) to society as a whole. However impact analysis should include calculation of economic impacts.	Not applicable because not essential. However, as part of impact assessment, the BLM has undertaken to estimate a reasonably foreseeable development scenario for mining and for road traffic and has estimated truck trips/traffic. Economic impacts associated with the alternatives were updated by AIDEA at the BLM's request.	Appendix H Sections 2.1.5, 2.2	Appendix H Sections 2.1.5, 2.2
Bio	If caribou movement and habitat use data are insufficient to address issues of concern, it may be necessary to conduct field studies to identify caribou (and other mammal) distribution, habitat use, movement corridors, and seasonal range use. If field studies are not conducted, a suggestion was made to rely heavily on ADF&G and NPS data.	Field studies related to caribou/mammal movement and distribution would be relevant to potentially significant impacts to caribou from the road and its traffic, because they would help define patterns of movement, at least in the year(s) studied.	The data are not essential to a choice among alternatives but are assumed to be helpful. The data are not essential because enough is known about caribou behavior and movement from other existing studies to predict impacts without project-specific field data.	Not applicable because not essential. The BLM determined that the time and cost associated with field studies of caribou movement would be exorbitant, given the large area traversed by the alternatives and the caribou herds, and because sufficient relevant caribou data already existed and there is extensive baseline data on caribou distribution and movements from caribou outfitted with telemetry collars. Other mammals have not been identified through scoping at the same level of concern as caribou.	EIS 3.3.4	EIS 3.3.4
Bio	Available mapping lacks vegetation type attributes.	Mapping of vegetation types is relevant to understanding the affected environment in general and for plants and wildlife habitat more specifically. Some wildlife impacts could be significant, which in turn could be significant for subsistence.	A certain level of understanding of vegetation by type is essential to understanding the project area and likely to a choice among alternatives, although other information about wildlife movement and behavior may be sufficient.	Vegetation type data are available through the BLM's Rapid Ecoregional Assessment GIS, with 15 classifications of vegetation type. This was determined to be adequate for the project and is reasonably obtainable and was used in the Supplemental EIS.	3.3.1; Volume 4, Maps	3.3.1; Volume 4 Maps

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Bio	Mapping of vegetation types using the Alaska Vegetation Classification system, a standard classification system developed for Alaska, is recommended for the alternatives and the missing eastern end of Alternatives A and B.	Mapping of vegetation types is relevant to understanding the affected environment in general and for plants and wildlife habitat more specifically. Having similar data for all alternatives is important to fairly assessing impacts.	A certain level of understanding of vegetation by type is essential to understanding the project area and likely to a choice among alternatives, although other information about wildlife movement and behavior may be sufficient. It is essential to have similar data for all alternatives.	Vegetation type data are available through the BLM's Rapid Ecoregional Assessment GIS, with 15 classifications of vegetation type for the entire project area. This was determined to be adequate for the project and is obtainable and was used in the Supplemental EIS. It was supplemented by what can be generalized to all alternatives from more detailed mapping done by the applicant. It was determined to be exorbitant in cost and time to map all alternatives to a more detailed level and that the less detailed level was adequate.	3.3.1; Volume 4, Maps	3.3.1; Volume 4 Maps
Bio	Vegetation type mapping needed for Alternative C and the eastern 50 miles of Alternatives A and B. Field and supplemental data supported vegetation type mapping within a 2,000-foot study area surrounding the reasonable alternatives.	Mapping of vegetation types is relevant to understanding the affected environment in general and for plants and wildlife habitat more specifically. Having similar data for all alternatives is important to fairly assessing impacts.	A certain level of understanding of vegetation by type is essential to understanding the project area and to a reasoned choice among alternatives, although other information about wildlife movement and behavior may be sufficient. It is essential to have similar data for all alternatives.	Vegetation type data are available through the BLM's Rapid Ecoregional Assessment GIS, with 15 classifications of vegetation type for the entire project area. This was determined to be adequate for the project and is obtainable and was used in the Supplemental EIS. It was supplemented by what can be generalized to all alternatives from more detailed mapping done by the applicant. It was determined to be exorbitant in cost and time to map all alternatives to a more detailed level and that the less detailed level was adequate.	3.3.1; Volume 4. Maps	3.3.1; Volume 4 Maps
Bio	Data gap: mapped wildlife habitat. Map wildlife habitat within and surrounding all alternatives at a similar quality and resolution. Wildlife habitat can be derived from vegetation mapping.	Mapping of vegetation types is relevant to understanding the affected environment in general and for plants and wildlife habitat more specifically. Some wildlife impacts could be significant, which in turn could be significant for subsistence.	A certain level of understanding of habitat by vegetation type is essential to understanding the project area and likely to a choice among alternatives, although other information about wildlife movement and behavior may be sufficient.	Vegetation type data is available through the BLM's Rapid Ecoregional Assessment GIS, with 15 classifications of vegetation type. This was determined to be adequate for the project and is reasonably obtainable and was used in the Supplemental EIS. Other measures of caribou habitat (winter range, summer range, collared movement, and lichen top cover, etc.) also were mapped and used.	3.3.4; Volume 4. Maps	3.3.4; Volume 4 Maps
Phys	Water resources data, including surface water (rivers and lakes) quantity and quality, groundwater availability and quality, and the seasonal changes to these resources, are recommended for identifying and assessing impacts from development.	Surface water and ground water flows and quality are relevant to understanding the affected environment and assessing impacts to water. It is possible that impacts to water would be significant.	Detailed data on water flow in each drainage and in groundwater, and on water quality, are not essential to a choice among alternatives. Sufficient data exist to map drainages and to understand the general behavior of water, and it is reasonable to assume that virtually all water quality near the alternatives if effectively untainted by human activity, given the mostly undeveloped and unindustrialized nature of the area.	Not applicable, because not essential. The fieldwork necessary to investigate details of surface and subsurface water flows and water quality was determined to be exorbitant in terms of time and cost, considering the extent of the study area, the length of the alternatives (some 500 miles), and the hundreds or even thousands of drainages crossed.	3.2.5; 3.3.2; 3.3.5; 3.4.2	3.2.5; 3.3.2; 3.3.5; 3.4.2
Phys	Baseline data on water resources are important in determining how road construction and mine development activities may impact the existing conditions.	Surface water and ground water flows and quality are relevant to understanding the affected environment and assessing impacts to water. It is possible that impacts to water would be significant.	Detailed data on water flow in each drainage and in groundwater, and on water quality, are not essential to a choice among alternatives. Sufficient data exist to map drainages and to understand the general behavior of water, and it is reasonable to assume that virtually all water quality near the alternatives if effectively untainted by human activity, given the mostly undeveloped and unindustrialized nature of the area.	Not applicable, because not essential. The fieldwork necessary to investigate details of surface and subsurface water flows and water quality was determined to be exorbitant in terms of time and cost, considering the extent of the study area, the length of the alternatives (some 350 miles), and the hundreds or even thousands of drainages crossed.	3.2.5; 3.3.2; 3.3.5; 3.4.2	3.2.5; 3.3.2; 3.3.5; 3.4.2

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Phys	Additional data on water resources are needed to fully describe the impacts of changes to existing conditions due to infrastructure development and mine operations.	Surface water and ground water flows and quality are relevant to understanding the affected environment and assessing impacts to water. It is possible that impacts to water would be significant.	Detailed data on water flow in each drainage and in groundwater, and on water quality, are not essential to a choice among alternatives. Sufficient data exist to map drainages and to understand the general behavior of water, and it is reasonable to assume that virtually all water quality near the alternatives if effectively untainted by human activity, given the mostly undeveloped and unindustrialized nature of the area.	Not applicable, because not essential. The fieldwork necessary to investigate details of surface and subsurface water flows and water quality was determined to be exorbitant in terms of time and cost, considering the extent of the study area, the length of the alternatives (some 500 miles), and the hundreds or even thousands of drainages crossed.	3.2.5; 3.3.2; 3.3.5; 3.4.2	3.2.5; 3.3.2; 3.3.5; 3.4.2
Phys	Limited field data for studied routes and no field data for Alternative C. Consider fieldwork including geotechnical drilling and material testing to check assumptions of reconnaissance level studies.	Geotechnical drilling and material testing would be relevant to determining such risks as naturally occurring asbestos and acid rock drainage, which if ignored could present potential for significant impacts.	Specific drilling and material testing is not essential to a choice among alternatives. A reasonable understanding of the project area is available from geologic mapping and other existing information. All alternatives are expected to encounter geologic challenges, and a reasonable drilling/testing program would not eliminate all questions and would cause impacts. Drilling and testing data would be useful but is more suited to the design phase.	Specific drilling and material testing information for some 500 miles of alternatives was determined to be exorbitant in terms of cost and time. Material testing would be conducted during final design for the selected alternative.	3.2.1; 3.2.2	3.2.1; 3.2.2
Bio	Limited baseline discharge data exist for water courses in the region. Very little water quality data exist (on an area-wide basis) for lakes and rivers in the region. (Note: this data gap is also discussed in the Water Resources section previously).	Surface water and ground water flows and quality are relevant to understanding the affected environment and assessing impacts to water. It is possible that impacts to water would be significant.	Detailed data on water flow in each drainage and in groundwater, and on water quality, are not essential to a choice among alternatives. Sufficient data exist to map drainages and to understand the general behavior of water, and it is reasonable to assume that virtually all water quality near the alternatives if effectively untainted by human activity, given the mostly undeveloped and unindustrialized nature of the area.	Not applicable, because not essential. However, baseline water quality monitoring has been incorporated into Appendix N of the Supplemental EIS as a potential mitigation measure. The fieldwork necessary to investigate details of surface and subsurface water flows and water quality was determined to be exorbitant in terms of time and cost, considering the extent of the study area, the length of the alternatives (some 500 miles), and the hundreds or even thousands of drainages crossed.	Appendix N; 3.2.5; 3.3.2; 3.3.5; 3.4.2	Appendix N; 3.2.5; 3.3.2; 3.3.5; 3.4.2
Bio	Presence/absence of wood frogs and presence/absence of chytrid fungus. Consider GIS analysis to determine potential wood frog habitat. Conduct limited wood frog surveys and test for chytrid fungus. Methodology should be developed in coordination with ADF&G, NPS, and University of Alaska-Fairbanks researchers.	The presence of wood frogs is relevant to the project's potential impacts on wood frogs. The presence of the fungus is relevant to the health of wood frogs and to general baseline/affected environment knowledge but not particularly relevant to the road's impacts to frogs. Frog habitat is expected to be widespread, and no significant impact to frog populations is anticipated.	Conducting frog surveys and tests for the fungus is not essential to a choice among alternatives. All alternatives are expected to traverse frog habitat and to impact individual frogs, but are not expected to impact frog populations. While it is possible the road could be a vector to accidentally bring the fungus to the area, the existing presence of the fungus would be a separate issue.	Not applicable because not essential. Fieldwork to assess wood frog presence would entail exorbitant cost and investment of time, given the broad extent of aquatic habitats across the project area. Based on what is known, it reasonable to assume wood frog habitat is widespread. Collecting known observations data and mapping likely wood frog distribution is reasonable and has been done using vegetation mapping.	3.3.2; Volume 4 Maps	3.3.2; Volume 4 Maps
Bio	Data need: overwintering habitat use by fish in areas potentially impacted by the project (for all alternatives) Consider acquiring or developing EIS-level data to identify overwintering habitat use by fish. Environmental analysis should address overwintering habitat use by fish in areas potentially impacted by the project. A few recent studies mentioned previously (Wuttig 2015 and Brown 2009) provide information on overwintering habitat for select species near Alternatives A and B, but overwintering use data tied to other potential alternatives may not be available.	Overwintering data for fish are relevant to potential impacts to fish, which could be significant if water drainage patterns were ignored.	Overwintering data for fish are not essential to a choice among alternatives. All alternatives are expected to affect fish habitat year round, and stipulations for all alternatives related to protection of fish and fish habitat would be the same for all alternatives. It was determined that sufficient information is known to reasonably discuss fish habitat and seasons of fish movements	Not applicable because not essential. However, existing studies regarding fish overwintering habitats have been acquired and used in the Supplemental EIS.	3.3.2	3.3.2

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Alternativ es	Design/construction consideration: Data are required on the applicability of mitigation measures to avoid or minimize impacts from infrastructure development. The roadways would likely be constructed in methods similar to existing Arctic roads, with design elements and mitigation measures that are suited to the climate in which they are located.	Best practices and common mitigation measures for arctic road construction are relevant to minimizing impacts of multiple kinds.	Types of reasonable and effective mitigation measures available are essential to a choice between No Action and the action alternatives, and for understanding whether impacts can be reasonably mitigated. However, all action alternatives are expected to be treated the same regarding most mitigation measures, so mitigation measures are not essential to a choice among action alternatives.	Information about best practices and effective mitigation measures have been collected from the BLM, CAs, public comments, and incorporated into the Supplemental EIS.	Appendix N; also EIS 2.4.4	Appendix N; also EIS 2.4.4
Phys	Soundscape inventories and project descriptions may be required for all other alternatives to develop comparable analyses and apply environmental sound models to assess impacts.	Baseline sound level data are relevant to understanding the potential for noise impacts. Given the status of the project area as almost entirely undeveloped, the main impact is likely to be presence vs. absence of road noise and to be an important impact on that basis rather than a quantified change basis.	Sound level data are not essential to a choice among alternatives, because all alternatives would create new road noise where currently there are few human-caused noises. All alternatives would operate similarly with similar traffic levels and thus similar noise levels.	Not applicable because not essential. NPS sound level data were obtained, and incorporated into the Supplemental EIS. Gathering new data in the field over some 500 miles of alternatives and an expansive project area was judged exorbitant in cost and time investment and not pursued. The NPS data works as a proxy for other undeveloped portions of the study area, and NPS noise modeling was extended the length of each alternative.	3.2.6	3.2.6
Phys	Preliminary evaluations, including drilling and material testing regarding ARD, should be completed for routes considered for construction and associated potential material source.	Geotechnical drilling and material testing would be relevant to determining such risks as naturally occurring asbestos and acid rock drainage, which if ignored could present potential for significant impacts.	Specific drilling and material testing are not essential to a choice among alternatives. A reasonable understanding of the project area is available from geologic mapping and other existing information. All alternatives are expected to encounter geologic challenges, and a reasonable drilling/testing program would not eliminate all questions and would cause impacts. Drilling and testing data would be useful but is more suited to the design phase.	Not applicable because not essential. Specific drilling and material testing information for some 500 miles of alternatives was determined to be exorbitant in terms of cost and time. Material testing would be conducted during final design for the selected alternative.	3.2.1; 3.2.2	3.2.1; 3.2.2
Cumult	Baseline traffic noise data along existing highway corridors are not available. Qualitative assessment of traffic noise increases within a set distance from road corridors associated with increased truck or rail traffic.	This suggestion does not appear to directly request baseline traffic noise data. Baseline sound level data are relevant to understanding the potential for noise impacts. Given the status of the project area as almost entirely undeveloped, the main impact is likely to be presence vs. absence of road noise and to be an important impact on that basis rather than a quantified change basis. Along the Dalton Hwy, the sound change would be an incremental small increase.	Sound level data are not essential to a choice among alternatives, because all alternatives would create new road noise where currently there are few human-caused noises. All alternatives would operate similarly with similar traffic levels and thus similar noise levels.	Not applicable because not essential. However, NPS sound level data were obtained, and NPS was asked to extend its modeling to the road corridors. Gathering new data in the field along 100 miles of Dalton Hwy was judged exorbitant in cost and time investment and not pursued, especially given the expected small incremental increase in road noise in that area compared to areas that currently have no traffic noise.	3.2.6	3.2.6
Phys	Physical environment-related fieldwork has been requested, which would include collecting temperature, ice-content, and soils data and identifying permafrost distribution along alternative alignments for EIS analysis impact and comparative analyses. A request was made for this data to be collected along alternative alignments using a geotechnical drilling field effort.	The missing information likely is relevant to better understanding of the project area environment but is not relevant to significant adverse impacts on the environment. It is known that all alternatives are underlain by permafrost. Consequences for a road project of thawing permafrost are principally damage to the road, which is a risk to the applicant but probably not significant to the broader environment.	Drilling information would be informative but is not essential to a choice among alternatives. All alternatives cross permafrost, and all have risks. Most risks are standard for construction in the arctic and would be dealt with equally among the alternatives in design.	Not applicable because not essential. The cost and time required to complete field drilling over some 500 miles of alignments in an area without road access would entail exorbitant cost and time. When an alternative is selected, drilling is expected to occur for one alternative to inform design.	3.2.1	3.2.1
Cultural	Comprehensive cultural resources investigations involving aerial and pedestrian field survey, with sub-surface testing and site evaluation (i.e., determining eligibility to the National Register of Historic Places) will need to be conducted throughout the proposed Project area. The extent, timing, and survey methods can be prescribed in a PA for the preferred alternative [36 CFR 800.4(a)(2)].	Site investigations are relevant to determining presence and importance of cultural resources, because sites often are forgotten, only partially known, or hidden/buried.	The results of fieldwork are not essential to a choice among alternatives, because there is a known regional history that affects all alternatives, because there are some data available, and because there is a formal PA procedure in place to address the topic for the selected alternative.	Not applicable because not essential. The cost and time required to perform ground surveys and shovel testing would entail exorbitant cost and time for some 500 miles of alignments.	3.4.8	3.4.8

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Cultural	Archival material through Alaska's Digital Archives and the National Archives should be reviewed, including historical photographs, albums, oral histories, moving images, maps, documentaries, and physical objects associated with the Project area, to identify places or individuals that may be significant [36 CFR 800.4(4)(b)(1)]. Resources include Alaska's Digital Archives, the National Archives, museum and library collections, Project Jukebox at the University of Alaska, Fairbanks, and Gates of the Arctic Research Portal.	Archival material may be relevant to determining presence and importance of cultural resources, because sites often are forgotten or only partially known.	The results of archival research are not essential to a choice among alternatives, because there is a known regional history that affects all alternatives, because there is some data available, and because there is a formal PA procedure in place to address the topic for the selected alternative.	Not applicable because not essential. The cost and time required to perform archival research would entail exorbitant cost and time for some 500 miles of alignments.	3.4.8	3.4.8
Cultural	National Register of Historic Places (NRHP) evaluations must be conducted on both newly discovered and previously recorded resources to determine if they are eligible to the NRHP. If they are eligible, effects and mitigation measures must be determined for those properties (36 CFR 800.5).	This is related to a legal requirement and not specifically a data gap. Related regulations allow for a Programmatic Agreement that details how resources will be discovered and documented. This is relevant to protecting historic and cultural resources.	Information about specific resources in the proposed alternative corridors is not essential to a choice among alternatives because all alternatives have risk of encountering such resources and because there is a process in place (the PA process) to identify and protect to the extent possible any sites discovered under any alternative.	Not applicable because not essential. However, a Programmatic Agreement and CRMP have been developed.	3.4.8	3.4.8
Cultural	Comments received to date identified the need to address Indigenous use of trails and travel routes, including the use of waterways	Information on trails and travel routes is relevant to understanding the project area and identifying corridors of use and identifying impacts.	Information about specific trails or travel routes in the proposed alternative corridors is not essential to a choice among alternatives because all alternatives have a risk of encountering trails and travel routes and because there is a process in place (the PA process) to address trails and travel routes discovered under any alternative.	Not applicable because not essential. However, the BLM has included trail and travel route information from the AHRS, place names, and ethnographic interviews	3.4.8	3.4.8
Cultural	Scoping comments received to date identified the need for consultation with Tribes to identify and evaluate potential cultural landscapes, places of Traditional Cultural Importance, traditional use areas, or other knowledge that Tribes may have as cultural resource subject matter experts.	Information from Tribes about cultural resources is relevant to understanding the project area and identifying impacts. Significant impacts to culturally important places are possible but may not be likely.	The information could be essential to a choice among alternatives, if it was determined that areas of significant cultural importance were impacted by one alternative but not another.	The BLM has undertaken such consultation and government-to-government consultation, including ethnographic interviews and Talking Circle sessions, on this and other topics, and incorporated any data into the Supplemental EIS and Section 106 process and PA.	3.4.8	3.4.8
Cultural	Interviews with traditional knowledge holders need to be conducted to determine where ethnographic resources, or places of traditional religious or cultural importance may exist within the Project area. These interviews should also inform field survey [36 CFR 800.4(4)].	Information from Tribes about cultural resources is relevant to understanding the project area and identifying impacts. Significant impacts to culturally important places are possible but may not be likely.	The information could be essential to a choice among alternatives, if it was determined that areas of significant cultural importance were impacted by one alternative but not another.	The BLM has undertaken such consultation and government-to-government consultation, including ethnographic interviews and Talking Circle sessions, on this and other topics, and incorporated any data into the Supplemental EIS and Section 106 process and PA.	3.4.8	3.4.8
Cultural	Compile previously documented place names for the cultural resource study area to help identify ethnographic resources. Following the compilation of place name information, include place name research for areas lacking previous documentation.	Place name research could be relevant to understanding the cultural importance of places, but no impact to place names per se is anticipated.	The information about place names is not essential to a choice among alternatives, because cultural importance can be determined in other ways.	Not applicable because not essential. However, the BLM has collected available data about place names and incorporated it into the Supplemental EIS.	3.4.8; Maps	3.4.8; Maps
Cultural	More information is needed regarding historic sites in the region. AHRS database shows a predominance of prehistoric site types. Need to confirm if this is an accurate reflection or if the data is skewed with researchers focusing more on prehistoric resources in the Project area.	Information about historic sites could be relevant to understanding and assessing impacts to historic sites. Significant impacts are possible but not considered likely because of ability to adjust road alignment and because of mitigation measures in a PA.	Information about specific resources in the proposed alternative corridors is not essential to a choice among alternatives because all alternatives have risk of encountering such resources and because there is a process in place (the PA process) to identify and protect to the extent possible any sites discovered under any alternative.	Not applicable because not essential. However, the BLM has collected available data about historic sites, and incorporated it into the Supplemental EIS.	3.4.8	3.4.8

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Cultural	Review mining records to identify historic mining sites. Evaluation and inventory of modern mining locations would likely lead to further knowledge of historic resources within the region. Useful archival resources include historic USGS topographic and other historic maps; land status records; mining claim documents and other mining-related documentation.	Original research regarding historic mining sites is relevant to understanding the historic background of the area and to potentially to identifying specific historic properties.	Information about specific resources in the proposed alternative corridors is not essential to a choice among alternatives because all alternatives have risk of encountering such resources and because there is a process in place (the PA process) to identify and protect to the extent possible any sites discovered under any alternative.	Not applicable because not essential. However, the BLM has collected available data about historic sites, and incorporated it into the Supplemental EIS, as appropriate (i.e. considering the protected nature of the resources)	3.4.8	3.4.8
Cumult	No specific indirect and cumulative effects analysis has been done. The cumulative impacts methodology has not yet been determined. The spatial/ geographic temporal extent for indirect and cumulative impacts analysis by resource is not currently defined. A technical workshop could be conducted to determine impacts/analysis. Additionally, a cooperating agency suggested during the review of the draft data gap report that it may be helpful to look at mining projects elsewhere in Alaska, including but not limited to Red Dog mine. Nearby communities such as Kotzebue and Kivalina could provide input on the effects of job creation, subsistence and pollution.	Information about the extent and methods for indirect and cumulative impacts analysis is not really a data gap but an administrative need for completion of an EIS. Therefore this item is not addressed further.			Appendix H as a whole; reasonably foreseeable development scenario in Appendix H, Section 2, and the cumulative and indirect effects analysis under each resource in Chapter 3	Appendix H as a whole; reasonably foreseeable development scenario in Appendix H, Section 2, and the cumulative and indirect effects analysis under each resource in Chapter 3
Cumult	A past, present, and future actions list has not been prepared. Could be prepared as part of a cumulative impacts technical workshop.	Information about past, present, and foreseeable actions is not really a data gap but an administrative need for completion of an EIS. Therefore this item is not addressed further.		.	Appendix H, Section 2.3	Appendix H, Section 2.3
Alternativ es	Operations: Additional data are needed to evaluate resources and issues of concern along the reasonable alternatives, including descriptions of construction equipment, material site operations, aircraft usage, and seasonal actions.	The information is generally relevant to reasonable foreseeable impact that could be significant because the types of road operations affect the surrounding environment.	All action alternatives would operate similarly, but the information noted could be helpful in understanding the differences between No Action and any action alternative. The BLM obtained sufficient information to understand these differences and analyze impacts from all alternatives.	The BLM obtained further information from the applicant on many points of construction and operation and incorporated the information in the description of the alternatives and in impact analyses.	Chapters 2, 2.4.3 to the end; Chapter 3	Chapters 2, 2.4.3 to the end; Chapter 3
Phys	A qualitative evaluation of the potential for contaminant releases is needed during construction as well as operations at proposed maintenance, storage, or refueling facilities along each alternative. The analysis would identify best practices designed to prevent and minimize impacts of spills.	This comment is addressing impact assessment needs and not a data gap per se.	NA	Spill risk was addressed qualitatively with respect to similar projects.	3.2.3 Hazardous Waste; 3.2.5 Water Quality; 3.3.2, Fish	3.2.3 Hazardous Waste; 3.2.5 Water Quality; 3.3.2, Fish
Phys	Evaluate potential for contaminant releases. GIS evaluation to identify sensitive resources (e.g. amphibian habitat) to avoid during facility siting along each alternative. Desktop qualitative assessment of potential spills and effects on existing communities, people and wildlife.	This comment is addressing impact assessment needs and not a data gap per se.	NA	Spill risk was addressed qualitatively with respect to similar projects.	3.2.3 Hazardous Waste; 3.2.5 Water Quality; 3.3.2, Fish; and other sections	3.2.3 Hazardous Waste; 3.2.5 Water Quality; 3.3.2, Fish; and other sections
Cumult	Updated information regarding mining prospects, both within the Ambler Mining District and outside the District. Size of the mines, operating scenarios of the mines, transportation assumptions on how, where, and at what levels shipments would occur.	Detail about the mining prospects is relevant to understanding how mines could impact the environment. Some impacts could be significant.	The information is not essential to a choice among action alternatives, because the mines would be the same under any alternative, but could be essential to a choice between No Action and any action alternative.	The BLM updated the reasonably foreseeable development scenario based on most current feasibility studies, technical reports, and other materials provided in public comments to reflect the current status of mining prospects both inside and outside the District, and incorporated this information into the Supplemental EIS	Appendix H as a whole; reasonably foreseeable development scenario in Appendix H, Section 2 and the cumulative and indirect analyses under each resource section in Chapter 3	Appendix H as a whole; reasonably foreseeable development scenario in Appendix H, Section 2, and the cumulative and indirect analyses under each resource section in Chapter 3

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Alternativ es	Develop updated estimate of current costs of construction, maintenance, and operation among alternatives.	The costs of construction and operations are primarily a risk to the applicant and not an impact issue. The exception would be if public funds were proposed to be used.	The information is not essential to a choice among alternatives, particularly because the applicant proposes no use of public funds.	The BLM prepared updated cost estimates for all three alternatives and incorporated the information into the Supplemental EIS.	Section 2.4.3; Appendix C	Section 2.4.3; Appendix C
Socio	Numerous scoping comments asked about the costs vs. benefits of the project. Conduct a cost-benefit analysis.	A cost-benefit analysis is most relevant if public funds were being used; otherwise, the costs accrue to the applicant and investors.	The missing information is not essential to a choice among alternatives, because it is more about whether the project 'pencils out' for the applicant than it is about impacts to the human environment.	Not applicable because not essential. The BLM determined that sufficient socioeconomic information was available to evaluate the project and that a cost-benefit analysis was not needed given the financing structure of the proposed project.	EIS 3.4.5	EIS 3.4.5
Socio	Numerous scoping comments called for the need to assess the economic feasibility and a full analysis of project costs in all phases. Request project cost information from AIDEA.	Economic feasibility information is mostly relevant to the applicant and not to impacts. It would be relevant to significant impacts if public funds were proposed to be used.	Economic feasibility information and project costs are basic background information but are not essential to a choice among alternatives, given that the economic risk is not to the public.	Not applicable because not essential. However, the BLM requested and obtained from AIDEA greater information on project costs and project funding mechanisms, and equal information for all three alternatives, and incorporated it into the Supplemental EIS.	2.4.3; 2.4.7	2.4.3; 2.4.7
Socio	Scoping comments included inquiries about how the project would be paid for. How would bonds for the road be paid off if the tolls are not enough? Would bonds be backed by the State? Would tolls be affordable enough for truckers? Where would AIDEA get its money for investment? Inquire with AIDEA about project financing.	Economic feasibility information is mostly relevant to the applicant and not to impacts. It would be relevant to significant impacts if public funds were proposed to be used.	Economic feasibility information and project costs are basic background information but are not essential to a choice among alternatives, given that the economic risk is not to the public.	Not applicable because not essential. However, the BLM requested and obtained from AIDEA greater information on project costs and project funding mechanisms, and equal information for all three alternatives, and incorporated it into the Supplemental EIS.	2.4.3; 2.4.7	2.4.3; 2.4.7
Bio	The NWI classification system is the USACE standard for analyzing impacts to wetlands, and the lack of NWI attributes represents a data gap.	Wetland data/mapping is relevant to understanding wetlands in the project area and relevant to wetland and waters impacts, which could be significant. Relevance is particularly high for USACE and its jurisdiction over waters.	Comparable data are essential to treating Alternative C the same as A and B and therefore are essential to a choice among alternatives.	The BLM required the applicant to provide the best available wetland mapping for Alternative C and for missing segments of A and B, and incorporated it into the Supplemental EIS.	3.3.1 and Volume 4 Maps	3.3.1 and Volume 4 Maps
Phys	Limited baseline data exist for discharge of the water courses in the region. Some USGS data exist for Koyukuk at Hughes, Jim River at Bettles, Dahl Creek near Kobuk, and Kobuk River at Ambler. It is assumed that there were some estimates of baseline flow in the applications for the Wild and Scenic designations of several rivers in the area, though records could not be found. USGS regression equations exist for several regions of Alaska and have been published in 2003 and 2016 versions. Existing baseline data can be compared to regression equations to determine the suitability of their use for estimating flow volumes. Stages or rating curves would need to be developed for individual crossing locations, with attention paid to development of aufeis, ice jams, and seasonal flooding (annual breakup). A recommendation was made that the field assessment of aufeis extent to be performed prior to breakup.	Baseline stream flow data may be relevant to understanding stream dynamics and potential for flooding, and related to culvert sizing, bridge pier spacing, and other design issues. Flooding and aufeis development are relevant to potential significant adverse impacts but would be addressed using standard engineering practices during design.	Stream flow data and ice formation data are not essential to a choice among alternatives. Flooding and aufeis issues are present for every action alternative, although the extent and cost impacts may differ by alternative length and number of waterbody crossings. Standard hydraulic and hydrologic engineering design practices exist to avoid and minimize impacts and would be addressed in the same fashion for each alternative.	Not applicable because not essential. Collecting reasonable data regarding flow and discharge of study area streams and rivers would require at least one year and more likely multiple years. Considering the cumulative length of the alternatives (some 500 miles) and numbers of streams in the hundreds, the time and cost was determined exorbitant. The BLM collected existing data.	3.2.5	3.2.5

Topic	Suggested Data Gaps	1502.22(a) Is the missing information relevant to reasonably foreseeable significant adverse impacts on the human environment? Why or why not?	1502.22(a) Is the missing information essential to a reasoned choice among alternatives? Why or why not?	1502.22(b) Is the missing information obtainable (based on cost or means)? Why or why not?	If required, discussion of existing credible scientific evidence; if not, citation to applicable Supplemental EIS section	If required, the BLM's evaluation of impacts based on theoretical approaches or research methods generally accepted in the scientific community; if not, citation to applicable Supplemental EIS section
Phys	Very little data exist (on an area-wide basis) on water quality of lakes and rivers in the region. There are limited USGS data collected on a variety of parameters for the locations listed above under Water Resources Quantity. Identification of additional data sources of water quality such as Alaska Department of Natural Resources' Alaska Groundwater Database, Streams Data, Water Reservations, other scientific journal data from past studies, National Park Baseline assessments, and past studies by the USFWS. A recommendation was made to collect necessary water quality data in a field investigation. The recommendation included baseline sampling, focusing on metals, be performed at water bodies along each alternative.	Baseline water quality data would relevant to understanding changes to water quality, including naturally high levels of metals/acidity that may occur. However, it was determined to be reasonable to assume that baseline water quality is natural and good in this principally undeveloped study area.	Water quality data are not essential to a choice among alternatives. Standard hydraulic and hydrologic engineering design practices exist to avoid and minimize impacts related to construction and erosion-related water quality, and these would be addressed in the same fashion for each alternative. The risks to water quality from operations (e.g., potential spills) would be of the same type for all alternatives.	Not applicable because not essential. Collecting field data regarding water quality on study area streams and rivers was determined exorbitant. The BLM collected existing data to the extent possible. It was determined reasonable to assume water quality in the study area's mostly-undeveloped watersheds is good, and baseline data can be collected during design and construction.	3.2.5	3.2.5
Cumulati ve	Determine whether costs of subsistence may increase if subsistence hunters have to go further out due to disturbance. Determine what data might be available to address this topic	Subsistence hunting patterns and costs may be relevant to determining impacts to subsistence, which could be significant.	Subsistence hunting patterns and costs could be essential to a choice among alternatives if they showed substantial differences among alternatives. However, the general types of impacts to subsistence are expected to be very similar across alternatives.	The BLM contracted with subsistence experts to research and document subsistence patterns and costs. The efforts was based on existing data and costs were dealt with qualitatively, but the best available data was used.	Appendix L; EIS 3.4.7	Appendix L; EIS 3.4.7
Socio	Additional research and Traditional Knowledge (TK) compilation/documentation would be required to identify TK relevant to the project. The data gap related to the identification or documentation of project-specific TK could be addressed through review of existing TK sources and conducting TK workshops in selected communities. Holding TK workshops in communities with knowledge of the project area (i.e., communities that are in proximity to or have use areas overlapping the project area) would address the TK data gap.	Traditional knowledge is relevant to multiple resource impact categories, particularly wildlife and subsistence topics. Wildlife and subsistence effects have potential to be significant.	Traditional knowledge is not essential to a choice among alternatives but is important information for consideration and understanding of impacts and during development of mitigation plans.	The BLM conducted multiple government-to-government and cultural resources meetings at communities in the area and collected TK through these means, through formal subsistence study, and through scoping and public comment on the Draft EIS. In addition, the BLM held Talking Circle workshops in association with the Ambler Road Supplemental EIS public meetings, prepared a report of these workshops, and incorporated Indigenous Knowledge from these workshops into relevant Supplemental EIS section.	3.4.5; 3.4.7	3.4.5; 3.4.7
Socio	Scoping comments identified a need for analysis of impacts to intangible benefits (mental, physical, spiritual well-being) from recreation, particularly in the southern Brooks Range environment.	Intangible benefits contribute to the well-being of individuals and communities. Impacts to recreation opportunities due to the project can also reduce or alter intangible benefits, thereby impacting that well-being and potentially decreasing quality of life by a significant degree.	The data are not essential to a choice among alternatives but would be informative, to the extent they are available. Other information is available to adequately explain and assess the potential for impacts to recreation among the alternatives.	Not applicable because not essential. The BLM has added a discussion of general recreation benefits to individuals and communities. A reduction or change in recreational opportunities or use in certain areas due to road construction would likely result in a decrease or modification of related benefits	3.4.3	3.4.3
Socio	Scoping comments identified a need for an analysis of the trade-off between losses of intangible wildlands values compared to possible economic benefits from mining activity on the road.	Wildlands are inherently valuable, and impacts to these areas can impact the communities and individuals that inhabit and utilize them. These impacts have the potential to be significant.	The data are not essential to a choice among alternatives but would be informative, to the extent they are available. Other information is available to adequately explain and assess the potential for specific, tangible impacts to the environment among the alternatives.	Not applicable because not essential. These impacts are difficult to discern, and the BLM currently does not have the data to complete this analysis.	3.4.3	3.4.3
Socio	Scoping comments identified a need for discussion of quantifiable economic losses due to impacts to the tourism industry from the proposed action.	Impacts to recreation opportunities due to the project can also reduce or alter economic benefits and the flow of local resources, thereby impacting the socioeconomic status of local individuals and communities and potentially decreasing quality of life if economic losses are significant.	The data are not essential to a choice among alternatives but would be informative, to the extent they are available. Other information is available to adequately explain the importance of and assess the potential for impacts to the tourism industry among the alternatives.	Not applicable because not essential. The BLM currently does not have the data to complete this analysis, which would require significant investment of resources.	3.4.3	3.4.3

Appendix S. Response to Comments

Note: This entire Appendix has been revised from the previous version and replaced with new content that is specific to the Supplemental EIS process only. Therefore, none of the text has been highlighted to indicate new or substantially revised text.

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1. Draft Environmental Impact Statement Public Involvement Process

Public involvement is an integral part of the National Environmental Policy Act (NEPA) process and is required in the preparation and implementation of agencies' NEPA procedures. The Bureau of Land Management (BLM) published a Notice of Availability (NOA) for the Ambler Road Draft Supplemental Environmental Impact Statement (EIS) for the Ambler Road Project (the project) in the *Federal Register* on October 20, 2023 (BLM 2023). This began the public comment period which ended on December 22, 2023. The BLM held 12 public meetings on the Draft Supplemental EIS in November and December 2023 (Table 1-1).

Pursuant to Alaska National Interest Lands Conservation Act (ANILCA) Section 810(a)(1) and (2), the BLM conducted public hearings in conjunction with the public meetings to gather comments regarding the findings presented in the ANILCA Section 810 Evaluation (Appendix M) resulting from the alternatives considered in the Draft Supplemental EIS. Court reporters were available at all hearing locations for attendees to record verbal testimony.

Notification of the publication of the Draft Supplemental EIS at the beginning of the comment period included direct emails of the news release to BLM Public Affairs public contact list, and direct phone calls to interested stakeholders (including Tribes, Alaska Native Corporations, industry, and State and local governments. USB drives containing electronic versions of the Draft Supplemental EIS were sent to 34 Tribes and 16 rural City offices in the communities found to have potential restrictions of subsistence use, per the ANILCA 810 Evaluation. Printed hard copy versions of the Draft Supplemental EIS were hand delivered to Tribes and city offices in Allakaket, Alatna, Ambler, Evansville, Kiana, Kobuk, Kotzebue, Selawik and Shungnak, and additional copies were mailed to potentially-affected Tribes in the region.

Details concerning dates, times, and locations of the public meetings/hearings were announced through local news media, newspapers, social media, email, mail, and the BLM project website. Comments on the Draft Supplemental EIS and ANILCA 810 Evaluation findings were received by email and by mail, through the BLM project website, and at public meetings/hearings. A court reporter was present at all meetings to document verbal comments for the project record in formal transcripts for each meeting/hearing.

Table 1-1. Public Meeting and ANILCA 810 Hearing Dates and Locations

Meeting	Date	Location
Fairbanks Public Comment Meeting/ANILCA 810 Hearing	November 2, 2023	Fairbanks, AK
Envansville/Bettles Public Comment Meeting/ANILCA 810 Hearing	November 7, 2023	Evansville, AK
Kiana Public Comment Meeting/ANILCA 810 Hearing	November 8, 2023	Kiana, AK
Kotzebue Public Comment Meeting/ANILCA 810 Hearing	November 9, 2023	Kotzebue, AK
Allakakaet Public Comment Meeting/ANILCA 810 Hearing	November 15, 2023	Allakaket, AK
Shungnak Public Comment Meeting/ANILCA 810 Hearing	November 17, 2023	Shungnak, AK
Kobuk Public Comment Meeting/ANILCA 810 Hearing	November 20, 2023	Kobuk, AK
Ambler Public Comment Meeting/ANILCA 810 Hearing	December 6, 2023	Ambler, AK
Selawik Public Comment Meeting/ANILCA 810 Hearing	December 11, 2023	Selawik, AK

Meeting	Date	Location
Anchorage Public Comment Meeting/ANILCA 80 Hearing	December 13, 2023	Anchorage, AK
Alatna Public Comment Meeting/ANILCA 810 Hearing	December 14, 2023	Fairbanks, AK
Huslia Public Comment Meeting/ANILCA 810 Hearing	December 19, 2023	Huslia, via videoconference

The transcripts and the presentation slides from the meetings available on the BLM project website: <https://eplanning.blm.gov/eplanning-ui/project/57323/570>. A summary of the project's prior public involvement efforts is in the scoping report (Appendix K), which is also available on the BLM project website: https://eplanning.blm.gov/public_projects/57323/200091317/20078230/250084412/Ambler_Scoping_Report_FINAL_508.pdf.

2. Public Comment Overview

During the 12 public meetings/ANILCA 810 hearings, 189 people provided oral comments. The BLM received a total of 34,783 submissions¹ (unique², form copy, form plus³ and duplicate⁴) during the public comment period. Of the submissions, 2,087 were unique letters, 30,065 were form copy letters, 1,423 were form plus letters, and 1,208 were duplicate letters (Table 2-1). Of the unique letters, 11 were petition-style, whereby multiple individuals signed on the content of the letter. As a result, a total of 89,898 individuals submitted written comment during the comment period. The BLM reviewed and responded to public comments via revisions to the Final Supplemental EIS and in Table 3-1 below.

Table 2-1. Submittals by Type

Submittal Type	Number of Submittals	Percentage of Total Submittals
Unique	2,087	86.4%
Form Copy	30,065	4.1%
Form Plus	1,423	6.0%
Duplicate	1,208	3.5%
Total	34,783	100%

2.1. Respondent Affiliations

In all, 96 submissions came from commenters who indicated they were representing an organization, business, Tribal Nation or Tribal entity, or government agency. All other submissions came from unaffiliated individuals. Note: individuals who provided their business title or employer information in their letter or testimony but did not state that they were an official representative were counted as unaffiliated individuals.

¹ A *submission* is defined as a single email, letter, webform submission, or speaker in written transcripts.

² Unique are submittals, either written or oral, with unique content.

³ Form copy letters are standardized letters that contain identical or nearly identical text. Form plus letters are form letters that slightly deviate from the standard by containing similar text that is not identical. Form plus submissions are not counted as individual unique comments unless they contain additional substantive text.

⁴ Duplicate submittals are duplicates of a unique letter.

The Tribes, Alaska Native Corporations, businesses, organizations, and governmental agencies that submitted written comments are shown in Table 2-2.

Table 2-2. Respondent Affiliations

Organization Type	Organizations
Tribal Nations/Tribal entities/Alaska Native Corporations	Alatna Village Council
	Native Village of Dot Lake
	Allakaket Village Council
	Native Village of Kotzebue
	Chickaloon Native Village
	Norton Bay Inter-Tribal Watershed Council
Government agencies and government officials	Evansville Tribal Council
	Tanana Chiefs Conference
	NANA Regional Corporation
	Doyon Limited
	Native Village of Ambler
	Yukon River Inter-Tribal Watershed Council
	Alaska Industrial Development and Export Authority
	Alaska State Department of Transportation and Public Facilities
	United States Senator
	City of Kotzebue
Businesses and organizations	Alaska Department of Commerce, Community, and Economic Development
	National Park Service, Alaska Region
	U.S. Army Corps of Engineers
	Northwest Arctic Borough
	Northwest Arctic Federal Subsistence Regional Advisory Council
	State of Alaska – Department of Natural Resources
	U.S. EPA Region 10
	State of Alaska – Office of the Governor
	U.S. Fish and Wildlife Service
	Advocates for Safe Alaska Highways
	Minto Development Corporation
	Alaska Chamber
	National Audubon Society
	Alaska Community Action on Toxics
	National Parks Conservation Association
	Alaska District Council of Laborers
	Native Movement
	Alaska Miners Association
	Nature Education Programs
	Alaska Coles, Great Old Broads for Wilderness
	NRGSC
	Alaska Wilderness League
	Outdoor Service Guides
	Alaska Wildlife Alliance
	Patagonia
	All Alaska
	Polar Bear Pals
	Ambler Metals
	Protect the Kobuk
	Americans for Prosperity
	Resource Development Council for Alaska
	Arctic Audubon Society
	Shawnee Natural Area Guardians
	Associated General Contractors of Alaska
	Sierra Club
	Backcountry Hunters and Anglers
	South 32
	Boston Catholic Climate Movement
	Subsistence Advisory Committee
	Center for Biological Diversity
	The Alliance
	Center for Science in Public Participation
	The Coalition to Protect America's National Parks

Organization Type	Organizations
	Defenders of Wildlife
	The Garden Club of America
	Deloy Ges, Inc.
	Theodore Roosevelt Conservation Partnership
	Ducks Unlimited
	The Wildlife Society – Alaska Chapter
	Earth Day Mobile Bay, Inc.
	Trilogy Metals US
	Earthworks
	Trout Unlimited
	Friends of the Santa Catalina Trails
	Trustees for Alaska
	Gates of the Arctic National Park Subsistence Resource Commission
	Turtle Island Restoration Network
	Gorgeous Rrissley Film Production
	U.S. GoldMining Inc.
	Greater Fairbanks Chamber of Commerce
	Valhalla Metals Inc.
	Humanity
	Western Arctic Caribou Herd Working Group
	Ibex Exploration LLC
	Wilderness Watch
	League of Women Voters, Milwaukee
	Winter Wildlands Alliance
	Midnight Sun Fly Casters
	Workforce Development Working Group

2.2. Comment Categories

Within each submission, individual comments (i.e., stand-alone comments that relate to a single issue, idea, or conclusion) were identified and grouped into one or more of the following categories listed in Table 2-3. Comment categories were either defined by individual resources that may be affected by the project, individual elements of the project, or specific phases and aspects of the Supplemental EIS or NEPA process (see Table 2-3). Categories are intended to describe the main topic or resource that is discussed in the comment regardless of whether the comment expresses opposition or support for the project. Any comments identified in form letters or duplicate letters were categorized only once and counted as a single comment no matter how many letters with that same comment were submitted.

Table 2-3. Comment Categories

Category	Topics
Issue or resource topics	Air quality and climate
	Public access
	Birds
	Recreation and tourism
	Cultural resources
	Sand and gravel resources
	Environmental justice
	Socioeconomic and communities
	Fish and aquatics
	Subsistence
	Geology and minerals
	Transportation
	Hazardous waste
	Vegetation
	Land use/land management
	Visual Resources
	Mammals
	Water Resources
	Noise
	Wetlands
	Paleontological resources

Category	Topics	
Decision process topics	General	ANILCA 810 analysis
	Section 106 consultation	Cooperating agency involvement
	Government to government consultation	Mitigation/monitoring
	ANCSA	Compliance with other laws
Supplemental EIS/process topics	Cumulative and indirect effects analysis	
	Remand of FEIS	Proposed action
	Public and stakeholder involvement	Funding and bonding
	Purpose and need	Alternatives

The BLM reviewed and responded to public comments via revisions to the Supplemental EIS and in the comment response table in Section 3. To date, 2,189 total individual substantive (further defined below) comments were identified from the various submissions and were categorized, as shown in Table 2-4. Half of comments (51.2%) fell into the following top seven categories: mitigation/monitoring, subsistence, mammals, fish and aquatics, alternatives, socioeconomics and communities, and water resources.

Table 2-4. Substantive Comments Received by Comment Category

Comment Category	No. Comments Received	% Total Comments
Mitigation/monitoring	235	10.7%
Subsistence	187	8.5%
Mammals	167	7.6%
Fish and aquatics	156	7.1%
Alternatives	143	6.5%
Socioeconomics and communities	130	5.9%
Water resources	103	4.7%
Cumulative and indirect effects analysis	94	4.3%
Public access	88	4.0%
Proposed action	84	3.8%
Compliance with other laws	73	3.3%
Air quality and climate	71	3.2%
ANILCA 810 analysis	62	2.8%
Decision process – general	60	2.7%
Cultural resources	55	2.5%
Geology and minerals	55	2.5%
Remand of Final EIS	46	2.1%
Wetlands	45	2.1%
Environmental justice	36	1.6%
Hazardous waste	34	1.6%
Funding and bonding	29	1.3%
Transportation and access	28	1.3%

Comment Category	No. Comments Received	% Total Comments
Birds	23	1.1%
Land use/land management	23	1.1%
Recreation and tourism	21	1.0%
Sand and gravel resources	19	0.9%
Vegetation	19	0.9%
Cooperating agency involvement	16	0.7%
Public and stakeholder involvement	16	0.7%
Noise	15	0.7%
Section 106 Consultation	14	0.6%
Purpose and need	14	0.6%
Government to government consultation	13	0.6%
ANCSA	13	0.6%
Visual resources	2	0.1%
Total	2,189	100.0%

The BLM considered comments within every submission and determined if comments were substantive or non-substantive. In performing this analysis, the BLM relied on Section 6.9.2 (Comments) in the BLM NEPA Handbook H-1790-1 (BLM 2008) to determine what constituted a substantive comment. All comments were reviewed and considered, and all substantive comments are responded to in this report.

Substantive comments do one or more of the following:

- Question, with reasonable basis, the accuracy of information in the Supplemental EIS.
- Question, with reasonable basis, the accuracy of, methodology for, or assumptions used for the environmental analysis.
- Present new information relevant to the analysis.
- Present reasonable alternatives other than those analyzed in the EIS.
- Cause changes or revisions in one or more of the alternatives.

Additionally, the BLM NEPA Handbook (BLM 2008) identifies the following types of substantive comments:

- Comments on the adequacy of the analysis: Comments that express a professional disagreement with the conclusions of the analysis or assert that the analysis is inadequate are considered substantive; they may or may not lead to changes in the final EIS. Interpretations of analyses should be based on professional expertise. Where there is disagreement within a professional discipline, a careful review of the various interpretations is warranted. In some cases, public comments may necessitate a reevaluation of analytical conclusions. If, after reevaluation, the BLM Authorized Officer responsible for preparing the EIS does not think that a change is warranted, the response should provide the rationale for that conclusion.
- Comments that identify new impacts, alternatives, or mitigation measures: Public comments on a draft EIS that identify impacts, alternatives, or mitigation measures that the draft did not address are considered substantive. This type of comment requires the BLM Authorized Officer to determine if it warrants further consideration; if so, he or she must determine if the new impacts,

new alternatives, or new mitigation measures should be analyzed in the final EIS, in a supplement to the draft EIS, or in a completely revised and recirculated draft EIS.

- Disagreements with significance determinations: Comments that directly or indirectly question, with a reasonable basis, determinations on the severity of impacts are considered substantive. A reevaluation of these determinations may be warranted and may lead to changes in the final EIS. If, after reevaluation, the BLM Authorized Officer does not think that a change is warranted, the BLM's response should provide the rationale for that conclusion.

Comments that are not considered substantive include the following:

- Comments in favor of or against the Proposed Action or alternatives without reasoning that meets the criteria listed above, such as "we disagree with Alternative B and believe the BLM should select Alternative A."
- Comments that only agree or disagree with BLM policy or resource decisions without justification or supporting data that meet the criteria listed above, such as "more grazing should be permitted."
- Comments that do not pertain to the project area or the project, such as "the government should eliminate all dams" when the project is about a grazing permit.
- Comments that take the form of vague, open-ended questions.

In response to substantive comments, the BLM could do the following:

- Modify alternatives, including the Proposed Action.
- Develop and evaluate alternatives not previously given detailed consideration by the agency.
- Supplement, improve, or modify its analyses.
- Make factual corrections.
- Explain why the comments do not warrant further agency response, citing appropriate sources or authorities.

Within each submission, there could be substantive comments and non-substantive comments. Comments that merely expressed an opinion for or against the project were not identified as requiring a response because they meet the BLM NEPA Handbook (BLM 2008) definition for a non-substantive comment. Many comments received throughout the comment analysis process expressed personal opinions or preferences, did not provide relevance to the adequacy or accuracy of the Draft Supplemental EIS, or represented commentary on management actions that are outside the scope of the Supplemental EIS. These comments did not provide specific information to assist the BLM in making a change to the existing action alternatives, did not suggest new alternatives, and did not take issue with methods used in the Draft Supplemental EIS; as such, the BLM did not provide a response for these comments in this document.

The table of substantive comments and BLM response is provided below. The table is organized by Communication ID number, which represents the unique identifier for each submission, and Comment ID number, which represents the substantive comment identified within the submission. Some responses refer the reader to a response made for a similar substantive comment submission. Comment ID numbers are presented sequentially in the Table below; any numbers that are missing from the sequence (e.g., where numbers skip from 1 to 3, etc.) are a result of non-substantive or duplicative comments being removed during the review and categorization process. Individual submissions in their entirety are labeled by communication ID and located on the BLM's ePlanning website: <https://eplanning.blm.gov/eplanning-ui/project/57323/570>.

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3. Response to Comment Table

Communication ID #	Comment ID #	Topic	Comment Text	Response Text
14	1	Subsistence	This road will negatively impact our caribou and salmon populations which is bad for our communities. Roads are known as moving fences to migrating land animals. A constant flow of traffic and sound of vehicles will cause caribou to not cross. This cuts down their environment a lot and the people on the other side of the road will not see as much game. On the other hand, the dust, exhaust, and other vehicular fluids will pollute the areas near the road. This will decrease the amount of salmon that can breed which cause populations to drop. Mines and mining companies will always try to cut corners to make profit, and this always ends up with the negatively affecting the health of the native populations.	Impacts to the availability and abundance of caribou and salmon to subsistence users are addressed in Section 3.4.7, Environmental Consequences. This includes a discussion of impacts of traffic, emissions, and dust deposition on the health and abundance of resources.
25	1	Subsistence	I am a Shungnak tribal member and an elder. I have lived in Shungnak all my life and have fish camps upriver from the village. Im worried about how the road will affect caribou and berrypicking and fish. There are lots of berrypicking areas and Native allotments up that way, and we go fishing way up the Kobuk River. The Ambler Road will hurt our subsistence and that will hurt our culture.	Impacts to caribou hunting and berry picking are addressed in Section 3.4.7, Environmental Consequences.
27	1	Subsistence	I'm a NANA shareholder and tribal member of Ambler. Id like to put in a comment stating that no road should be built because it will affect our culture, our subsistence hunting. There will be no native foods, nothing for us if there is a road. We won't be able to teach our children what we were taught growing up.	Impacts to subsistence, including sociocultural impacts related to reduced opportunities to pass on Indigenous knowledge, are addressed in Section 3.4.7.
28	1	Subsistence	My main concern is subsistence. The road will change our herd the way the pipeline did to the porcupine herd and also part of the northwest arctic caribou herd. You know the predators out there they don't take as much but its the big game hunters. We don't need any roads here. We need to protect our land. Once they put a road through its going to open up the whole country. There's lot of gold mining, lot of mineral mining, oil. The road would cut off the migrating caribou herd. Plus its declining already.	Impacts to caribou resource availability resulting from linear structures such roads and pipelines diverting migration are addressed in Section 3.4.7, Environmental Consequences.
29	1	Alternatives	I suggest looking at the potential of an elevated road to diminish environmental impact while allowing use of the needed ores	An elevated rail concept was considered in the Alternatives Development Memorandum (Appendix G).
46	1	Subsistence	Ambler Road would threaten subsistence, the way of life here. We already know that roads don't do caribou any favors. We have evidence from the Red Dog road that it messes with their migration pattern. And we have evidence from the Haul Road. That road was supposed to be private, just for industry. But then the outside hunters sued because they wanted to be able to hunt up there. They're going to do the same thing to Ambler Road.	Impacts to caribou resource availability resulting from linear structures such roads and pipelines diverting migration are addressed in Section 3.4.7, Environmental Consequences. In addition, this section addresses the potential for increased competition from non-local hunters resulting from road and ROW access.
58	2	Socioeconomics and communities	Unfortunately, the current proposed supplemental environmental impact statement leans heavily towards possible negative effects and remote scenarios of catastrophic events. Rather than focus on these remote unlikely events scenarios there should also be consideration to the benefits to better access to the Ambler district. Positive things like opportunities for the communities and residents to be able to live and thrive in the communities along the access route. To be able to have a job that will enable residents to improve their life style in these communities this could be a huge positive impact. To allow families that have chosen a rural life style to thrive and communities to grow.	Section 3.4.5, Mining, Access, and Other Indirect and Cumulative Impacts, discusses the economic benefits with respect to job opportunities, cost of living, and other potential beneficial effects of improved access for communities.
58	3	Remand of Final EIS	For the Bureau of Land Management to now suggest alternative routes and having expanded the number of impacted communities far beyond the ten that were in the original, EIS goes far beyond what could be considered as reasonable.	In developing the Supplemental EIS, the BLM reconsidered all previous alternatives from the 2020 EIS as well as new potential alternatives that could reduce environmental impacts to the resources of concern in the remand process (e.g., fish and caribou).
61	2	Socioeconomics and communities	While AIDEA and mining companies promise to hire from local communities, lack of subsistence leave, lack of qualifications for technical positions, and other barriers stand between local people and the jobs they're promised by industry.	At this time, there is no specific local hire requirement or workforce training program for the proposed project. As noted in Appendix N, Potential Mitigation Measures (Section 3.4.5), AIDEA would develop and implement a plan acceptable to the BLM and NPS that would identify and promote work opportunities for local residents and develop training programs for local residents so that they could be employed during construction and operations of the Ambler road.
61	4	Subsistence	If subsistence resources are lost, community members are even more dependent on incredibly expensive, limited, and often less nutritious food from the village store. Copper, the most abundant resource in the Ambler Mining District is not a critical resource, but fish and caribou are.	Reviewed section to ensure the potential increase in costs of store-bought foods resulting from a lack of subsistence foods is adequately addressed.
61	5	Socioeconomics and communities	The state only earns 3% royalties from mining on state lands, meaning the vast majority of the money earned from potential mine development will leave the region and state to enrich foreign mining companies.	Acknowledged. Section3.4.5 of the Supplemental EIS discusses the potential revenues that could accrue to state and local governments from mining operations in the region. This Supplemental EIS is focused on the impacts on the local, regional, and state economies and communities. This Supplemental EIS does not include estimates of the potential revenues to mining companies and contractors.
68	4	Alternatives	The FEIS needs to analyze more protective alternatives. The project options outlined in the draft SEIS fail to protect local communities, animals, and the land, water, and air, and that needs to be fixed.	In accordance with the CEQ NEPA implementing regulations, 40 CFR 1502.14, the BLM has explored and evaluated all reasonable alternatives for this project and discussed reasons why other alternatives were determined not reasonable. Based on the purpose and need for the project, the BLM identified potential alternatives from a number of sources and evaluated alternatives through an iterative process. For details on the alternatives examined and the reasons some were not carried forward for detailed analysis, see Supplemental EIS Appendix G.

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109	1	Subsistence	I'm a member of Ambler tribe. I don't want the road. What's going to happen to our bears, our fish, caribou, moose? What's going to happen to it because that's pretty much our supermarket. We can't 'go to AC. We cant go Walmart, Fred Meyers. You know its not like we can just go to the store and get our meat. We go out and get it. It's not just about the meat either, it's about the act of hunting, getting ready to go out, get the food. Just being out in the beauty of nature, our land. They say it's gonna be a closed road. But that's what they said about the Dalton Highway and its open to the public now. There are already people coming up to hunt caribou, catch that big sheefish. There would be lots more. We've seen float planes land by Hunt River and they just walk there for a bit and then get back in the plane and go. We grew up down there. Growing up we never saw that, people coming in for a few minutes. We camped down there at my dad's place for the whole summer. Wed just see a boat here and there. Now, rafters and float planes all the time.	The potential impacts of the road project on the availability of caribou, fish, moose, and other resources resulting from increased competition from outside hunters are addressed in Section 3.4.7, Environmental Consequences.
112	1	Public and stakeholder involvement	I was just looking at the Ambler SEIS ePlanning page and found the scheduled in-person meetings listed, but I am wondering if BLM intends to hold any virtual meetings. While it's great that Covid has eased and in-person meetings are being scheduled, particularly in remote villages, the lack of a meeting in Anchorage and no virtual meetings is a glaring omission that prevents the majority of Alaskans from participating in the public process for a project that will impact all residents. Please add at least one virtual meeting and an in-person meeting in Anchorage.	A virtual meeting was held for the community of Huslia, and an in-person meeting was held in Anchorage.
132	1a	ANILCA 810 analysis	There needs to be a full, in-depth 810 Analysis. The old data currently being used from fish and game is outdated and needs to be reassessed, being sure to include the most rural residents. The Impact statement shows that the land, rivers, people, animals and fish cannot survive or thrive if the Ambler road it built.	See response to letter 7303, comment 1.
132	1b	Alternatives	Alternatives to a road are available, such as flying and/or rails to ports. Non-road options should have been, or need to be, explored by professionals who have the number one priority to protect the local ecosystem and help it thrive.	See response to letter 68, comment 4.
132	2	Air quality and climate	Why are climate change and it's impacts not discussed thoroughly in the SEIS? - How long can the ground they want to build on sustain a road of any size?	Climate change and greenhouse gas emission impacts have been discussed and analyzed for the project and all alternatives. GHG emissions for the construction of each alternative was estimated and are presented in Appendix D, Table 25. GHG emissions from industrial transportation on the proposed alternatives, as well as GHG emissions from continued road travel to Fairbanks and rail transport to the Port of Alaska in Anchorage are estimated and presented in Appendix D, Table 26. These tables help to define the likelihood and magnitude of impact. The estimated GHG emissions are also presented in a relatable context, comparing potential emissions to common activities that generate GHG emissions, expressing the potential average year GHG emissions to the number of homes annual energy use. In addition, each alternative's potential footprint is discussed in relation to permafrost thawing. In addition, the BLM's Analysis of the Management Situation has a concise summary of climate change in Interior Alaska, which is summarized in the Supplemental EIS, recognizing the sources of existing GHGs in the project area and their impacts. It can be noted further, and could be added to the EIS, that climate change is fundamentally a cumulative phenomenon, global in scope, and all GHGs contribute incrementally to climate change regardless of scale or origin. The multitude of interwoven natural systems and feedback mechanisms that contribute to climate variability over the entirety of Earth further complicate analysis. Climate scientists provide analysis by modeling changes to these systems in response to a range of global emissions scenarios known as Representative Concentration Pathways (RCPs). In preparation for the IPCC's Sixth Assessment Report (AR6), the climate science research community, economists, and energy systems modelers developed a new range of "pathways" that examine how global society, demographics, and economics might influence future climate impacts, vulnerabilities, adaptation, and mitigation over the next century. The scenarios are collectively known as the Shared Socioeconomic Pathways. The Shared Socioeconomic Pathways explore how reductions in emissions would, or would not, be achieved and can therefore be thought of as potential mitigation alternatives. The RCPs and Shared Socioeconomic Pathways are meant to complement each other. The state climate change projection for Alaska summarized from the Fourth National Climate Assessment and NOAA's state climate summaries are described below. These climate change projections use the RCP modeling and Shared Socioeconomic Pathways have not yet been incorporated. The higher emissions pathway (RCP8.5) assumes state emissions trajectories follow historical growth and assumes no climate policies are enacted to reduce emissions, while the lower emissions pathway (RCP2.6) assumes global GHG emissions are reduced substantially over time. The largest source of uncertainty in future climate change projections is emissions projections, which is why IPCC looks at a range of emissions pathways. Since the RCP8.5 scenario was developed in 2007, there have been a combination of global commitments to the Paris Agreement and changes in the global energy landscape have made this scenario much more unlikely although still useful, because it provides valid model projections of how the earth would respond if global carbon emissions reach the levels implied by RCP8.5. From a policy standpoint, however, presenting RCP8.5 as a plausible business-as-usual scenario could be counterproductive to global climate efforts (Harvey 2020). For example, when considering the effort required to keep global warming below 2°C over the next few decades, the cost may seem "exorbitant" to policymakers if RCP8.5 is their basis of comparison. Alaska is on the front lines of

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				climate change and is among the fastest warming regions on Earth. It is warming faster than any other state, and it faces a myriad of issues associated with a changing climate. Global climate models project more warming in the Arctic and interior areas than in the southern areas of Alaska. In the RCP8.5 scenario, interior and northern areas of the state are projected to warm by 10°–16°F, southern portions by 2.5°–8°F. Climate models suggest that Arctic waters will be virtually ice-free by late summer before 2050 and near-surface permafrost will likely disappear on 16% to 24% of the landscape by the end of the twenty-first century. Average precipitation is projected to increase in all seasons during the twenty-first century, with the greatest increases expected in winter and spring. By the middle of the twenty-first century, annual precipitation increases are projected to exceed 10% over most of the state, with greater increases in the Arctic and interior and the largest increases in the northeastern interior. Climatic extremes are expected to change with the changing climate. Under a higher scenario (RCP8.5), by mid-century (2046–2065) the highest daily maximum temperature (the hottest temperature one might expect on a given summer day) is projected to increase 4°–8°F compared to the average for 1981–2000. For the same future period (2046–2065), the lowest daily maximum temperature (the highest temperature of the coldest day of the year) throughout most of the state is projected to increase by more than 10°F, with smaller projected changes in the Aleutian Islands and southeastern Alaska. Additionally, the lowest daily minimum temperatures (the coldest nights of the year) are projected to increase by more than 12°F. The number of nights below freezing would likely decrease by at least 20 nights per year statewide, and by greater than 45 nights annually in coastal areas of the North Slope, Seward Peninsula, Yukon–Kuskokwim Delta, Alaska Peninsula, and Southcentral Alaska. Annual maximum 1-day precipitation is projected to increase by 5%–10% in southeastern Alaska and by more than 15% in the rest of the state, although the longest dry and wet spells are not expected to change over most of the state. Growing season length (the time between last and first frosts in a given year) is expected to increase by at least 20 days and perhaps more than 40 days compared to the 1982–2010 average. Whether or not this increased growing potential is realized will largely depend on soil conditions and precipitation. The area burned by wildfires may increase further under a warming climate. Projections of burned area for 2006–2100 are 98 million acres under a lower scenario (RCP4.5) and 120 million acres under a higher scenario (RCP8.5).
132	3	Land use/management	Science and common sense, along with Alaskans and Americans all across the country, agree that this road should not be allowed. Not only does BLM need to say no to this road, they need to say no to any possibility of a future road. The permits for the Ambler mining road need to be revoked, and the process followed to obtain these permits needs to be thrown out and replaced with one that prioritizes protecting the ecosystem, environment, and local economy first. Please revoke the permits for the Ambler road immediately.	Section 505 of FLPMA requires the BLM to identify terms and conditions necessary to protect public lands and interests associated with any rights-of-way it issues. The BLM's direct regulatory authority is limited to public lands managed by the BLM; FLPMA requirements do not extend to other lands.
148	1	Alternatives	Nana Regional Corporation should consider alternative access such as a road to the Red Dog Mine an Red Dog Port as an alternative access to the Ambler Mining District an minimizing the impact to wildlife and the Caribou Herd that migration to the Region as well as the social impacts to the other regions that are affected by Nana Regional Corporations proposed road.	Appendix G, Section 6.4 details the pros and cons of the DMTS Port Route and the Cape Blossom Route. These alternatives were determined to not meet the purpose and need of the project and were eliminated from further consideration.
155	1	Cultural resources	If they make road and let it happen, we don't know what all is up there. It was before our time. In the past people would put their loved ones right on the ground, under a tree. If they're building the road the workers might run into that kind. Lots of people run into those graves. The workers might run into those graves while they build it.	Additional text has been added to address potential for impacts to graves.
162	1	Subsistence	My family has a fish camp at Qalugrivik near the mouth of Mauneluk River that we have used for a long, long time. I still go to camp every year.	Added reference to this camp under Section 3.4.7, User Access.
177	1	Cultural resources	I have four siblings. When my parents migrate from way up there, they lose three of them from living in tents in the cold. One of them is buried right back here by Happy Jacks. A couple more are buried along the Kobuk River here, were not sure where. Our ancestors buried people all over this country. We don't know really for sure where they are, but I know for sure there's a lot of burials out there.	See response to letter 155, comment 1.
187	1	Subsistence	Subsistence farming relies on the untouched land the road will bring unnecessary noise, air, water pollution to the land.	Section 3.4.7, Environmental Consequences, addresses the potential impacts to subsistence resulting from noise and contamination.
217	1	Public and stakeholder involvement	You guys need to do a better job of keeping our community informed. Our residents might not have internet, might not have a phone or computer, let alone know to go take a look on the federal register for giant development coming our way.	See response to letter 33781, comment 3.
217	2	Public and stakeholder involvement	There's a lot of misinformation going around about the road project right now. It would be nice to have someone come and tell our community the straight facts.	See response to letter 33781, comment 3.
235	1	Alternatives	The Ambler Road should be run from Ambler to the nearest deep water port which in this case would be Blossom Point or Red Dog.	Appendix G, Section 6.4 details the pros and cons of utilizing the existing DMTS port. This alternative was determined to not meet the purpose and need of the project and was eliminated from further consideration.
244	3	Air quality and climate	Trucks are estimated to make 168 round trips per day or 61,320 trips per year. That equates to 51,972 tons of CO2 (equivalent to 11,500 cars) annually.	Comment noted. As stated in the Supplemental EIS Appendix D, Tables 22 through 24, calculated annual air emissions from this traffic, including CO, NOx, SO2, VOCs, and PM ₁₀ /PM _{2.5} . This emissions-based approach was performed to identify anticipated emissions loading and

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				compare alternatives. It does not seek to estimate health-based ambient air quality concentrations, which would require air dispersion modeling, but it does help to define the likelihood and magnitude of impact.
244	7	Mammals	This part of Alaska--the Brooks Range, Gates of the Arctic National Park, and the surrounding region--is home to the Western Arctic Caribou Herd (which the Alaska Department of Fish and Game recently shared saw a 7% population decline in the past year) and the Kobuk and Koyukuk river fisheries. These are two critical food sources for the surrounding Indigenous and rural communities. The area also boasts some of the world's most rare and distinct wildlife, providing habitat for moose, wolves, and small mammals. Black, brown, and polar bears live here --the only place on Earth where all three coexist.	The decline in the WAH population is documented in Section 3.3.4 of the Supplemental EIS and was updated with the most recent WAH population estimate. Polar bears are very unlikely to use the project area because it is far from the coast and outside polar bear habitat.
244	8	Birds	In addition, 15 species of boreal birds found along the proposed Amber Road corridor already face significant decline across their ranges. This includes Blackpoll Warblers, Olive-sided Flycatchers, Sandhill Cranes, Rusty Blackbirds, Red-necked Phalaropes, and Gray-headed Chickadees. The preferred route would also cross 2,000 acres of wetlands vital to avian habitat, affecting all four species of loons, many shorebird species, and waterfowl that are, again, important food resources.	The Supplemental EIS cites Handel and Sauer's 2017 paper, which includes information about negative population trends of birds breeding in the Northwestern Interior Forest (BCR4), and Appendix E-17 includes watchlist designations by agencies and NGOs (BLM, ADFG, Audubon Alaska, Boreal Partners in Flight). Some species listed by the commenter (olive-sided flycatcher, gray-headed chickadee, blackpoll warbler) were determined to have a negative population trend for this region of Alaska or are listed by agencies or NGOs, while others (sandhill crane, red-necked phalarope) were not. No changes were made to the Supplemental EIS text or appendix.
255	1a	Subsistence	I'm from Ambler, an Ambler tribal member and NANA shareholder. I'm worried mostly about the caribou migration. My wife is from Alatna right across from Allakaket. They used to have the main caribou migration right through there too, like we do in Ambler. Ever since that Haul Road opened up the caribou don't come around anymore. Only once in a great while the people of Alatna see a small bunch. I don't want that to happen here like what happened in my wife's area. I'm concerned that the Ambler Road will be similar. That's why I'm against the road. I know it will be the same and we will lose the caribou. I don't want that to happen. My family subsists off of caribou and all the game. We hunt. Dust from the minerals that they are going to take out is going to be poison to the caribou. How about fish too? Are they going to monitor that discharge closely? That's my concern because I know it will come down this way.	Impacts to caribou resource availability resulting from linear structures such roads and pipelines diverting migration are addressed in Section 3.4.7, Environmental Consequences.
255	1b	Subsistence	Sport hunters will use the road to set up camps, maybe even stake claims on state land. The river is counted as state land so the sport hunters could hunt right in the river like we traditionally do.	Potential impacts on subsistence resulting from outside hunters accessing ROWs is discussed in Section 3.4.7, Environmental Consequences.
270	1	Land use/management	The Final Supplemental EIS (FSEIS) needs to address the Doyon Limited (Doyon) land access issue, as recently covered in the Alaska Beacon (https://alaskabeacon.com/briefs/doyon-ltd-drops-support-for-ambler-road-at-least-temporarily/). The FSEIS must explain what Doyon denying access to construct an alternative route means in terms of the FSEIS alternatives and what it would mean if the ROD selects Alternative A and AIDEA cannot gain legal right of entry. There are complex land access issues associated with this project and in light of this recent development, it should be clearly disclosed upfront in the FSEISBLM should in fact express this information clearly and widely before the comment period closes on this draft so the public can provide informed comments. This latest action by Doyon begs to question the viability of the proposed project and further investigation of equal detail for Alternative C may be warranted (e.g., wetlands are not detailed to the same extent for this alternative and are likely a gross misrepresentation, biological studies in this area are almost non existent). If alternatives feasibility is in question, BLM owes the public an explanation of why this is considered a viable action alternative. It may be prudent for BLM to pause this process until such time that there is a fully executable agreement between AIDEA and local landowners. Until that time, unless AIDEA can compel a ROW via eminent domain, the proposed project cannot be completed. As such, if this FSEIS progresses, it seems like BLM's only course of action would be to select the no action alternative until access rights can be secured and realistic alternatives can be developed, analyzed, and compared. If eminent domain is an assumption, the FSEIS should explain the legal mechanism that AIDEA intends to deploy and consideration should be given to how likely such an argument is to prevail through likely litigation.	See responses to letter 26067, comment 10 and letter 25830, comment 25.
273	1	Subsistence	Ambler Road is going to change everything for us. I'm concerned about wildlife and fish, and about the actual ways our lifestyle is going to change. The land wont be natural like it is now. I am 70 years old, a tribal member and resident of Shungnak all my life. Subsistence is most important to me because it has been happening for a long time and is part of our Inupiaq culture. Fish is one of the most important things because everything happens up here on the upper Kobuk Riverits an important place for fish and for subsistence fishing. The Ambler Road is going to impact everybody up and down the river. It might affect our drinking water because our drinking water source is the Kobuk River. We've been looking for a well, but were using surface water now. Anything that happens upriver is going to affect us all. My view is no to the Ambler Road because of the negative effects that it will have for subsistence and for our culture.	The potential sociocultural impacts of reduced subsistence opportunity are discussed in Section 3.4.7, Environmental Consequences (Sociocultural Impacts).
275	4	Socioeconomics and communities	The draft statement fails to look at the full impacts of gravel mining on public health, local communities, and animals, and that should be fixed.	See response to letter 32724, comment 167. See also response to letter 30027, comment 25.
280	2	Alternatives	How come more alternatives were not explored? If this is about one mine why can't there be a rail to a nearby port? Drones would make it possible to ship ore out of the Ambler area.	The combined air/road alternative concept was considered but determined not to meet the purpose and need for "surface transportation access in support of mining exploration and development" as described in ANILCA Section 201(4)(b) and was therefore removed from further consideration in an action alternative. Appendix G, Section 6.3 explains the BLM's rationale for not analyzing this alternative concept. Various rail routes were considered in Appendix G, Section 6.4 but were eliminated from detailed analysis due to practicality, feasibility, and/or environmental concerns.

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280	3	Air quality and climate	Why is climate change not discussed enough in the SEIS? The Arctic is melting the last thing it can sustain is a massive 20-mile road.	Comment noted. See response to letter 132, comment 2.
6011	1	Mitigation/monitoring	I propose the use of a revenue bond to fund this road, with a toll exacted on travelers to finance the majority of the construction costs until those are recovered. I also propose to classify the road as privately managed road with consent to searched of any people or vehicle traveling upon it as a condition of passage, so that we can prevent the illicit transportation or illegal substances that challenge rural Alaska.	AIDEA plans to issue revenue bonds as a principal tool to finance the construction of the project. These taxable bonds would be sold through private placements to various potential buyers. AIDEA indicates that no state General Fund dollars and no federal funds would be used for construction. The ROW application is for an industrial-only access road. See Appendix N, Section 3.4.5, Public Health Potential Mitigation Measure 3.
7303	1	ANILCA 810 analysis	The proposed Ambler industrial road would be bad for all subsistence needs in the region sheefish, caribou, salmon, other land mammals. There should be a more robust 810 Analysis. The data used from fish and game is old. Rural residents are not always able to report activities or harvest.	The Section 810 analysis and the Supplemental EIS are based on the best available subsistence data. In addition, the subsistence analysis incorporates Indigenous Knowledge from local residents to ensure that key subsistence uses and concerns are addressed.
9952	1	Alternatives	I am especially concerned about the Ambler Road connecting with the outside world. We are fortunate to have caribou, big sheefish, and many other fish and animals. If a road to the outside world is opened to the public, here will come the sport hunters and fishermen depleting our resources, especially because our sheefish are so large. For this reason, it would be better to build any road west to Kiana or Kotzebue or Red Dog rather than connect it to the Alaska road system.	The screening analysis in Appendix G balances the pros and cons of multiple western routes. These alternatives were determined to not meet the purpose and need of the project and/or were removed from further consideration due to either practicality, cost, or environmental concerns.
10640	4	Water resources	The BLM Ambler Right-of-Way Grant Stipulations (BLM ROW Grant) states in 1.11 that "All construction and operations activities shall be conducted with due regard for good resource management and in such a manner as not to block any stream or drainage system; change the character or course of a stream; cause the pollution of any stream, lake, wetland, or land area; or cause pollution of the air, except as authorized by the appropriate federal or state agencies." It would be impossible not to change the character of a stream or pollution of the waterways, land, or air throughout the project and after its construction. How does the project plan to follow this stipulation effectively?	The Supplemental EIS acknowledged potential impacts to hydrologic connectivity and introduction of pollutants to the waterways, land, and air as a result of the proposed project. The "except as authorized by the appropriate federal or state agencies" gives the BLM and other agencies authority to authorize work that may have impacts to resources, with the understanding that impacts will be mitigated to minimize impacts through various stipulations, such as stipulations to ROW grants and permits. The Environmental Consequences sections for each resource within the Supplemental EIS and Appendix N list stipulations developed to minimize impacts to acceptable levels for authorization of proposed activities.
10640	5	Water resources	BLM ROW Grant 3.11 discusses materials removed from or stockpiled in rivers and waterways; if approval is granted for either of those actions by the Authorized Officer, it WILL change the character or course of a stream and/or block a stream or drainage system. This goes against Stipulation 1.11. How does the project plan to rectify this?	The "without further site-specific analysis and approval of the AO" and "unless approved by the Authorized Officer" portions of BLM ROW Grant 3.11 gives the BLM the option to authorize such activities <i>if</i> the permittee can satisfactorily show that doing so will not "change the character of a stream" or "block any stream or drainage system." If impacts are anticipated, the BLM Authorized Officer will not authorize such activities. Potential BLM measures in Appendix N, Section 3.2.2 and Section 3.2.5 provide further restrictions on potential material impacts, such as Section 3.2.2, number 6, which requires a 100-foot undisturbed buffer along any lakes or creeks that flow through upland material mining pits. Special condition 10 of the USACE CWA Section 404 permit (adopted as proposed mitigation under Appendix N, Section 3.5) also states that "Gravel and other construction materials shall not be taken from streambeds, riverbeds, active floodplains, lakeshore or outlets of lakes. Material sites shall be located outside of active channels and active floodplains. A 500' buffer around all streams shall be maintained, within which no material site or access road to a material site shall be located."
10640	6	Hazardous waste	BLM ROW Grant 3.8.1 states that all solid waste and garbage will be disposed of within 90 days of generation. 90 days is a long time to generate and hold waste. What system will be in place to ensure that the waste does not attract wildlife? How will their waste be properly disposed of in a reasonable time? BLM ROW Grant 3.8.2 emphasizes the use and maintenance of portable toilets; what measures will be taken to ensure that the portable toilets are not wildlife attractants or accessible by wildlife?	Potential mitigation identified in Appendix N includes a measure for AIDEA or its designee to prepare and implement a comprehensive waste management plan, which would outline priorities (prevention and reduction, recycling, treatment and disposal) as well as the procedures. All protocols for incineration, backhaul or composting has be to in accordance with ADEC and EPA regulations and procedures and approved by the BLM Authorized Officer. See Appendix N, Section 3.2.3 for details.
10640	7	Subsistence	The Ambler Access Project's brochure states that the project will help to "preserve a way of life that is increasingly threatened by rising costs of living and high unemployment." However, the project itself continues to threaten this traditional way of life as a result of its impact on the land, wildlife, and the resulting long-term impact on subsistence lifestyles. How does the project give traditional users the "tools they need to subsist off the land" when the project itself will so dramatically impact the land and flora and fauna that people rely on for subsistence?	The Supplemental EIS discusses the potential economic benefits of the road while also discussing the potential negative impacts of the road on subsistence in the potentially affected communities.
11181	1	Subsistence	My first thoughts about the Ambler Road is: totally not a good idea. I just paid almost \$200 for my family in Ambler to send me fresh tuttu (caribou) meat on Bering Air. Tuttu are FINALLY crossing by Ambler, just as the Kobuk is freezing up. The herd is less than half the size it used to be, not migrating the way it used to as it has almost my entire life, and as it has for 10,000 years in this region. If that road gets built, Ill have to pay just as much in freight or gas but maybe there will be no tuttu! My family will starve without caribou. There will be no caribou because tuttu don't like roads. We know that they get confused around the Red Dog Mine and that portsite road. They get confused on their migration for over a month. We also know that land up by Ambler is full of asbestos and later when the mines are bringing up all kinds of toxic rocks it will hurt the caribou. I've heard that caribou meat already has lots of lead and toxics because of the Red Dog Mine. Itll only get worse with the asbestos and copper. You're going to be poisoning us. You guys probably think oh if there's no caribou those people could just buy meat from Walmart or AC or something. But that doesn't feed us the way caribou does. First cause its expensive. But also because it doesn't feed our Inupiaq souls. We Inupiaq have a connection to caribou, to this land. If you build that road it will damage forever our connection to caribou because there won't be any! And it will damage our connection to land.	Impacts to caribou resource availability resulting from linear structures such roads and pipelines diverting migration are addressed in Section 3.4.7, Environmental Consequences. Section reviewed to ensure the potential negative economic impacts resulting from reduced subsistence harvests are adequately addressed.

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11512	1	Mammals	I do not want the Amber Road, it will disrupt the migration of Caribou, it crosses 10+ rivers, and has lead and zinc mines, which are poisonous, and might kill fish. Most of the herd will turn around and not cross, and the others will follow. Plus juvenile delinquents will trespass, with Hondas, ATVs and other vehicles. They will try to get Caribou, chase them, and just leave them to die. Hopefully you choose the No Action Option, NO ROAD TO AMBLER!	Section 3.3.4 of the Supplemental EIS discusses the potential impacts of the road on caribou movements as well as the potential for trespass on the road.
12988	2	Mitigation/monitoring	General Measures As Mitigation: Throughout the DSEIS, discussions are very general with minimal road-specific information other than dozens of promises to do additional work, mitigation planning, and design AFTER the proposed road is approved by federal and state agencies. In other words, risk and uncertainty remain unacceptably high, especially for subsistence communities. The DSEIS contains many caveats regarding mitigation, using weak and non-committal terms, stating that they cannot control what all landowners will or will not do, and giving the distinct impression that over time mitigation commitments will not be fulfilled. AIDEA's approach continues to be that approving entities should trust that they will, at some point post-approval, develop and implement responsible, acceptable mitigation measures. This approach continues to be unacceptable. How can decision makers support this project without knowing what mitigation measures will be implemented, if they will work, and what they will cost? AIDEA must be required to provide substantial mitigation planning information in the Final SEIS along with guarantees that measures will work and that they will implement them.	The proposed mitigation in Supplemental EIS Appendix N contains measures that serve to minimize potential impacts to resources from the project. Should the project be approved, the ROD will determine which mitigation measures are required.
14098	1	Public access	Whereas the primary concern regards significant harvest capacity of hunters and fishermen using the Ambler Access Road. Whereas any person can paper stake mining claims on State lands to buy the right to be permitted as an industrial user. Whereas any person can then bring boats, ATVs, and other hunting equipment, there will be hundreds to thousands of users end-running the public closure. Whereas the Dalton Highway/Haul Road public closure was bypassed by commercial use permits for hunters and fishers who staked mining claims in 1982. Whereas the Subsistence Resource Commission feels strongly this will occur immediately once the Ambler Access Road is built. Therefore, the Gates of the Arctic Subsistence Resource Commission demands that the Bureau of Land Management construction permit for the Supplemental Environmental Impact Statement shall clearly state: The Ambler Access Road shall not allow transportation of hunters, fishers, game or fish parts or gear by any commercially permitted person.	See Supplemental EIS Appendix N, Section 3.3.5, Mammals Potential Mitigation Measure 8 and Section 3.4.3, Recreation and Tourism, Potential Mitigation Measures 1 and 2 for proposed prohibitions.
14109	1	Mitigation/monitoring	In today's world it is very important that all the communities directly impacted by development be apart of the planning for any infrastructures needed and to evaluate mitigation to prevent toxic degradation of the natural environment that would be impacted. Local input is our right as citizens of our state and country.	Appendix N, Section 3.4.7, Subsistence Uses and Resources Potential Mitigation Measure 2 refines AIDEA's proposal to establish a subsistence working group for knowledge sharing and requires AIDEA to consult directly and regularly with affected subsistence communities.
14123	1	Water resources	The watersheds where roads exist provide lower quality water to those downstream who depend on them for water supply to drink and survive.	The Supplemental EIS acknowledges that the proposed activities have potential to impact water quality that would affect downstream water users. The Environmental Consequences sections for Sections 3.2.3 and 3.2.5 within the Supplemental EIS and Appendix N Sections 3.2.5 and 3.5 list stipulations developed to minimize impacts from proposed activities on water quality.
14689	1	Subsistence	We always go hunt up river from the Kobuk and the road will be right there. What if they crash with the road they will not pick it up off the ground. They will spill, accidents are going to happen. Our animals that we eat, they are going to eat what they spill. It's going to affect them. Its going to affect our fish, and what we eat. We don't want to eat what they spill.	The potential impacts of contamination from spills and other emissions on subsistence are discussed in Section 3.4.7.
15258	1	Subsistence	My reason to oppose the Ambler Road is that Noorvik is the last and only village on the Kobuk River Delta. The Kobuk River Delta consists of three main channels; the Nazuruk, Riley, Melvin. These channels are surrounded by mostly lakes, sloughs, etc.. Our village depends on the Kobuk River Delta for subsistence. The Kobuk River Delta have many different kinds of plants and wildlife, such berries, plants for medicine, and eating, many different kinds of birds and waterfowl, moose, bear, caribou, furbearing animal etc.. The main subsistence concern is in our Kobuk River Delta is the fish, many kinds of fish is in our rivers, lakes and sloughs. Salmon, pike, whitefish shiifish mudshark, grayling, water inhabitants like beaver, muskrat, otter, mink, weasels. There are many seasonal hunting and fishing camps on the whole Kobuk River Delta, also some permanent camps.	Section 3.4.7 addresses potential downstream effects to fish and other aquatic resources. Text added specifically referencing the Kobuk River Delta.
15511	1	Alternatives	The logical development approach for the Kobuk mining district is for the mining company or companies to develop a road to the west coast of Alaska for moving materials to market. Like the Red Dog Project, manpower can be flown into the site and materials moved to the coast for shipment.	The screening analysis in Appendix G balances the pros and cons of multiple western routes. These alternatives were determined to not meet the Purpose and Need of the project and/or were removed from further consideration due to either practicality, cost, or environmental concerns.
15819	1	Subsistence	In addition, another stated, "it is vital and culturally important to harvest spotted and bearded seals which will be adversely affected by the Ambler Road Project."	Reviewed Section 3.4.7 to ensure potential impacts to marine mammals are appropriately addressed.
15819	2	Alternatives	In addition, this individual stated that roads and mines could enhance the support of Cape Blossom Regional Port and that other routes should be considered.	Appendix G details the pros and cons of all routes, including a road and rail to Cape Blossom. These alternatives were determined to not meet the purpose and need of the project and/or were removed from further consideration due to either practicality, cost, or environmental concerns.
15945	2	Subsistence	The Ambler Road Project will destroy protected wilderness and national parklands, with irreversible impacts on critical habitats for fish and wildlife such as migratory birds, caribou, moose, bears, and many more species. The road will threaten current and future generations of lupiat and Athabascan communities that rely on these resources for survival.	Section 3.4.7, Environmental Consequences addresses potential impacts to subsistence resource availability.
16803	1	Public access	The most significant and glaring flaw in a deeply flawed analysis of the project is in the assertion that the Ambler Road would be private and that access would only be for industrial traffic. Given that the State of Alaska has already invested in this project, sportsman groups have vowed legal action to open the road if built, the lack of any discussion of how to control access in the EIS, the history of the Dalton Hwy, and current public use of the Red Dog Road; it seems nearly impossible that this proposed road would not be a public thoroughfare almost as soon as it was built. But the EIS does not take into account	See response to letter 22595, comment 13.

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			the effects of a public road across the Brooks Range. Nor does it adequately explain why the document assumes limited access.	
16907	1	Fish and aquatics	Currently, part of the area of the proposed road is used by the Native Village of Kotzebue for the production of salmon and sheefish. Many important spawning Kotzebue for the production of salmon and sheefish. Many important spawning areas for these stocks are located adjacent to the road and downstream from the areas for these stocks are located adjacent to the road and downstream from the mining areas under consideration for development if the road becomes a reality. A large part of our community's annual subsistence catch is comprised of Kobuk River sheefish and salmon. In addition, the long-term sustainable commercial chum salmon fishery based out of Kotzebue depends on a healthy population of Kobuk salmon fishery based out of Kotzebue depends on a healthy population of Kobuk River chum salmon. Many salmon runs in western Alaska have recently seen large River chum salmon. Many salmon runs in western Alaska have recently seen large population declines and adding additional habitat stress (which the road and mines would do) and multiple pathways of pollution to spawning grounds and the water the salmon live in (especially the eggs and fry) and breathe, makes it more likely the salmon live in (especially the eggs and fry) and breathe, makes it more likely that the Kobuk River chum salmon will be vulnerable to population decline, or that the Kobuk River chum salmon will be vulnerable to population decline, or collapse. Losing this stock would have very negative consequences for the community of Kotzebue and the other villages utilizing this resource. The sheefish spawning areas that are located adjacent to the road and downstream from the likely mines, are the largest and most productive sheefish spawning areas from the likely mines, are the largest and most productive sheefish spawning areas in Alaska. Kotzebue depends on a healthy and uncontaminated Kobuk River sheefish population in order to provide a large amount of easily procured food for sheefish population in order to provide a large amount of easily procured food for the people. The abundance of this resource and their presence directly adjacent to the people. The abundance of this resource and their presence directly adjacent to the community for most of the winter, allows for a rare opportunity of egalitarian the community for most of the winter, allows for a rare opportunity of egalitarian access by young and old, those with lots of equipment and resources, and those with access by young and old, those with lots of equipment and resources, and those with very little. The quality, abundance, and access, to Kobuk River sheefish, by the community of Kotzebue, is exceptional on a global scale and is recognized as community of Kotzebue, is exceptional on a global scale and is recognized as uniquely valuable by our community for this reason. Because of this, the Native uniquely valuable by our community for this reason. Because of this, the Native Village of Kotzebue is very concerned about the potential deleterious effects from Village of Kotzebue is very concerned about the potential deleterious effects from both the road project and the expected mines. We appreciate that the SEIS points both the road project and the expected mines.	Comment noted. Text was added to p. 1, paragraph 1 and p. 5, paragraph 1 to reiterate the downstream importance of these stocks to subsistence activities, as far away as Kotzebue Sound.
16907	2	Subsistence	In addition to sheefish and salmon, Kotzebue Tribal members depend on whitefish and other fish species that live and reproduce in the Kobuk River. These fish also feed a large population of juvenile bearded seals and all ages of spotted seals that reside in the Kobuk River delta during the open water months. Any pollution that disrupts or contaminates these fish populations, would also negatively impact this important rearing and feeding habitat for bearded and spotted seals. Beluga whales also feed on fish in the Kobuk River delta area and the Hotham Inlet (Kobuk Lake) and Selawik Lake and would be vulnerable to contamination and fish population disruptions resulting from activities associated with the road and mining efforts. These downstream potential impacts should be noted and included in discussions of environmental impacts in the SEIS and other future documents.	Section 3.4.7 addresses potential impacts on fish species along the Kobuk River in addition to the potential for impacts to marine mammals in the event of a large-scale spill. Reviewed Section 3.4.7 to ensure potential downstream effects to marine mammals are appropriately addressed.
16907	3	Mammals	The western Arctic caribou herd (WACH) has been experiencing annual population declines for almost 20 years and the herd now has the fewest number of animals it has had since the 1970s, and remains in the preservative declining management level. There are many examples from other caribou herds of rapid declines that have not reversed course, especially in areas associated with large scale human development and habitat fragmentation, so it is very concerning that this project cuts through a major part of the spring and fall WACH migration route and comes at one of the most vulnerable times in the herds history. While AIDEA and others may commit to mitigate impacts to caribou, there is no real way to mitigate the most impactful result of this project, which is the road itself and the construction activities, including the spur roads and the mine developments that are the point of the road. While addressing human harvest can potentially assist with the recovery, the best chance of a recovery is to have available large scale habitat that is not fragmented and a herd that is not impacted by industrial activity.	The current decline in the WAH is documented in Section 3.3.4 of the Supplemental EIS and was updated with the most recent WAH population estimate. Declines in other herds and the potential for disruption of caribou movements are also discussed.
16907	4	Government to government consultation	The Native Village of Kotzebue continues to have grave concerns about this entire Ambler Road effort and we remain committed to fully engaging as this project moves forward. We request the BLM to carry out a robust outreach and Government-to-Government efforts during the entirety of this project. We are always willing to communicate with BLM to influence this project in a way that is most protective of the resources our Tribal citizens depend on.	The BLM appreciates the information we have received from the Native Village of Kotzebue in conjunction with the Ambler Road Project and will continue to consult with you on matters that may affect your Tribal members and the resources they depend on.
16992	1	Fish and aquatics	It is true that Alternative C would have a larger impact on fish than the other alternatives, but it could also make it significantly easier for monitoring and enhancement projects to operate in portions of the Koyukuk River drainage that are currently very expensive to access. This would be especially useful for monitoring chum salmon, and there is currently an error in the SEIS regarding their escapement goals. In 2023, summer chum met their drainagewide escapement goal, and it is currently unclear if the fall chum met their drainagewide escapement goal (the final numbers are still being produced by ADFG, and the fall chum either just missed the goal or were slightly over the goal). The Koyukuk has many important summer chum spawning areas, and Henshaw Creek in particular is growing in production (outside of the recent collapse, which was likely driven by ocean conditions). As mentioned in the SEIS, Clear Creek (tributary of the Hogatza) is another major chum spawning area, but its largest escapement ever was 116,735 fish in 1995, while Henshaw Creek recorded 360,687 fish in 2017. Assuming state, federal, or tribal governments will be given limited access to the haul road, monitoring of these areas will improve under Alternative C. As this will be a mining haul road, Alternative A is better from a fish perspective because	Added a sentence in the first paragraph of Alternative C Impacts (p. 22): "One potential fish management outcome from Alternative C is that this route may provide easier monitoring access to known or presumed spawning areas for chum salmon and sheefish along larger streams like the Hogatza, Koyukuk, and Tozitna rivers and their tributaries (Map 3-18)."

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			there is less opportunity for contamination from ore dust. Overall, the AIDEA has taken reasonable steps to reduce impacts to fish in all alternatives.	
16992	2	Fish and aquatics	Regarding the text of the SEIS, there are a few areas where there are two commas next to each other, and the excerpt below needs to be revised to actually note the concentrations of ore or it needs to be simplified to state that some ore may enter the river: "However, even with the use of hydraulically sealed lids and truck rinsing procedures, ore concentrates are transported up to 2.5 miles (4 kilometers) from the Red Dog Mine haul road and low levels much farther (Hasselbach et al. 2005; Neitlich et al. 2017)"	Section 3.3.2, Fish and Aquatics, already discusses the potential for toxic dust from mining activities to enter aquatic habitats. The text has been reviewed and is accurate as written.
17542	1	Birds	Similarly, roadside ecology research has found the simple presence of vehicular traffic noise (even in lieu of a physical road) to have devastatingly negative effects on wildlife, especially birds. When roads and their noise are introduced to an environment, species become more stressed and the overall health of the herds/groups/flocks/etc. decreases due to increased attention and resources needed to protect from introduced threats. Reproduction and habitat quality decrease with simply the noise of a road. See: Ware, McClure, Carlisle, & Barber (2015).	Revised paragraph on p. 3-119 to elaborate on noise effects for birds.
17876	1	Water resources	This physical barrier across river headwaters would necessarily affect water quality for both the Kobuk River, which drains into Kotzebue Sound, and the Koyukuk River, which feeds the Yukon. If approved, the road and mines would bring sedimentation, streambed destruction, habitat removal, migratory obstacles, and a potentially extreme compromise of valuable water resources. Designing stable holding ponds for copper sludge and toxic tailings to last for hundreds of years seems unrealistic.	See response to letter 14123, comment 1. The Mining, Access, and Other Indirect and Cumulative Impacts portion of Supplemental EIS Section 3.2.5 and Appendix H further discuss potential impacts and mitigation of mining activities on downstream water quality. Any proposed mining activities (including groundwater pumping/drawdowns, water use for mining activities, holding ponds for copper sludge, toxic tailings storage, drill cuttings and effluent, or other potential impacts on water quality) will require additional NEPA analysis, which typically would include an EIS specific to the proposed mine development, and would need to show that water use would not detrimentally impact water resources and that proposed mitigation to safeguard downstream water quality is adequate. Mining companies would be responsible for permitting temporary water use authorizations for proposed activities with ADNRR.
17876	2	Mammals	Caribou are also sensitive to human disturbances. Local knowledge, backed with radio-collar data, suggest that if caribou leaders cross a road the others will follow, but they can be startled back for many miles, disrupting the normal cycles of mating and migration. The population of caribou in the Western Arctic herd is currently in decline. In a world where people struggle, fight, and sue over access to clean water and to natural resources that are food supplies, why would we let the Ambler Road be built? What price are we willing to pay for a generation of mining?	Literature on the effects of infrastructure on caribou movements for the WAH and other herds is discussed in Section 3.3.4 of the Supplemental EIS. This includes the observations of caribou movements near the DMTS connecting the Red Dog Mine to the coast.
17950	1	Air quality and climate	The insufficient attention to climate change in the Supplemental Environmental Impact Statement (SEIS) for the Ambler Road project illustrates a prevalent inclination to favor short-term economic interests over the long-term health of the environment. The Arctic, already severely impacted by climate change, is a particularly sensitive area that demands careful consideration of environmental impacts. However, the development of the Ambler Road is advancing without adequately addressing these essential climate concerns, revealing a common trend where environmental impacts are often overlooked in favor of immediate economic benefits. This approach, especially in delicate ecosystems like the Arctic, indicates a narrow focus on short-term profit at the expense of sustainable, forward-thinking environmental stewardship.	Comment noted. See response to letter 132, comment 2.
17950	2	Air quality and climate	Moreover, the SEIS's limited treatment of climate change in the Ambler Road project is indicative of a broader tendency to disregard environmental concerns in development initiatives. There is often a preference for infrastructure and resource extraction ventures that can compromise ecological integrity, reflective of an approach that places more value on economic growth than on the preservation of the environment. This practice not only poses immediate threats to the Arctic's fragile environment but also contributes to the larger issue of global climate change, amplifying the ecological and social challenges faced by indigenous and local communities dependent on these ecosystems for their livelihoods and cultural identity.	Comment noted. See response to letter 132, comment 2.
17978	1	Alternatives	Subsidizing a private mining road with public funds is not in the public interest. The nearest tidewater is barging via the Kobuk River this alternative should be evaluated.	Appendix G, Section 6.3 details a potential route by barge on the Kobuk River. This alternative was eliminated from further consideration as it does not meet the purpose and need of the project.
17991	2	Government to government consultation	Despite widespread tribal resistance, the continuation of the Ambler Road project reflects a notable disparity within the prevailing economic system, where decision-making is largely swayed by those wielding more financial and political influence. This imbalance often leads to favoring large-scale infrastructure endeavors that align with business interests, disregarding the environmental and cultural well-being of indigenous communities. The insufficient engagement of tribal leaders in the decision-making process further demonstrates the undervaluing of indigenous perspectives in a system that prioritizes economic objectives over community and environmental health.	Please see Appendix I for a list of the Tribes that the BLM has consulted with in conjunction with the Ambler Road Project.
18058	1	Alternatives	The decision-making process for the Ambler Road project shows a significant lack of consideration for alternative, less environmentally damaging solutions, such as rail transport or drone technology. This limited exploration of alternatives suggests a preference for approaches that primarily benefit large corporations and investors, often at the expense of environmental and social considerations. In this light, the Ambler Road represents more than just a physical development; it symbolizes an economic system that favors certain development pathways, frequently overshadowing more sustainable and less intrusive methods. The focus on constructing a road instead of investigating other less impactful transport methods indicates a tendency to favor large-scale infrastructure projects that facilitate access to new areas for development and financial gain. This trend tends to neglect or undervalue innovative or unconventional solutions that could align more closely with environmental protection and the needs of local communities. Opting for a road, despite its potential for substantial	The combined air/road alternative concept was considered but determined not to meet the purpose and need for "surface transportation access in support of mining exploration and development" as described in ANILCA Section 201(4)(b) and was therefore removed from further consideration in an action alternative. Appendix G, Section 6.3 explains the BLM's rationale for not analyzing this alternative concept. Various rail routes were considered in Appendix G, Section 6.4 but were eliminated from detailed analysis due to practicality.

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			ecological harm, hints at a broader agenda to enable more extensive industrial activity in the region, consistent with objectives of maximizing resource utilization and market expansion. Moreover, the insufficient exploration of alternative options casts doubt on the inclusiveness and objectivity of the decision-making process, raising questions about whose interests are truly being served. The choice to build a road, instead of considering less damaging alternatives, could be seen as indicative of the influence of influential economic players who benefit from more direct access to natural resources and emerging markets. This situation reflects a common critique of development practices that are often more aligned with financial profitability and corporate priorities than with a dedication to sustainable growth, ecological responsibility, and the welfare of local and indigenous populations.	
18149	1	Subsistence	The proposed road would be a huge disaster to our river and land as we would be down river from the road. It will kill off any remaining spawning fish we get, and the animals will move on when we get more hunters coming off the road to hunt for sport.	Impacts to subsistence resulting from reduced resource availability are addressed in Section 3.4.7.
18180	1	Subsistence	2 areas that drive all of my actions here are trauma and wellbeing. While Im not from here I have been very blessed to have had the opportunity to live and raise children in a subsistence lifestyle. When you have worked hard with your family and then sit down to enjoy all of the foods you've hunted, gathered and prepared it's a spiritual experience, full of ritual and love for others and nourishment on many levels. Subsistence needs to be protected as much as religion. Mental health is driven by physical health, including gut health which is best when you are eating healthy foods that you value. It's not just food, its much deeper than that and it can't be replaced. Subsistence is resilience, which is the answer to overcoming trauma.	The potential sociocultural impacts of reduced subsistence opportunity are discussed in Section 3.4.7, Environmental Consequences (Sociocultural Impacts).
18225	1	Subsistence	I don't trust the culverts and bridges that will be built across our fish spawning streams. I am concerned about salmon, white fish, and sheefish spawning. Not sure how greyling spawn but we also fish for them, and trout. Culverts in the Pacific Northwest have blocked salmon from traveling upstream for years. It became such a problem that there was a court case to restore these culverts. I have read that it is important to demand that good quality culverts , the kind that do not damage salmon habitat are used on the Ambler Road project. I say good quality culverts are not enough to ensure the safety of our upriver streams. I believe culverts are designed to keep water moving, not to accommodate fish. I have seen the power of break up. I am not talking about the major break up on the Kobuk River, I am talking about the breakup upstream where these culverts are crossing. It is just as powerful. Debris will cause blockage. Who is going to monitor the blockage? I do not trust AIEDA to do this. L	The subsistence (Section 3.4.7) and fish and aquatics (Section 3.3.2) sections address potential impacts to spawning streams from culverts as well as lease stipulations and ROPs meant to reduce the impacts of culverts on fish movement and spawning.
18225	2	Subsistence	On the subject of sheefish spawning. Here is a quote from the draft SEIS that concerns me greatly, " Large mine dewatering could reduce groundwater flows into important spawning, egg incubation, and wintering habitats relied upon by salmon, sheefish, whitefish and other important subsistence species which could have potential population level impacts. Given the proximity of the four most advanced mine projects to the Kobuk River sheefish spawning grounds and the large numbers of sheefish that spawn in this habitat, sheefish could be especially vulnerable to population -level effects. Our family depends on sheefish to feed ourselves and our dogs. We have a dog team that we use for recreation and we have also participated in the local Kobuk 440 dog sled race. Dog mushing is a part of our culture. Without it who are we as arctic people? We need sheefish to be able to keep this culture alive. For these two reasons, culverts and the reduction of groundwater flows due to possible mining impacts I oppose the Ambler Road.	Potential impacts to sheefish spawning and subsequent impacts to resource availability are discussed in Section 3.4.7. Impacts to recreation are discussed in Section 3.4.3.
18334	1	Water resources	I believe that the conclusions of a recent study in the National Petroleum Reserve Alaska (NPRA) can be applied to the Ambler Road construction and maintenance along with the mining that will occur. Winter Lake Water Withdrawal (LWW) is NOT BEING REPLENISHED ANNUALLY BY SAME YEAR SNOWMELT RECHARGE in that study. This suggested conclusion is based on the Water and Environmental Research Center at the University of Alaska Fairbanks' 2022 study of Modeling Stream Flow Response to Scenarios of Tundra Lake withdrawal and Seasonal Climate Extremes, Arctic Coastal Plain" research article 10.1029(2022). The study occurred in the northeast corner of the NPRA which is the Crea Creek watershed which is a sub-watershed of the Fish Creek drainage system. The area has historically supplied water and ice chips for oil exploration. The Key Points of the Water Resources Research are: * The winter Lake Water Withdrawal (LWW) reduces summer low and average stream flow with the recovery time of up to 3 years. * The winter LWW is not counterbalanced by same year snowmelt recharge as is currently assumed in the land management regulations. * Low rainfall (21% of normal) combined with winter LWW lead to intermittently dry streams in the following 3 summers. * The recovery time for multiple years of LWW is 2-5 years. One year replenishment is not enough. The combined effects on stream flow means the hydrological equilibrium is changed. Fragmentation of the surface water network occurs. Impassable fish stream conditions can then occur. This ultimately could modify fish species distribution and assemblage. This ecosystem is already experiencing fragmentation due to climate change. This will be exacerbated by permafrost thaws due to being exposed by the road and mine development. Irreversible damage to natural topography, vegetative patterns, hydrological flow, and aquatic habitat occurs. Mining industrialization can affect the snow and ice fields in the south side of the Brooks Range. These areas feed important springs that emerge in the north side of the Brooks Range which are within the Arctic National Wildlife Refuge. This hydrological connection should not be deteriorated. These springs are important habitat for fish and wildlife in the winter.	Research showing lake water withdrawals (LWWs) for NPRA and other North Slope activities may not be fully replenished on a yearly basis is acknowledged. The soil conditions that would be crossed by the proposed Ambler Road alternatives differ from NPRA and North Slope development roads in that extents of the road requiring ice roads and ice pads during construction are generally limited to segments of the road crossing stream/river valleys and areas of thaw-sensitive permafrost; much of the alternative alignments have been routed along uplands that will not require extensive ice road construction to facilitate road construction. Special condition 30 of the USACE CWA Section 404 permit (adopted as proposed mitigation under Appendix N, Section 3.5) requires AIDEA to complete a geotechnical investigation plan that would incorporate all mitigation measures and inform locations where ice roads/pads are needed to protect thaw-sensitive permafrost. Additionally, unlike NPRA and North Slope ice roads/pads that must be constructed every year for the duration of the proposed development, the duration of required ice roads will be short term in duration, estimated at 3 years or less (per the estimated construction duration of the combined phasing options in Section 2.4.8), until the gravel road is constructed, at which time LWWs for ice roads and pads will no longer be needed. AIDEA will be responsible for permitting temporary water use authorizations for LWWs with ADNIR. LWWs are discussed on pp. 3-37 to 3-38 and 3-97 to 3-99 of the Supplemental EIS. Potential BLM Mitigation Measure 6 in Section 3.3.3 of Appendix N also provides safeguards for fish associated with LWWs. Any proposed mining activities involving LWWs will require additional NEPA analysis, which typically would include an EIS specific to the proposed mine development, and would need to show that LWWs would not detrimentally impact water resources.
18334	2	Socioeconomics and communities	The “man-camp” construction camps bring an influx of outside people into the area. The supply of drugs, alcohol, and crime results. Law enforcement is sparse in remote Alaska villages. In fact, the public perception is that law enforcement is notoriously lacking. Yes, the state troopers and wildlife officers still respond to crime. But they are short staffed. Currently,	Section 3.4.5 (Socioeconomics and Communities) of the Supplemental EIS discusses potential effects of the project on community services. Supplemental EIS Section 2.4.3, Features Common to All Action Alternatives-Operations, and Appendix H, Section 2.2.2 (Public and Non-Industrial

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			there are 50 empty trooper spots. The troopers that are recruited are hard to retain. Thus, there is less ability to cover in a timely manner the large distances. Weather comes in that eliminates plane travel. A one-hour plane ride gets replaced by 8 hours on via snowmachine. This is hard data to be used in realistically appraising the level of community and state services needed due to an increase in population and industrialization.	Access), describe the actions proposed by AIDEA to restrict access to the road, including AIDEA's proposal to hire their own road security and maintenance staff.
18334	4	Mammals	This is a herd population that already is declining due to changing climate conditions and other undiscovered reasons. By 2021, the population dropped by more than half of the population in the 1990s. And 2022, the numbers further declined. This road will intersect 3 caribou migration routes. The rapidly occurring climate changes mean rising temperatures change the weather patterns. Freezing rain in the winter is more common. This freezes the ground plants which become inaccessible to the caribou as food. Cumulative impacts from 4 proposed federal permitting processes must be considered by the DOI: the NPR-A rule making, the Willow Project Seismic Permit, the Ambler Road ROW, and the upcoming D-1 Land draft EIS regarding the Bering Sea-Western Interior Planning Area (affecting 38 tribes). All 4 of these affected project areas have Western Arctic Caribou Herd use. The fragmentation and negative habitat impacts must be assessed cumulatively together somewhere in these regulatory processes. Industrial development disrupts caribou behavior according to recent studies. Roads, pipelines, and other infrastructure are seen as obstacles by the herd. This blocks their migratory paths and feeding patterns. They avoid mining camps and oil fields with their leaking chemical odors and tailings. Drilling equipment and truck traffic shakes the earth. The air is filled with the noise of planes and helicopters which disrupt the herd.	The decline of the WAH and the potential impact of climate change on caribou populations are discussed in Section 3.3.4 of the Supplemental EIS. The potential impacts of reasonably foreseeable actions are discussed in the cumulative impacts section of Section 3.3.4.
18334	7	Water resources	The City of Kobuk's public water well and the City of Shungnak's Kobuk River surface water withdrawal are downstream from Alternatives A and B. Shungnak is also 10 river miles downstream from Alternative C. Any toxic spill into the water sources puts these communities at risk.	See response to letter 14123, comment 1. Section 3.2.3.1 of Appendix N specifically discusses spill prevention and response mitigation.
18334	8	Fish and aquatics	Lack of waterbody crossing data by the applicant is unacceptable. Only 55 waterbodies in the first 55 miles have been done. That leaves more than 156 unanalyzed miles.	Should an action alternative be approved in the BLM's ROD, additional surveys and studies would be conducted as needed in support of other local, state, and federal permits. As described in Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA - Biological Resources, fish surveys would be conducted to assess fish presence in rivers in streams for all life history stages along the selected alignment. The scope of these surveys would be coordinated with ADF&G, the USFWS, and NMFS. The Supplemental EIS includes a description of design features and mitigation measures that are intended to reduce impacts to waterways, fish, and aquatic habitat from road construction and the installation of bridges and culverts (see Supplemental EIS S Section 2.4.4, Design Features Proposed by AIDEA - Physical Environment; Section 3.2.5, Water Resources - Impacts Common to All Action Alternatives, and Appendix N, Potential Mitigation).
18425	2	Socioeconomics and communities	The Supplemental Environmental Impact Statement (SEIS)'s insufficient assessment of these economic and environmental consequences demonstrates a systemic bias in development strategies. Such strategies are skewed towards projects offering quick financial profits, despite potential enduring risks to the environment and local communities. The implication that inhabitants along the Ambler road might have to substitute their traditional subsistence ways with costlier imported food exemplifies a disregard for the socio-economic realities of indigenous and rural communities. This shift not only disrupts established lifestyles and local economies but also imposes a dependence on external, market-based food sources, heightening vulnerability and eroding autonomy.	Impacts to subsistence resulting from reduced resource availability are addressed in Section 3.4.7. Impacts to the cost of living are also discussed in Section 3.4.5 (Socioeconomics and Communities) of the Supplemental EIS.
18425	3	Environmental justice	Therefore, the Ambler Road project serves as a case study of a prevalent economic approach that tends to overlook and weaken local, sustainable economic practices in favor of industrial and infrastructural expansion. This approach not only jeopardizes ecological equilibrium but also deepens economic disparities. Local communities, particularly those marginalized and indigenous, often suffer the consequences of environmental harm and the erosion of traditional ways of making a living. The preference for such development initiatives, despite the impacts on local communities and the environment, mirrors a broader economic trend, where decisions are influenced by the benefits to a select few, often at the cost of the broader community's welfare and environmental integrity.	The BLM will weigh both the potential beneficial and adverse impacts of the proposed project in making a decision. That decision will weigh the potential benefits of jobs and revenues to the local and state economy against the adverse effects to the human environment disclosed in the Supplemental EIS. The EJ analysis in Section 3.4.6 of the Supplemental EIS evaluates the potential beneficial and adverse impacts to marginalized and indigenous communities.
18461	1	Mammals	Ambler Road would put a critical area, the Brooks Range, and its inhabitants at substantial risk. The location of the proposed road would be constructed right in between vital caribou herds. The herds that inhabit this area include the Western Artic Herd, Teshekpuk Herd, Central Arctic Herd, and Porcupine Herd. These herds have played a significant role in the traditions and heritage of Native Alaskan communities and serve as a foundation for subsistence harvesting (Parrett 2016). These herds move through the Brooks Range throughout the year, in the summer they migrate towards the north slope and in the winter, to the south side of the mountains. One of the largest of the herds, the Western Arctic Caribou herd, is shrinking and has seen an alarming 33% reduction from 2003 (Richards 2023). The definite cause of the decline remains unknown, and the proposed Ambler Road could be a threat to their survival. It would be prudent to take a proactive approach and investigate the causes of their decline, before constructing a road that could exacerbate their condition. It is crucial to consider the other impacts it will have on other inhabitants that rely on the land and wetlands of Brooks Range and the Gates of the Arctic National Park and Preserve.	The project area is primarily used by the WAH, although some TH animals may occasionally winter in northwestern Alaska, as described in Section 3.3.4 of the Supplemental EIS. The potential impacts of the project on the WAH are discussed in Section 3.3.4 of the Supplemental EIS.
18528	1	Water resources	The project must require an intensive and immense, regional watershed-scale, long-term scientific sampling/analysis program, here located in the most challenging of geographic and climatic circumstances. The 'Ambler Road' is postulated on extending through the Brooks Range watershed, consistently the wrong way, routed from as far east of the mines as any contaminants impacts could conceivably reach, westward though the mines' sites, further west all the way into ocean environment, and north-south possibly as far as from Brooks Range and Baird Range peaks southward well beyond the	Map 3-05 in Volume 4 shows the major watersheds crossed by the proposed action alternatives (including the Kobuk, Selawik, Koyukuk, Melozitna, and Yukon rivers and Beaver Creek) and acknowledges potential impacts could extend downstream. The Supplemental EIS utilizes the best available data, including data collected and analysis performed by the applicant. As listed in Section 2.4.4, AIDEA has committed to additional sampling and analysis, including geotechnical studies, hydrologic studies, and fish studies. Mitigation measures included in Appendix N,

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			Kobuk River, to whatever scientifically designated boundaries can be scientifically identified. Here in the Supplemental EIS, these analytical boundaries are not presented in any responsible manner.	Sections 3.2.5 and 3.5 require additional sampling/analysis prior to construction activities, including surface water baseline characterization, final cross-drainage culvert locations, and hydrologic/hydraulic design of structures.
18528	2	Fish and aquatics	Each stream crossing must be analytically, comprehensively characterized, and all wildlife biogeochemically characterized, particularly considering migratory genera including bird species, fish species, amphibians and populations whose eggs and, therefore, reproductive capacities may be affected by Selenium or any biochemical variants of selenium that could be expected to occur in these aquatic environments! This analytical framework must consider and analyze the consequences of roadbuilding materials, derivation of this fill, and how it will behave in haul road traffic, particularly as global warming continues to impact permafrost. In a landscape rich enough in copper sulfide group minerals to justify mining, it follows that marginal occurrences of some of the same metals could permeate roadbuilding materials sources. This is true, particularly for sulfate and selenium compounds, such as pyrite, chalcopyrite and any of the lead-zinc minerals. Omission of consideration of selenium, selenite, selenate or any of the possible selenium variations in the SEIS is reprehensible. The work cited in the 'References' section of these comments conveys the complexity of this challenge in any environment that includes gradients from salt water to fresh water, still water to running water, from oxygenated to a state of chemically reduced water and wetland environments, and the vulnerability of the eggs of fish, birds, amphibians and other wildlife that BLM must assure are identified throughout the watershed. Transport of these reproductively deadly toxins into the environment cannot be tolerated. Selenium researcher Joseph Skorupa notably challenges notions that assume correspondence between selenium levels in waterbodies, on the one hand, and in tissue of eggs and aquatic wildlife. Based on analyses at a dozen “real world” sites, Skorupa have reported that Selenium dissolved in waters where wildlife may feed, reproduce or rest may seriously exceed the previously accepted 'standard' of 5 ppm; rather, Skorup found that waters with presumed acceptable levels may result in greatly increased accumulations of selenium compounds in internal tissues, some as much as 20 or 30 times that acceptable maximum. Furthermore, a great deal of variation appears likely from species to species, and from one environmental circumstance to another. Only a thoroughgoing laboratory program, carried out over a period of years, can reach a scientifically acceptable degree of assurance that selenium toxicity in eggs, or selenium-caused deformation and death of hatchlings/young can be avoided or suppressed. If this cannot be achieved, then the “No Action” alternative is imperative. Similarly, sampling and analysis must be carried out for other likely or possible elements and compounds, including all metals and compounds in the sulfide group --- nickel, copper, lead, and zinc, as well as minor sulfide-group metals and compounds, notably antimony, arsenic, bismuth, cadmium, cobalt, germanium, gold and silver. Some of these metals are likely to be targets of mining, and therefore can be assumed to be conspicuous among metals components of mining concentrate being hauled across this immense watershed that, we will remind everyone, is above the Arctic Circle, and unlike any other research documented in ecotoxicology literature. This will render these metals and metals compounds to be of greater concern for spills or other handling and transport mishaps or miscalculations than may be claimed. Neglect of these considerations, and failures to perform responsible advanced modeling and operational sampling and analysis is no excuse for ethically adequate biogeochemical analysis and engineering management! Remediation must not be counted on as an adequate remedy to responsible planning, design and operational management! Spills and remedial cleanup may work in some places, economically and ecotoxicologically, but not here! Throughout the watershed and sub-watersheds, lizards, frogs, amphibians, and other aquatic and wetlands genera and species, as well as mammals that are exposed --- especially those that consume fish and aquatic life --- Project Sponsors must determine thresholds for impact on reproduction, particularly egg sterilization or hatchling deformation as a result of selenium poisoning, appropriate to each and every variation of site and species. Questions of relationships between, for example, water contamination levels and egg contamination levels must be addressed quantitatively according to a rigorous laboratory sampling/analysis and reporting plan, in accordance with the Skorupa team methodology, adapted to the Ambler Road environmental conditions.	The potential for selenium and other metals to be leached into the surrounding environment are described in Supplemental EIS Section 3.2.1, Geology and Soils - Geology and Soils Hazards. Supplemental EIS Section 3.2.2., Fish and Aquatics - Mining, Access, and Other Indirect and Cumulative Impacts, describes potential selenium impacts from future potential mining projects on fish. Supplemental EIS Appendix N, Potential Mitigation - Physical Environment, includes mitigation measure number 5: “Geotechnical investigations would include acid-base accounting for samples collected from material sites, along the road alignment, and at locations of ancillary facilities to identify areas of potential acid rock drainage. Testing also would be done for non-acidic metals leaching. Cuts would be minimized in areas with high potential for acid rock drainage and non-acidic metals leaching. AIDEA would provide a protocol for determining when alternative locations would be needed to avoid such areas and, if avoidance is not possible, how cut material and drainage would be handled.” The Supplemental EIS notes that this mitigation measure would be mostly effective, but impacts could still occur.
18528	3	Socioeconomics and communities	We would be remiss if we failed to respond to the SEIS's repeated emphasis on asbestos as an environmental hazard. To be sure, asbestos has been documented to be a threat to worker health and to the health of residents of industrial development regions. Here, we find the wildly disproportionate emphasis on asbestos to be inappropriate, given the omission of so many other ecological, human health and worker health concerns.	Asbestos is one of many public health issues analyzed in Section 3.4.5 of the Supplemental EIS (Socioeconomics and Communities) and it is not emphasized disproportionately. The hazards associated with exposure to asbestos are documented in the HIA.
18528	4	Fish and aquatics	Physical Stream Interruptions: Where streams of all sizes are proposed to be channeled through road culverts, or any other interruption of flows (e.g. dams), significant time must be allowed, possibly over a number of years, for study to integrate into alternative crossing measures modelled for particular species. Not only salmon must be considered, but also many other fish species. A proven plan of effectiveness must be established ahead of commencement of construction, creating full proof of compliance through a modeling plan for each species, population and variation of environmental circumstance. Analyses must ask the right questions about inevitable ecological variations of every conceivable type, rather than pretending that the SEIS's extensive but relatively static catalog of wildlife is sufficient. The sheer quantity of stream crossings is nothing short of outrageous! To be sure, this is an enormous scientific challenge, implying costs well beyond the “exorbitant” level cited in Section 3 page 99 of the SEIS.	Should an action alternative be approved in the BLM's ROD, additional surveys and studies would be conducted as needed in support of other local, state, and federal permits. As described in Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA - Biological Resources, fish surveys would be conducted to assess fish presence in rivers in streams for all life history stages along the selected alignment. The scope of these surveys would be coordinated with ADF&G, USFWS, and the National Marine Fisheries Service. The Supplemental EIS includes a description of design features and mitigation measures that are intended to reduce impacts to waterways, fish, and aquatic habitat from road construction and the installation of bridges and culverts (see Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA - Physical Environment, and Section 3.2.5, Water Resources - Impacts Common to All Action Alternatives). Additionally, potential mitigation measures that would further protect fish passage are identified in Supplemental EIS Appendix N, Potential Mitigation.
18528	5	Cultural resources	Cultural Adaptations: Indigenous Subsistence cultural adaptations across the entire landscape must be characterized rigorously, as well, and studied respectfully to determine scientifically whether and how Indigenous communities may be impacted. Dietary, ceremonial and spiritual practices must be respectfully explored and internalized into all phases of environmental impacts analysis. The mining team must determine solutions adequately to address all concerns raised by	Based on a review of the data that is available, summarized, and cited in this document and accompanying appendices, sufficient data exists to allow the BLM to make a reasoned choice among the alternatives and ensure potentially significant impacts are disclosed.

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			scientific findings. Communities undeniably are certain to be impacted by the proposed 'Ambler Road' plan and Ambler mining district vision. Fully considering impacts of biogeochemistry of the mines in the Ambler district, must also be responsibly executed. Fully considering, as well, the cultural impacts of legions of roadbuilding, mining, maintenance and transport personnel seems hardly worth mentioning, given that it is intuitively obvious to be doomed to fail at all levels. Other variables to be identified in a sampling-analysis plan must also be followed out and fully developed. This project is far too intrusive and damaging to be considered partially.	
18528	6	Fish and aquatics	The extent and cost of thoroughgoing analytical support laboratories that would be required is bound to be startling. Rio Tinto/Kennecott's on-site analytical laboratory, constructed to conduct sampling/analysis of contaminated groundwater below Utah's Bingham Mine waste rock dumps in the 1990s and thereafter, cost approximately \$2.5 to \$3.0 million, and employed a minimum of 2 to 4 expert laboratory chemists and field technicians/samplers at any given time. The dozens of field laboratories that would be needed here, capable of the scope of work undertaken by the RT/Kennecott field lab in the numbers likely to be necessary to create scientific validity throughout the Ambler mining and 'Ambler Road' site, are likely to dwarf the vague concepts of laboratory costs that we could find in the SEIS. And this doesn't include the off-site ecotoxicological and genetics testing and population-specific sampling/analysis and modeling that would surely be necessitated by such a pervasive, extensive threat to chinook salmon and other fish species/populations, and by the full suite of other wildlife to be addressed. Off-site genetics testing, which may mandate sampling and analysis at a university or private laboratory (e.g., U. California Davis) as has been done for other "springer" salmon populations in the Pacific Northwest in order to conceptualize and plan for genetically "true" recovery of chinook and other seasonally migrating types of salmon threatened with extinction, following Endangered Species Act mandates. (Please see the video cited in References, below, The Lost Salmon, Swiftwater Films); Needless to say, it is far more effective and economically viable to preserve populations in advance than to research genetically valid pathways toward recovery of collapsed populations. Similarly, it is far more effective to prevent ecotoxic destruction of species, whole populations, and the ecosystems of which wildlife species are a part, than to "bio-remediate" them, pretending that this post-destruction remediation will work. (We cite the extremely costly efforts to replace natural "springer" salmon with hatchery salmon--resulting in a genetic mix of fall and spring chinook populations in northern California and Idaho's Salmon River, presented in the video cited above.	Maybe construction of the road does not require the extensive laboratory testing cited by the commenter to minimize impacts to fish and the aquatic environment. The BLM is considering mitigation measures to reduce impacts to the environment (see Appendix N, Potential Mitigation), should road construction be authorized. Any future proposals to construct and operate a mine in the area would be subject to its own environmental review and additional testing as described by the commenter may be considered for such proposals.
18528	7	Air quality and climate	ALASKAN PERMAFROST IS THAWING at an utterly unprecedented pace, along with glaciers, streams and sea ice, even on Alaska's northern coast in the Arctic Ocean, as one complex set of consequences of Global Climate Change! The entire Brooks and Baird ranges of mountain glaciers are bound to experience great ice loss and corollary stream runoff, particularly in seasons of record warmth. The " U.S. National Climate Assessment" report cited in the 'References' section of these comments, passes on hints of information about thawing permafrost in Alaska, as many previous reports had predicted. The burden of proof, however, resides on the doorstep of the mining companies and on BLM's and the State of Alaska's administrative authority to assure that a fully informed scientific engineering and construction basis for planning and design underlies all GIS/remote-sensing tools being exercised on the 'Ambler Road' and Ambler mines project! Heavy equipment and temporary structures in a thawing-freezing-thawing-freezing environment promises utter disaster when a core objective is prevention of contamination runoff and periodic accumulation of that contamination. The year 2023 is being documented to constitute the warmest year on record, so there is no denying that the intermittent bog is upon us. The landscape has been treated with great finesse and knowledge by Indigenous peoples. Industrial cultures, by way of extreme contrast, is the LEAST CAPABLE of all cultures, with the possible exception of combat military, of dealing with intermittent-thawing permafrost, which may seem to reach a static condition, only to give way either to permanent thaw or inundation, or to a deceptive condition of re-freezing. For the rest of us to regard the team behind the Ambler Road proposal to fully visualize, with scientific certainty, the promised circumstance, is asking too much.	Comment noted. Permafrost and climate change is discussed in Section 3.2.7 of the EIS and each alternative's footprint is discussed in relation to permafrost impacts. The EIS notes, road project effects and mining project effects of the types discussed in this Supplemental EIS that can hasten permafrost thaw, coupled with the effects of a generally warming climate on permafrost, could cumulatively release CH4 and further contribute to climate change. The EIS states such impacts to permafrost are anticipated in Section 3.2.1. The applicant's estimate of construction costs includes the anticipated construction costs associated with thicker embankments, or additional insulation, to preserve the existing soil thermal regime as much as possible and the necessary maintenance to keep the road functional and useful for its users. Impacts to water quality from the thawing of permafrost are addressed in Section 3.2.5.
18528	9	Decision process - general	The separation of Ambler mines from the proposed Ambler Road cannot be allowed. The landscape cannot be separated from the poisonous geochemistry that the mines would generate and the road would distribute throughout the region's water, air, biota and soils. The analytical framework of this overall proposition is untenable, and is intellectually and scientifically dishonest, as proposed. Factors that must be integrated into analysis of such an overall vision include biogeochemical and cultural impacts on communities and community health, on wildlife populations in their precarious balances in need of avoidance of carefully, compassionately formulated ecotoxicity thresholds, and on ecosystems in National Parks and Protected Areas. This analysis must be willing to reach far out into the Pacific Ocean. Together, these deficiencies in the face of clear necessity is nothing short of reprehensible. No remedial, corrective solution can be designated at the scale of this envisioned overall project, considering the nature of reprehensible attribute, both those expressed in the SEIS and those avoided.	The impacts of mining are analyzed to the extent that information is available to do so. No specific mining application/permit request for the District has been submitted to date. The BLM evaluated reasonably foreseeable mining development as indirect and cumulative impacts using a hypothetical mining development scenario. When officially proposed, each mine would go through its own project-specific NEPA analysis and permitting process, which would provide further detail and analysis regarding the specific impacts of each mine operation.
18654	2	Section 106 consultation	There needs to be a management/maintenance fund in place now to cover the management actions, monitoring and mitigative actions (increased staffing, field work, lab work, research, collections and data management and curation) that are promised in the EIS and in supporting agreements such as the NHPA Programmatic Agreement (PA). The affected state and federal land managing agencies and cooperating tribal councils do not have sufficient staff or resources to monitor and mitigate the widespread adverse impacts expected to occur over a very long time. The PA (p.8) states that "12 months following PA execution, the BLM will submit standard mitigation guidance for archaeological sites, historic trails and other property types that are common in the APE." The PA was signed in 2020 and the guidance has not been included as an appendix. Has it been done? Without a management/maintenance fund to support project-dedicated staff, adverse impacts to cultural and natural resources cannot be monitored, mitigated or avoided.	Each land manager that issues a ROW or some other right of access is responsible for ensuring compliance with the terms of the grant for access. The BLM would recover its monitoring costs through a cost reimbursable agreement with the ROW holder.
18654	4	Decision process - general	AIDEA's proposed project is an industrial access road project to a mining district. However, there is no formal development proposal for any specific mine at this time. Therefore, no federal agency is currently considering any authorization for mining development in the District. The only authorization to be decided at this time is for the road and its supporting infrastructure	See response to letter 18528, comment 9.

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			described in Draft Supplemental EIS Chapter 2, Alternatives. Actual mine developments would require federal permits and would be evaluated in separate environmental review processes at the time they are formally proposed (Vol.1 p. ES-3). This segmentation of a project for NEPA review is prohibited by regulations and court precedent if each action does not have independent utility. The sole purpose of the road and its supporting infrastructure is for the mine development and operation. The range of actions that must be considered, include not only the project proposal, but all connected and similar actions that could contribute to cumulative effects. Specifically, NEPA requires that all related actions be addressed in the same analysis. The scope of the EIS should be as vast as the scope of this proposed project's impacts.	
18654	6	Proposed action	Table 2-1 in the SEIS (below) shows the mineral resources indicated or inferred by exploration for the four proposed mines that the access road would support at this time. Only copper, zinc, lead, silver and gold are listed in the table. Carbonated-hosted copper alone has high probability of occurring, but only in the Arctic deposit and at the western end of the Ambler Mineral Belt. Otherwise, the occurrence in the Ambler Mining District of the listed minerals has mostly medium to low probability (see examples of Appendix H Maps below). AIDEA has not made the case that the project will meet the criteria for addressing national strategic mineral needs nor does it justify the high environmental cost of a 211-mile industrial corridor that will open a vast area to other mining operations. [see attachment for table] Where in the SEIS is there information about the occurrence and size of deposits of the other critical or strategic minerals that the Senator mentioned? [see attachment for map]	At this time, foreseeable development within the Ambler Mining District is focused on these metals.
18654	7	Cumulative and indirect effects analysis	The EIS states, "The mining scenario assumes the 4 leading prospects in the District--Arctic, Bornite, Sun, and Smucker--all develop (sic) with a combination of open pit and underground mining. Other future mining development in the District is possible but is too speculative to include within the mining scenario (Vol.1, p.ES-3)." From the mineral deposit probability maps, I think we can see the likely future mining development that will be facilitated by the proposed access road (see, for example Maps 3 and 5 from Appendix H, below).	See responses to letter 23145, comment 3 and letter 26152, comment 1.
18658	2	Mitigation/monitoring	I also believe that passage across the most environmentally sensitive areas (such as caribou habitat) should be restricted to times when the wildlife is least likely to be disrupted.	Appendix N Sections 3.3.2 and 3.3.5 discuss various proposed mitigation measures to minimize impacts to wildlife and caribou. These measures include a Comprehensive Wildlife Interaction and Avoidance Plan that would include animal crossing policies, animal avoidance, and potential for road closures, and a proposed mitigation measure that would allow the Authorized Officer to require a temporary cessation of traffic during known caribou migration.
18661	1	Subsistence	The road threatens our future to preserve our culture. We have fish delivered by air as oceans and rivers become scarce.	Potential impacts on fish availability in the context of reduced salmon populations are discussed in Section 3.4.7.
18661	2	Mammals	Climate change has impacted the Dall sheep as 50% of the herd perished in the brooks range.	Because Dall Sheep are primarily an alpine species, they are unlikely to be directly impacted by the Project, although some disturbance could occur from air traffic or other human activities associated with the project and with reasonably foreseeable actions as discussed in Section 3.3.4 of the Supplemental EIS.
18699	1	Subsistence	Were elders we know what will happen with that road. The berries on the tundras. They'll be affected from the dust. The stuff that the Caribou eat the lichens they'll be affected too and we eat caribou. The river everything goes down stream. We all will be affected all the way to Kotz.	Potential impacts on berries and other wildlife resulting from dust deposition and contamination are discussed in Section 3.4.7.
18743	1	Mammals	The camps along the road will change the caribou. Because of the noise and the people living in these camps for road workers. I worked with Bornite for a few years. We know this when I was working that there was sheep coming this way. A few miles from Bornite. About ten years ago. Probably the noise from the helicopters stopped them. First time we saw sheep.	Section 3.3.4 of the Supplemental EIS discusses potential changes in the distribution and behavior of caribou as a result of different activities associated with the project.
18743	3	Subsistence	I have been living here all my life. Been hunting since I was 5 with my Dad right where the road is gonna be. He started taking me. I do not want the Ambler Road to be built. I used to go that way to hunt, where the road is projected to be built. Been hunting a lot, all around this area. I think there will be a lot of noise from this road. I know the way to where we hunt. It is the old way we used to go to the other side of the mountains. I think the noise could change the way the animals are. There are moose, caribou, bear and fur bearing animals back there. I think itll be a lot of noise, a lot of trucks not only me that hunts back there. There will be noise from the equipment. Ever since they started this project I notice there have been a lot of equipment. When they, the Bornite mine, stay open late there are helicopters.	Impacts to subsistence resource availability resulting from road, air traffic, and construction noise are discussed in Section 3.4.7, Environmental Consequences.
18743	4	Subsistence	The Bornite Road disrupts our traveling in the country to our hunting grounds in fall and spring time. They tell us we cant hunt when they are working because of high powered rifles. This is late in the fall time because the mine is staying open later. In the spring time the mine opens early. They scrape the road down to gravel. The berms get big along the road. Our old trails always went that way. Because of the big berms we get stuck when we try to cross to get to our trails. Then we have to drive on gravel because when we get stuck we only have the road to come back to our village on.	Reviewed the cumulative impacts section in Section 3.4.7 and Appendix L and added text regarding current impacts from mining exploration.
18743	5	Subsistence	They had a spill one time , Nova Gold equipment, right by the road. KTC , Kobuk Traditional Council, asked me to check. I was working there. I checked the spill it sank into the road. All the fluids came out of the truck. There is a little creek right by the lake. They didnt have any booms down there. After we found out they put booms. They had to dig 8 feet down to get the oil out. It would have been very unsafe for the fish down river if we hadn't found out. That was right before the sheefish run end of June. That one would have affected the sheefish. They haul fuel on that road. The new road would haul fuel too. The same thing could happen on the Ambler Road.	Potential impacts of spills and contamination on subsistence resources including fish are addressed in Section 3.4.7, Environmental Consequences.

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18863	1	Transportation and access	I also have concerns that this project is not truly taking into consideration the landscape in which this private road would be built through. This is not easily tamable country, and any Alaskan will tell you that roads are difficult to maintain up here. AIDEA continually points to the Dalton Highway as an example of what this road will be, but neglects to mention how the Dalton struggles to be maintained as the climate of Alaska warms. The Dalton has flooded multiple times in the past decade, many bridges need to be rebuilt, and a permafrost slump is threatening to wipe out the road, in addition to continual maintenance to combat frost heaves and the wear and tear of large trucks. With all of this comes substantial opportunity to impact the environment, and I do not see this sufficiently addressed in the SEIS under the excuse that planners cannot account for climate change appropriately. This SEIS should account for the worst case scenario, not this weak excuse.	See response to letter 23769 comment 1. Climate change impacts are analyzed in Appendix H and discussed under Environmental Consequences sections for the various analyzed resources in Chapter 3 of the Supplemental EIS. Numerous design features (Section 2.4.4) and mitigation measures (Appendix N) are included in the Supplemental EIS to minimize impacts on water resources, permafrost, geology and soils, and other resources.																																																																																																																								
18863	2	Cumulative and indirect effects analysis	Throughout my review of the EIS and Supplemental EIS, I am repeatedly concerned that this road is being considered with minimal knowledge about the scale of mining in the Ambler district and a lack of plans regarding the mitigation of impacts to the environment from mining activities, including the trucking of materials on the Ambler Road. A road in itself is not overly concerning, but in the EIS and SEIS there are repeated references to the lack of knowledge and planning regarding the mines. This is not how we should be assessing the impact of this project, if this is in essence a private road (since the public will not be allowed access at least initially) for the sake of mines, then the mines should be detailed in the EIS along with the road. We, the public from whose land this project will encompass, should not be permitting mining of this caliber on the repeated promises of AIDEA to plan for mitigations. These plans should already be in place so that we can adequately judge them, this permit is putting the cart before the horse.	See response to letter 34767, comment 160 regarding mitigation measures for future mines. See response to letter 23434, comment 13 regarding uncertainty and reasonable assumptions made in the mining scenario.																																																																																																																								
18932	3	Funding and bonding	It is informative to look at the parameters that might drive the “sufficient lease agreements” necessary to finance the road. These parameters include the number of viable leases, the length of the leases, and the financial security of these agreements. In Figure 1, the total costs for road are apportioned by mine. The apportionment is based on the number of estimated road trips for each mine, taken from information provided in the DSEIS. It is assumed that the number of Ambler Road trips associated with each mine (DSEIS 2023, Appendix H, Table 2-5) is linearly related to the costs that AIDEA would assess each mine for use of the road. In Figure 1, the total number of road trips is calculated for the life of each mine, and then each mine's proportion of the AIDEA road costs are assigned to the respective mine. The final apportionment of road costs to each mine will be determined by AIDEA in the future, but lacking this information in the DSEIS, this is a reasonable approach for establishing a rough estimate. <table><tr><th colspan="8">[table] ALLOCATION OF TOTAL AMBLER ROAD CONSTRUCTION & OPERATING COSTS TO EACH PROJECTED MINE</th></tr><tr><th>Mine</th><th>Arctic</th><th>Bornite</th><th>Smucker</th><th>Sun</th><th>Total</th><th>Source</th><th>Resource</th></tr><tr><td>Value (Millions \$)</td><td>\$10,400</td><td>\$13,200</td><td>\$1,100</td><td>\$1,600</td><td>\$26,300</td><td>Appendix F, Table 15</td><td>Mine Start Year 2033 2035 2051 2045 -</td></tr><tr><td>Appendix H, Table 2-9</td><td>Mine Operating Life (years)</td><td>12</td><td>35</td><td>5</td><td>6</td><td>- Appendix F, Table 15*</td><td>Annual Revenue (Millions \$)</td></tr><tr><td>\$866.5</td><td>\$626.5</td><td>\$218.8</td><td>\$261.5</td><td>-</td><td>-</td><td>Appendix F, Table 15</td><td>Mine Construction Cost (Millions \$)</td></tr><tr><td>\$827.1</td><td>\$2,140.0</td><td>\$212.7</td><td>\$414.1</td><td>\$3,593.9</td><td>-</td><td>Appendix F, Table 14</td><td>Road Construction Cost (Millions \$)</td></tr><tr><td>- - - -</td><td>\$797.4</td><td>-</td><td>-</td><td>-</td><td>-</td><td>Appendix F, Table 18</td><td>Road Total Operating Cost (Millions \$)</td></tr><tr><td>- - - -</td><td>\$1,400.0</td><td>-</td><td>-</td><td>-</td><td>-</td><td>Appendix F, Table 18</td><td>Ambler Road Trips (per year)</td></tr><tr><td>22,630</td><td>14,600</td><td>9,490</td><td>9,490</td><td>-</td><td>-</td><td>- Appendix H, Table 2-5</td><td>Ambler Road Trips - Total for Life-of-Mine</td></tr><tr><td>271,560</td><td>511,000</td><td>47,450</td><td>56,940</td><td>886,950</td><td>=</td><td>(Ambler Road trips per year) x (mine operating life)</td><td>Percentage of Total Ambler Road Trips</td></tr><tr><td>30.6%</td><td>57.6%</td><td>5.3%</td><td>6.4%</td><td>100.0%</td><td>=</td><td>(Ambler Road trips per mine) / (total Ambler Road trips)</td><td>Share of Road Construction & Operating Costs (Millions \$)</td></tr><tr><td>\$672.78</td><td>\$1,265.99</td><td>\$117.56</td><td>\$141.07</td><td>\$2,197.4</td><td>=</td><td>(road construction cost + operation costs) x (percentage of total Ambler Road trips)</td><td>Cost per Year of Mine Operation (Millions \$)</td></tr><tr><td>\$56.1</td><td>\$36.2</td><td>\$23.5</td><td>\$23.5</td><td>-</td><td>=</td><td>(share of road construction & operating costs) / (mine operating life)</td><td>Road Cost Payments as a percentage of Annual Mine Revenue</td></tr><tr><td>6.5%</td><td>5.8%</td><td>10.7%</td><td>9.0%</td><td>-</td><td>=</td><td>(mine payments for road use) / (annual mine revenue)</td><td>Based on the total cost of the road (\$2.2 billion), and the number of trips projected for the four mines (886,950), the toll for each road trip would cost a mine approximately \$2500.</td></tr><tr><td colspan="8">[end of table] Also of note is that the annual payments to AIDEA amount to approximately 7% (Ambler) to 11% (Smucker) of the projected annual revenue for each mine (Figure 1). 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18932	4	Funding and bonding	State of Alaska investments in mining roads have also failed. The Alaska Department of Transportation spent over \$8 million to construct an access road to the Rock Creek mine (Nome Nugget 2013). The mine went bankrupt due to ore processing problems less than a year after opening (Nome Nugget 2011). The potential liability to Alaska taxpayers for the Ambler Road is ten times that of the Red Dog mine road, and over 250 times that of the Rock Creek mine road, which is a classic example of how mining projections can go wrong, even after the commitment to build a mine has been made.	See response to letter 18932, comment 3.																																																																																																																								
18932	5	Funding and bonding	Even if the Ambler Road was constructed in conjunction with the Arctic and/or Bornite projects, the Smucker and Sun projects are not projected to begin for at least another decade. It is not reasonable to assume that Smucker and Sun will participate in financial assurance for the Ambler Road. Their development timeline is too uncertain to warrant that investment. This means that for financing purposes, Arctic and Bornite would need to shoulder the financial assurance for the Ambler Road. Annual	See response to letter 18932, comment 3.																																																																																																																								

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			payments for financing the road are estimated to be \$54.5 million (DSEIS 2023, Appendix F, Table 18), an amount AIDEA must provide whether they are receiving payments from a mine, or not.	
18932	6	Funding and bonding	Finally, the AIDEA plan assumes that the road will be available only for industrial traffic, not for the general public, and that the road will be closed after mining has ceased, nominally in 50 years. The reality is that villages along the road corridor will be allowed to connect to the road and will become dependent on the road for logistical supply. Once the road is constructed, it will not be closed, and perpetual road maintenance funding will eventually be required.	The costs associated with potential post-mining use of the road are beyond the scope of the Supplemental EIS.
18932	7	Funding and bonding	Because the Ambler Road could pose a significant financial liability on Alaska taxpayers if the economic projections outlined in the DSEIS are not realized, a more detailed analysis of the likelihood of AIDEA meeting its financial projections for paying back the \$2.2 billion investment in the Ambler Road should be included in the SEIS.	See response to letter 18932, comment 3.
18963	1	Subsistence	this would have a huge impact on the migration of the animals which would cause a more problems for the people who depend on the animals for food, food in the stores are getting more expensive and most of the time hunting and fishing is what people rely on for food, and as a local commercial fisherman, I know a lot of people rely on that for money and more importantly for food as well, as the animals would have to change their migration routes, we the people would also have to spend more money on gas which that would be another terrible problem, we the people would have to go further in searching for our food, fighting the weather and conditions greater than they already are, I'm sure you guys know about so many good people falling through the ice traveling, breaking down and freezing up to where it's too late	The potential impacts of the road on animal migrations and subsequent economic impacts and health and safety risks are discussed in Section 3.4.7, Environmental Consequences, and Mining, Access, and Other Indirect and Cumulative Impacts
19418	1	Mammals	Subsistence: The updated analysis identifies 66 communities whose subsistence activities could be potentially impacted and finds that any road alternative may significantly restrict subsistence uses in nearly half of these communities. The documentation provided by Jim Daus research on the Red Dog Mine and road at the very least raises questions about the impact of road crossings on caribou behavior. The projected impacts of road crossings on the Western Arctic Herd (WAH) from all three alternative routes would be superimposed on the forces which (according to ADF&G data cited in the Draft SEIS) led to a decline from around 490,000 animals in 2023 to around 259,000 in 2017. Since the publication of the Draft SEIS, ADF&G estimated the current herd size to be 152,000 and indicated that, in response, harvest quotas may be restricted for 2024. Given that up to 70% of the WAH migrates through the study area each year and the precipitous decline in the herds size, its hard to imagine a worse time to consider further fragmentation of the herds habitat by approval of any of the proposed routes.	The decline in the WAH population is documented in Section 3.3.4 of the Supplemental EIS and was updated with the most recent WAH population estimate. The findings of Dau (2023) regarding impacts of the DMTS (Red Dog Road) on caribou are discussed in Section 3.3.4 of the Supplemental EIS.
19418	2	Sand and gravel resources	Habitat: The Draft SEIS states (p. 3-15, Vol 1) that large amounts of gravel will be needed for road construction and that the gravel will be mined from deposits along any of the proposed routes of the Ambler Road. It also states, Geochemical investigations supplying data on the specific, sizes, grades, and actual quantities have not been conducted. This absence of data raises a number of questions including, How much gravel? and Where would it all come from? and What will be the impacts on water quality affected by the mining of all this gravel? I noted that the study by Kuiper et.al. cited in the Draft SEIS found that every mining proposal reviewed in their study predicted water quality compliance, but 76% of those mines exceeded water quality standards once they were in operation. It appears to me that the incomplete description of the impacts of the proposed gravel mining operations and the track record for predicting water quality impacts from mining operations means that at this point it is unwise, if not impossible, to draw any meaningful conclusions about the impact of mining the gravel needed for any of the proposed routes on water quality.	Project construction and maintenance would use millions of cubic yards of construction-grade gravel and rock. Proposed material sites are depicted in Volume 4 of the Supplemental EIS: Map 2-3 (3 pages) shows sites for Alternatives A and B; Map 2-4 (4 pages) shows sites for Alternative C. Appendix C, Table 2, lists the number of proposed material sites and the estimated footprint (area) for each Action Alternative. See response to letter 32724, comment 382.
19418	3	Public access	Access: The Draft SEIS does not present convincing evidence that access to and from any of the proposed routes for an Ambler Road can be restricted. There are at least two shortcomings related to this issue in the Draft SEIS (discussion, for the most part, found on p. 3-165, Vol 1). 1. The document does not address the question of how restriction of public access to any of the three proposed routes of the Ambler Road differs from the failed attempts to restrict access to the Dalton Highway north of the Dietrich River. Dont the rulings on the right of public use of the Dalton Highway apply to an Ambler Road? If not, why not? 2. On what legal basis could AIDEA allow communities to use the road for certain uses, such as commercial delivery of fuel and goods while not allowing other public use? Furthermore, I am skeptical that a staffed, gated facility at each end of the proposed road will eliminate public access. While those facilities may discourage many would-be users, Alaskans are pretty resourceful; and I suspect that in time a trickle of public users will become a deluge. For these reasons, my opinion is that any decision other than No Action would be a big mistake and borders on being irresponsible.	Supplemental EIS Section 2.4.3, Features Common to All Action Alternatives-Operations, describes the actions proposed by AIDEA to restrict access to the road. Appendix H, Section 2.2, Road Access Scenarios, discusses commercial access for communities, non-industrial access, and trespass. Should the project be approved, the ROW issued by the BLM would be for industrial use only.
19418	2b	Water resources	How much gravel? and Where would it all come from? and What will be the impacts on water quality affected by the mining of all this gravel? I noted that the study by Kuiper et.al. cited in the Draft SEIS found that every mining proposal reviewed in their study predicted water quality compliance, but 76% of those mines exceeded water quality standards once they were in operation. It appears to me that the incomplete description of the impacts of the proposed gravel mining operations and the track record for predicting water quality impacts from mining operations means that at this point it is unwise, if not impossible, to draw any meaningful conclusions about the impact of mining the gravel needed for any of the proposed routes on water quality.	Appendix C Table 1 states material needs for each alternative (15 million cubic yards for Alternative A, 16.8 million cubic yards for Alternative B, 22 million cubic yards for Alternative C). The 2020 USACE CWA Section 404 permit authorized development of 15 material sites for Alternative A (assumed applicable to Alternative B as well); additional material sites would be permitted on a case-by-case basis as needed. AIDEA has proposed potential material sites for all alternatives expected to provide adequate material supply. The BLM has included several potential mitigation measures in Appendix N Section 3.2.2 that would reduce impacts, and the potential for impacts, from material mining on water quality. Special conditions 10 and 11 from the permit (including in Appendix N Section 3.5) also provide protections for water quality from gravel mining operations.
19665	1	Mammals	I have read the Supplemental Environmental Impact Statement; this road and its implications are enormous in their scope and potential application. I was especially interested in the impact on mammals. I looked through the document and wondered if you would consider mitigation techniques such as fencing and wildlife overpasses. According to the USFW, fencing has worked at the National Elk Refuge in Wyoming to deter elk and other ungulates from crossing highways that	Wildlife overpasses, underpasses, and fencing would be difficult to design prior to road construction when there are large uncertainties regarding where wildlife, particularly highly mobile species such as caribou, are likely to encounter the road and attempt to cross. Improperly placed fencing could hinder wildlife movements.

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			cross through their range. Wildlife overpasses and underpasses have seen moderate success. King 5 reports that a moose has been sighted for the first time in Mt. Rainer Park due to a wildlife corridor in the Northern Cascades. Additionally, since the construction of the wildlife corridor, a wolverine has been spotted for the first time in many decades. I understand there is a need for mines and infrastructure to support mines, and I am not particularly happy with building new mines. I think doing everything possible to mitigate harm needs to happen. Building infrastructure such as wildlife overpasses and underpasses and fencing, as well as replanting native vegetation after construction is complete, would help mitigate any negative impacts that may occur.	
19784	1	Air quality and climate	I am extremely worried that the construction, maintenance, and use of this long proposed road, and the major industrial development that it would facilitate, would require the burning of an enormous amount of fossil fuels. This would generate huge and ongoing greenhouse gas emissions that would add to the already deadly climate change crisis.	Comment noted. Climate change and greenhouse gas emissions impacts have been analyzed in the Supplemental EIS. See response to letter 132, comment 2.
20009	1	Alternatives	Why was an alternative that does not require road construction, such as performing mining operations via airplane or helicopter, not analyzed?	The combined air/road alternative concept was considered but determined not to meet the purpose and need for “surface transportation access in support of mining exploration and development” as described in ANILCA Section 201(4)(b), and was therefore removed from further consideration in an action alternative. Appendix G Section 6.3 explains the BLM's rationale for not analyzing this alternative concept.
20091	1	Subsistence	We fish for chum salmon in Kotzebue Sound. Part of the run, the earlier part, is the Kobuk River run. These salmon spawn on the tributaries of the Kobuk River, the CLEAN Kobuk River. If this road is built, its going to cause all kinds of problems for our fishery. All that extra sediment in the water is not good for spawning salmon or for the eggs and little fish. And when the mines are built, I know that copper and copper mining is super toxic to salmon the fight against Pebble Mine taught us all that. Some kind of toxic runoff is inevitable. Im worried about my livelihood here if that road is built. I also eat the salmon I catch, share them with family and around town to extended family. Salmon are really important to our local diet. If they are poisoned and die off from too much sediment in the water, what will we eat?	Potential impacts of sedimentation and contamination on spawning grounds are discussed in Section 3.4.7 (Subsistence) and Section 3.3.2 (Fish and Aquatics).
20215	1	Water resources	I am concerned that the 2900 proposed culverts will negatively impact fish populations and hydro dynamics in the region. I live in an area were millions of dollars are poured into fixing failed or compromised culverts annually. I cannot believe with a changing climate that these culverts wont suffer a similar fate and need endless maintenance.	As described in Section 2.4.4, AIDEA has committed to multiple design features that would minimize impacts on hydrologic connectivity and fish passage. Appendix N Section 3.2.5 and Appendix N Section 3.5 also list multiple mitigation measures that will minimize impacts of culverts on hydrology and fish passage. For example, in Appendix N Section 3.5: measure 5 requires natural channel design with culverts exceeding measured bankfull widths for all fish passage culverts, measure 6 requires all culvert locations be identified in the field during breakup, and measure 12 requires an Adaptive Management Plan for culverts that will require regular monitoring, maintenance, repair, and reporting on culvert performance for the life of the project. As shown in Appendix D, Table 16, the majority of culverts along the proposed action alternatives are not anticipated to cross fish-bearing streams and require fish passage culverts; where fish are identified along the alternatives, natural channel design fish passage culverts would be installed per stated mitigation measures.
20248	1	ANILCA 810 analysis	The Ambler Road project's dependence on an outdated and incomplete 810 Analysis, which evaluates the impact on fish and wildlife, highlights a significant systemic shortcoming in addressing the concerns and rights of local communities, especially those in rural and indigenous areas. This deficiency in the analysis process mirrors a wider pattern of economic marginalization, where the perspectives and experiences of less affluent groups are often disregarded or overlooked in favor of industrial and commercial ventures. The failure to refresh this essential data and the limited ability of rural residents to report their activities or harvests point to a gap between policy-making and the actual experiences of these communities.	See Response to letter 7303, comment 1.
20325	1	Purpose and need	BLM confounds its purpose with decision-to-be-made In spite of the importance of its purpose and needs statement, the draft SEIS muddles it. On one hand, the draft SEIS's Section 1.4 says that “The BLM reviewed its purpose and need from the March 2020 Final EIS and determined that no substantive changes were needed.” Presumably that determination's effect was to incorporate the 2020 EIS version of the purpose and need statement into the 2023 SIES version by way of the reference. The final EIS, Section 1.4, had explained that, as follows: “The proposed BLM federal action is approval of the ROW application submitted by AIDEA. The purpose of the BLM action is to issue a ROW grant... Here, the BLM had mistakenly confounded action with purpose. Then the muddled statement was incorporated by way of reference into Section 1.4 of the SEIS in 2023.	Text has been revised in Section 1.4, Purpose and Need for Federal Action.
20325	2	Purpose and need	BLM's purpose statement selects a road before evaluating alternatives. The SEIS's Section 1.4 does offer some improvements over the final EIS, however. The first sentence in the first paragraph of Section 1.4 in 2020, presumably incorporated by reference into Section 1.4 in 2023, had said, “The need for federal action results from the requirement under the Federal Land Policy and Management Act for the BLM to consider AIDEA's SF299 ROW application for industrial surface transportation access across BLM-managed lands to the District.” Furthermore, the SEIS in Section 1.4 adds that “The BLM is responding to an application for a ROW... ” and “The BLM will decide whether to grant, grant with modifications, or deny the applicant's ROW application.” These sentences, particularly with terms like “consider,” “responding,” and “will decide whether,” provide a good description of the agency's decision actions to be made without pre-supposing the results. Nevertheless, the SEIS's adoption of the final EIS's statement of purpose and need kept alive an unhelpful element. The third sentence in the first paragraph of the EIS's Section 1.4, adopted into the SEIS by reference, said, as follows: “The purpose of the BLM action is to issue a ROW grant that provides for: *Technically and economically practical and feasible year-round industrial surface transportation access in support of mining exploration and development; ... “ Similarly, the second paragraph of the SEIS Section 1.4 says that the U.S. Army Corps of Engineers “indicated that its overall purpose is ‘to	Text has been revised in Section 1.4, Purpose and Need for Federal Action.

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			provide year-round surface transportation access... '.” Here, the SEIS writers are saying that the agencies will decide in favor of some version of the surface access action alternatives. However, it goes without saying that to provide a surface transportation ROW before assessing environmental impacts violates the NEPA rules.	
20325	3	Purpose and need	The SEIS's Section 1.4 does offer some improvements over the final EIS, however. The first sentence in the first paragraph of Section 1.4 in 2020, presumably incorporated by reference into Section 1.4 in 2023, had said, “The need for federal action results from the requirement under the Federal Land Policy and Management Act for the BLM to consider AIDEA's SF299 ROW application for industrial surface transportation access across BLM-managed lands to the District.” Furthermore, the SEIS in Section 1.4 adds that “The BLM is responding to an application for a ROW... “ and “The BLM will decide whether to grant, grant with modifications, or deny the applicant's ROW application.” These sentences, particularly with terms like “consider,” “responding,” and “will decide whether,” provide a good description of the agency's decision actions to be made without pre-supposing the results. Nevertheless, the SEIS's adoption of the final EIS's statement of purpose and need kept alive an unhelpful element. The third sentence in the first paragraph of the EIS's Section 1.4, adopted into the SEIS by reference, said, as follows: “The purpose of the BLM action is to issue a ROW grant that provides for: *Technically and economically practical and feasible year-round industrial surface transportation access in support of mining exploration and development; ... “ Similarly, the second paragraph of the SEIS Section 1.4 says that the U.S. Army Corps of Engineers “indicated that its overall purpose is 'to provide year-round surface transportation access... '.” Here, the SEIS writers are saying that the agencies will decide in favor of some version of the surface access action alternatives. However, it goes without saying that to provide a surface transportation ROW before assessing environmental impacts violates the NEPA rules.	Text has been revised in Section 1.4, Purpose and Need for Federal Action.
20366	1	Transportation and access	Vehicles pollute via their exhaust, debris/trash from passengers and drivers, oil/antifreeze/brake fluid leaks, noise - so much noise that disrupt natural patterns, light - all of it ruins wilderness.	Potential impacts from vehicles noted in comment are identified and analyzed in Sections 3.2.3 Hazardous Waste, 3.2.6 Acoustical Environment (Noise), 3.2.7 Air Quality and Climate, and 3.4.4 Visual Resources.
20374	1	Subsistence	The contaminated land the moss is on they eat it. The caribou get contaminated they come down this way we catch them and eat them therefore we get sick. The birds. Same thing with the birds. The birds nest. What if they nest on contaminated grounds? How are the eggs gonna hatch? We hunt birds. We catch birds, we get sick.	Potential impacts of spills and contamination on subsistence resources including fish and caribou are addressed in Section 3.4.7, Environmental Consequences. Reviewed discussion of spills to ensure potential impacts to birds, caribou, and other resources from spills are adequately addressed.
20472	2	Subsistence	We have to go far to hunt. People gonna be freezing we don't know how far they go. We don't know when they come back. What if they hit a ground storm. All from traveling too far to find animals.	The potential impacts of the road on animal migrations and subsequent economic impacts and health and safety risks are discussed in Section 3.4.7, Environmental Consequences, and Mining, Access, and Other Indirect and Cumulative Impacts.
20504	1	Alternatives	Since there is a more development to the west, could the road be developed to the west instead of the east and then the ore barged from there?	The screening analysis in Appendix G balances the pros and cons of multiple western routes. These alternatives were determined to not meet the Purpose and Need of the project and/or were removed from further consideration due to either practicality, cost, or environmental concerns.
20589	1	Mammals	“The road is just one piece to a larger story of industrialization of Northwest Alaska. The road would literally pave the way for the Ambler Mining District, which would only accelerate further development and activity that caribou would seek to avoid. Meanwhile, the herd population is currently in decline, dropping 23% in the last two years. The Western Arctic Caribou Herd will need its vast range to remain intact in order to adapt in a changing climate.”	Section 3.3.4 of the Supplemental EIS discusses the decline in the size of the WAH as well as how development within the herd range may make it more difficult for the herd to adapt to impacts from a changing climate. The cumulative impacts discussion of Section 3.3.4 describes the potential impacts of additional industrial activity identified as a Reasonably Foreseeable Actions.
20611	1	Alternatives	As a possible alternative, make an access road from the Red Dog mine area.	The screening analysis in Appendix G balances the pros and cons of multiple western routes. These alternatives were determined to not meet the Purpose and Need of the project and/or were removed from further consideration due to either practicality, cost, or environmental concerns.
20627	1	Mammals	Roads cause wildlife vehicle mortality, habitat fragmentation, changes in wildlife behavior and wither the genetic variability of wildlife over time. Biodiversity is rapidly declining and we do not need to develop and pave every inch of the planet.	Section 3.3.4 of the Supplemental EIS discusses the potential impacts of vehicle collisions, habitat fragmentation and behavioral disturbance on terrestrial wildlife. Population declines of a sufficient magnitude to result in large losses of genetic diversity in wildlife in the area are not likely to occur as a result of this project as described in Section 3.3.4 of the Supplemental EIS.
20684	1	Proposed action	Building the Ambler Road before a solid plan exists for a specific, economically feasible mine is premature. The SEIS states (p. 2-8): Road construction likely would begin in support of mining exploration and would not be dependent on mine development permits or approvals. This is not reassuring. I believe it is quite possible that we could end up with the substantial adverse impacts of a road without gaining the long-term economic benefits of a mine. No road construction should begin until there is a specific destination to an economically feasible mine that is in well into the permitting process. I concur with the option presented in the SEIS to eliminate Phase 1 of road construction.	See response to letter 32570, comment 132.
20684	2	Proposed action	The SEIS states that the Arctic Project, the most advanced mining project in the Ambler District, has an estimated life of only 12 years. The Sun and Smucker mines have an estimated life of only 5 years each (Table 2-9). These likewise do not give me confidence that the road will in fact provide long-term economic benefits. The cumulative and irreversible adverse impacts of the road on the natural and social environments as described in the SEIS far outweigh the potential economic benefits.	Although a comprehensive cost-benefit analysis has not been developed, the entire Supplemental EIS is an analysis of the impacts and benefits to physical, biological, and social resources described both quantitatively and qualitatively. The BLM decision maker will weigh both the beneficial and adverse impacts in making a decision. A statement demonstrating the financial and technical ability to construct, operate, maintain, and terminate a project is required pursuant to 43 CFR 2804.26(a)(5)(i) prior to approving a ROW application.

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20684	4	Fish and aquatics	Any impacts to the Kobuk River sheefish spawning population will likely ripple to the rest of the region because these fish intermingle with Selawik River sheefish on their wintering grounds in Hotham Inlet. Sheefish harvests on these wintering grounds are of vital importance to Kotzebue, Noorvik, Selawik, Buckland and other nearby communities.	The importance of sheefish to regional communities is noted in the Supplemental EIS in Section 3.3.2, Fish and Aquatics, and Section 3.4.7, Subsistence Uses and Resources.
20731	1	Water resources	Unacceptable Aquatic Resource Impacts and Critical Mapping/Data Gaps * Contrary to the public interest: fails USACE Public Interest Review valuation (non-compliance with all applicable factors); * Not permissible under the Clean Water Act: fails to comply with all applicable Section 404(b)(1) Guidelines factors/determinations * Inaccurate, incomplete data/maps on waters, wetlands, and floodplains * Can't establish accurate baseline, determine impacts, plan mitigation * Lack of a science-based functional assessment is a fatal flaw. The tribes, agencies, interested parties, and the public have no idea what the actual losses will be for Action Alternatives, and costs to the Nation * Logistically, technically, biologically impossible to replace functional losses consistent with the 404(b)(1) Guidelines and the 2008 Army-EPA Mitigation Rule due to magnitude and location of impacts * Chemicals and hazardous wastes will irreversibly pollute the ecoregion, harming people, communities, subsistence resources and practices for centuries to come * Fish migration and spawning will be disrupted	The Supplemental EIS utilizes the best available data, including data collected by the applicant. Alternatives A and B were realigned on the east end of the corridor during the permit application process at request of regional Tribes and communities; as such, less data has been collected for the realigned segments. Similarly, Alternative C was developed in the course of the EIS process, so again less specific data has been collected for that alternative. As listed in Section 2.4.4, AIDEA has committed to additional sampling and analysis, including geotechnical studies, hydrologic studies, and fish studies. Mitigation measures included in Appendix N Sections 3.2.5, 3.3.3, and 3.5 require additional sampling/analysis prior to construction activities and include multiple mitigation measures to minimize impacts on hydrology, water quality, and fish. Methods to mitigate for and minimize impacts from stormwater runoff, dust, spills, floods, and seasonal flows are well understood and included in the listed mitigation measures. Based upon the data available, assumptions regarding potential impacts are considered adequate for comparing potential impacts of the proposed action alternatives. Cumulative impacts are discussed in Appendix H.
21015	1	Wetlands	lack of accurate wetland and floodplain mapping means BLM & USACE cannot determine the LEDPA or how the required mitigation sequence will be applied	Suitable high resolution and field ground truthed wetland mapping is available for Alternatives A and B, whereas mapping for Alternative C is based on a desktop analysis that combines National Wetland Inventory data and existing vegetation mapping. The available mapping, both desktop and high-resolution mapping, are sufficient to determine significant differences to impacts from Alternative C and Alternatives A and B. The high-resolution wetland mapping for Alternatives A and B is suitable to compare those similar alternatives.
21015	3	Land use/management	Applicant does not own the land required for the road and recently a Tribal organization, Doyon, withdrew its permission to cross their lands, rendering the Action Alternatives unimplementable; the applicant can no longer affirm that property interests required for the road have been or will be acquired	See response to letter 26067, comment 10 and letter 25830, comment 25.
21015	5	Proposed action	Information provided by the applicant and noted in the BLMs DSEIS is preliminary and lacking in the engineering details to ascertain whether future, post-approval designs of structures will comply with safety criteria	The Supplemental EIS contains sufficient information for each of the action alternatives to adequately compare impacts among the alternatives and to make an informed decision on the ROW application.
21015	6	Water resources	EO 11998, Floodplain Management, requires Federal agencies to avoid, to the extent possible, the short- and long-term adverse impacts associated with the occupancy and modification of floodplains, a requirement the proposed Ambler Road violates by its intrusion, and because the road is optional, not required for high priority National purpose/need such as National Security, protecting human health, or responding to a disaster; the road will bisect, block, and fill waters of the United States and cause significant degradation of critical functions and services; restoration and creation are impossible to accomplish, losses will be permanent and irreplaceable; only the No Action Alternative complies with applicable laws, regulations and Executive Orders	EO 11998 requires Federal agencies to avoid proposed actions that would occur in or impact floodplains and “consider alternatives to avoid adverse effects and incompatible development in the floodplain.” If the proposed action, in accordance with the purpose and need (discussed in Section 1.4 of the Ambler Road Final EIS), cannot avoid crossing floodplains, EO 11998 requires agencies to “design or modify its action in order to minimize potential harm to or within the floodplain.” Further, per Section 3 (b) “If, after compliance with the requirements of this Order, new construction of structures or facilities are to be located in a floodplain, accepted floodproofing and other flood protection measures shall be applied to new construction or rehabilitation. To achieve flood protection, agencies shall, wherever practicable, elevate structures above the base flood level rather than filling in land.” The base flood level refers to the 100-year flood event. Potential BLM mitigation measure 6 under Section 3.2.5 Appendix N discusses mitigation measures to comply with EO 11988. Additional mitigation measures under Sections 3.2.2, 3.2.5, and 3.5 of Appendix N further discuss mitigation measures to minimize impacts in floodplains and preserve floodplain connectivity. Note that there are no mapped regulatory floodplains crossed by the proposed action alternatives.
21015	8	Water resources	Neither the 2020 nor the 2023 BEPA documents or the Administrative record contain sufficient information to make a reasonable judgment on impacts to aquatic resources	See response to letter 20731 comment 1.
21015	10	Wetlands	Logistically, technically, biologically impossible to replace functional losses consistent with the 404(b)(1) Guidelines and the 2008 Army-EPA Mitigation Rule due to magnitude, location, type of impacts to a fragile, subsistence ecosystem	Replacement was not proposed as part of the Section 404 wetlands permit which has multiple special conditions to minimize impacts to wetlands and aquatic environment.
21015	11	Mitigation/monitoring	EO 11990, Protection of Wetlands, requires Federal activities to avoid adverse impacts to wetlands where practicable, and all practicable measures to minimize harm must be considered. The administrative record generated by BLM and USACE shows that thus far in the regulatory process the proposal does not comply with this Part of the Guidelines. First, potential environmental engineering and voluntary best management practices proposed (not promised) by the applicant are NOT acceptable mitigation. Mitigation cannot be speculative, caveated, or voluntary --- it must be certain, without caveats, and a requirement of any right-of-way or CWA 404 permit. The applicant has NOT proposed or described in any detail project-specific mitigation measures --- instead, the administrative record includes very general discussions of generic and potential measures. A fatal flaw thus far in the BLM real estate and USACE regulatory processes is that no compensatory mitigation measures have been proposed or required even though the proposed road will directly destroy/degrade 2,000 acres of wetlands and 50 linear miles of stream, and indirectly and adversely affect up to 10,000 acres of wetlands. The applicant is deferring all mitigation planning/design until AFTER all approvals are obtained --- the risk and uncertainty for at least 66 indigenous subsistence communities is unacceptably, and disproportionately high, as it is for all Alaskans and the Nation.	The ROD will determine which mitigation measures will be required by the BLM if an action alternative is approved. The USACE terms and conditions are considered as proposed mitigation in the Supplemental EIS.

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21143	2	Cumulative and indirect effects analysis	The purpose of this road is to access a mining district, but the BLM has failed to fully consider the impacts of future mines, and the roads they need for development and operation, in this SEIS. Harmful acid rock drainage, tailings, and contamination must all be fully considered.	See response to letter 32724, comment 141.
21454	1	Mammals	Placing a road where animals are known to migrate = dead animals on the road and countless collisions. Caribou and anything attempting to cross the road will be hit by vehicles- animals against machines and people with deadly consequences -	Section 3.3.4 of the Supplemental EIS discusses the potential for wildlife-vehicle collisions. These can be minimized through regulation of traffic speeds and protocols for drivers.
21508	1	Alternatives	What about additional alternatives? The Ambler Mining district appears to be only about 100 miles from the coast. Where is the nearest port? Others have suggested a railway or flying the ore out to the nearest port.	The combined air/road alternative concept was considered but determined not to meet the purpose and need for "surface transportation access in support of mining exploration and development" as described in ANILCA Section 201(4)(b) and was therefore removed from further consideration in an action alternative. Appendix G Section 6.3 explains the BLM's rationale for not analyzing this alternative concept. Various rail routes were considered in Appendix G Section 6.4 but were eliminated from detailed analysis due to practicality.
21508	2	Socioeconomics and communities	What about a more complete economic analysis of the Ambler Road? "An Economic Analysis of the Proposed Alaska Ambler Access Road" was prepared for the National Parks Conservation Association by Power Consulting Incorporated raises many questions about the economic assumptions and viability of the Ambler Road, such as inaccurate construction cost, not enough mines and road tolls to cover costs.	The Supplemental EIS is focused on the potential impacts on state, regional, and local economies and communities. Evaluating the economic/financial viability of the proposed project is not part of this Supplemental EIS. See Section 3.4.5 of the Supplemental EIS for discussion of assumptions on the principal and interest for bonds issued by AIDEA and for a Minimum Annual Assessment (MAA) by AIDEA for road users. As per AIDEA's analysis, the MAA payments for 50 years would provide more revenue than needed for AIDEA to repay the bonds. See also response to letter 22770, comment 15 regarding updated cost estimates and response to letter 32570, comment 132 regarding bonding requirements.
21680	1	Alternatives	If the minerals there are so important, the best answer is to fly them out or build a railroad to Kotzebue. With the permafrost melting throughout Northern Alaska, a road would not be economically feasible to build or maintain.	The combined air/road alternative concept was considered but determined not to meet the purpose and need for "surface transportation access in support of mining exploration and development" as described in ANILCA Section 201(4)(b) and was therefore removed from further consideration in an action alternative. Appendix G Section 6.3 explains the BLM's rationale for not analyzing this alternative concept in detail. Various rail routes were considered in Appendix G Section 6.4 but were eliminated from detailed analysis due to practicality.
21845	1	Subsistence	A 2015 study by the Subsistence Division of the Alaska Department of Fish and Game found that in Kobuk, 93% of survey respondents used salmon, non-salmon fish, and caribou respectively. 90% used birds and eggs (73% of which are migratory), 86% used berries, and 80% used wood. The use levels were similar for neighboring Ambler and Shungnak (70% or more of surveyed residents using these resources). This study, as well as the vast database of the Subsistence Division and centuries of Traditional Ecological Knowledge of different Alaska Native peoples highlight the significance and high usage of local wildlife and fish for the continued well-being of these communities.	The subsistence technical report includes harvest data for Kobuk River communities, including data on % of HHs using, harvesting, and sharing subsistence resources. The high reliance on subsistence wildlife harvests is discussed in Section 3.4.7, Affected Environment.
21906	1	Proposed action	But despite their attempts to frame Ambler Road as a vital avenue to accessing critical minerals, the primary deposit at Ambler Mining District is copper--which is not a critical mineral--and other minerals are speculative or are not clean energy minerals. There is no rationale in building a road to develop a mine for minerals that are either speculative in existence or not critical to U.S. clean energy development and national security, especially in a place that is crucial to Alaska Native communities and home to critical caribou and fish ecosystems.	As stated in Supplemental EIS Section 1.4, Purpose and Need for Federal Action, the BLM is responding to an application for a ROW under Title V of FLPMA for industrial access to the Ambler Mining District.
21906	2	Proposed action	Despite the mining industry's attempts to frame Ambler Road as a necessary avenue to accessing critical minerals for the clean energy transition, the primary deposit at Ambler Mining District is copper--which is not a critical mineral--and other minerals are speculative or are not clean energy minerals. There is no rationale in building a road to develop a mine for minerals that are either speculative in existence or not critical to U.S. clean energy development and national security, especially in a place that is crucial to Alaska Native communities and home to critical caribou and fish ecosystems. The company behind the project has only identified the presence of copper, lead, zinc, silver, and gold in the region. The BLM has cited independent studies to confirm this. The mining company has noted cobalt and germanium deposits, but these claims are only speculative and have no supporting data.	See response to letter 18654, comment 6.
21910	1	Socioeconomics and communities	The proposed Ambler Access Project (AAP) will bring jobs and opportunities to the state, especially to local communities most desperately in need. The draft SEIS needs to highlight the impact of these jobs and opportunities more fully on the local economies.	Section 3.4.5, Socioeconomics and Communities, of the Supplemental EIS discusses potential economic effects on employment and income, cost of living, and other effects of road access to the local communities in the region.
21910	2	Socioeconomics and communities	Industry in our state has proven repeatedly that it can and should be trusted. The mining industry in particular has provided valuable benefits to the state, while developing resources responsibly. A prime example of responsible resource development is the Red Dog Mine which has operated for more than 30 years and still enjoys the support of the majority of individuals living in the region it operates in. The positive legacy of Red Dog can be replicated by any future resource development effort in the state, balancing subsistence and resource development while providing significant opportunities for local communities. Production in the region is on track to start winding down, taking jobs and economic benefits with it, elevating the importance of replicating the successes of projects like Red Dog. In addition to the jobs directly associated with production, these projects also provide critical operating funds for the region. According to the Northwest Arctic Borough's (NWAB) Comprehensive Plan Update for 2030, 83% of the borough's operating funds came from Red Dog in 2020. To avoid a gap in local jobs and other economic benefits, new opportunities need to be explored in the region - and the AAP is a must. The draft EIS needs to weigh this dynamic heavily when assessing community impact.	See response to letter 21910, comment 1.

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22143	1	Mitigation/monitoring	I attended the Anchorage Draft SEIS public meeting and heard multiple comments of concern related to murdered and missing indigenous people/women (MMIP/MMIW) and the potential for increased violence against local Native people by outsiders in the area for work. BLM should consider instituting a stipulation that all employees (including Alaska Department of Transportation and Public Facilities, mine site operators, and all subcontractors) are required to stay on company facilities and are not authorized to visit or travel to local communities. This stipulation could be expanded to require that these employees are prohibited from engaging in hunting, fishing, or any other harvesting activities. These rules could be modeled on rules that typically govern North Slope employees while they are at work (i.e., "on lease"). Inclusion of such a mitigation measure may help allay perceptions and actual violence against locals by outsiders.	Appendix N, Section 3.4.5.1 Public Health Potential Mitigation Measure 3 would require AIDEA to prohibit its employees, contractors, subcontractors, and their employees from visiting local communities while on duty or while staying at project facilities except for the conduct of official business. When communities are visited for conduct of official business, AIDEA would keep records of purpose, date, location, and participants, and would make such records available to BLM or law enforcement agencies on demand.
22150	1	Mammals	We do not support facilitating open pit copper mines at the expense of our wildlife and our Native villages. The proposed road could pose a serious barrier for the herd in its annual migration route by cutting right through it. Scientific concerns arise regarding the impact of a road and industrial traffic on caribou behavior. The fear is that the caribou might avoid the road, moving away from Alaska Native villages that rely on them for traditional subsistence. If the road were to become public in the future, it could lead to significant hunting pressures on the herd, further disrupting their historical migration patterns. The road is a crucial part of the broader industrialization in Northwest Alaska. It would serve as a gateway to the Ambler Mining District, potentially accelerating development that the caribou actively avoid. Meanwhile, the Western Arctic Caribou Herd faces a 23% decline in population over the last two years. To ensure their survival, maintaining their extensive habitat range is essential.	Section 3.3.4 of the Supplemental EIS discusses potential impacts on caribou from the proposed road alternatives as well as the impact from Reasonably Foreseeable Actions including large mines.
22357	1	Fish and aquatics	Ambler Road will cross >20 public rivers and streams (some National Wild and Scenic rivers) and have 2,900 culverts to maintain. Anyone with ecological knowledge knows 100 culverts are a huge problem for fisheries in easy to reach and affordable to maintain areas, but 2,900 culverts in a remote landscape without proper and constant management could have catastrophic impacts to fish migrations and water control.	Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA - Physical Environment, describes commitments made by AIDEA to reduce impacts from the installation of culverts. Supplemental EIS Section 3.2.5, Water Resources - Impacts Common to All Action Alternatives, describes mitigation measures that would be employed to minimize impacts from culverts as well as the anticipated impacts from culvert installation. Appendix N describes the mitigation measures that are intended to minimize impacts from culverts. AIDEA would develop a monitoring and maintenance plan for culverts to prevent them from being blocked by mud and debris. The plan would include a mechanism for funding culvert repairs and replacement, and would be required to be approved by the Alaska Department of Fish and Game. Culvert monitoring and maintenance would be conducted by AIDEA.
22480	7	Mammals	Impacts on Western Arctic Caribou Herd * In 2003, the herd numbered 490,000 animals; declined to an estimated 188,000 animals in 2023; below the minimum sustainability objective of 200,000 caribou; lowest population estimate in the last several decades (WACHWG 2022) * Roads are semi-permeable barriers, caribou may shift or entirely abandon seasonal habitat causing delay and deflection of tens of thousands of WAH caribou, annually * Caribou may travel up to 9.3 miles to avoid roads and 11.2 miles to avoid settlements; collisions on the rise * Study of the Native-owned Red Dog Mine Industrial Access road north of Kotzebue found that just four vehicles an hour affected the migration of 30 percent of collared caribou or approximately 72,000 individuals of the 2017 population estimates. * Linear features like roads also are used by predators like wolves	The decline in the WAH population is documented in Section 3.3.4 of the Supplemental EIS and was updated with the most recent WAH population estimate. Only a portion of the WAH migrates near the Red Dog Road (DMTS) in a typical year, so fewer than 72,000 caribou (based on 2017 estimate) will be impacted in a typical year.
22480	8	Fish and aquatics	Yukon River Chinook, Chum, Coho In Decline - Returns in 2021, 2022 and 2023 Lowest (or near so) On Record (1960-2023) * DSEIS makes many highly speculative/risky assumptions, with minimal data/information about streams impacted, culvert designs and ability to pass fish * Less than two dozen stream crossing sites have been visited; fewer sampled for fish, flow/size; insufficient habitat information (soils, bed, vegetation) * Additional field documentation with extensive data collection using modern methods (eDNA, remote long-term sensors/data loggers) needed * Short 2-3 year time window and 1,000s of streams/ culvert sites * AIMR and follow-on mine development will exponentially exacerbate an already dire situation for fish, and for PEOPLE and wildlife that depend upon fish	Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA - Physical Environment, describes commitments made by AIDEA to reduce impacts from the installation of culverts. Supplemental EIS Section 3.2.5, Water Resources - Impacts Common to All Action Alternatives, describes mitigation measures that would be employed to minimize impacts from culverts as well as the anticipated impacts from culvert installation. Appendix N describes the mitigation measures that are intended to minimize impacts from culverts. AIDEA would develop a monitoring and maintenance plan for culverts to prevent them from being blocked by mud and debris. The plan would include a mechanism for funding culvert repairs and replacement, and would be required to be approved by the Alaska Department of Fish and Game. Culvert monitoring and maintenance would be conducted by AIDEA. The project's final culvert design would be based on site-specific conditions and would be guided by the applicable mitigation measures (see Appendix N) adopted in the BLM's ROD.
22480	10	Decision process - general	* The level of information and detail for AIDEA's preferred Alternative A is significantly more robust making it challenging to equitably compare it with other action alternatives and the No Action Alternative	See response to letter 22852, comment 1 regarding the level of detail for action alternatives. See response to letter 32724, comment 67 regarding the No Action Alternative.
22480	11	Water resources	Inadequate Information to Evaluate Impacts to Natural Resources and Tribes * Inaccurate, incomplete data/maps on waters, wetlands, and floodplains; can't establish accurate baseline, determine impacts, develop, compare mitigation measures * Water quality, levels, flows (quantity and duration), reliability will be disrupted throughout the region as over 3,000 streams will be affected * Lack of a science-based functional assessment is a fatal flaw --- tribes, agencies, interested parties, and the public have no idea what the actual losses will be for Action Alternatives, and costs to the Nation * Logistically, technically, biologically impossible to replace functional losses consistent with the 404(b)(1) Guidelines and the 2008 Army-EPA Mitigation Rule due to magnitude and location of impacts	See response to letter 20731 comment 1.
22559	2	Socioeconomics and communities	Money made at the mines or road won't stay in the region or positively effect the region.	See response to letter 61, comment 5.

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22559	4	Subsistence	There will be severe negative impacts to subsistence resources including caribou, sheefish, migratory birds, salmon, and other food sources. When subsistence resources are lost, people will turn to store bough resources. The problem is that the the cost of imported food is astronomical.	The potential shift toward store-bought foods is discussed in Section 3.4.7, Sociocultural Impacts. Reviewed section and revised to elaborate on the potential economic impacts of such a shift.
22578	1	Subsistence	There are concerns about the effect of the road on caribou migration, as the north slope is my primary source of caribou meat for the year, there are many questions and concerns that need to be addressed, as there is evidence the red dog mine road has affected migratory routes.	Potential impacts of the road on caribou migration, including a discussion of the impacts of the Red Dog Road, are discussed in Section 3.4.7, Environmental Consequences.
22578	2	Socioeconomics and communities	Yes the mine and road will provide jobs, but at what cost. The precious minerals will shipped out of country for processing and will provide no guaranteed further benefit in securing these rare minerals for American industry.	See response to letter 61, comment 5.
22595	1	Mammals	For many years, the WACH was the largest caribou herd in Alaska, with nearly 500,000 animals at its peak in the early 2000s. This large, wide-ranging herd provides a crucial subsistence resource to residents of approximately forty remote communities spread across the range of the WACH, as well as many others who rely on caribou for their livelihoods or other reasons, as described above. The herd also plays an important role in a healthy environment that supports many other species and natural processes. Unfortunately, for about two decades the herd has been in serious decline. The 2023 count of 152,000 represents the lowest numbers since the 1970s. There are very real consequences for subsistence hunters and other people in the WACH range of the consistent long-term decline of the herd. At our annual meeting last year, the Working Group voted to recommend a reduced subsistence harvest limit from five caribou per day to four per year, only one of which may be a female, as well as a pause on all non-resident harvest. This is not a recommendation we made lightly, knowing that it will have impacts on those who rely upon caribou most. However, in light of persistent declines we felt the need to take action in alignment with the Working Groups Cooperative Management Plan. When the people we represent are being asked to reduce their use of the WACH because of low herd size, allowing permitting and construction of an industrial mining road that BLM acknowledges will likely impact caribou habitat use, population size, and availability for subsistence is unconscionable.	The current decline in the WAH population is documented in Section 3.3.4 of the Supplemental EIS and was updated with the most recent population estimate.
22595	2	Subsistence	While being concerned by the possibility, we appreciate that BLM acknowledged that public use and trespass on the road are considered reasonably foreseeable as expected impacts and are analyzed as such in the DSEIS. We agree that there are a number of potentially harmful effects that such public use would have on caribou and subsistence use. We also are concerned about the potential for increased complexity of hunting regulations, which may create uncertainty for subsistence users in the region. The Working Group often seeks to make hunting regulations more clear and consistent, rather than adding additional levels of complexity as would likely be required if the road eventually was opened to the public.	Section 3.4.7 was revised to incorporate discussion of potential changes in the complexity of hunting regulations in the region resulting from the road.
22595	3	Alternatives	Another change in the DSEIS is consideration of a 2-phase option that would skip construction of a seasonal pioneer road and proceed straight to a year-round single-lane road. This would have the effect of reducing the number and duration of construction periods, which may have stronger impacts on caribou and other species, as well as on subsistence. If a ROW is permitted, the Working Group is supportive of using a 2-phase approach to reduce construction phases. Furthermore, clear guidance should be provided about what would underlie the decision to allow the project to proceed to Phase 3, as the DSEIS says a Phase 3 road may never be needed. This should only be allowed after it has been established that a Phase 3 road is necessary and will avoid, minimize, and mitigate environmental harm.	The Supplemental EIS analyzes each action alternative to the Phase 3 two-lane road as requested by AIDEA. Should the project be approved, the ROW will allow for the construction to Phase 3 of the road once the conditions for construction have been met, and will require the mitigation as specified in the ROD.
22595	4	Mammals	As herd size changes caribou may expand or contract their range use accordingly (e.g., Taillon et al. 2012, Virgl et al. 2017). Areas used heavily when populations are high may be temporarily abandoned at lower population sizes and then reused when the herd increases again. In light of this, it is important that BLM consider historic patterns of caribou space use and subsistence harvest rather than only looking at recent patterns as the herd decreases in size. Caribou are an important resource for all the communities represented on the Working Group and should be considered as such in the FSEIS.	Section 3.3.4 of the Supplemental EIS includes information on decadal changes in range use and the tendency of herds to contract to the core range during period of low populations.
22595	5	Subsistence	The updated text description of the Ambler Mining District and Land Status in the DSEIS Introduction describes seven communities as harvesting resources from lands and waters within the Ambler Mining District (BLM 2023a p. 1-4). As we note above, around 40 communities rely on the WACH, which uses lands within the District and elsewhere along the proposed road corridor and thus would be affected by any permitted road. While this is acknowledged elsewhere in the DSEIS, it is important that it also be made clear here at the outset of the Introduction to make clear the broader impacts of development in the District.	Revised text as suggested.
22595	6	Mammals	The DSEIS states that the WACH has shown the same general movement patterns for the last 50 years (BLM 2023a p. 3-127). It is important to note recent patterns of 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 (Joly and Cameron 2022). These changing patterns have impacted subsistence availability for many communities that formerly received large numbers of caribou and have altered scientific practices, leading to helicopter-based captures in spring for collaring caribou, rather than boat-based captures at Onion Portage. Such recent patterns may be indicative of future trends under climate change and should be clearly described in the FSEIS beyond simply noting increased use of northern wintering areas since the FEIS was published.	Additional information on changes in the timing and location of fall migration and winter distribution was included in Section 3.3.4 of the Supplemental EIS.
22595	7	Mammals	While taking into account recent changes, it also is important that the DSEIS gives adequate attention to historic patterns of use. As we note above, research has shown that as herd size changes caribou may expand or contract their range use accordingly (e.g., Taillon et al. 2012, Virgl et al. 2017), which may alter interactions with the road. Group size also appears to influence caribou responses to disturbance in some cases. For example, larger groups may have difficulty crossing infrastructure (e.g., Smith and Cameron 1985). Over a 50+ year timeframe of the road and mines, the WACH is likely to exhibit increases and decreases in size. It is crucial that the Ambler Road and associated mines are designed to afford	Information on caribou group size and road crossing success was added. Lawhead et al. (2006) summarizes available data on this question for the Central Arctic Herd.

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			population protection at both high and low population levels and that the DSEIS analyze expected effects across multiple population sizes.	
22595	8	Mammals	When describing the influence of insects on caribou behavior, the DSEIS claims that during the insect harassment season avoidance of insects becomes the only factor that influences habitat selection during conditions conducive to insect activity (BLM 2023a p.3-128). This statement is not in alignment with the best-available scientific information. While insect activity does have a strong influence on caribou behavior and habitat selection, it is not the only factor that influences these processes. Recent work with the Central Arctic Herd found that adult female caribou avoid infrastructure more than expected by chance and that this avoidance continues during the mosquito harassment season, albeit at shorter distances than during calving or post-calving (Johnson et al. 2020). Similarly, Severson et al. (in press) found that while resource selection and probability of road crossing during insect harassment was strongly influenced by the level of insect harassment, they also were affected by traffic volume and distance to road. Clarification of this point is crucial as the current DSEIS text may erroneously imply that the proposed roads would have no effect on caribou during insect harassment. While most of the WACH interacts with the proposed road corridor in other seasons, it is nonetheless important 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. The FSEIS needs to be updated to better conform with this best available scientific information.	Changed “only” to “the predominant factor”. Caribou of the Central Arctic Herd preferentially use roads and pads for fly relief habitat during mid-summer (Pollard et al. 1996, Prichard et al. 2020) and Severson et al. (2023) found that road crossing rates of Central Arctic Herd caribou were highest at moderate traffic levels during high insect harassment periods (see Figure 5 of Severson et al. 2023).
22595	9	Mammals	The DSEIS states that the reduction of lichen-dominated vegetation types would result in disproportionately greater impacts on the WAH than reduction of other vegetation types (BLM 2023a p. 3-133). We agree that winter food availability is important for caribou and share concerns about potential of the proposed road to reduce lichen availability for overwintering caribou. We appreciate that the mean percentage lichen cover was calculated for each alternative but were surprised that no mapping was done of this information. It would be helpful to see maps of lichen cover along each route at a meaningful scale that allows evaluation of whether alteration in the proposed route would avoid areas of high potential winter food availability for caribou. We request that such mapping be included in the FSEIS.	A map of lichen top cover values in 2020 based on remote sensing was added.
22595	10	Mammals	We agree with the DSEIS observation that even relatively low traffic levels, compared to some prior studies, can have detrimental effects on caribou movement patterns. Indeed, recent work by Prichard et al. (2022) and Severson et al. (in press) found behavioral responses of caribou even at low traffic levels while Smith and Johnson (2023) found that caribou rarely crossed winter roads with any level of traffic. These citations should be incorporated into the FSEIS (e.g., at p.3-136).	Citation of Severson et al. (2023) and Smith and Johnson (2023) was added. Prichard et al. (2022) found that displacement from roads with low traffic levels occurred in the calving season but not in the post-calving season and there was little evidence of displacement from inactive infrastructure during the calving season.
22595	11	Proposed action	According to the DSEIS, if the road is allowed to proceed it could be completed before any associated mines have their own approvals (BLM 2023a p. H-9). Allowing this runs the risk of a road being completed, with all of its associated detrimental impacts described in the DSEIS, but without a guarantee that mine development will be permitted or completed. Instead, we request that it be specified that the road cannot be constructed until at least one mine also has its approval to better ensure that at least some financial benefits accompany the costs of the road.	See response to letter 32570, comment 132.
22595	12	Proposed action	Another area of concern surrounds reclamation of the proposed road. While AIDEA proposes to remove the road and supporting infrastructure and reclaim and restore the habitat within the ROW, they have not provided a reclamation plan and do not intend to do so until close to the proposed road closure about 50 years from now (BLM 2023a p. 1-3). This raises serious questions about whether AIDEA will actually be able to conduct meaningful reclamation and whether the standards they propose will be sufficient to actually repair the harms they have done. By the time AIDEA proposes a mitigation plan they will already have reaped the financial benefits of decades of mining, leaving a diminished ability to meaningfully address deficiencies in the plan they eventually propose. While we agree that it is important to allow flexibility for plan improvements with new scientific studies and technological advances in restoration approaches, we also request that before a ROW is approved a detailed reclamation plan be developed and made available for public comment that demonstrates that a technically feasible reclamation plan exists, that it is in alignment with the best available scientific information and Indigenous Knowledge about environmental impacts of a potential road and mining and their remediation.	See response to letter 29489, comment 92. Text has been updated.
22595	13	Proposed action	A major concern with the proposed reclamation is whether it will happen. The DSEIS states that, 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 (BLM 2023a p.2-12). This indicates that not all roads may be removed from the program area and that some roads, aircraft activity, and traffic are likely to continue even after mining ceased. That these activities may continue in perpetuity suggests such roads and airstrips may never be removed and recovered, leading to continuing impacts to caribou, subsistence, and other wildlife and habitats. While the DSEIS states that such requests would require separate environmental approvals, their possibility nonetheless raises grave concerns about whether impacts will truly be removed in the future.	Supplemental EIS Appendix H, Section 2.2, Road Access Scenarios, addresses potential public and non-industrial use of the road.
22595	14	Public access	Related to the above, we are concerned about the effect of multiple jurisdictions on the likelihood of the road remaining closed to public access. The DSEIS indicates that owners of land crossed by the road could each decide what users to authorize, with AIDEA having to allow access (BLM 2023a p. H-27). In the same appendix, the DSEIS notes that the Alaska Department of Transportation & Public Facilities produced a report on potential infrastructure that states that if the Ambler Road is developed, nearby communities could potentially connect to the National Highway System on a permit basis (BLM 2023a p. H-33). The DSEIS acknowledges that once communities are connected to the road for commercial purposes, it is unlikely that those commercial uses would be discontinued (BLM 2023a p. H-33). This raises the question of whether the State of Alaska intends the road to be removed after mining or instead intends to provide long-term connections for communities to the road system. It also raises questions about what kind of access might be allowed for state-owned lands that could affect access and use across the road system.	See response to letter 19418, comment 3.

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22595	15	Cumulative and indirect effects analysis	Furthermore, the DSEIS states that AIDEA proposes to place fiberoptic communications lines for internet and phone service along the road (BLM 2023a p. H-35). It states that it is likely communities may want to connect to these lines to enhance their internet and phone access. However, the DSEIS fails to link this likelihood to a corresponding decrease in the likelihood of removal of these internet and phone lines after the road ROW ends. It seems likely that providing a public good like internet and phone access will be deemed important enough to justify retaining infrastructure instead of pursuing full reclamation. The FSEIS should acknowledge and fully analyze this possibility.	Text has been revised.
22595	16	Mitigation/monitoring	Other persistent impacts are acknowledged by the DSEIS that would continue beyond mine closure. For example, fencing would be placed around closed mines to limit wildlife access and the mining pit would be filled with water to create a pit lake (BLM 2023a p. H-18). Such actions would lead to enduring habitat loss, rather than true reclamation to pre-mining conditions. The DSEIS also notes that if not economical to remove or sell at closure, mobile or stationary equipment would be stripped of electronics and batteries, and fluids drained and placed in an approved landfill for final disposal (BLM 2023a p. H-18). The lack of an economic incentive to remove all materials taken to a site for road development or mining should not be considered of sufficient importance to justify their lack of removal. Instead, BLM should require that all materials brought into a site within the project area or associated mines be removed after the project is completed in support of more full restoration and reclamation.	The impacts of mining are analyzed to the extent that information is available to do so. No specific mining application/permit request for the District has been submitted to date. The BLM evaluated reasonably foreseeable mining development as indirect and cumulative impacts, using a hypothetical mining development scenario. When officially proposed, each mine would go through its own project-specific NEPA analysis and permitting process, which would provide further detail and analysis regarding the specific impacts of each mine operation.
22595	17	Mitigation/monitoring	The DSEIS states that AIDEA proposes to adopt the wildlife interaction protocols used on the Delong Mountain Transportation System (Red Dog Road) for the Ambler Road (BLM 2023a p. 2-9, 2-18). The Working Group is concerned about the effectiveness of these proposed protocols. Both scientific studies (Wilson et al. 2016) and subsequent visualizations of movements by collared WACH caribou near the Red Dog Road shared by the National Park Service at the Working Groups annual meetings demonstrate altered movement behavior. Some animals delay crossing while others fail to cross the road entirely despite a wildlife interaction protocol and mitigation measures such as stopping vehicles while caribou are nearby. It seems likely that such reactions would similarly be observed around the Ambler Road if a similar protocol is used or be even greater based on differences in topography and vegetation in the Ambler region. We urge BLM to heed the knowledge shared by Alaska Native communities that raises concerns about the differences in conditions between the two areas and their effects on caribou (e.g., BLM 2023a p. M-19). We also note that the proposed Ambler Road is about four times as long as the Red Dog Road, which may hinder the ability of caribou to parallel the road and eventually pass around it without crossing, as is sometimes observed with the Red Dog Road. Together, this potential for similar or greater impacts with the Ambler Road is of great concern for increasing impacts on the WACH and its users and make reliance on Red Dog mitigation measures questionable. This aligns with the DSEIS own statement that the measures used for the Red Dog Road are not very effective, and therefore behavioral disturbance, and displacement should be anticipated if they are applied to the Ambler Road (BLM 2023a p. 3-138). The lack of a scientifically validated means of mitigating impacts to caribou reinforces the importance of BLM selecting the No Action Alternative to protect subsistence, caribou, and the habitat they rely upon.	Comment noted.
22595	18	Mitigation/monitoring	Potential Measure 4 states that AIDEA must notify the BLM Authorized Officer in writing 30 days before any temporary closure and 90 days before permanent closure and reclamation. This is reasonable for planned closures and will help ensure BLM oversight over closure activities and enforcement. However, as currently phrased the language of this measure could conflict with the ability of AIDEA to perform emergency closures, such as to shut down operations when caribou are present to reduce the likelihood of disturbance. It is unlikely this can be planned with a 30-day warning. The measure should be adopted with altered language that specifies that it applies to planned closures but is not intended to prevent emergency closures for safety reasons or to avoid disturbance to wildlife, subsistence, or other processes.	Text revised as suggested.
22595	19	Mitigation/monitoring	Potential Measure 7 states that AIDEA would not block or obstruct ingress or egress along existing roads, winter trails, or subsistence trails. Given the extreme importance of subsistence to communities across the state of Alaska, this is an important mitigation measure that should be adopted. In light of this importance, the exception allowing the Authorized Officer to approve blocking of trails or roads should be removed.	The intent of this this language is for health and safety purposes. Should the project be approved, the ROD will determine which mitigation will be required. A ROW issued by the BLM would be applicable to public lands managed by the BLM.
22595	20	Mitigation/monitoring	1.2 Reporting Requirements Potential Measure 1 requires AIDEA to submit documentation of consultation with affected subsistence communities. It is important that such consultation occurs and requiring that documentation of this consultation be shared with BLM will allow BLM and other landowners oversight to ensure consultation is occurring. In addition to requiring that issues raised during consultation be reported, AIDEA should also be required to include a summary of how they intend to address the issues reported. This will improve the accountability of AIDEA to the concerns of subsistence communities. We also urge BLM to include a broad definition of what counts as affected subsistence communities. As is noted above and in the DSEIS, impacts on caribou at the project location will have consequences for communities across the range of the WACH who rely on caribou for subsistence and other uses. It should be specified that all of these communities have the opportunity to engage in consultation if desired by the community. With the modifications described, this important mitigation measure should be adopted in the FSEIS.	Text revised as suggested.
22595	21	Mitigation/monitoring	1.4 General Completion of Use (Restoration/Reclamation) Potential Measure 1 requires removal of all improvements or equipment upon completion of use. This is important and should be adopted, however the exception to leave items approved by the Authorized Officer should be removed. As described above, leaving any items on the landscape is a concern and should not be permitted so that habitat can be restored to the maximum extent possible and disturbance of wildlife and subsistence users minimized. In addition, the standard for the condition of restoration currently is described as to a condition that is approved in writing by the Authorized Officer (BLM 2023a p. N-6). This is too vague to provide reassurance that restoration will be adequate. 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 (BLM 2023a p. N-7). This reinforces why a reclamation plan needs to be clearly defined and reviewed by appropriate parties prior to	Supplemental EIS Appendix N Potential Mitigation, Section 1.4 General Completion of Use (Restoration/Reclamation), Potential Mitigation Measure 4 would require AIDEA to submit a closure and reclamation plan for approval prior to receiving a Notice to Proceed for construction on BLM-managed lands, and would require the plan to be updated at 5-year intervals. Should the project be approved, the BLM will make a decision on what mitigation measures will be required in the ROD.

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			approval of the ROW. This review should be conducted by agency staff, independent scientists, and Indigenous Knowledge holders from subsistence communities that will be affected by the project. The plan should also include a procedure for further review and updates over time as conditions change and technology improves.	
22595	22	Mitigation/monitoring	Potential Measure 4 is related to our recommendations for measure 1 and requires AIDEA to submit a closure and reclamation plan for approval before construction is authorized, along with updates every 5 years and at key project stages. This is very important and should be adopted. It should also be strengthened to incorporate the independent review described above as part of the approval process.	Should the project be approved, the ROD will determine which mitigation measures will be required.
22595	23	Mitigation/monitoring	The DSEIS summary of effectiveness for this section focuses primarily on the effectiveness of the proposed measures in keeping BLM informed about AIDEAs plans. This is important but insufficient. To increase the likelihood of effective restoration, it is important that the measures taken by AIDEA have a reasonable chance of success. Review and approval of the plan by qualified subsistence users, scientists, and agency staff, in addition to the Authorized Officer, will increase the likelihood of restoration success.	PMM has been revised as suggested.
22595	24	Funding and bonding	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. 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, this will only be effective to the extent that bond amounts are sufficient to cover the expected expenses. This requirement should be updated to specify amounts necessary, or a process to determine those amounts, based on similar projects in similar environments. Amounts required should account for expected inflation and should include some margin for error to ensure future costs are not underestimated.	Should the project be approved, the ROD will determine whether this mitigation measure is required.
22595	25	Mitigation/monitoring	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. This is an important measure for reducing environmental impacts, such as disruption of caribou. It should be adopted with the addition 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.	PMM has been revised as suggested.
22595	26	Mitigation/monitoring	3.3.2 Wildlife General Potential Measure 1 requires development and implementation of a Comprehensive Wildlife Interaction and Avoidance Plan using the best available science and Indigenous Knowledge (BLM 2023a p. N-30). This is an important measure that should be adopted. We were especially pleased to see a broader group specified for development of the plan prior to approval by the Authorized Officer. We urge that this list be expanded to also include independent scientists with relevant knowledge of the species for which policies are being developed and that the Subsistence Advisory Committee mentioned here include representatives from across the communities affected by the project.	Several of potential mitigation measures in Appendix N describe developing plans in consultation with the relevant State and federal agencies, Tribes, Alaska Native Corporations, and the Subsistence Advisory Committee. These agencies and entities have specific requirements intended to protect the resources under their jurisdiction and are well suited to incorporate detail into achieving the mitigation objectives.
22595	27	Mitigation/monitoring	Potential Measure 2 is similar to measure 1 but focused around a Comprehensive Fish and Wildlife Monitoring Plan. We are supportive of this measure, with the improvements mentioned for measure 1. Furthermore, the mitigation plan needs to not just focus on habitat but also on other key wildlife processes such as movement and resource selection. The plan also should specify funding mechanisms to support such monitoring. The recent Arctic National Wildlife Refuge Coastal Plain Leasing DSEIS proposed creation of an Adaptive Management Plan with funding given by the project proponent to the authorized agencies who would be responsible for carrying out or hiring others to conduct the monitoring (BLM 2023b). A similar plan would be useful for the Ambler Road with monitoring funded by AIDEA, with funding provided to the Alaska Department of Fish & Game and National Park Service who would be responsible for conducting monitoring or hiring other suitable groups to conduct monitoring. Potential Measure 2 also specifies that the monitoring plan will include a point of contact for communities and managers seeking and sharing information on fish and wildlife conditions in areas affected by the project. We request that this list of contacts include representatives of all caribou study communities and that the Working Group also be included in these communications.	Comment noted. PMM 2 has been revised to include the WAH WG.
22595	28	Mitigation/monitoring	Potential Measure 7 requires AIDEA to work with land managers and wildlife agencies to identify construction timing windows to protect wildlife. This may be beneficial but further information is needed about what kind of requirements will be included here and what factors will be considered to identify when timing windows will or will not occur. We also request that the group that identifies these timing windows be expanded to include subsistence users from communities affected by the project, including across the full WACH range, and independent scientists with relevant knowledge.	PMM revised as suggested.
22595	29	Mitigation/monitoring	3.3.5 Mammals Potential Measure 1 states that during calving and major migration periods AIDEA activities on BLM-managed lands may be restricted by the Authorized Officer with written notice. While restricting activities to protect sensitive wildlife is important, it is likely to be minimally effective for caribou if it only is applied to BLM-managed lands since much of the area used by caribou lies outside these areas. The Working Group recognizes that BLM only has authority over the lands under its purview but strongly urges BLM to work with other landowners to apply the requirements of this and the other proposed mitigation measures across the entire Ambler Road area. We also note that currently the potential to restrict activities under this mitigation measure is restricted to migration and calving periods. As the DSEIS makes clear, winter is also an important period for caribou and is a season where there may be substantial overlap between caribou winter range and the proposed road. This measure should be rephrased to apply whenever caribou are present. Finally, greater specificity is needed for this mitigation measure to clarify how the Authorized Officer will determine if cessation of activities is needed and how long this should last. It should also be clarified that written notice can include electronic communication. Such rapid measures may be needed to allow rapid response to caribou movements or other changing conditions.	Text revised as suggested.

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22595	30	Mitigation/monitoring	Potential Measure 2 gives wildlife the right of way on the Ambler Road and requires vehicles to slow down or stop to permit wildlife crossing of the road. It also allows the Authorized Officer to require temporary cessation of traffic during known caribou migration. This is very important and should be adopted. However, 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. Rather, 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 above for measure 1, if caribou encounter the road at other seasons (e.g., winter) it is important that this measure also be applied to allow temporary stopping of traffic. We appreciate the requirement to share data on road closures with state and federal agencies and ask that it also be made available to affected communities, scientists, and the public.	See Appendix N, Section 3.3.2, Wildlife PMM 2 regarding requirement for a comprehensive wildlife monitoring plan. Should the project be approved, the ROD will determine which mitigation measures will be required.
22595	31	Mitigation/monitoring	Potential Measure 8 prohibits hunting, fishing, shooting, and trapping by all AIDEA agents or employees, along with any contractors, agents, or employees of entities allowed commercial use of the road. This is incredibly important to adopt as it has been stated that this will occur throughout the Ambler EIS process. Potential for increased hunting access and competition between hunters is something the Working Group has consistently raised in our scoping and DEIS comments as a concern. This measure should help reduce these concerns, though potential for illegal trespass and hunting persists, as acknowledged by the DSEIS.	Comment noted.
22595	32	Mitigation/monitoring	3.4.7 Subsistence Uses and Resources Potential Measure 2 requires AIDEA to consult directly and regularly with affected subsistence communities, and ensure that affected communities are represented on the subsistence working group (BLM 2023a p. N-47). Ensuring avenues for AIDEA to hear from and respond to knowledge and concerns of affected communities is crucial and should be adopted in the FSEIS. We again emphasize that this group should include representatives of all caribou study communities, since the road and associated mines may affect caribou upon which they rely. We also request that the Working Group be kept apprised of consultation and communication opportunities.	Appendix N, Section 3.4.7, Subsistence Uses and Resources PMM 2 has been revised to include reference to the WAH WG.
22595	33	Funding and bonding	We also request that AIDEA be required to provide bonding before beginning construction to fund reclamation and restoration (e.g., BLM 2023a p. 2-13). This must be sufficient to fully support the proposed measures, based on other similar projects and protected from inflation. Until these requirements are met, no ROW should be issued.	Supplemental EIS Appendix N, Section 2, Alternatives, includes Potential Mitigation Measure 2 that would require bonding for the different phases of the project.
22633	2	Public access	A private road on public lands prohibits citizens from enjoying this publicly funded road. There is a strong argument for opening the road to public use in the future, and considerations for the impacts of public use are not considered in the application. While it is not the responsibility of the applicant to provide information on uses not intended by the applicant, it is in the public interest for our regulatory agencies to consider such possibilities and potential consequences to subsistence use and environmental quality.	See response to letter 19418, comment 3.
22633	3	Funding and bonding	Impacts to the Economy This road is being funded by the State of Alaska with no guarantee that the proposed mines will be able to pay back the construction costs. The State is already battling a dire economic crisis and the Alaska DOT&PF is underfunded to maintain and plow existing roadways. The Dalton Highway is currently be rerouted to avoid an area of ice-rich permafrost. Much of the proposed Ambler Road corridor crosses similar ice-rich permafrost (yedoma), over which it is difficult to maintain a road surface. The maintenance problems and associated costs will likely dwarf that of the Dalton Highway. This is not a cost the people of the State can afford. The State is estimating it will require 50 years to achieve a return on the investment, while the deposits being explored project no more than a 30-year mine life. While investment in the Dalton Highway was a wise choice because oil royalties paid to the State are high, the royalties the State earns on mining are too low (3%) to result in much economic gain for the State. The DSEIS states that the road is proposed to be removed in 50 years. The cost of road removal and restoration often costs far more than building the road. It is unlikely that Alaska will be reaping large oil royalties in 50 years. There will likely be insufficient funds available to remove and restore the road. As an ecological restoration practitioner, I would estimate that, aside from road removal, restoration of the road corridor would cost approximately \$80,000 per mile or more in today's dollars. The total cost of road restoration would be millions of dollars that the State will likely not have available in the future.	See response to letter 18932, comment 3 and response to letter 25830, comment 26.
22633	4	Recreation and tourism	Tourism is Alaska's third largest industry, with thriving tourism businesses supporting recreation in the proposed Alternative corridors. Tourists travel to the region for the wilderness experience, including quiet, dark, and largely unaltered natural environment. If the road were built, it is likely that recreationalists will avoid trips that encounter the road, thus negatively impacting the income potential of existing flight services, lodges, and guides in the region.	The analysis already describes the road corridor as a "visual and audible interruption" in an otherwise undeveloped area. The Supplemental EIS notes that recreationists near the road corridor may encounter non-natural elements in their remote and natural experience, including experiencing increased levels of noise, traffic, and new overflights; increased levels of dust; and physically encountering the road or its associated infrastructure, such as bridges. These impacts may deter some recreationists who seek entirely remote experiences from choosing experiences in the vicinity of the road. The Supplemental EIS also notes that the development of the road may reduce nearby demand for recreational experiences and require business model alternations for nearby guides and lodge owners and may require mobile guides to shift their activities to other areas. Language regarding displacement of some recreationists has been previously modified to acknowledge lack of data. The BLM believes that the Recreation and Tourism sections, the Socioeconomic sections, the Visual Resources, and the Land Ownership, Use, Management, and Specials Designations sections in the EIS and Appendix H adequately consider the topics in this comment and are sufficient to allow decision-makers to make an informed decision about choosing among build alternatives or to choose the No Action Alternative.

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22633	5	Subsistence	Alternatives A, B, C, and the cumulative case will all negatively impact subsistence practices in many communities. This may result in dire economic hardship for the residents of these communities, as subsistence hunting and fishing are necessary to supplement low incomes and expensive store-bought food.	Revised Sociocultural Impacts section to include additional text regarding the potential economic impacts of reduced subsistence harvests.
22633	6a	Water resources	The thousands of culverts planned would dramatically affect natural flow patterns. The DSEIS did not address “piping,” where as massive ice in permafrost soils melts over time and water flows under a roadway through voids left in the ground. Not only does this drain surrounding land, but creates extremely difficult maintenance problems as evidenced at Dalton Milepost 362.4. These mechanisms are poorly understood. When the Dalton Highway was built, culverts were placed at all stream crossings. Since the time of construction, permafrost degradation adjacent to the roadway and increased precipitation due to climate change have caused increased channeling of water parallel to the roadway. The DSEIS does not adequately address the predicted increase in precipitation due to climate change and how additional water flows will be addressed. Many of the culverts along the Dalton Highway have bowed from permafrost degradation, preventing adequate drainage through the culverts. Nowhere in the DSEIS was this problem addressed.	Special condition 30 of the USACE CWA Section 404 permit (adopted as proposed mitigation under Appendix N Section 3.5) requires AIDEA to complete additional geotechnical investigations and characterization of permafrost along the road prior to construction to incorporate identified mitigation measures for minimizing impacts on permafrost. As stated in Section 2.4.4, AIDEA has committed to detailed thermal modeling based on data collected to inform mitigation strategies. Section 2.4.4 and Appendix N Sections 3.2.2, 3.2.5, and 3.5 identified multiple design approaches and mitigation measures for minimizing impacts on permafrost, including constructing the road to Phase II embankment depths (thermally balanced) over thaw sensitive permafrost soils; use of insulation, air convention embankment, thermosyphons, sunsheds, snowsheds, or air ducts as required; porous fill to maintain shallow groundwater flow through the active layer; minimizing cut and flattering fill slopes; and adequate culvert placement. AIDEA is responsible for maintaining culverts along the road to the satisfaction of BLM and other regulatory agencies per special condition 12 of the USACE CWA Section 404 permit (adopted as proposed mitigation under Appendix N Section 3.5), which requires an Adaptive Management Plan for culverts that will require regular monitoring, maintenance, repair, and reporting on culvert performance for the life of the project. AIDEA has a direct impetus to minimize damage to road and subsurface to minimize associated maintenance costs. Appendix N Section 3.2.1 mitigation measures include a permafrost monitoring plan to detect and respond to issues resulting from permafrost disturbance at any location in the construction or operating right of way, including spur roads, landing strips, and building pads. The Mining, Access, and Other Indirect and Cumulative Impacts portion of Supplemental EIS S Section 3.2.5 and Appendix H further discuss impacts of climate change.
22633	6b	Water resources	Additionally, the culverts along the Dalton Highway are thawed in spring by using steam in thaw pipes installed inside the culverts. I have recorded many broken thaw pipes inside these culverts and it is likely the proposed Ambler Road will face the same problem. Timing of the thawing is especially difficult. Surface snow melt begins before the culverts can be thawed and not re-freeze. The accumulation of water upstream from the culverts creates a “heat sink,” promoting permafrost thaw. When the culverts are eventually thawed, the rush of water flowing downstream causes head-cutting in the upstream channels, altering hydrology, and occasionally causing mechanical and thermal erosion of underlying massive ground ice. The DSEIS does not address adequate timing of culvert thaw, nor does it propose a better alternative to the current thaw pipe system, which is prone to failure.	See response to letter 22633, comment 6a.
22633	6c	Water resources	Much of the proposed Ambler Road alternative corridors cross over ice-rich permafrost (DSEIS Geology Section), where the volume of ground ice is greater than 50% of the total. As the climate warms, more of this ice is melting, causing subsidence (thermokarsts) and thaw slumps across the landscape. Changes in water flow often trigger melt when water that often naturally flows in a diffuse manner is channelized. Surface subsidence is often remediated by backfilling with gravel, often converting wetlands to uplands, and changing soil properties such that vegetation is very slow to recover. There is no known remediation method for filling voids under the road surface, as seen on the Dalton Highway between mileposts 109 and 144. The ice-rich permafrost found in the foothills of the Brooks Range pose huge hurdles for construction, but even greater hurdles for maintenance. Water impoundment adjacent to arctic roadways is common, especially on the upstream side of roadways during spring breakup. This impounded water alters the permafrost thermal regime, exacerbating permafrost thaw and widening the impact footprint, which is not accounted for in the DSEIS.	See response to letter 22633, comment 6a.
22633	6d	Water resources	Where the proposed road alternatives cross discontinuous permafrost, deleterious impacts to the surrounding permafrost thermal regime and vegetation are likely to be greater, thus widening the area of impact beyond what was included in the DSEIS.	See response to letter 22633, comment 6a. Supplemental EIS Section 3.3.1 and Appendix N, Section 3.3.1 provide additional discussion on potential impacts to vegetation and mitigation measures to reduce impacts on vegetation.
22633	6e	Water resources	The DSEIS provides insufficient information regarding restoration of disturbed areas during construction and no information about restoration of the road corridor upon removal. I have extensive experience with restoration on permafrost lands including writing restoration plans, implementing the restoration activities, and monitoring performance of the restoration. The plan glazes over how difficult these activities are, how slow the recovery is, how extraordinary the costs of restoration are, and that the results are usually far from “restored,” meaning that the environment functions and has aesthetic and wildlife habitat characteristics similar to that found pre-disturbance. The ground surface elevation under a roadway is compressed, forcing a decision in restoration planning to remove all imported gravel, which frequently results in pooled water in the former footprint, versus leaving some gravel in place to maintain surface elevations. Leaving gravel in place to maintain surface elevations results in difficulty reestablishing native vegetation and an alteration of area environmental functions. Once ground ice is lost, the only remedy to restore the ground surface elevation to a level that maintains pre-disturbance hydrology is to backfill lost ground volume with gravel. This requires a gravel source (material mining) and most often converts land from wetlands to uplands, forever altering hydrologic and wildlife habitat functions and characteristics. The DSEIS states, “Disturbed soils would be stabilized and revegetated with native plant materials....” Current practices to stabilize soil include using rolled erosion control fabric and seeding with native-grass cultivars, grass seed that was originally collected in the arctic, but is grown elsewhere as a seed source. Arctic restoration ecologists in Alaska do not recommend seeding with native-grass cultivars: they do not provide thermal stability, they can inhibit colonization by native plants, and the seed can contain up to 3% of invasive weed species. There are no commercially available native seed sources aside from grass seed.	Section 2.4.4 and Appendix N, Sections 3.2.2, 3.2.3, 3.3.1, and 3.5 describe measures for restoration of disturbed areas during construction, including “stabilization and restoration of sites disturbed during construction activities would occur in a timely manner within the post-disturbance growing season as work is completed. Disturbed soils would be stabilized and revegetated with native plant materials to reduce visual impacts and the potential for soil erosion and sediment discharge. AIDEA would work with the Alaska Plant Materials Center and the relevant land manager to develop a plan for obtaining native plant seed and/or cuttings to be used for restoration and reclamation needs.” Appendix N Section 3.3.1 describes additional mitigation measures to address impacts on vegetation, including requiring AIDEA to prepare and implement a Revegetation Plan approved by the Authorized Officer. Proposed design and mitigation features are considered adequate with the understanding that AIDEA would have to present additional detail for approval. Section 2.4.4 describes AIDEA's proposed approach for restoration of the road corridor upon removal, including “a detailed reclamation plan containing sufficient performance standards subject to land manager approval would be developed prior to the issuance of the authorizations. Reclamation measures would include removal of embankments, culverts, and bridges; re-grading the roadway to establish more natural ground contours and drainage patterns; and revegetation

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			Permafrost soils are not stabilized by coverage of new growth vegetation. Rather, it is the accumulation of deep organic materials over decades or centuries that provide thermal regulation of permafrost soils.	of the area through seeding or planting of native vegetation. Appropriate native plant materials would be identified in consultation with the Alaska Plant Materials Center and each landowner.” Appendix H Section 2.1.4 discusses anticipated reclamation and closure activities and impacts. Appendix N Section 1.4 describes mitigation measures for restoration of the road at the end of the project life.
22633	7	Mitigation/monitoring	The Palmer Plant Materials Center is only beginning to examine how to provide native plant seed. It is unlikely that a source large enough for this project will be available during the time of construction or when the road is removed. The DSEIS lacks detail on restoration activities, available current practices, and planned approaches. Detail is needed on how disturbed soils would be stabilized, where the native plant materials would come from, and which species would be used for different environmental situations, e.g., fens, bogs, saturated wetlands, drainage gullies, slopes with high ice content, and in areas of subsidence.	Supplemental EIS Appendix N Potential Mitigation, Section 1.4 General Completion of Use (Restoration/Reclamation), Potential Mitigation Measure 4 would require AIDEA to submit a closure and reclamation plan for approval prior to receiving a Notice to Proceed for construction on BLM-managed lands, and would require the plan to be updated at 5 year intervals.
22633	8	Mitigation/monitoring	The DSEIS provides and example of placing 6 inches of rigid insulation board under culvert bedding. There are 2 mentions in the DSEIS of using insulation under the roadbed “as necessary.” This practice is becoming more common, but causes a nearly impossible problem when the road is removed. Gravel roads are removed by heavy equipment scooping and pushing the gravel. There is no way to avoid breaking rigid insulation during this removal process. It is likely that millions of bits of rigid insulation will be blown across the landscape during road removal. There is no mention in the DSEIS of how the road would be removed to prevent littering of the tundra with pieces of rigid insulation. Instead of allowing placement of rigid insulation under the roadbed, I highly recommend the BLM require a greater depth of gravel be placed to prevent permafrost degradation.	Supplemental EIS Appendix N Potential Mitigation, Section 1.4 General Completion of Use (Restoration/Reclamation), Potential Mitigation Measure 4 would require AIDEA to submit a closure and reclamation plan for approval prior to receiving a Notice to Proceed for construction on BLM-managed lands, and would require the plan to be updated at 5 year intervals.
22633	9	Sand and gravel resources	The DSEIS does not provide sufficient information on the depth and extent of permafrost or presence of clay/silt lenses underlying the area. Without detailed soil mapping and permafrost depth investigations, it is irresponsible to permit this road. There is insufficient information on material sites: locations, material types available, and quantities. In Section 2.4.3, “Physical Environment,” first bullet point, the DSEIS references the need for additional studies “to control permafrost thawing.” Currently, the only known methods to “control” thawing are to build vented shoulders or installing thermal syphons, neither of which are feasible for long distances. It is unrealistic for AIDEA to expect they will be able to control permafrost thaw. The third bullet in this section references making fill slopes as flat as possible where permafrost degradation is likely. The DSEIS fails to account for the much wider footprint at these locations because permafrost depth and extent studies have not been published. The public cannot adequately comment on the proposed project if the footprint has not yet been determined.	Section 2.4.4, under “Physical Environment” - wording has been revised to state “... <u>mitigate</u> permafrost thawing.” Table 1 of Appendix C provides the estimated footprint (acres) of the proposed industrial access road, supporting access roads and other major project components. Estimates of the roadway footprint account for cuts and fills for the project elements plus a 10-foot buffer around those limits for construction access, clearing, and other temporary effects. The Supplemental EIS analysis also acknowledges in Section 1.5.6 (Uncertain Project features), that without on-the-ground surveys, the layout, staging, and sequencing of construction actions are not fully known, and impacts are approximate.
22770	1	Public access	* The BLM should evaluate the full impacts of the Ambler Road eventually being opened for public use, since there is a strong historical precedent for that action (i.e., the Dalton Highway and the De Long Mountain Transportation System that connects Red Dog Mine and its port site). The draft SEIS acknowledges for the first time “the potential for the industrial road to be purposefully opened to the public sometime in the future” and we appreciate the BLM’s analysis in Appendix H of some of the potential impacts of reasonably foreseeable public use and trespass. The final SEIS should include a more detailed analysis of the full impacts of an eventual public access road, given the strong precedent for that outcome.	See response to letter 19418, comment 3.
22770	2	Proposed action	* The final SEIS should more clearly convey that the Ambler Road will most likely never be removed and reclaimed. The draft SEIS acknowledges a lack of reclamation as a possibility, which is an improvement over previous analyses. However, it should be made clear that reclamation of the Ambler Road is highly unlikely. We are not aware of any major industrial road permitted by the BLM or the State of Alaska that has been reclaimed. There is an opportunity to strengthen the final SEIS by noting how many miles of BLM-managed mining roads have actually been reclaimed in Alaska.	See response to letter 22595, comments 12 and 13.
22770	3	Cumulative and indirect effects analysis	* The final SEIS should analyze the potential cumulative impacts of an expanded mining scenario. The draft SEIS assumes a minimum mining scenario in which the four leading mineral deposits in the project area would be developed with a combination of open-pit and underground mines. Ideally, the project proponent would be required to reveal a maximum expected level of development in the Ambler Mining District. At the very least, the SEIS could analyze the potential impacts of an expanded mining scenario--including at least one additional major mine--since it is reasonable to expect that additional deposits could be developed during the 50-year life of the road. Without this information, it is impossible for the public and resource management agencies to begin predicting the full potential direct, indirect and cumulative impacts of the overall project on fish, wildlife, and people.	See responses to letter 23145, comment 3 and letter 26152, comment 1.
22770	4	Mitigation/monitoring	* It is critical that the final SEIS for the Ambler Road considers the mitigation policy and guidance to address impacts to resources from public land uses, as outlined in BLM’s Manual Section 1794 and Handbook 1794-1. As part of following this guidance, the SEIS should expressly account for the risk that compensatory mitigation measures may fail and identify necessary assurances and safeguards.	Should the project be approved, the ROD will determine which mitigation measures will be required.
22770	5	Mammals	* There is an opportunity to incorporate more of the best available science regarding potential caribou behavioral disturbances in the final SEIS. We appreciate the new citations included in draft SEIS, including research by Wilson et al. (2016) found that satellite-collared WAH caribou that were delayed by the much shorter Red Dog Mine industrial access road in the Northwest Arctic by an average of 33 days during the herd’s 2011 fall migration. We also recommend the inclusion of a study by Parlee et al. (2018) which describes the “tragedy of open access” and the impacts of mineral resource development on Canada’s Bathurst herd, which has experienced one of the steepest declines of any large migratory barren-ground caribou herd.	Citation of Parlee et al. 2018 was added.

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22770	6	Mammals	* We are pleased to see the draft SEIS align with the best available research on caribou and their lack of habituation to roads during calving season. However, there are still some misleading statements in the SEIS on habituation to roads, such as that “initially exposing caribou to a small pioneer road may increase their tolerance of the larger Phase 2 road.” Given the lack of biological research to support caribou habituation to roads, we recommend that this misleading statement be removed.	Text on habituation in caribou was added. There is strong evidence from Alaska herds that caribou do not habituate to roads and traffic during calving but there is little scientific consensus for whether or not habituation to development occurs during other seasons.
22770	7	Mammals	* We appreciate that the draft SEIS includes a more nuanced understanding of habitat variability and the amount of space that caribou require, given their low fidelity to seasonal ranges. Longtime Western Arctic Caribou Herd biologist Jim Dau describes space--naturally intact home range--as the most important factor for the long-term survival of caribou. Caribou need access to multiple geographically disparate areas to have options for distributing themselves to best utilize available food, areas of low insect and predator abundance, and areas of low hunting pressure. Although caribou herds rarely utilize their entire range in any single year, they will use 100% of their seasonal ranges over a course of decades. The biological research included in the final SEIS should accurately capture these considerations.	Section 3.3.4 of the Supplemental EIS describes the changes in WAH wintering range over the period when telemetry collars were available and provides maps showing the extent of these annual winter ranges.
22770	8	Mammals	* Moose densities are low in the upper Koyukuk and Kobuk watersheds, and harvest is already restricted. If the Ambler Road were built, up to 36 square miles (23,000 acres) of important moose habitat could be lost. Compensatory mitigation of an equivalent amount of riparian habitat should be required to maintain adequate hunting opportunity.	It is not clear how the 36 square miles calculation is derived. While some moose habitat will be directly lost to gravel placement and moose may be disturbed within some distance of the road, vegetation clearing along roads can also result in improved growth of preferred early successional moose browse.
22770	9	Water resources	* Regarding the potential mitigation measures discussed in Appendix N, we urge the BLM to require more a specific water monitoring plan. The agency should clarify what is required to be monitored, where, and for how long.	Recommended water quality monitoring plan conditions added to Section 3.2.5 under Impacts Common to All Action Alternatives.
22770	10	Hazardous waste	* The BLM should include a quantitative spill risk assessment in the Ambler Road final SEIS that includes the potential for all on-site and transportation-related spills and considers the full range of hazardous materials. A recent analysis (Lubetkin, 2022) compared predicted versus actual spills of hazardous materials at the five largest mining operations in Alaska and found that mining project proponents severely underestimated spill risk when seeking federal and state permits.	Section 3.2.3 uses a range of annual spill risk and references the Lubetkin analysis.
22770	11	Subsistence	The BLM rightly placed more attention on the potential direct, indirect and cumulative impacts of the proposed Ambler Road to rural subsistence throughout the draft SEIS. However, the SEIS repeatedly minimizes the likelihood that the Ambler Road would eventually be open to the public. Given the profound impacts that public access would have on subsistence resources, the BLM should update the potential impacts to subsistence using a more realistic road access scenario in the final SEIS.	The access scenarios presented in Supplemental EIS, Appendix H Indirect and Cumulative Scenarios, are based on assumptions as described in the appendix in order to analyze the potential effects of reasonably foreseeable actions.
22770	12	Recreation and tourism	* The draft SEIS does not adequately capture the value of the Brooks Range to recreational users, including hunters, anglers, paddlers, hikers, and wildlife photographers. The Brooks Range is vast, wild, and remote, offering residents and visitors alike an unparalleled wilderness experience that is difficult to find elsewhere. The draft SEIS includes statements such as, “the road and the mines would substantially alter the recreation environment along the southern Brooks Range.” This sentiment does not capture the profound mental, physical and spiritual benefits that many people derive from spending time in wild places.	To add context for recreation benefits, the BLM has added the following to the Affected Environment: “Recreation can provide positive benefits, including personal benefits such as improved fitness and mental health; social or community benefits such as positive lifestyle choices, improved social skills and increased community involvement; economic benefits such as employment opportunities and recreation-based business; and environmental benefits, such as a desire to steward natural resources due to participation on outdoor activities” (BLM 2014). A reduction or change in recreational opportunities or use in certain areas due to road construction would likely result in a decrease or modification of related benefits. “
22770	13	Recreation and tourism	* The final SEIS should acknowledge the likely direct and indirect impacts of the Ambler Road on recreation. For example, non-local hunters inside and outside the project area could face additional restrictions on hunting opportunities if habitat fragmentation from the Ambler Road were to contribute to the further decline of the Western Arctic Caribou Herd.	The impacts of the Ambler Road on recreational hunting for both local and non-local hunters is discussed in Sections 3.3.4 (Mammals) and 3.4.7 (Subsistence Use and Resources) of the Supplemental EIS. Section 3.3.4 discusses harvest of the WAH by both local and non-local hunters. This section also details the likely detrimental impacts of the Proposed Action on the WAH population and on localized movement patterns. Section 3.3.4 also notes conflicts and competition between local and non-local caribou hunters, a topic further explored in Section 3.4.7. Section 3.3.4 discusses potential changes in hunter use due to the road, including potential trespass use by both local and non-local hunters, which may increase illegal hunting activity in the area (the issue of trespass is further discussed in Section 3.4.7, which notes that non-local hunters from other regions may have greater means to access resources and may use the road ROW as a travel corridor illegally, leading to more competition with local hunters for resources like caribou). These sections also discuss the possibility of further regulation of hunting activity in the road vicinity to mitigate the impacts of increased human activity, including illegal hunting activity, on caribou, which may present new access challenges to local and non-local hunters who do not engage in illegal hunting activities who wish to hunt in the vicinity of the road. In response to your comment, the BLM has added the following: “It is likely the road and any associated facilities located near these rivers would effectively create a zone people would not use for these activities, which may lead to a decrease in levels of dispersed camping, hiking, camping, and other recreational activities in this zone. For discussion of more potential impacts on local and non-local hunting activities, please see Sections 3.3.4 and 3.4.7 of the Supplemental EIS.”
22770	15	Funding and bonding	* An updated and thorough cost-benefit analysis should be included in the final SEIS. Some project costs, such as road construction and maintenance, are already included in the SEIS and should be updated to reflect increases since 2019. Other potential costs have never been considered in the EIS, including the cost of replacing culverts that require resizing or impede fish passage, the cost of treating mine waste in perpetuity if any of the mines go bankrupt, and the cost of compensatory mitigation--just to name a few considerations.	The Supplemental EIS uses revised cost estimates for construction, maintenance, and reclamation (see e.g., Appendix C, Table 1, Summary of major project components for each action alternative; and DOWL 2023).
22840	1	Fish and aquatics	DSEIS makes many highly speculative/risky assumptions, with minimal data/information about streams impacted, culvert designs and ability to pass fish Less than two dozen stream crossing sites have been visited; fewer sampled for fish,	Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA - Physical Environment, describes commitments made by AIDEA to reduce impacts from the installation of culverts.

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			flow/size; insufficient habitat information (soils, bed, vegetation) using modern methods (eDNA, remote long-term sensors/data loggers) needed	Supplemental EIS Section 3.2.5, Water Resources - Impacts Common to All Action Alternatives, describes mitigation measures that would be employed to minimize impacts from culverts as well as the anticipated impacts from culvert installation. Appendix N describes the mitigation measures that are intended to minimize impacts from culverts. The project's final culvert design would be based on site-specific conditions and would be guided by the applicable mitigation measures (see Appendix N) adopted in the BLM's ROD.
22840	2	Decision process - general	The level of information and detail for AIDEAs preferred Alternative A is significantly more robust making it challenging to equitably compare it with other action alternatives and the No Action Alternative	While there is more information for AIDEA's proposed action, there is sufficient information for each of the action alternatives to adequately compare impacts among the alternatives.
22840	3	Water resources	Inadequate Information to Evaluate Impacts to Natural Resources and Tribes Inaccurate, incomplete data/maps on waters, wetlands, and floodplains; cant establish accurate baseline, determine impacts, develop, compare mitigation measures Water quality, levels, flows (quantity and duration), reliability will be disrupted throughout the region as over 3,000 streams will be affected Lack of a science-based functional assessment is a fatal flaw --- tribes, agencies, interested parties, and the public have no idea what the actual losses will be for Action Alternatives, and costs to the Nation Logistically, technically, biologically impossible to replace functional losses consistent with the 404(b)(1) Guidelines and the 2008 Army-EPA Mitigation Rule due to magnitude and location of impacts	See response to letter 20731 comment 1.
22855	1	Decision process - general	Glaringly, this SEIS does not provide the comprehensive baseline information required by law. Under NEPA, the agencies must "describe the environment of the area(s) to be affected ... by the alternatives under consideration." [40 CFR Sec 1502.15] "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." [Carlucci, 857 F.2d at 510] How can the consequences of the project construction and operation be known if the baseline information is not first provided, relating to such things as surface and groundwater resources, fisheries inventory, air quality, wildlife resources, habitat specifics, avian species and numbers, and cultural, recreation and economic resources? In plain language, if we don't know what we have, how can we know how our actions will effect things? And how can you reasonably define mitigation measures when you don't know what you have?	Chapter 3 describes the baseline conditions of the affected environment and has been updated with new information in this Supplemental EIS. The remaining data gap is described in Appendix R. According to 40 of the CFR 1502.22, when an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an EIS and there is incomplete or unavailable information, the agency will make clear that such information is lacking. A number of topics are called out within Chapter 3 of the Supplemental EIS where information is incomplete or unavailable. The BLM evaluated the data to determine if any missing information would be relevant to determining reasonably foreseeable significant adverse impacts or essential to making a reasoned choice among alternatives and, if it was, whether the overall costs of obtaining it would not be exorbitant. 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). As required by 40 CFR 1502.22, the Supplemental 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. The BLM has evaluated the impacts in the Supplemental EIS based upon research methods and theoretical approaches that are accepted in the scientific community. Based on a review of the data that are available, summarized, and cited in the Supplemental EIS and in accompanying appendices, sufficient data exists to allow the BLM to make a reasoned choice among the alternatives. If the project moves forward, additional studies and information would be generated during permitting. Some potential mitigation measures identified in Appendix N have provisions for data collection and monitoring.
22855	2	Proposed action	I would like to stress the harm that this project will do to local peoples, while the project itself does not prove itself as being necessary to provide 'rare earth minerals' for future alternative energy production. Indeed, there has yet to be any proven lode of rare earth minerals that can be efficiently mined in the Ambler Mining District. The District does not contain any proven economic deposit of cobalt. One of the four proposed mines previously listed cobalt, but this year the company entirely removed cobalt from its mineral resource estimate. At present, increases in the global supply of cobalt has lowered the sale price and a new cobalt mine in Idaho was declared to be unprofitable and mining activity there was suspended. It is probable that a cobalt substitute may be used to make lithium-ion cathodes in the future. The Trilogy Metals announcement that germanium might be a byproduct at one of the sites remains unconfirmed. No economic feasibility study has been done to see if it was possible to economically develop the deposit. At present, germanium plays no role in clean energy development. Any zinc processed in the District would have to be shipped to East Asia for processing, and as such would not increase the U.S. mineral independence or supply chain security. The U.S. currently gets 60% of its zinc resources from Canada, an allied nation. Lastly, neither lead nor gold are critical minerals. Lead poses great threats to public health and the ecosystem, and the sole purpose of mining gold is to increase wealth (in this case, mainly of an international mining consortium). It is therefore my contention that mining of the Ambler District would do nothing to strengthen our national security, or our supply of minerals necessary for clean energy production, or further secure our supply chain.	See response to letter 21906, comment 1.
22871	1	Subsistence	The Ambler Road Project and associated development of the Ambler Mining District threaten the inherent human rights of Tribal members to continue traditional hunting, fishing, and gathering practices that serve as the foundation of their culture, spirituality, and way of life. The impacts from the proposed industrial development would cause severe harm across the region to all the resources that the local Athabascan and lupiat cultures revere including caribou, fish, water resources, wetlands, and vegetationas well as to their opportunities for subsistence and the social cohesion, culture, traditions, language, health, and well-being that depend on participation in subsistence harvesting and sharing networks.	The potential impacts of the road and sociocultural systems, including culture, social cohesion, and sharing networks, are addressed in Section 3.4.7.
22974	1	Fish and aquatics	* AIDEA only assessed 55 waterbody crossings in the first 55 miles of the road, leaving more than 156 miles unanalyzed. This lack of data and preparation to mitigate or eliminate impacts to fish is unacceptable, especially in the face of existing declines in fish populations.	Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA - Physical Environment, describes commitments made by AIDEA to reduce impacts from the installation of culverts. Supplemental EIS Section 3.2.5, Water Resources - Impacts Common to All Action Alternatives,

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				describes mitigation measures that would be employed to minimize impacts from culverts as well as the anticipated impacts from culvert installation. Appendix N describes the mitigation measures that are intended to minimize impacts from culverts. The project's final culvert design would be based on site-specific conditions and would be guided by the applicable mitigation measures (see Appendix N) adopted in the BLM's ROD.
23034	1	Compliance with other laws	The clear intent of Congress, as expressed in the Alaska National Interest Lands Conservation Act (ANILCA) is to guarantee surface transportation access to the Ambler Mining District: "the Interior Secretary shall permit such access, " (Section 201(4)(b) emphasis added). The BLM's DSEIS claims access across federal lands is discretionary, which is a clear violation of the intent of Congress as expressed in ANILCA.	The BLM's authority to issue a ROW over BLM-managed lands is found in FLPMA. Section 201(4)(b) of ANILCA only addresses a ROW through the Western Kobuk River Unit of GAAR.
23034	5	Compliance with other laws	Imposing new conditions, such as selecting an unworkable route or prohibiting the road from being built in phases (Phase I being a pioneer road), would cripple the project through delay and cost. The unnecessary and arduous requirements amount to the BLM not only violating the express requirements of ANILCA, but breaking the promises made by the federal government at statehood to Alaskans.	See response to letter 23034, comment 1.
23100	1	Mammals	I have spent the last three years photographing, researching and documenting Arctic caribou decline in Alaska and Canada for National Geographic Magazine (attached). The devastating decline of the Bathurst Caribou Herd in Canada is directly correlated with mining and development, and we do not want to repeat these mistakes in Alaska with the Western Arctic Caribou herd. The Ambler Road would cut straight through the migration path of this herd. The Western Arctic Caribou Herd herd was once the biggest in the world, but since 2003 its gone from around 500,000 animals to 188,000, with a quarter of those losses happening in just the past three years.	The decline in the WAH population is documented in Section 3.3.4 of the Supplemental EIS and was updated with the most recent population estimate.
23145	1	Funding and bonding	As far as I can tell, the SEIS estimates costs of construction only. Estimates of total cost should be accounted, including costs of maintenance and reclamation.	See response to letter 22770, comment 15.
23145	2	Cumulative and indirect effects analysis	To fully assess the potential impact of the Ambler Road, the SEIS should directly address the specific mineral development proposals within the Ambler District together with the road development. This should include impacts associated with proposed mine infrastructure and access, as well as the long-term storage and treatment of waste rock and tailings. The road should be considered as part of the mine permitting process associated with the proposed development of specific deposit(s), not as an isolated project. If the exploration work is not at a point that allows for initiation of permitting process, then this is a good indication that the EIS for the road development is premature. In other words, addressing the impacts of the road alone is insufficient for considering the comprehensive impacts of the entire project to the region.	See response to letter 32724, comment 141 regarding waste rock and tailings. See response to letter 34767 comment 3 regarding the BLM's treatment of mining impacts as cumulative and indirect. The hypothetical mining scenario presented in Appendix H includes a description of typical mine infrastructure and access needs (see Appendix H, Section 2.1.4, Production). The potential cumulative and indirect effects of mining-related infrastructure and access roads are analyzed in Chapter 3 of the Supplemental EIS.
23145	3	Cumulative and indirect effects analysis	The impact of potential mineral development outside of the Ambler District should be more specifically considered. The Supplemental EIS should address, for each alternative corridor, the potential for significant environmental, cultural and subsistence impacts in regions that may be accessible via the proposed route. In other words, would a given right of way provide access to potential development (mineral resources or other types of development) in highly sensitive areas. It is already the case that intensive mineral exploration work has begun along the southern foothills of the Brooks Range from the Dalton Hwy to near the Alatna River. This work has already had significant negative impact on the recreational use of this area due to the high level of low altitude air traffic; primarily low-level helicopter traffic moving loads between camps and drill sites and the Dalton Hwy. This traffic has been a persistent disruption to summer recreational users of the North Fork of Koyukuk and John Wild and Scenic Rivers. I suspect the exploration work in this area, and further to the west, will increase dramatically in the coming years. Therefore, the EIS needs specific assessment of the impacts that are a direct result of the proposed road project and not currently considered in any corridor alternative.	Ongoing mineral exploration in support of mining claims east of the District (e.g., for the Roosevelt, Malamute, and Helpmejack projects) has been more explicitly called out within the list of other reasonably foreseeable actions in Appendix H, Section 2.3.3, and the ongoing effects of these exploration activities are analyzed within the context of cumulative and indirect effects throughout Chapter 3. See also response to letter 26152, comment 1.
23145	4	Public access	The long-term impacts of the road need to be specifically considered, and in particular how they might vary among the potential corridors. The proposal from AIDEA is for the development of an industrial access road only that would be reclaimed after development ceases in the Ambler District. However, a number of additional scenarios should be considered by the Supplemental EIS including the potential for commercial operation in perpetuity, and the potential impacts associated with public access. As noted in Appendix H (pg H33-H34), it is highly likely that use of the road will expand beyond the scope of the current proposal. The current EIS must address these scenarios and not push them off to future consideration. The development of the road corridor will have a substantial and irreversible impact on the region. If this corridor leads to the development of a public access road system there will be immense impacts to the region. To make a final decision on whether the project should be permitted, it is essential that the impacts of these "reasonably foreseeable" scenarios (pg. H33) be accounted for.	The access scenarios presented in Supplemental EIS Appendix H, Indirect and Cumulative Scenarios, are based on assumptions as described in the appendix in order to analyze the potential effects of reasonably foreseeable actions. The potential effects of public and non-industrial access scenarios are analyzed throughout Chapter 3 within the context of cumulative and indirect effects.
23145	5	Proposed action	The Supplemental EIS needs to better address uncertainty. The current plan is vague, open to future modification and lacks a single entity that would establish and enforce permitting throughout the corridor region. Therefore, current attempts at assessing the impacts are based on assumptions which have a high degree of uncertainty. For the different alternative corridors the EIS should, at least in qualitative terms, address how the uncertainty effects the degree of confidence in the scale and scope of impacts. A low degree of confidence would be an indication that a more specific plan needs to be put forward so that the impacts could be better assessed.	See responses to letter 21015, comment 5 and letter 22855, comment 1.
23145	6	Alternatives	It is important that the Supplemental EIS re-address the alternative routes. The SEIS is biased towards accepting AIDEA's assumptions, cost estimates and preferred routing. The Supplemental EIS should consider alternative routes and alternative means of transporting ore, such as rail, irrespective of cost. For instance, a major concern with respect to social and	In accordance with the CEQ NEPA implementing regulations, 40 CFR 1502.14, the BLM has explored and evaluated all reasonable alternatives for this project and discussed reasons why other alternatives were determined not to be reasonable. To determine whether an alternative

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			subsistence impacts is the development of road access originating at the Dalton Hwy, thereby connecting the region to urban Alaska. A western route (road or rail) may be more costly, but may be preferred by stakeholders in the region by allowing development within the Ambler District, without a connection to the Dalton Hwy. If there are western alternatives that have potential to reduce overall impacts, and may be more acceptable to regional stakeholders, then these should not be excluded from consideration based on cost estimates alone. My reading of the current Draft EIS's justification for eliminating western alternative routes is primarily due to cost, which suggests that the BLM is only considering the viewpoint of a single stakeholder (the financial benefits to AIDEA and its industrial partners).	was reasonable, the BLM considered an alternative's effectiveness at satisfying the purpose and need, technical and economic feasibility, the practicality of the alternative, and whether the alternative duplicated others evaluated. Western routes, both road and rail were specifically considered and were eliminated from further consideration due to economic feasibility and practicality. For details on the alternatives examined and the reasons some were not carried forward for detailed analysis, see Supplemental EIS Appendix G.
23187	1	Alternatives	After years of rigorous studies conducted under two separate Federal administrations starting under the Obama administration, the BLM and NPS compiled a robust data set that thoroughly covers all relevant requirements of the National Environmental Policy Act (NEPA) and the Alaska National Interest Lands Conservation Act (ANILCA particularly section 20I(4)(b)) in the form of the Final EIS. This lengthy and thorough process made it clear that the Alternative A route for AMDIAP was the best alternative. In 2020, the BLM, National Park Service (NPS) and the U.S. Army Corps of Engineers (USACE) selected Alternative A as the preferred route through a joint record of decision (JROD) and those decisions still stand today. The alternative selected in the 2020 JROD was not subject to judicial review and was determined by USACE to be the alternative with the least environmental impact. Therefore, the inclusion of new additional alternatives is outside the BLMs scope of authority for the DSEIS. The submission of an entirely new DSEIS is also outside the BLMs scope of authority the document should only have covered the issues that were raised as part of the remand notice.	See response to letter 58, comment 3.
23196	1	Remand of Final EIS	As an initial matter, the NMA believes this DEIS is unnecessary. Over a nearly five-year period, the BLM thoroughly analyzed the potential impacts of the Project in the March 2020 final EIS and issued a favorable Record of Decision (ROD) in July 2020. Litigation ensued, and in a disappointing decision, the BLM requested a voluntary remand from the U.S. District Court for the District of Alaska, indicating that additional legal analysis revealed deficiencies in the BLM's analysis of subsistence impacts under ANILCA section 810 and consultation with tribes pursuant to section 106 of the National Historic Preservation Act (NHPA). The court granted remand but did not vacate the underlying decision, and instead returned the matter to BLM to correct the self-confessed deficiencies. The NMA disagrees with the BLM's characterization of these errors as the thorough administrative record shows that extensive consideration of potential environmental and tribal concerns.	See response to letter 31764, comment 1. Trespass and public use of the road affects subsistence uses and resources.
23196	2	Remand of Final EIS	While the BLM's DEIS notice of availability references the two alleged deficiencies under ANILCA and NHPA, problematically, the scope of the DEIS has been inappropriately expanded to multiple issues and new analyses of "water resources, air quality and climate, vegetation and wetlands, fish and aquatics, birds, mammals, transportation and access, environmental justice, subsistence, and cultural resources." This expansive new analysis is in addition to the already comprehensive administrative record of nearly 200,000 pages. The DEIS' significant expansion includes many new potential issues but does not put them into context or identify the severity of those issues. In fact, in many cases, the DEIS presumes harm without justification or consideration of mitigation measures.	See response to letter 31764, comment 1.
23196	3	Alternatives	Yet, in expanding its scope outside of the issue areas agreed upon for voluntary remand, the BLM has concocted additional new road alternatives that were not contemplated in the 2020 ROD and that do not meet the project objectives, particularly new Alternative C. The BLM touts various advantages of Alternative C including more control over mitigation measures. This bureaucratic overreach by the BLM is almost comical, as Alternative C is nearly entirely on BLM land, and largely avoids other federal agency lands. Mystifyingly, BLM's Alternative C is almost 50 percent longer than Alternatives A and B and completely avoids the GAAR despite Congress' expectation as articulated in ANILCA. Requiring a significantly longer and inherently more expensive road not only jeopardizes the viability of the congressionally contemplated mineral development, but it is also likely to have a greater environmental impact.	Alternative C is not a new alternative; the concept for Alternative C was proposed by the public during scoping for the 2020 EIS. The BLM refined the Alternative C concept into an alignment and analyzed the alternative in detail in the 2020 EIS because it provided a counterpoint to the A/B alignments, trading longer length and greater footprint impacts and construction costs for elimination of impacts to NPS-managed lands, proximity to communities that indicated greater interest in proximity to a road, minimization of impact to the WAH, different and reduced recreation impacts, and different and somewhat reduced subsistence impacts. These were among the most important topics raised during scoping for the 2020 EIS, and the alternatives responded to these topics. See also Section 2.3 of the Supplemental EIS and Appendix G. The BLM and cooperating agencies re-examined alternatives concepts during the preparation of this Supplemental EIS, and no new alternatives were brought forward for detailed analysis as a result of that process (See Appendix G).
23196	5	Alternatives	The NMA also objects to the DEIS reconsideration of the phased road construction approach. NEPA requires that assessment of reasonable alternatives, and the BLM's new phasing approach does not follow the spirit of that directive. These new phases of alternatives were not at issue in litigation and should not be included in the DEIS. The alternatives ignore the previous engagement by AIDEA with licensed transportation engineers who determined the best approach was phased road construction over four years. Should the BLM select one of the new phased approaches, it would raise serious questions and create potential litigation risks for other set analyses within the forthcoming final EIS and ROD. The NMA encourages the BLM and partner federal agencies to select Alternative A as the best option, consistent with the 2020 ROD.	The combined phased option was developed in light of AIDEAs amended application to the USACE, which proposes to build the road to Phase II standards in sensitive permafrost and wetland areas.
23196	6	ANILCA 810 analysis	The DEIS expands its ANILCA analysis to 66 communities from the original 27 in the 2020 EIS and ROD and includes additional communities that are hundreds of miles away from the proposed project. The NMA is concerned that with the inclusion of almost the entire state of Alaska's subsistence communities, the BLM is inappropriately broadening its scope and evaluating externalities that are completely irrelevant to the AAP.	The Section 810 analysis includes potentially affected communities within the entire range of the WAH and downstream communities along the Yukon River, due to the potential for subsistence users in those communities to experience impacts to subsistence uses and needs based on the factors of reduced abundance and availability of caribou and fish before additional potential mitigation measures (as described in Appendix N) are considered. See Supplemental EIS Section 3.4.7, Subsistence Uses and Resources, for an explanation of the relationship between the 66 study communities and the Ambler Road Project and Appendix M regarding varied impacts based on project proximity.
23196	7	ANILCA 810 analysis	Sixteen communities have subsistence use areas that overlap with the alternatives. The BLM attempts to disregard the genuine impacts of Alternative C in favor of highlighting the alleged greater impacts of Alternative A and B. Of note,	Reviewed and edited comparison of alternatives under Cumulative Impacts to provide additional clarity and nuance regarding the differences between the alternatives.

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			Alternatives A and C would have the same number of subsistence communities impacted by the road, with eight, compared to Alternative B which would impact eight subsistence communities. Under all alternatives, communities would be affected with fewer subsistence areas and migratory changes to caribou. In the ANILCA Section 810 Analysis, BLM identifies that Alternatives A and B may significantly restrict subsistence use in 30 communities. For Alternative C, the BLM identifies 31 subsistence use communities that may be impacted - the exact same communities in Alternatives A and B, with the addition of Stevens Village that would be impacted. Yet, BLM inexplicably declares that the cumulative impacts of Alternatives A and B related to resource abundance and availability would likely be greater than those under Alternative C.	
23196	8	Socioeconomics and communities	As the project proponent, AIDEA's mission is to promote, develop, and advance economic growth and diversification in Alaska as created by the State of Alaska's Legislature. Instead of trusting and relying on a state agency developed with the purpose is to increase job opportunities and economic activity within the state, the BLM downplays the clear economic benefits of the AAP to the region and the people of Alaska. For example, AIDEA pays an annual dividend to the Alaska general fund and would continue to pay a dividend from the AAP revenue for the life of the project. Despite this, the BLM states it is difficult to determine if Alaska would generate more revenues from the investment in AAP compared to other potential uses, yet the BLM provides no quantitative evidence to support its assertion.	The Supplemental EIS is focused on the potential effects on state, regional, and local economies and communities. An evaluation of the economic merits of the proposed project versus alternative projects or investments is outside the scope of this Supplemental EIS.
23196	9	Socioeconomics and communities	In an even more confusing circular example on the potential economic impacts, the BLM notes that "Mining-related jobs would be a long-term, temporary effect and would be lost once the mines closed. Although this would, in effect, be a reversion to existing conditions, it would be perceived as an adverse economic effect at the time unless there were a clear source of replacement employment. Does the BLM suggest that the absence of jobs or employment opportunities at any given time within a community is preferable over jobs that are in place for at least 50 years? The BLM's assumptions do not take into account the mandatory reclamation after a mine closes, which will also create jobs. By downplaying the beneficial economic effects, the BLM shows its cards and preference for "no use" despite a multiple-use mandate under FLPMA. In addition, while NEPA requires an assessment of the effects of an action, to include the economic effects, the BLM is a land management agency without a mandate to develop and advance economic growth and diversification of its lands, such as AIDEA. The BLM would be better off relying on the state agency responsible for economic growth to make the economic analysis, instead of cobbling together its own interpretation of what will or will not drive the Alaskan economy.	The Supplemental EIS notes that the proposed project will increase employment opportunities in the region and the jobs would last for the duration of the operations of the road and potential mining activities. Appendix H of the Supplemental EIS describes potential reclamation activities associated with the proposed project. These reclamation activities will also create jobs/increase employment opportunities in the region.
23196	10	Public access	To a degree, BLM ties potential subsistence impacts to misuse of the proposed AAP through trespass and "reasonably" foreseeable public and non-industrial access. The DEIS' supposition that trespass or public use is inevitable ignores the track record of private industrial roads in Alaska. While all measures should be taken to prevent trespass or nonauthorized uses of the AAP, the existing roads providing access to the Red Dog and Pogo mines demonstrate that it is unreasonable for BLM to presume misuse of the proposed road.	See response to letter 19418, comment 3.
23279	1	Socioeconomics and communities	Finally, as resource extraction continues to expand, so does the MMIW crisis. This is because resource extraction creates an environment of lawlessness and impunity for those who commit violence against Indigenous women and girls. There is no plan to combat this offered by any proponent of the Ambler industrial mining road and no existing resources available to Interior villages. This risk is understated in the SEIS and deserves to be considered more deeply. This alone justifies a no action alternative.	See response to letter 34767, comment 94.
23279	2	Alternatives	Why is it that more alternatives were not explored? If this is about one mine why cant there be a rail to a nearby port? Drones would make it possible to ship ore out of the Ambler area.	A potential mitigation measure would require AIDEA to prohibit its employees, contractors, subcontractors, and their employees from visiting local communities while on duty or while staying at project facilities except for the conduct of official business. When communities are visited for conduct of official business, AIDEA would keep records of purpose, date, location, and participants, and would make such records available to BLM or law enforcement agencies on demand (Appendix N Section 3.4.5.1).
23310	1	Compliance with other laws	A road is guaranteed by ANILCA §201(4)(b) and other laws for access "from the Ambler Mining District to the Alaska Pipeline Haul Road." Aside from stating the intent to do so, no reason is given, or authority cited for undertaking a further National Environmental Policy Act (NEPA) analysis. (Beaudreau Declaration at 10). Doing so violates ANILCA § 201(4)(d) which states: "Such analysis (i.e., the already completed EEA analysis) shall be deemed to satisfy all requirements of that Act (i.e., NEPA)..." (Emphasis added). This EEA is not part of the District Court's remand order- so there is nothing to reconsider. By reconsidering alternatives already considered in the JROD (including the completed EEA), DOI is redoing the EEA analysis as a NEPA analysis in violation of ANILCA § 201(4)(d) which has resulted in total disregard of the timelines mandated by Congress in subsection (e): Within 60 days of the completion of the environmental and economic analysis, the secretary shall jointly agree upon a route for issuance of the right of way across the preserve. (Emphasis added).	See response to letter 23034, comment 1. The Environmental and Economic Analysis and NEPA waiver under ANILCA Section 201(4)(d) only apply to the NPS and GAAR.
23310	3	ANILCA 810 analysis	Moreover, the Bureau of Land Management (BLM) has applied § 810 of ANILCA to the entire 211-mile Ambler Road route even though 61% is on State land and much of the rest is on Northwest Arctic Borough (NWAB), Alaska Native Claims Settlement Act (ANCSA) private land, or in the GAAR where the Right of Way (ROW) selected by the Secretaries of Transportation and Interior is by statute not subject to judicial review.	See response to letter 29489, comment 28.
23310	4	ANILCA 810 analysis	n accordance with the above, the impacts on subsistence by the road within the National Preserve were set forth by the National Park Service (NPS) in its environmental and economic analysis (EEA), which was completed in 2020 and is not subject to judicial review. This EEA is not part of the District Court's remand order that allowed for the BLM to pause litigation to prepare a Supplemental EIS. As a result, the NPS land in the Gates of the Artic National Preserve is not subject to a NEPA review or any additional ANILCA process notwithstanding Beaudreau's and DOI's attempt to do so. Section 810 only applies to "Public lands" which are defined as "federal land." As set out in 32 CFP.242.4 ANILCA expressly excludes state	See response to letter 29489, comment 28.

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			land, state selected land, and ANCSA land from its definition of Federal land: (1) Lands situated in Alaska which are Federal lands, except- (i) Land selections of the State of Alaska which have been tentatively approved or validly selected under the Alaska Statehood Act and lands which have been confirmed to, validly selected by, or granted to the Territory of Alaska or the State under any other provision of Federal law. (ii) Land selections of a Native Corporation made under the Alaska Native Claims Settlement Act,43 U.S.C. 1601 et seq., which have not been conveyed to a Native Corporation, unless any such selection is determined to be invalid or is relinquished; and (iii) Lands referred to in section I9(b) of the Alaska Native Claims Settlement Act, 43 U.S.C. 1618(b). The only federal lands along the preferred route A in the 2020 Joint Record of Decision (JROD) that meet this definition are: (1) one mile of BLM owned land; and (2) 30 miles of BLM managed land, that the State of Alaska has selected. (These BLM managed land are the first 30 miles going west from the Dalton Highway). Notwithstanding the miniscule amount of “Federal” land involved, the DSEIS has applied an ANILCA\$ 810- subsistence analysis to the entire 21.1 proposed road. When AIDEA asked BLM why it was applying \$ 810 to State and ANSCA land, it replied via email that the definition section of ANILCA that defines the term “subsistence” does not reference any limitation to “public land” or “federal land” so a \$ 810-subsistence analysis can be applied to private land or ANCSA holdings. The Ninth Circuit’s Opinion in Angoon v. Hodel,803 F.2d 1016, 1027-1029 19th Cir. 1986) contradicts the BLM’s argument for applying ANILCA \$ 810 to State, state-selected land, other private land, and ANSCA land. In sum, the DSEIS illegally exceeds the scope of review it purported to take pursuant to the Beaudreau Declaration.	
23317	2	Proposed action	AIDEA’s poor business reputation in-state In 2021, the state of Alaska investigated AIDEA and the Alaska Energy Authority (AEA) after reports of a “hostile work environment.” These reports included “questionable procurement decisions, verbal abuse, harassment, and preferential loans and loan forgiveness being given to companies connected to AIDEA board members and staff.”5 In the case of the proposed Ambler Access Project specifically, AIDEA’s preferred route would cross about twelve miles of land owned by Doyon Ltd., the regional Native corporation, near Evansville. In a letter to AIDEA on October 17, 2023,6 Doyon states they will not allow access to corporate-owned lands after the current agreement with AIDEA expires in April 2024. Doyon’s president and CEO states that this is directly related to AIDEA’s failure to address their concerns, and “poor treatment” from AIDEA. The SEIS does not reflect the significant problems and uncertainty related to those lands, despite two of the Alternatives assuming the road would cross Doyon land.	The BLM is required to analyze the proposed project as requested by the applicant through submission of SF299: Application for Transportation, Utility Systems, Telecommunications and Facilities on Federal Lands and Property. The Alternative A and B routes were submitted by AIDEA for analysis under NEPA. As stated in Section 1.4, Purpose and Need, the BLM’s decision will be limited to whether to grant, grant with modifications, or deny the applicant’s ROW application to cross BLM-managed lands.
23408	1	Mammals	For example, a recent paper by Neitlich et al 2022 detailed impacts from a similar haul road to what is proposed here (the DeLong Mountain Transportation System linking to the Red Dog Mine in northwest Alaska), in the Cape Krusenstern National Monument. In this study, it was shown that emissions from fugitive dusts along the haul road impacted lichen, a key caribou food, up to 3 km on either side. Lichen species cover was reduced (the majority of lichen species were eliminated less than 100 m from the road), species richness declined, and lichens in this range were enriched in heavy metals Zinc, Lead, and Cadmium. Research has also shown that resource roads in similar environments can impact caribou migration by delaying timing and altering migration routes. Based on knowledge of the study species, the authors suggest that long term recovery would take many decades following mine closure. Has the impact to this key food species, including exposure to elevated levels of heavy metals, been adequately studied for the Western Arctic Caribou Herd within the draft SEIS?	Neitlich et al. (2022) was discussed in Section 3.3.4 of the Supplemental EIS. It should be noted that the level of heavy metals along the Red Dog Road (DMTS) were decreased through the use of better containment for loads in ore trucks along the road and mitigation measures for fugitive dust from ore trucks will be required for this project.
23408	2	Fish and aquatics	A recent review by Sergeant et al. 2022 showed that the risks and impacts of mining on salmonid species have been underestimated across watersheds of western North America. Salmon is a critical food species for communities in this region and across Alaska, and provides necessary nutrients to support ecosystems throughout watersheds. I am concerned that the proposed Ambler road does not meet criteria for ensuring the health of salmonid-bearing watersheds. I encourage a more thorough understanding of climate change risks and anticipated ecosystem changes and the connection of these risks and changes to watershed impacts from the Ambler Road in the draft SEIS.	Risk to fish and aquatic habitat from the construction of the proposed road are described in Section 3.3.2, Fish and Aquatics, including climate change (see Section 3.3.2, Fish and Aquatics - Mining, Access, and Other Indirect and Cumulative Impacts).
23434	1	Mitigation/monitoring	Throughout the DSEIS, discussions are very general with minimal road-specific information other than dozens of promises to do additional work, mitigation planning, and design AFTER the proposed road is approved by federal and state agencies. In other words, risk and uncertainty remain unacceptably high, especially for subsistence communities. The DSEIS contains many caveats regarding mitigation, using weak and non-committal terms, stating that they cannot control what all landowners will or will not do, and giving the distinct impression that over time mitigation commitments will not be fulfilled. AIDEA’s approach continues to be that approving entities should trust that they will, at some point post-approval, develop and implement responsible, acceptable mitigation measures. This approach continues to be unacceptable. How can decision makers support this project without knowing what mitigation measures will be implemented, if they will work, and what they will cost? AIDEA must be required to provide substantial mitigation planning information in the Final SEIS along with guarantees that measures will work and that they will implement them.	According to 40 CFR 1502.22, when an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an EIS and there is incomplete or unavailable information, the agency will make clear that such information is lacking. A number of topics are called out within chapter 3 of the Supplemental EIS where information is incomplete or unavailable. The BLM evaluated the data to determine if any missing information would be relevant to determining reasonably foreseeable significant adverse impacts or essential to making a reasoned choice among alternatives and, if it was, whether the overall costs of obtaining it would not be exorbitant (see Appendix R). 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 Supplemental 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. The BLM has evaluated the impacts in the Supplemental EIS based upon research methods and theoretical approaches that are accepted in the scientific community. Based on a review of the data that are available, summarized, and cited in the Supplemental EIS and in accompanying appendices, sufficient data exists to allow the BLM to make a reasoned choice among the alternatives. If the project moves forward, additional studies and information would be generated during permitting. Some potential mitigation measures identified in Appendix N have provisions for data collection and monitoring.
23434	2	Public access	p. 2-3: AIDEA has proposed that staffed gatehouses be in place at each end of the road. It is unclear how this will effectively control unauthorized access across the 211-mile long alignment through wilderness. Individuals can stop and trespass or hunt/fish anywhere along the 211-mile road. There will be unfettered opportunities to trespass using snowmobiles from off-	See response to letter 14098, comment 1.

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			road locations. As noted in the last paragraph, the BLM acknowledges that public use and trespass are reasonably foreseeable and the adverse impacts must be acknowledge and considered during decision making. AIDEA should consider funding enforcement and monitoring patrols. Another deterrent might be heavy fines or even confiscation of vehicles and equipment.	
23434	3	Subsistence	ES-6: Subsistence use would be altered by the presence of the road, both because a road would affect wildlife behavior and because it would affect their access to subsistence use areas. The road and mines could cause individual and community impacts related to a collection of traditional foods. The second sentence should be revised to replace could with would based upon the information provided throughout the DSEIS and the plethora of statements, testimony, news releases, letters, and traditional knowledge provided by tribal governments, tribal individuals, and tribal organizations. Indigenous people are the experts for making these determinations and the only ones that can render impact assessments on themselves and their subsistence resources and practices. Such determinations cannot be made by non-indigenous entities.	Text has been revised as suggested.
23434	4	Recreation and tourism	ES-6: Recreation, tourism, the environment, and what the DSEIS refers to as solitude would be adversely affected for all Alaskans and visitors when backpacking, rafting, fishing or hunting by floatplane or motor boat, or going to traditional fish camps from nearby communities. These impacts will be permanent, irreversible, and unable to be mitigated (eliminated or acceptably minimized). It is recommended that the last paragraph on this page be revised to state this reasonably foreseeable result should the road be constructed.	The BLM has added to this paragraph, "The construction and operation of the road would change the remote character and reputation of this region. Such impacts would endure for the temporal duration of the ROW for the Proposed Action, but impacts may be mitigated or even reversed in certain areas following the closure and reclamation of the road"
23434	5	Wetlands	p. 3-63, 3-69, 3-70: The wetlands analysis used a combination of mapping products to provide a regional context for wetlands the ACCS mapping greatly underestimates the true extent of wetlands in the area -- no fine scale wetland mapping is available for the Alternative C alignment. The previously identified fatal flaw problems continue to apply to the DSEIS, rendering it inadequate for determining an accurate baseline for aquatic resources, especially wetlands, for determining and evaluating effects, for mitigation planning, and for comparing the action alternatives to the no action alternative. - Aquatic resources, and especially wetlands, are the circulatory system of the region, evolved over millennia to produce and sustain the unique and valuable ecosystem that supports subsistence resources and practices, and the spiritual well-being and health of indigenous people. Although additional information has been added on aquatic resources and impacts, key issues have not been addressed and must be in the final SEIS. - Cobbling together mostly outdated data and information, compiled using different and incomparable methods at significantly different times, using varying terminologies, without a standard region-wide functional assessment method means that neither the BLM nor the USACE know what the impacts will be, the substantial functional losses, and whether those losses can or should be mitigated in some way. - Aquatic resource functions vary greatly across landscapes so it is not meaningful to simply use acres of wetlands/lakes and linear feet of stream to characterize impacts. - Additional attention should be paid to examining potential impacts to the Nutuvukti Fen, a unique wetland under management of the National Park Service (p. 3-70). - BLM should require AIDEA to produce a new analysis that covers the entire project using current professional standards in compliance with regulation requirements and professional practice so that in the final SEIS decisionmakers have the data and information they need to make legally defensible, science-based ROW and permit decisions.	Suitable high-resolution and field ground-truthed wetland mapping is available for Alternatives A and B whereas mapping for Alternative C is based on a desktop effort combining National Wetlands Inventory data and existing vegetation mapping. The available mapping, both desktop and high-resolution mapping, are sufficient to determine significant differences to impacts from Alternative C and Alternatives A and B. The high-resolution wetland mapping for Alternatives A and B is suitable to compare those similar alternatives. A similar assumption was made when considering functional losses where some information was available for portions of Alternatives A and B but was not available for Alternative C. Because Alternative C is much longer than both A and B, the assumption was that functional losses overall would be greater. Special attention was given to the Nutuvukti Fen to the extent that Alternative B was developed to avoid any upstream disturbance in that area.
23434	6	Hazardous waste	Appendix H, pp. H-14, H-15, H-16: The information on these pages raise a very serious suite of problems with mining projects like the four that comprise the Mining Scenario, and the potential dozen or so mines that may follow. Contamination of surface waters and the groundwater table with metals being mined, selenium and asbestos being released, and the harsh chemicals used to extract and process ores will essentially poison this ecoregion for centuries to come. Regardless of proposed handling and treatment options, for which scanty information is provided in the DSEIS, pollutants will enter the waters and environment, fish and wildlife species, and human beings, adversely affecting health, resilience, and sustainability. Tailings dam failures also have been a major issue and frequent occurrence world-wide. The Final SEIS must, at a minimum, include a more detailed discussion and analysis of these issues, with estimates of quantities of chemicals, lists of chemicals and their toxicity, and response and remediation plans for accidents, failures, and every-day occurrences that will contribute contaminants to the ecoregion. The potential costs to the State of Alaska to address these potential problems must be provided, and an analysis regarding whether it will be feasible to remove these contaminants once they enter the environment.	Because no detailed mining permit in the Ambler Mining District has been applied for, the kinds of details identified by the commenter are not known (the type and extent of hazardous substances). With respect to water quality concerns, as stated in Section 3.3.3 of Appendix H, a mine is required to obtain the necessary construction and operational permits and approvals. This includes water quality related permits from the ADEC. Prior to permit issuance for water quality related permits, such as an Alaska Pollution Discharge Elimination Permit, the mine is required to demonstrate that water treatment meets federal and state requirements prior to discharge and that spills and the potential for spills has been evaluated and contingency plans are in place. These standards are set by the federal and state governments with the intent to prevent harmful chemicals, metals, or sediments from degrading water quality and potentially harming wildlife. Treatment requirements and discharges as well as spill containment measures would be in compliance with these standards. Water quality is monitored throughout the life of the mine and as part of the long term monitoring. As described in Section 2.1.5 of Appendix H, long-term monitoring varies, but could extend 50 or more years beyond the life of the mine and could be perpetual. If monitoring identifies a potential issue during operation or as part of long term monitoring, additional measures would be evaluated and implemented as appropriate.
23434	7	Water resources	Appendix H, p.H-17: The first paragraph on this page touches upon an issue that requires substantial additional analysis. An important impact of mining operation is drawdown of the water table, using pumps, in order to access ore at depth. The drawdown of water results in a large cone of depression in the groundwater table, which can lower the water table well below natural stream or lake levels and substantially reduce flows into streams. Mine-induced alternations to the exchange patterns of surface and groundwater also has the potential to create additional pathways for dispersal of potential contaminants. Open-pit mining is, according to mining and scientific literature, one of the most destructive mining methods because it requires not only the removal of vegetation and topsoil, but installing pumps to drain water from the pit to enable access to deeper ore deposits. When a cone of depression is created groundwater flows may change direction, pollutants are dispersed, and surface waters and vegetation for miles around a pit can be starved of water, killing vegetation and fish and wildlife species. Although the BLM is considering mine projects as an indirect effect, and part of the cumulative effect analysis, the Final EIS should expand upon this effect, at least for the four mines in their Mining Scenario, to provide tribes,	The Supplemental EIS has incorporated available information for the four mines as discussed in Appendix H. See response to letter 17876, comment 1.

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			the public, and decision makers with science and engineering information on the serious potential effects that will be caused by cones of depression should the road be approved and constructed. The Final SEIS must also improve the discussion of the tailings dam and model failure scenarios in accordance with current professional practice.	
23434	8	Subsistence	L-1, L-5/6 & Vol 1, ES-6: In section 2, page L-1 the DSEIS states that there are 27 primary subsistence communities in what BLM has defined as the study area. In Vol 1, page ES-6 the document states the subsistence study area for the Ambler Road Supplemental EIS includes 66 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. Table 1 on pages L-5/6 lists 66 Caribou and Fish study communities, while the text in Vol 3, page L-161 in Section 6.4.1 again refers to 27 subsistence study communities, as does the last paragraph on pages L-186/188. The Final SEIS must clarify these apparent inconsistencies.	There are three categories of subsistence study communities: primary study communities (27), caribou (42) study communities, and fish (32) study communities. Altogether, because of overlap between these three categories, there are 66 subsistence study communities. Added text where appropriate to more clearly distinguish between the 3 types of subsistence study communities.
23434	9	Mitigation/monitoring	L-186: The third full paragraph provides a very short discussion about the impacts of mine closure and what the landscape, and water flow, may be like after the road is removed (if constructed). Throughout the DSEIS there are places where road closure is discussed, but not in sufficient detail to disclose the very likely permanently degraded and scarred landscape that will remain for Alaskans and indigenous communities to have to live with. BLM should do additional research on examples of road and mine closures in the State of Alaska and in similar climes to disclose specifics on how landscapes are permanently altered. Fish and wildlife species never fully recover. Vegetation mosaics never fully recover, and have significantly decreased variability and resilience. In other words, AIDEA, a foreign mining company, will make its profits, leave a decimated landscape, and in the long run cost Americans, Alaskans, and indigenous people much more in terms of health, well-being, and cultural sustainability. Vegetation cannot, as a matter of science, reestablish on altered post-mining landscapes with associated changes in groundwater levels, surface water flows, drainage patterns, and remanent road and pit barriers. These impacts cannot be fully mitigated or restored. Also, the recreation and tourism industries will be adversely affected.	Road closure and reclamation is discussed throughout the Supplemental EIS as a part of the overall proposed project. - A summary of AIDEA's stated plan for closure and reclamation is included in Chapter 2, Section 2.4.3, under the subheading Project Lifespan/Closure/Reclamation. - A reclamation plan, with multiple commitments, is included in Appendix N, Section 1.4, and reclamation has been addressed in other sections of Appendix N. - AIDEA provided an estimated cost for reclamation, and it is included in the cost rows at the bottom of Table 1 in Appendix C . - Multiple sections of Chapter 3 include text to disclose the likely impacts and benefits of road closure and reclamation, particularly where those impacts may differ from similar impacts during initial construction. The impacts of reclamation have been stated throughout Chapter 3; specifically, Section 3.3.1 discusses the often permanent impacts of road-building on vegetation and potential impacts from the reclamation process as do the other sections in the Supplemental EIS.
23434	10	Proposed action	p. 2-17: Reclamation of the industrial access road and support facilities would be undertaken at the end of the 50-year project. A detailed reclamation plan containing sufficient performance standards subject to land manager approval would be developed prior to issuance of the authorizations. This as a major problem, and a fatal flaw, due to the risk and uncertainty associated with relying on potentially unknown entities 50 years from now to properly and successfully implement the reclamation. The project-specific measures and costs are, at this point, completely unknown. It would not be a surprise if those responsible for reclamation don't claim that the work is cost prohibitive. Worse, the significant adverse impacts to indigenous people and natural and cultural resources will have occurred with no certainty whatsoever that the areas can be reclaimed. There is scant evidence in the large-scale mining industry that landscapes where mining roads and associated infrastructure, and mines, can be reclaimed. For the most part, once natural resources are destroyed and degraded, especially in Alaska, they are lost for many hundreds of years, or forever. Cultural resources and spiritual resources are non-renewable and irreplaceable. Further studies and analysis are required for inclusion in the Final SEIS to evaluate the reclamation issue, the lack of even a conceptual mitigation plan for public review, and an estimate of potential reclamation costs.	See responses to letter 22770, comment 15 and letter 29489, comment 92.
23434	12	Fish and aquatics	AIDEA only investigated 55 waterbody crossings in the first 55 miles of the proposed route, leaving 156 miles uninvestigated. Therefore, because of the expected adverse impacts and the lack of proper analysis of the entire 211-mile route, the true extent of impacts is still unknown. This is unacceptable when one considers the serious decline in salmon and other fish populations and their body sizes, all subsistence resources people depend upon to survive. Worse, AIDEA proposes to identify measures to minimize, not eliminate, impacts to fish and aquatic species post-approval and in the design phase. Hence, it will be too late to save fish, and too late for BLM and USACE to benefit from public comments on mitigation proposals which mostly likely will be ineffective as demonstrated at other mining projects.	Should an action alternative be approved in the BLM's ROD, additional surveys and studies would be conducted as needed in support of other local, state, and federal permits. As described in Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA - Biological Resources, fish surveys would be conducted to assess fish presence in rivers in streams for all life history stages along the selected alignment. The scope of these surveys would be coordinated with ADF&G, USFWS, and the National Marine Fisheries Service. The Supplemental EIS includes a description of design features and mitigation measures that are intended to reduce impacts to waterways, fish, and aquatic habitat from road construction and the installation of bridges and culverts (see Draft Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA - Physical Environment, and Section 3.2.5, Water Resources - Impacts Common to All Action Alternatives).
23434	13	Cumulative and indirect effects analysis	The BLM has failed to adequately address reasonably foreseeable mine development as indirect and cumulative impacts of the proposed road as the anticipated development is based on limited available information about the District and on development of other similar mineral deposits. The BLM should be required to obtain further information to have a better understanding of the mine activity impacts on the road and surrounding areas.	The Supplemental EIS analysis of cumulative and indirect effects associated with the reasonably foreseeable mining development scenario is based on the best data available. Relevant information from the updated mining feasibility studies and technical reports for Arctic, Bornite, and Sun have been incorporated into Appendix H. Because mining activity in the Ambler Mining District is reasonably foreseeable (see response to letter 29489, comment 57), the BLM is required to make a good faith effort to identify the cumulative and indirect effects of that activity. Because no formal proposal for mining has been submitted to any state or federal agency, the BLM made reasonable assumptions about future mining-related activities based on current information about the deposits and typical scenarios for mining development in Alaska. To avoid underestimating effects, the hypothetical scenario represents a high-production rate and favorable market prices. Additional details regarding future

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				mine developments and their resulting impacts on specific resources would be discussed as part of future NEPA analyses and permitting for proposed mines.
23445	1	Subsistence	Last fall as I was on a plane flying out to Huslia, downriver from where the proposed road would be put in, there were two huge caravanboats heading up the river from the Yukon. I don't know where they were going but it told me that there were hunters that travel far into the areas less traveled literally eating away at the villages food source. If a road were put in it would be easy access for many who are not interested in keeping the state in a healthy balance. A balance that would ensure that those less fortunate would have enough food to survive well into the future.	The potential impacts of road increasing access to outside hunters is addressed in Section 3.4.7.
23451	1	Fish and aquatics	Additionally, Alaska Industrial Development Authority (AIDEA), BLM and the US Army Corps of Engineers (USACE) must do extensive additional fieldwork, study, and analysis to adequately understand the ecological baseline for fish and current stressors to begin to understand the effects of the proposed Ambler Industrial Access Road, and follow-on open pit mines.	Should an action alternative be approved in the BLM's ROD, additional surveys and studies would be conducted as needed in support of other local, state, and federal permits. As described in Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA - Biological Resources, fish surveys would be conducted to assess fish presence in rivers in streams for all life history stages along the selected alignment. The scope of these surveys would be coordinated with ADF&G, USFWS, and the National Marine Fisheries Service.
23451	2	Decision process - general	The ecological, scientific, and engineering information currently described in the DSEIS, and administrative record is insufficient for the BLM to make a science-based, legally defensible decision regarding the requested right-of-way, and similarly, the USACE does not have enough information to establish a credible baseline condition, identify the least environmentally damaging practical alternative, and defend the final permit decisions made in 2020.	See response to letter 22855, comment 1.
23451	3	Cumulative and indirect effects analysis	The BLM has failed to adequately address reasonably foreseeable mine development as indirect and cumulative impacts of the proposed road as the anticipated development is based on limited available information about the District and on development of other similar mineral deposits. The BLM should be required to obtain further information to have a better understanding of the mine activity impacts on the road and surrounding areas. Habitat loss and alteration due to the reasonably foreseeable development of the District could equal or exceed that from the road itself. The likely road networks could increase the magnitude of impacts on caribou, and mining activities could result in a greater intensity of disturbance and displacement. Climate change, would act synergistically along with other cumulative actions, and may increase wildfires, alter predator-prey dynamics, change browse availability and distribution, or increase the prevalence of extreme winter weather events	See response to letter 23434, comment 13 regarding the adequacy of the reasonably foreseeable mining development scenario and associated impact analysis. See response to letter 32724, comment 169 regarding the cumulative effects of climate change.
23451	5	Geology and minerals	The outflow of acidic water from the oxidization of volcanogenic massive sulfide deposits is highly likely on all action alternatives and if the road is allowed to proceed will have an adverse effect on vegetation, soil organisms, water quality, and aquatic life;	Section 3.2.1 has been revised to clearly explain that ARD and ML are naturally occurring processes in the affected environment. Section 3.2.2 has been revised to explain potential impact could include increased ARD and ML because of the project exposing bedrock containing iron sulfide minerals (e.g., excavation/blasting at some material sites) to air and water. Mitigation measures to avoid or reduce impact on resources including vegetation, soil, water quality, and aquatic life are presented in Appendix N.
23451	6	Fish and aquatics	Researchers have documented more than 20 fish species along the propose routes which would likely be impacted which include: Pacific salmon, sheefish, broad and humpback whitefish, Arctic grayling, northern pike, and burbot, the Alaska blackfish. The Henshaw Creek stands out as an especially important producer of chum salmon in the Koyukuk River drainage, which is the single largest producer of summer chum salmon in the Yukon River basin. The South Fork Koyukuk River provides habitat for a considerable number of Chinook and chum salmon	The importance of Henshaw Creek and the South Fork Koyukuk River to Pacific salmon is described in Supplemental EIS Section 3.3.2, Fish and Aquatics - Affected Environment - Pacific Salmon).
23451	7	Geology and minerals	The proposed project crosses state lands, Native corporation lands and federal lands which include the southern foothills of the Brooks Range and run through the Arctic Mountains province, which consists of glacier carved mountains and hills of folded and faulted sedimentary rocks and their metamorphic equivalents. Continuous permafrost underlies this region with soils are highly susceptible to erosion or other soil movements caused by disturbances to ground-covering vegetation and subsequent thawing of the permafrost and likely measurable concentrations of undisturbed asbestos. The road and its associated facilities would transect areas with existing geological hazards as well as unfavorable soil and subsurface conditions, which road construction and use will likely exacerbate. These include corrosive subsurface minerals; liquefiable soils; and organic-rich, ice-rich, poorly drained, or thaw-sensitive permafrost soils	Comment noted. This subject matter is addressed in the Supplemental EIS.
23508	1	Remand of Final EIS	This process went through years of rigorous studies conducted under two separate Federal administrations starting under the Obama administration, the BLM and NPS compiled a robust data set that thoroughly covers all relevant requirements of the National Environmental Policy Act (NEPA) and the Alaska National Interest Lands Conservation Act (ANILCA particularly section 20I(4)(b)) in the form of the Final EIS. This lengthy and thorough process made it clear that the Alternative A route for AMDIAP was the best alternative. In 2020, the BLM, National Park Service (NPS) and the U.S. Army Corps of Engineers (USACE) selected Alternative A as the preferred route through a joint record of decision (JROD) and those decisions still stand today. The alternative selected in the 2020 JROD was not subject to judicial review and was determined by USACE to be the alternative with the least environmental impact. Therefore, the inclusion of new additional alternatives is outside the BLMs scope of authority for the DSEIS. The submission of an entirely new DSEIS is also outside the BLMs scope of authority the document should only have covered the issues that were raised as part of the remand notice.	See response to letter 31764, comment 1.
23508	2	Decision process - general	This DSEIS is chock-full of errors. It has moved sections around from the FEIS and includes several references to other sections that are inaccurate and non-existent. Numerous sections from the FESI were removed and not flagged as to what was removed this is unlawful and dishonest! The new additions in yellow highlighted boxes reference sections that don't exist (i.e., Section 2.5 is referenced many times and does not exist), and in general is a poorly written document.	References to Section 2.5 have been corrected. The Supplemental EIS was prepared in accordance with BLM policies and procedures as well as the CEQ implementing regulations for NEPA (40 CFR 1500-1508).

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23508	3	Remand of Final EIS	The supplemental analysis should only address deficiencies identified during the litigation process. This broadened scope is inconsistent with the remand court ruling and ANILCA. BLMs authorities are limited to the Project components that occur on BLM-managed public lands. This new DSEIS goes beyond the scope of what the court ordered. When the federal agencies filed their motion for remand, the court advocated for a relatively narrow, targeted and timely remand process. The BLM must recognize that this process be expedited as dictated by the court ruling and should be consistent with ANILCA. As previously outlined, many federal agencies are intimately familiar with the environmental analysis for the Project. They have spent years permitting the Project, during which time they offered multiple opportunities for public comment. The federal agencies produced an administrative record that consists of almost 200,000 pages submitted to the court. The federal agencies needlessly extended the timeframe for the remand process by including a scoping period, and they are significantly expanding the scope of the remand by significantly expanding the scope of the supplemental EIS and by including alternatives that have already been analyzed. This is inappropriate and contrary to the law. This DSEIS needs to be limited to the deficiencies identified by the Declaration of Deputy Secretary of the Interior ECF No. 1130-1 of Feb 22, 2022.	See response to letter 31764, comment 1.
23508	4	Remand of Final EIS	The voluntary remand that DOI submitted identified two issues to be addressed: subsistence uses in ANILCA and tribal consultation under the National Historic Preservation Act. However, the DSEIS included expanded and additional analyses on issues beyond the remand, including a new phasing option for the road. The scope of the DSEIS should be constrained to the two issues identified in the remand.	See response to letter 31764, comment 1.
23508	5	Remand of Final EIS	The Alternatives sections including the Phased Approach option need to be removed as this is outside the scope of the remand notice.	See response to letter 58, comment 3.
23508	6	Remand of Final EIS	BLM includes new additional alternatives in the DSEIS without sufficient explanation. In 2020, the BLM, National Park Service (NPS) and the U.S. Army Corps of Engineers (USACE) selected Alternative A as the preferred route and those decisions still stand today. The alternative selected in the 2020 JROD was not subject to judicial review and was determined by USACE to be the alternative with the least environmental impact. The inclusion of new additional alternatives is outside the BLMs scope of authority for the DSEIS.	See response to letter 58, comment 3.
23508	8	Public access	The DSEIS supposes that trespass and authorized use by the public is inevitable. While it is important to consider the possibility of trespass it should be considered that the Proponent will implement all possible measures to prevent it. Merely concluding that trespass will happen without including objective evaluation of the reality of the environment and mitigation possibilities is unfair to everyone. This can be done by reviewing the track record of Red Dog DMTS and the Pogo Mine road, which studies were not included in the DSEIS, and also by working with the local communities in the region.	Supplemental EIS Appendix H, Section 2.2, Road Access Scenarios, discusses commercial access for communities, non-industrial access, and trespass as reasonably foreseeable, and provides the basis for the indirect and cumulative impact analysis of these uses under NEPA presented in Chapter 3.
23508	9	Public access	The Ambler Road would be a PRIVATE ROAD with no public access provided to ensure that no hunting or fishing would take place along the road corridor. AIDEA has committed to maintaining guard stations at both ends of the road to ensure that no public access is allowed. Modern drone and surveillance equipment could be used to monitor the situation along the entire road route. All contractors would sign legally binding agreements to ensure that no contractors stop to hunt or fish while constructing or operating equipment along the road corridor. As stated in the Right-of-Way request by AIDEA, this will be a Private Road. The only way for it to become a public road would be to go through a new EIS process that would fully evaluate the potential impacts of it becoming a public road including impacts to fish and wildlife, caribou migration and subsistence resources. Furthermore, the Bond Holders who finance the Road would have to be compensated and each of the Right-of-Way agreement with landowners including the State, Federal and private owners would have to be modified to accommodate public access. It would be a major, time-consuming and expensive undertaking.	See response to letter 23508, comment 8
23508	10a	Public access	1.5.13 Mammals pg C-13: All references to Dalton Highway need to be removed since Dalton is public and the AAP is not going to be a public road. Need more statistics and dialogue on the Red Dog road and the measures in place to protect the caribou i.e., communication, shut down procedures when caribou are within a certain radius, etc. ALL REFERENCES TO AMBLER ROAD BEING MAY BECOME OPEN TO PUBLIC is inaccurate and false and needs to be removed as pointed out that is not what is being permitted in this DSEIS document.	See response to letter 23508, comment 8.
23508	10b	Mammals	What traditional knowledge was put into this report where is the information from the locals? There were lower herd numbers in the 70s as shown on the Western Arctic Caribou Herd Working Group website and we have heard from locals that the caribou populations are generally fluctuating depending on where they decide the most food is present for the winter. Statements like The presence of a road and road noise could affect caribou migration patterns is opinion with no factual data to back it up and needs to be removed.	Section 3.3.4 of the Supplemental EIS describes the decline of the WAH to approximately 75,000 caribou in 1976. There are multiple examples of roads influencing caribou movements including Wilson et al. (2016) for the Red Dog Road (DMTS).
23508	10c	Subsistence	Furthermore, this added language states that Alternative C would affect more moose habitat than A/B and I know for a fact that more people rely on moose meat for subsistence than caribou particularly the villages in the area of Alternative C. For that reason alone, Alt C should be deemed the most impactful from a subsistence perspective.	These differences between the alternatives are discussed in the Supplemental EIS.
23508	11	Fish and aquatics	1.5.11 Fish and Aquatics pg C-11: The following statement needs to be added to the fish and aquatics section as it is pertinent to the issues that were identified during the remand process, and is important for the route selection. Alternative A is the most direct route and therefore has the smallest Project footprint in wildlife habitat, wetlands, and fish habitat and is also the most economically feasible to construct, operate, maintain, and eventually reclaim. The overall Project footprint is less for Alternative A than Alternative B, and significantly less than Alternative C. Of particular relevance to subsistence impacts, Alternative A places a river crossing on the Reed River 7 miles farther from known sheefish spawning habitat than Alternative B, which means less potential for impacts to this important subsistence resource.	Supplemental EIS Appendix C, Chapter 2 Alternatives Tables and Supplemental Information, Section 1.5.11, Fish and Aquatics, summarizes the anticipated impacts the alternatives would have on fish and aquatics; other sections in this appendix summarize the impacts to other resources (e.g., wildlife habitat, wetlands, subsistence). Section 1.5.11 includes metrics comparing the action alternatives.

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23508	12	Subsistence	Alternative A also places the road outside of Amblers vegetation subsistence harvest area, while Alternative B overlaps it. Alternative A requires fewer disturbed acres (4,524 acres, of which 1,022 acres are on DOI-managed land) than Alternative B (5,138 acres, of which 1,033 are on DOI-managed land) and Alternative C (8,210 acres). Alternative A also avoids placing an airstrip, construction camp, and maintenance facility within GAAR, while Alternative B includes these features within GAAR. Direct quote on page 9 from Section 6.2 Bureau of Land Managements Rationale for Adopting Alternative A Joint Record of Decision 2020. By BLMs own language, and in particular to subsistence impacts, Alternative A is clearly the best route for having overall significantly lower environmental and subsistence impacts. This language needs to be included in the DSEIS.	See response to letter 29272, comment 3c.
23508	13	ANILCA 810 analysis	The DSEIS improperly expands the ANILCA Section 810 analysis from 27 to 66 communities. This represents a gross overreach of agency authority. The region impacted does not contain 66 communities. There is also no reasoning why the increase from 27 to 66 communities this is outside the scope of the remand for BLM to increase to communities that will not be impacted by the road. Some of the new communities are hundreds of miles away from the road area being proposed. BLM assumes without scientific evaluation that subsistence uses for these communities will be significantly restricted. This is inappropriate and not based in science or factual evidence. This is opinion and needs to be removed from the DSEIS. The focus of the DSEIS should remain on the 10 villages closest to the road. Further, BLM should take into consideration that decades of successful coexistence of other private industrial roads in Alaska like the Delong Mountain Transportation System (DMTS) at Red Dog Mine and the road to Pogo Mine.	See response to letter 23196, comment 6.
23508	14	Mammals	The DSEIS cites data about caribou population that is not actually definitive and ignores that post-DMTS construction and operation, the Western Arctic Herd population actually increased in that region.	It is true that the WAH increased in size after development of the Red Dog Road (DMTS) but the area around the road corridor is only a small portion of the herd range that is primarily used during fall migration and is only used by a fraction of the herd during migration in most years so the number of caribou potentially impacted by the road in a given year is generally a small portion of the herd.
23508	15	Subsistence	The DSEIS fails to acknowledge current successful structures of Subsistence Advisory Committees, particularly at the Red Dog Mine, in which communities have management authority in issues impacting subsistence uses. This is irresponsible and must be taken into consideration moving forward.	In several places, Section 3.4.7 of the Supplemental EIS discusses the Ambler Access Road SAC and its role in reducing potential impacts to subsistence.
23508	16	Fish and aquatics	In no place does the DSEIS acknowledge that Alaska has a history of roads coexisting with the environment, wildlife, and human health. If the agency is going to amplify concerns such as suggesting the road project would damage fish habitat, then it must also outline permitting requirements and mitigation measures required by the Alaska Department of Fish and Game that has successfully regulated projects near fish habitat for decades. This is an oversight by not including the track records for projects across the State in the DSEIS.	The purpose of an EIS's analyses is to identify potential project impacts, including ways to minimize impacts. Supplemental EIS Section 3.3.2, Fish and Aquatics, includes descriptions of ADF&G's involvement as a consulting and permitting agency. Note: The Supplemental EIS includes acknowledgement of ADF&G's Fish Passage Inventory Database, which has identified several culverts that limit or preclude fish passage along the Dalton Highway.
23508	17	Water resources	The DSEIS infers the road will sever hydrology in some areas and ignores that the applicant has proposed a significant number of bridges and culverts to maintain connectivity. The objective balance of both must be considered.	The Supplemental EIS states that constructing a new road across undeveloped terrain has potential to sever or otherwise impact hydrologic connectivity. Section 2.4.4 of the Supplemental EIS discusses multiple design features proposed by AIDEA to mitigate potential impacts on hydrologic connectivity (e.g., "Project design features that mitigate impacts to permafrost and hydrology would be incorporated based on geologic and hydrologic studies to freely convey surface water across the road surface and minimize impacts on groundwater flows." in Section 2.4.4). The Environmental Consequences portion of Section 3.2.5 further discusses mitigation to minimize impacts on hydrology (e.g., "AIDEA has proposed design features meant to retain cross drainage, so that the gravel road embankment would not unduly affect drainage patterns..." in Section 3.2.5). Potential mitigation measures in Sections 3.2.5 and 3.5 of Appendix N further list measures that would mitigate impacts on hydrologic connectivity.
23508	18	Socioeconomics and communities	Villages in the Kobuk and Koyukuk regions that choose to connect to the Ambler Road could have opportunity to bring in commercial goods, fuel and equipment at significantly lower costs than currently available. In addition, they could decide to access the Fiber Optic high speed internet for tele-medicine and tele-education. These important improvements would only be made possible if the Ambler Road is approved. The associated fiber optic line should be approved, and access and socioeconomic benefits of greater connectivity to schools, health clinics, and local villages and communities throughout the region should be a priority. These points are not mentioned anywhere.	Appendix H discusses the potential effects of improved community access, including potential fiber-optic development.
23508	19	Socioeconomics and communities	The DSEIS ignores concerns about production of minerals and oil and gas in this region to begin winding down. Should this happen, jobs and economic benefits will decrease, elevating the importance of replicating the successes of projects like Red Dog. According to the Northwest Arctic Boroughs (NWAB) Comprehensive Plan Update for 2030, 83% of the boroughs operating funds came from Red Dog in 2020. In April 2023, the governing bodies of the NAWB and North Slope Borough (NSB) each passed joint resolutions in April of 2023 in support of the AAP and development of the Ambler Mining District in recognition of the jobs, revenue, and good stewards mining companies can be.	Appendix H, Table 3-1, discusses the potential indirect and cumulative effects of reasonably foreseeable future actions (which includes Red Dog Mine closure) in the region on the local economies and communities.
23622	2	Alternatives	here are not critical minerals in Ambler at least not to the degree they say. If there were they would be willing to fly them out. How come more alternatives were not explored? If this is about one mine why cant there be a rail to a nearby port? Drones would make it possible to ship ore out of the Ambler area.	The combined air/road alternative concept was considered but determined not to meet the purpose and need for "surface transportation access in support of mining exploration and development" as described in ANILCA Section 201(4)(b), and was therefore removed from further consideration in an action alternative. Appendix G Section 6.3 explains the BLM's rationale for not analyzing this alternative concept. Various rail routes were considered in Appendix G Section 6.4 but were eliminated from detailed analysis due to practicality.

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23638	1	Hazardous waste	3.The materials used to “pave” the roads are very unstable and result in substantial runoff, percolation, and unstable surfaces - e.g. the material can turn into a sticky, concrete like, muddy material that can be a foot deep or more and adheres to everything and water runs off and leaches from it to lower areas (below the roadbed), the material also slowly sluffs off to ground level 4. When roads are maintained, these materials get graded off and slump to the sides, adding to the accumulation of polluted land and water	The road would be designed to meet design standards for heavy industrial use roads.
23681	1	Subsistence	I also have an intimate understanding of how much people in that region depend on caribou. Based on this experience and the publications from groups like the Caribou Working Group based out of Kotzebue. It is well established that the road at Red Dog Mine has created significant alteration of caribou migrations and now with the population dropping to 150,000 animals (from over 500,000, 20 years ago). With evidence that east/west roads interfere with migration of the western arctic herd and the already highly stressed subsistence community, the construction, use and maintenance of the ill-conceived Ambler Road could prove disastrous for our community. I have talked with local community leaders and hunters at length about this and they are unanimous in their concerns about this.	Section 3.4.7 of the Supplemental EIS discusses the potential impacts of the road on caribou migration, including data regarding impacts of the Red Dog Mine on caribou movement.
23769	1	Transportation and access	There has been no review of the AIDEA plan from a public safety or transportation safety perspective. Transportation safety is an environmental issue and must be considered before any EIS is approved. How many more crashes, deaths, injuries and property damages will this new road cause to the road systems it is a part of? I believe the access road should be taken to tidewater, not to public highways used by individuals, businesses, school buses, cyclists and recreationalists. Keep industrial ore hauling off public highways, particularly two-laned rural roads with many driveways, school bus stops and other hazards on them, like the Elliott and Steese Highways have. If you have not considered the impacts of additional and different traffic on the roads that will have to service the proposed Ambler Road, then the EIS will be deficient. If you have not considered alternatives, mitigation factors and all the impacts the proposed Ambler Road will cause for the people and environment around the roads that will have to service the proposed Ambler Road, then the EIS will be deficient. See “Integrating Road Safety into NEPA Analysis: A Practitioner's Primer,” June 2011, by US Dept. of Transportation Federal Highway Administration, attached.	Potential impacts from haul traffic on the public road system, including public safety and transportation safety, are discussed under <i>Mining, Access, and Other Indirect and Cumulative Impacts</i> within Section 3.4.2 based on the best available data currently available for potential mine development within the project area; additional detail on traffic volumes and impacts if discussed in Appendix H under <i>Transportation</i> . Rail and vessel transport is also addressed in Appendix H. Any proposed on-the-ground mining and development activities separate from the Ambler Road project will require additional NEPA analysis with additional detail on transportation impacts, including indirect and cumulative impacts. The State of Alaska Department of Transportation and Public Facilities (DOT&PF) is responsible for Alaska's public highway system; stated purposes of the DOT&PF are to “provide for the safe and efficient movement of people and goods” and “open opportunities for exploration and development of Alaska's resources.” DOT&PF is responsible for making sure the public highway system and maintained and upgraded to accommodate projected traffic volumes and road uses and would have multiple years to evaluate and prepare for potential traffic impacts resulting from mining development within the project area. As stated in Appendix H in Section 2.3.3, DOT&PF, which has invested \$175 million to construction projects planned along the Dalton Highway corridor over the next 5 years. Mining companies will be responsible for determining whether available rail, port, and vessel facilities adequately support proposed development and will ultimately decide how ore and other mining products are transported to market.
23784	1	Public access	There needs to be a realistic impact analysis of an alternative based on eventual public access and an indefinite or permanent life of the road. Final SEIS should analyze that.	See response to letter 23508, comment 8.
23784	3	Socioeconomics and communities	Due to unavoidable direct, indirect, cumulative, and RFA impacts to fish, caribou and access, the levels of self-sufficiency of villages would decrease in the project area, and other impacted villages; the social and economic costs could be vastly greater than anticipated. This should be further analyzed.	The Supplemental EIS is focused on describing the potential impacts (both adverse and beneficial) of the proposed project on the physical environment (Section 3.2), biological resources (Section 3.3), and social systems including visual resources, subsistence resources, cultural resources, and socioeconomics (Section 3.4). Although a comprehensive cost-benefit analysis has not been developed, the entire Supplemental EIS is an analysis of the impacts and benefits to physical, biological, and social resources described both quantitatively and qualitatively. The BLM decision maker will weigh both the beneficial and adverse impacts in making a decision.
23784	4	Alternatives	The Final EIS must consider an action alternative of the Ambler Road eventually opening to the public and having permanence. It is unrealistic to believe that once built, there would not be immense pressure for it to be opened to the public, as has occurred with the Dalton Highway, and Red Dog road.	Supplemental EIS Section 2.4.3 Features Common to All Action Alternatives-Operations describes the actions proposed by AIDEA to restrict access to the road. Appendix H Section 2.2 Road Access Scenarios discusses commercial access for communities, non-industrial access, and trespass. Should the project be approved, the ROW issued by the BLM would be for industrial use only.
23784	5	Proposed action	Similarly, AIDEA and BLM proposed and analyzed a road that lasts only 50 years, and then is reclaimed: “AIDEA proposes to reclaim the road and anticipates that would occur at the end of the 50-year project, or when mineral exploration and development activities in the District conclude,” (p. 2-12): and, “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” (p.2-13). If indeed the road is to be reclaimed, AIDEA would make a solid commitment of reclamation costs at the outset. It is not clear from the DSEIS how strongly the issue of road permanence arose during scoping. I would be surprised if it did not come up frequently. Once the mining industry gets established in the Ambler District, and along the other 200 miles of the Ambler Road, plus along the entire Dalton Highway, it is undeniable there will be pressure and demonstrated need to keep the Ambler Road open beyond 50 years. One only needs to look at the Fort Knox mine near Fairbanks, operating for 20+ years from ~1993 to 2023. Now that the Fort Knox deposit is ending, the company is mining nearby deposits to the east (Gil, Sourdough), and distant deposits near Tetlin (Manh Choh). Indeed, the company is touting its long-term strategy to use public highways to keep the Fort Knox processing mill operating for decades longer (North of 60 Mining News, Jan 27, 2022). And, the Red Dog mine is in the process of expanding to satellite deposits (Anchorage Daily News June 16, 2022). Road permanence is a reality BLM and AIDEA must consider in the final SEIS.	See response to letter 22595, comments 12 and 13.
23784	7	Fish and aquatics	Significant impacts to water quality and contaminant effects on fish (e.g. studies by Limpinsel et al (2018), Woody et al. (2020), and Sergeant et al. 2022) from mines are usually unavoidable and often require perpetual treatment. Moreover, the	The potential development of mining prospects in the Ambler Mining District and their impacts on fish and aquatic habitat are described in Supplemental EIS Section 3.3.2, Fish and Aquatics -

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			established track record of large mines in the US (Maest et al. 2006), and specifically in Alaska (Earthworks 2020) is that predictions made in the environmental review process grossly underestimated the level of contamination that actually occurred once mine operations ensue. It is likely these patterns of water contamination and fish impacts would be expanded once the Ambler Road is opened up to all miners, large and small. Not featured in the DSEIS is the probability of increased small placer gold operations adjacent to the Ambler Road. I personally documented the negative environmental effects of placer mining operations in the upper Koyukuk and Chena watersheds, where BLM and AK DNR have experienced challenges conducting sufficient monitoring and regulating.	Mining, Access, and Other Cumulative Impacts, including the potential need to treat contaminated mine water in perpetuity. Supplemental EIS Section 3.2.5, Water Resources, provides additional discussion on impacts from placer mining as well as long-term water treatment from mining operations.
23784	8	Mammals	Caribou are probably the most important large mammal for subsistence and sport hunters as well as recreational wilderness travelers. I agree with the DSEIS conclusion that “habitat loss and alteration due to the reasonably foreseeable development of the Ambler District could equal or exceed that from the road itself...and exponentially increase fragmentation of migratory and winter range” (p.3-147); and, “It is much more likely that a system of roads would jeopardize long-distance migration than any single road” (p.3-148). Adding credence to this conclusion is Canada’s experience with the Bathurst Caribou Herd in the central arctic of NWT and Nunavut. While I was pleased the DSEIS considered several caribou/disturbance literature citations from Alaska and Canada, one really important paper was missed. Parlee et al. (2018) reported on: “the growing disturbance of caribou habitat by resource development, particularly in the Bathurst range where populations have plummeted over the last two decades from an estimated high of 475,000 to lower than 20,000 animals. It is the only herd of all the barren-ground caribou herds in Canada that has fallen so steeply and to such lows; when compared to other barren-ground herd ranges, the Bathurst caribou range has also experienced the greatest amount of disturbance from mining during this last cycle of decline.” This study provides convincing evidence to me that the Ambler Road, and associated development of several mines, would have a huge impact on caribou. It has already happened in Canada in the center of a major caribou herd’s range that unfortunately overlapped with the development of several large diamond mines over the last two decades. A future with a drastic decline of Western Arctic Caribou in the midst of a developed Ambler mineral belt is something BLM and the State of Alaska should not let happen.	Citation of Parlee et al. 2018 was added. Other Canadian herds, notably the George River Herd, have also undergone dramatic population declines.
23784	9	Mammals	Moose. The upper Koyukuk and upper Kobuk watersheds are low density moose populations. Hunting regulations are already restrictive in those areas. It is my professional judgement, having piloted thousands of hours of aerial moose surveys in both areas over the decades, that increasing development pressures combined with increasing hunting pressure will necessitate even stricter regulations to protect that low density population. The result would be poorer hunting success for all, but most importantly, reductions in subsistence harvest opportunity and success that would be nearly impossible to mitigate.	Declines in the moose population would lead to fewer opportunities for harvest but the change in the moose population is difficult to predict. Moose can tolerate some levels of human activity and clearing of ROWs can create more early successional preferred moose browse. The potential for increased hunting pressure would depend on restrictions on road access and harvest regulations.
23784	10	Birds	Birds. The DSEIS listed a total of 69 bird species in the project area for which there are various biodiversity concerns and/or population concern watchlists (Table 17, pp. E-15 to E-18). Most of these watchlist species utilize floodplain, riparian, and wetland habitats, so impacts to these areas should be avoided. The DSEIS acknowledges the North American avifauna has lost almost 30% of its abundance since 1970, citing Rosenberg et al. (2019). The DSEIS estimated that 23-36 mi2 of habitat will be impacted just from the road construction. The DSEIS should estimate acreage of the additional mining development that is reasonably foreseeable. The footprints of the Fort Knox, Red Dog, and proposed Donlin mines could be used to make those estimates. I would guess it would at least double the 23-36 mi2 loss of habitat just from the road. Because of this large habitat loss BLM should require AIDEA to budget for and undertake compensatory mitigation. There are many square miles of degraded placer-mined areas located in riparian and floodplain habitats on BLM and DNR lands throughout interior Alaska. AIDEA plans to assess road-usage tolls paid for by profits from the Ambler District mines. AIDEA should also plan on paying for compensatory mitigation to account for the 23-36 mi2 of habitat lost by restoring an equal area of these degraded mining lands.	Ongoing mineral exploration in support of mining claims east of the District (e.g., for the Roosevelt, Malamute, and Helpmejack projects) has been more explicitly called out within the list of other reasonably foreseeable actions in Appendix H, Section 2.3.3. Appendix H maps have also been updated to show the most current DNR State Mining Claim data. The ongoing effects of these exploration activities are analyzed within the context of cumulative and indirect effects throughout Chapter 3. Per the BLM’s NEPA Handbook (H1790-1), reasonably foreseeable actions are those for which there are existing decisions, funding, formal proposals, or which are highly probable, based on known opportunities or trends. Mining prospects that exist outside of the District, such as the Roosevelt, Malamute, and Helpmejack mines, are in the early stages of exploration with little to no details available about their mineral resource potential and their likelihood or timeframe for development. Appendix H acknowledges that future potential development of these mines could be facilitated by the proposed road; however, without additional information these mines do not yet meet the criteria for being reasonably foreseeable actions. In comparison, the 4 major mine projects that are analyzed in the reasonably foreseeable mining development scenario are further along in exploration, have mineral resource estimates available, and with the exception of Smucker, have advanced to the stage of a feasibility study (Arctic) or technical report (Sun and Bornite). For these reasons, the BLM considers the development of these 4 major mines reasonably foreseeable. See also responses to letter 23145, comment 3 and 26152, comment 1.
23784	11	Subsistence	I appreciate that Appendix L included some qualitative subsistence IK (mainly gleaned from village scoping meetings, draft review meetings and subsistence council meetings) and from the numerous harvester-interview-based projects that were cited (e.g. Table 2, pp. L-11 to L-21). The DSEIS only scratched the surface to utilize a fraction of the historic subsistence IK available. The DSEIS touched on community quality of life (p 3-186, 3-195, 3-199) and health/well-being impacts (p. 3-189, p. 3-228). I suggest the final SEIS must examine in greater detail the qualitative community health and well-being benefits of subsistence described by these excellent studies. Also, an additional IK series available for the Koyukon Region was not utilized in the DSEIS (Ravens Story, 1995-2004, including 31 elder interviews from 8 villages). The community health and well-being impacts from the Ambler Road and related actions were properly recognized in the DSEIS (p.3-199), but I believe they were underestimated. No attempt was made to estimate social and economic costs of diminished subsistence. If this project is approved, it is my professional judgement the levels of self-sufficiency would decrease in the project area, and other impacted villages, and the social and economic costs could be vastly greater than anticipated.	Reviewed Raven’s Story interviews and incorporated Indigenous Knowledge as relevant to the Supplemental EIS. Section 3.4.7, Sociocultural Impacts, address social and economic impacts of reduced subsistence, as does the Cumulative Impacts section. Added additional discussion regarding social and economic impacts of the proposed road.
23784	12	Socioeconomics and communities	The DSEIS did not include an accurate cost-benefit analysis. Tables 16 to 20 (p. F-14-16) provided estimates of employment, wages/income, state revenue, local revenue, and road usage fees, etc. Completely lacking from this analysis, and needing to be considered are: -Amortized reclamation and cleanup costs for the road and the four reasonably foreseeable mines that could be developed. What is the value of the anticipated reclamation bonds for the road and RFA’s? -Costs to the public of	See response to letter 23784, comment 3.

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			perpetual treatment of expected acid mine drainage and heavy metal contaminant treatment if one or more of the mines closes prematurely and goes bankrupt (as has happened multiple times recently in adjacent Yukon Territory, Canada) - Reimbursable cost to the state and feds for additional fish and wildlife law enforcement patrols, biological surveys, and adjustment to regulations to deal with increased access -Cost of compensatory mitigation to restore previously-mined degraded riparian and floodplain habitats. -Economic impact aid to villages should they lose 30% of their subsistence capability, as predicted	
23784	13	Subsistence	The wild and unspoiled Brooks Range foothills areas to be traversed by the Ambler Road represent one of the largest roadless and undeveloped areas left in North America. This creates priceless value to both the local residents and visitors who come from elsewhere in Alaska, the US, and many nations in the world. Local Indigenous residents get spiritual nourishment from being out on the land because it is a landscape their ancestors handed to them for stewardship with an expectation of reverence for the natural world which sustains them (Nelson 1986, Nelson 1987, Ravens Story). The DSEIS properly acknowledged these kinds of potential community wellness impacts, for example: ..."the loss of direct use of the land could lead to reduced knowledge among the younger generation of place names, stories, and traditional ecological knowledge associated with those areas. There would also be fewer opportunities for residents to participate in the distribution and consumption of subsistence resources, ultimately affecting the social cohesion of the community" (p. 3-198). But the DSEIS did not say these values are priceless. The final SEIS must strongly acknowledge these intangible but critically important values.	Reviewed section and edited to ensure that these cultural values are irreplaceable.
23784	14	Recreation and tourism	The DSEIS disclosed a minimal level of impacts to wilderness recreational users, for example, the number of wild river float routes in which users would have to cross under a bridge, see the road, or hear traffic (p. 3-181-182). Similar to the local Indigenous people's respect and stewardship of the land, many non-local recreationists who visit the area--river floaters, hunters, backpackers, photographers, scientists, and guides, etc. - value this area immensely for their own mental and physical sustenance. There are ongoing economic uses that do not destroy the land, e.g. wilderness recreation and guided/outfitted hunting businesses that earn income but have a very light footprint. The DSEIS barely acknowledged, almost downplaying, these values: "This area is used primarily by local residents and some river floaters (e.g., Ambler River and Wild River) and is seen by people traveling by aircraft for transportation or tourism. The numbers of travelers who would see the mine-related development is not high, but many of those who would see them likely would be sensitive to the changes" (p. 3-182). The DSEIS seemed to minimize the overall impacts to these values and must correct that error. It is a significant impact. The final SEIS should mention all the floatable rivers to be impacted, from the John River in the east to the Ambler River in the west. I have personally floated some of these rivers for work or for recreation and I can attest to their outstanding wild value, whether officially designated, or not. All the non-local types of users mentioned above would likely agree with the local village residents that these values are priceless. I'd guess this was stated in many different ways during scoping, or during DSEIS public review meetings, in villages and cities alike. The final SEIS must emphasize (and not minimize) that there is a huge trade-off between the intangible wildlands values versus minerals and dollars, should the Ambler Road be approved. The BLM should employ modern social science methods to account for these intangible values (EPA 1995, Capitals Coalition 2020, NIH 2020).	The BLM added, "Appendix F, Table 8 and Volume 4, Map 3-29 summarize and illustrate all common river floating routes potentially impacted by the Proposed Action, including the Alatna, Ambler, John, Kobuk, North Fork Koyukuk, Selawik, and Wild Rivers. Table 8 in Appendix F also provides additional information for each potentially impacted floatable river, including floatable mileage, typical watercraft, and land management."
23851	1	Subsistence	The Ambler Road brings unacceptable risk to the region's sheefish, chum coho, and Chinook salmon, Dolly Varden charr, Arctic grayling, humpback whitefish, broad whitefish, northern pike, burbot, and Alaska blackfish. Since the final EIS was published, the status of chum, Chinook, and coho salmon stocks in the Yukon watershed has grown worse. This decline has led 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. Declining salmon runs have caused whitefish, sheefish and grayling to become increasingly important for subsistence users.	Impacts to salmon availability in the context of the ongoing vulnerability of these populations are discussed in Section 3.4.7, Environmental Consequences.
23874	1	Hazardous waste	The environmental impact statement needs to include an analysis of the scientific studies of the toxic processes and by products of building and operating mines. The toxic impacts on wildlife and humans need special attention. The person doing the analysis needs to have a doctoral degree in toxin epidemiology or environmental epidemiology, and that expert and their credentials need to be included in the report.	See response to letter 23434, comment 6.
23924	1	Cumulative and indirect effects analysis	The impact of potential mineral development outside of the Ambler District should be more specifically considered. The Supplemental EIS should address, for each alternative corridor, the potential for significant environmental, cultural and subsistence impacts in regions that may be accessible via the proposed route. In other words, would a given right of way provide access to potential development (mineral resources or other types of development) in highly sensitive areas. It is already the case that intensive mineral exploration work has begun along the southern foothills of the Brooks Range from the Dalton Hwy to near the Alatna River. This work has already had significant negative impact on the recreational use of this area due to the high level of low-altitude air traffic; primarily low level helicopter traffic moving loads between camps and drill sites and the Dalton Hwy. This traffic has been a persistent disruption to summer recreational users of the N. Fork of Koyukuk and John Wild and Scenic Rivers. I suspect the exploration work in this area, and further to the west, will increase dramatically in the coming years. Therefore, the EIS needs specific assessment of the "off-corridor" impacts that are a direct result of the proposed road project	See response to letter 23145, comment 3.
23924	3	Alternatives	It is important that the Supplemental EIS re-address the alternative routes. My opinion is that the EIS is biased towards accepting AIDEA's assumptions, cost estimates and preferred routing. The Supplemental EIS should consider alternative routes (and alternative means of transporting ore) irrespective of cost. For instance, a major concern with respect to social and subsistence impacts is the development of road access originating at the Dalton Hwy, thereby connecting the region to urban Alaska. A western route (road or rail) may be more costly, but may be preferred by stakeholders in the region (e.g. connecting western communities and allowing development within the Ambler District, without a connection to the Dalton	In accordance with the CEQ NEPA implementing regulations at 40 CFR 1502.14, the BLM has explored and evaluated all reasonable alternatives for this project and discussed reasons why other alternatives were determined not to be reasonable. To determine whether an alternative was reasonable, the BLM considered an alternative's effectiveness at satisfying the purpose and need, technical and economic feasibility, the practicality of the alternative, and whether the alternative duplicated others evaluated. The BLM applied the screening criteria as detailed in

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			Hwy). If there are western alternatives that have potential to reduce overall impacts, and may be more acceptable to regional stakeholders, then these should not be excluded from consideration. My reading of the current Draft EIS's justification for eliminating western alternative routes is primarily due to cost, which suggests that the BLM is only considering the viewpoint of a single stakeholder (the financial benefits to AIDEA and its industrial partners).	Appendix G Section 6. Various western routes including road and rail were eliminated from detailed analysis due to a number of factors including cost, greater environmental impacts and technical feasibility concerns. The BLM cannot apply different screening criteria to certain alternatives and not others.
24117	1	Socioeconomics and communities	The current Supplementary Environmental Impact Statement (SEIS) fails to acknowledge another critical aspect: the societal impacts that the proposed construction camps man camps accompanying the Ambler industrial road would inflict upon women in the region. These man camps, often overlooked in environmental assessments, have far-reaching social consequences, particularly for women in these areas. Yet, this vital aspect has been notably absent from the SEIS, raising concerns about the oversight in addressing the broader societal impacts. The creation of these camps, without a thorough assessment of their effects on the safety, well-being, and social fabric of the region's women, is unacceptable. The potential risks and challenges posed by such establishments need to be thoroughly evaluated and addressed before any project proceeds. The absence of this critical consideration further strengthens our stance against the Ambler Road. The well-being and safety of all individuals, especially the marginalized and indigenous peoples, should be central in any decision-making process.	See response to letter 34767, comment 94.
24144	1	Water resources	But the main reason I am compelled to submit a comment- is because of recent research that was not included in permitting documents. I have included two articles from this year - one by myself and one by a colleague that was recently published in Scientific America. It regards what scientists are calling rusting rivers. This emerging phenomenon has been documented by subsistence hunters in the region. Several folks from smaller villages in the Northwest Arctic spoke to me about their concerns about the changes to land and waters that they have known their whole life. To my knowledge, rusting rivers first became known to the scientific community in 2018. This phenomenon is occurring in the most remote parts of the Brooks Range. One of the scientists studying them believes that this might be unique to the area because of the unique geology of the region. I have included a copy of my radio script of the story. Please note that the bold type are direct quotes from Patrick Sullivan.	Discussion of the rusting river phenomenon was added to the Supplemental EIS in Section 3.2.5 based on recent preliminary research published by the USGS. Additional discussion added to this paragraph based on the articles provided.
24217	2	Cumulative and indirect effects analysis	Second, if Ambler Road is already approved (or built), any succeeding mine EISs might define the transportation corridor length not by the length of spur road and Ambler Road together but just by the length of any new additions between Ambler Road and various mine components. "... [....] If mine EISs produced after Ambler Road gets approved or built only consider the effects of relatively short access roads that connect mines to Ambler Road rather than the total length, the effects will be underestimated. That is, not only does the current SDEIS for Ambler Road artificially reduce the consideration of direct and indirect effects from reasonably foreseeable development by only considering if TrRoad is significant instead of the more comprehensive TrRoad + TrMine + TrRoad, Mine for the Ambler Road itself, it also sets the stage for each of the proposed mines to dramatically underestimate the effects related to transportation corridors by only analyzing the potential impacts along the spur roads that would connect the mines to Ambler Road. Since most models of transportation corridor risks are based on the length of the road, any such models would be looking at the impacts of roads lengths of ~15 miles or less (Figure 3), rather than including the spur road with the full 210 to 332-mile Ambler Road, the Dalton Highway (60 or 161 miles, depending on the Alternative), and presumably Alaska Highway 2 to Fairbanks (an additional 84 miles).	The hypothetical mining scenario presented in Appendix H includes a description of typical mine infrastructure and access needs (see Appendix H, Section 2.1.4, Production). The potential cumulative and indirect effects of mining-related infrastructure and access roads are analyzed in Chapter 3 of the Supplemental EIS.
24217	4	Cumulative and indirect effects analysis	In addition to the discrepancies in the number of ore concentrate loads that would be transported along the proposed Ambler Road and Dalton Highway, Table 2.5 from Appendix H has what appear to be very low numbers for the estimates of other mine supplies. Hazardous substances used at mines include blasting agents, fuel, and chemical reagents. Comparing the expected number of loads of explosives, fuel, and reagents across mines is not straightforward as the ores being mined, processes being used, and the load sizes being transported can all vary from mine to mine (Table 8). More details will be necessary to get a better understanding and estimate associated with the risks of all the other hazardous materials that can be transported to, from, and at any proposed mines.	Because no formal proposal for mining has been submitted to any state or federal agency, the BLM made reasonable assumptions about future mining-related activities based on current information about the deposits and typical scenarios for mining development in Alaska. Table 2-5 trip estimates for mill and maintenance supplies are approximations based on the best available data. Additional details regarding future mine developments and their resulting impacts on specific resources would be discussed as part of future NEPA analyses and permitting for proposed mines. See also response to letter 23434, comment 13.
24217	5	Cumulative and indirect effects analysis	The number of loads of ore concentrate that would be hauled should be consistent throughout the document, including if double trailers are split into single trailer loads at the junction of Ambler Road and the Dalton Highway.	Traffic volumes associated with the reasonably foreseeable mining development scenario are outlined in Appendix H, and are consistently summarized in Chapters 1–3 of the Supplemental EIS. The estimated annual average daily traffic during peak years of the mining scenario could be up to 168 trips per day on Ambler Road (see Supplemental EIS Chapter 2.4.3 and Appendix H, Table 2-6). 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 (see Appendix H, Table 2-5 and Supplemental EIS Chapter 2.4.3).
24217	6	Hazardous waste	As noted in Lubetkin (2022), N = RT is an intuitive but overly simplistic model for expected spills. Please see Chapter 11 of that report for other models related to hazardous materials transportation risks. Furthermore, as noted in the same report, transportation spills are not limited to collisions and rollovers, which are the only types of transportation spills addressed by the N = RT model. In fact, collisions and rollovers only accounted for 11.4% of the 1,004 transportation spills listed at the five Alaska hard rock mines (Lubetkin 2022). Overall, the existing analysis in the DSEIS (BLM 2023) predicts hundreds to thousands of hazardous materials spills along Ambler Road and Donlin Highway if it is constructed and the mines are allowed to move forward. The final SEIS should note that the risks increase with increased mining, refine those estimates as much as possible with more detailed estimates regarding explosives, fuels, and reagents, and address how that large number of events would impact the transportation corridor	The applicant has committed to stipulations that supply and ore container trucks would have closed and sealed containers. See Section 2.4.4 of the EIS. Such practice would reduce the dispersal of dusts during travel, and reduce, although not avoid, the risk of spills should the trucks run off the road. Because no detailed mining permit in the Ambler Mining District has been applied for, the type and extent of hazardous substances cannot be known.
24369	1	Subsistence	I think in the rush to prepare and publish this Draft SEIS on the Ambler Road, the importance of subsistence continues to be devalued and environmental impacts are not adequately addressed. The full scale of the project is not being considered. The	The Supplemental EIS addresses construction, operation through reclamation, and cumulative impacts of the road.

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			issues of the environment and subsistence resources are not receiving as much analysis as is other minutia such as the proposed size of the culverts. Once again, the application and environmental review process seems to be using the same tactic which was reported to have been used by the Pebble Mine proponents on their plans. Which was to deliberately minimize and piecemeal the full extent of the project, so that once the first step was authorized, the subsequent expanded plans would be presented as only marginally different and simply rubber stamped as approved. A review of primarily the construction phase of the Ambler Road plans, without a review of the full longterm operational plans, and lifespan of the road appears to be an attempt to downplay the potential environmental and subsistence impacts of a road that will cross 2,900 streams, 11 major rivers and 1,700 acres of wetlands. Furthermore, a review of the road plan without looking at the full cumulative effects, does not provide a complete analysis of the future environmental impacts to this region, the potential impacts to the subsistence resources and the users of those resources.	
24369	2	Transportation and access	The proposed Ambler Road will transport mining trucks and ore to market. The intersection with the Haul Road, is not the market. These trucks will continue their journey down an already busy and in need of repairs, haul road, that was not designed or constructed for this purpose. If the road is approved, then this EIS should cover the cumulative impacts for all the points between the junction of the haul road (the current end point of this project area) to their final destination, the processing plant or point of export. These minerals and mining trucks, facilitated by the potential operation of this proposed Ambler road, will have significant cumulative impacts adding to traffic and wear and tear on the existing haul road, through local communities such as Fairbanks, along the Alaska rail corridor and possibly into and through the Port of Anchorage.	See response to letter 23769, comment 1.
24369	3	Government to government consultation	Page 1-6. Why are the Alaska Federally Recognized Tribes in NW Arctic, (as listed by FR Notice 86 FR 7554, as being Federal Recognized Tribes) not listed here? Actions in this proposed project area would have direct impact upon their subsistence resources. Fisheries, Animals and other subsistence resources often cross project boundaries during their lifecycles. Subsistence resources are often shared between communities, so even if the community itself does not fall within the project boundaries, it does not mean there is not a potential impact on their subsistence activities and resources. If it has not already been completed as part of this EIS process, Tribal Consultations should be held with each of these federally recognized Tribes: Native Village of Ambler, Native Village of Buckland, Native Village of Deering, Native Village of Kiana, Native Village of Kivalina, Native Village of Kobuk, Native Village of Kotzebue, Native Village of Noatak, Native Village of Point Hope, Native Village of Selawik, and any others that share subsistence resources that are found in the project area.	The Federally Recognized Tribes listed in Section 1.5.1 participated in the Supplemental EIS process as cooperating agencies, as defined by NEPA at 40 CFR 1508.1(e). This means that they signed a memorandum of understanding with the BLM to carry out cooperating agency responsibilities per 40 CFR 1501.8 as part of the Supplemental EIS process. Although Tribes in the northwest region were offered cooperating agency status, none decided to formally participate in the Supplemental EIS in this way. Please see Appendix I for a list of the Tribes that the BLM has consulted with in conjunction with the Ambler Road Project.
24369	4	Air quality and climate	Page 2-12. Climate Change Challenges. I am not able to find an analysis section in this document which projects the amount of permafrost that may be subjected to melting due to the proposed project, nor a section or projections on the amount of methane gas that will be released due to the thawing, during construction nor operation of the project, nor forecast into the future as the result of the resulting methane release, due to this project. The paragraph titled Uncertain Project Features appears to be used as some sort of disclaimer, that because we don't have the data, and the future is uncertain, we really don't know how to predict what will happen. It does not appear as if there has been enough homework nor research completed by the development team to undertake a project of this magnitude. The science is out there and should be applied here for more precise forecasting of the potential effects, in our rapidly changing conditions, due to climate change. To state, as on page 2-14, that project designs would be modified in the future as additional studies are completed, seems to be irresponsible, and a veiled approach to ram this project through without having the best science in hand to analyze the potential impacts, PRIOR to its start.	Permafrost and climate change is discussed in Section 3.2.7 of the Supplemental EIS and each alternative's footprint is discussed in relation to permafrost impacts. The Supplemental EIS notes, road project effects and mining project effects of the types discussed in this Supplemental EIS that can hasten permafrost thaw, coupled with the effects of a generally warming climate on permafrost, could cumulatively release CH4 and further contribute to climate change. The Supplemental EIS states such impacts to permafrost are anticipated in Section 3.2.1. The applicant's estimate of construction costs includes the anticipated construction costs associated with thicker embankments, or additional insulation, to preserve the existing soil thermal regime as much as possible and the necessary maintenance to keep the road functional and useful for its users. Impacts to water quality from the thawing of permafrost are addressed in Section 3.2.5.
24369	5	Proposed action	Page 2-17. Reclamation of the industrial access roadundertaken at the end of the 50-year project. This section made me laugh out loud, as yes it does indeed sound absolutely ridiculous. Actually it is insulting to not only the reader of this document but to those who put value in the wording and process of an EIS. What type of a BOND is BLM requiring of AIDEA to provide a guarantee this will be done? Will those funds be invested in a growth fund, to insure that the amount keeps pace with inflation rates over the next 50 years? It so misses the mark on what is actually required of restoration activities. If permafrost is exposed and melted, how does the project team plan to address restoring it? I was a Realty Specialist with the BLM and the wording on this section makes me cringe, as there will be no funds available at that point to develop nor implement a meaningful restoration to repair the surface, subsurface, water quality nor ecological system balances that were disrupted during the course of the construction and project lifespan. Trying to get someone to pay for the restoration after the payload is gone, there is no budget item for restoration and the company has reincorporated under a new name, does not provide any confidence that the restoration will be completed.	See responses to letter 22770, comment 15 and letter 29489, comment 92.
24369	6	ANILCA 810 analysis	ANILCA 810. This document fails to mention the influence and potential disruption of the caribou herd and other subsistence resources caused by noise and vibrations of mining activity and increased aircraft in the area. I have listened to subsistence hunters for many years, explaining how they have spent precious gas and time to track and access animals, and at the last minute a boat, airplane or vehicle has spooked the animals, and they went home without food. The sound travels across many miles, and sometimes the noise was heard or the vibrations felt, but the vehicles were so far away they could not be seen. Nevertheless, the animals sensed it and fled. Just because we humans can't sense it, doesn't mean they can't. It also fails to mention road kill of caribou due to mining traffic. Anyone that has driven Alaskan roads knows that Caribou are not quick to try and avoid oncoming traffic and are commonly hit by passenger vehicles. The commercial vehicles proposed for hauling heavy mining loads, will have less chance of successfully avoiding a herd that is also using the same road as the trucks.	The Section 810 analysis (see Section B.2.1, Subsistence Resource Abundance) addresses the potential for direct mortality to individual animals, including caribou, as a result of vehicle and aircraft collisions, pile driving, and blasting. The Section 810 analysis also addresses the potential impacts of noise from construction and traffic on caribou availability (see Section B.2.1, Subsistence Resource Availability). Reviewed cumulative impacts section and added discussion of potential resource availability impacts of mining activities.
24369	7	Fish and aquatics	Page 3-94. The new section on potential impacts of water quality and fisheries, is chilling in its reference to toxin levels and potential impacts to subsistence resources and those that consume them. The measures that are proposed to address these impacts seem to fall short of ever being meaningful or successful.	The Supplemental EIS discloses the potential impacts from contaminants that could come from roadway runoff, accidental spills, and dust (Section 3.3.2, Fish and Aquatics - Impacts Common to All Action Alternatives), as well as mitigation measures intended to help minimize or prevent such contamination. Additional design features and mitigation measures that would reduce

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				impacts to water quality and subsistence resources are described in Supplemental EIS Sections 2.4.4, Design Features Proposed by AIDEA, and Appendix N, Potential Mitigation.
24369	8	Mammals	Page 3-124. Caribou. Earlier discussion in this document, in the road section, there was mention of asbestos and other chemicals being released and dispersed as a result of the road. I do not see where their discussion has been incorporated into the section on Caribou and how the potential wind blown particulates might be ingested by terrestrial mammals. Studies have been conducted along the Red Dog Mine Road in Northwest Alaska on the effects of the road on Caribou and on the lichen in proximity to the road. Perhaps I am missing it, but I do not see that research and its conclusions referenced in this analysis. The Red Dog Mine has provided an opportunity to learn from previous mine and road projects. Perhaps a more robust comparison, and incorporation of that research and findings in this section is needed.	Additional discussion of Neitlich et al. (2022) and the potential for asbestos and other contaminants was added. It should be noted that the level of heavy metals along the Red Dog Road (DMTS) were decreased through the use of better containment for loads in ore trucks along the road and mitigation measures for fugitive dust from ore trucks will be required for this project.
24369	9	Cumulative and indirect effects analysis	The narrative in the EIS also describes that the Ambler Road will be available for access to future development in the area. The EIS does not however address this type of increased use, in its analysis. In some sections it barely provides analysis of the operational aspect of providing access to a single mine, which is yet to be permitted, in the Ambler District. This EIS as prepared focuses its analysis on the construction of the road and marginally introduces, describes and analyzes the OPERATION OF THE ROAD in the Other Indirect or Cumulative Impacts sections. In accordance with the Code of Federal Regulations (CFR 43 2800) states a Right-of-Way means the public lands that the BLM authorizes a holder to use or occupy under a particular grant or lease. The EIS that was prepared on this road seems to limit its scope and analysis to simply the construction of the road and minimizes its discussion and analysis of the OPERATION of the road. Although it mentions the Ambler Road will open up mineral development in the area, the EIS does not provide any analysis of the types and amounts of new mining ventures that may spawn in this area, and how that would increase the use and impacts of the road. The full scope of construction and long-term operation need to be addressed and analyzed. If the road is not being built to operate a mine, then what is its purpose? There are a few sections of the analysis that address use and impacts during the operation of the road, but many sections skirt the issue.	Mining developments within the Ambler Mining District are not currently proposed (i.e., are not ripe for decision) and, therefore, are not treated as connected actions in the Supplemental EIS. As a result, the BLM has analyzed the effects of reasonably foreseeable mining developments within the District as indirect and cumulative effects (see Appendix H). The hypothetical mining scenario presented in Appendix H includes a description of typical mine exploration, development, operation, and reclamation activities (see Appendix H, Section 2.1.4, Production), and the potential cumulative and indirect effects of mining-related activities on environmental resources are discussed and analyzed in Chapter 3 of the Supplemental EIS.
24369	10	Air quality and climate	The Draft SEIS review should include a more scientific discussion of current climate change factors in the region and future projections of climate change in Alaska. Climate change will have an effect the physical road, and will also have effects on the physical environmental factors, the biological resources and the social systems. Climate change factors and data from the region, should play a greater role in this analysis. I have suggested in previous comments that the Alaska Center for Climate Assessment and Policy might be a good first stop for gathering this type of information, but it appears those suggestions have not been incorporated in the EIS, except in the Fish and Amphibians section. The rapidly changing climate, vegetation changes, subsistence challenges resulting from climate change are not adequately addressed here. I would suggest the Draft SEIS incorporate not only the current science in Alaska on these changes, but also available projections for continued climate changes, such as permafrost melting and resulting methane releases, changes in animal migration patterns, vegetation types and cover changes, flooding and storm pattern intensity and the anticipated stressors to subsistence resources. Changes to freezing and thawing of waterbodies have already negatively affected access to subsistence resources. Change on current and future subsistence needs and resources should receive better analysis in the Supplemental EIS.	Comment noted. See response to letter 132, comment 2.
24369	11	Public access	The Draft SEIS review should include a full analysis of what would occur to physical, biological and subsistence resources when the road is eventually opened to the public or other mineral or development interests. If this road is built with public funds from AIDEA, it has a very good chance of being opened as a public access road, despite the feeble rhetoric to the contrary, which was included in this Draft FEIS. Even a single use ATV vehicle trail in Alaska, can blossom out into a network of access routes. The analysis in this document appears to be an attempt to minimize the impacts of a major new road across Northwest Alaska and could provide a false sense of assurances for the future. If history teaches us anything, then perhaps we could look back, to access issues on the Haul Road, as an example of how a limited access road was eventually opened to all traffic.	See response to letter 19418, comment 3.
24369	12	Transportation and access	The Draft SEIS should include the construction and operation effects of the Ambler Road to the Haul Road and throughout the transportation corridor to the Port of Anchorage, during both its construction and operational period. The EIS also briefly mentions a rehabilitation phase, which should be addressed as well. If the Haul Road is already experiencing maintenance challenges, it only stands to reason that adding an access branch to a 200 plus mile Ambler Road which operates to support and transport mining activity, will provide added challenges. One estimate I read in the EIS was that 168 trucks/day will be hauling materials on this road. It does not mention any limitations, so the reader is left to assume as additional mining activity comes on line, more trucks will be on the road each day. The 168 trucks/day figure equates to over 5,000 trips/ month or over 61,000 trips/year, if the mines operate year round. The EIS did not specify if these were one way or round-trips, but that figure should be clarified. To omit consideration of these impacts would be like suggesting that there will be no off-site impacts of the construction and operation of this road for mining activities. If the reasoning of omitting this analysis in this EIS was that it could be better considered at a later date, in the EIS for the mining activities, it could be seen as much more than an oversight, it could be viewed as an attempt to circumvent the NEPA process in addressing the potential impacts. If the BLM fails to provide that analysis now, when the time comes, the mining companies will claim that should have been considered in this EIS, as it is not part of their mining footprint. I know this shell game has been parlayed for other ventures in the past to attempt to downplay their impacts and increase the profit margin, but it should not be allowed to happen in this case. If not for the mines, the Ambler Road would not be necessary. If not for connection to the Port in Anchorage, there is no market for minerals. If the Dalton Highway and the Alaska Railroad are also part of the plan for transporting these minerals, their use and potential impacts should also be described and analyzed in this EIS.	See response to letter 23769 comment 1. The Supplemental EIS utilizes the best available data, including available traffic projections provided by mining companies. Footnotes to Appendix H Table 2-6 clarify AADT includes traffic passing an observer in either direction, so are one-way estimates. As stated in Section 3.4.2, traffic volumes during construction and use of the winter construction access trails are expected to be similar to those listed in Appendix H, Table 2-6, for Phase 1 activities. Section 2.4.4 describes AIDEA's proposed approach for restoration of the road corridor upon removal, including "a detailed reclamation plan containing sufficient performance standards subject to land manager approval would be developed prior to the issuance of the authorizations. Reclamation measures would include removal of embankments, culverts, and bridges; re-grading the roadway to establish more natural ground contours and drainage patterns; and revegetation of the area through seeding or planting of native vegetation. Appropriate native plant materials would be identified in consultation with the Alaska Plant Materials Center and each landowner." Appendix N Section 1.4 describes mitigation measures for restoration of the road at the end of the project life. The impacts of mining are analyzed to the extent that information is available to do so. No specific mining application/permit request for the District has been submitted to date. The BLM evaluated reasonably foreseeable mining development as indirect and cumulative impacts, using a

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				hypothetical mining development scenario. When officially proposed, each mine would go through its own project-specific NEPA analysis and permitting process, which would provide further detail and analysis regarding the specific impacts of each mine operation.
24369	13	Hazardous waste	I did not see an analysis addressing the hauling and transporting of minerals and chemicals associated with the mine site, up and down the Haul Road, in communities throughout Alaska on their way to the port, nor potential off site impacts to the state roads and Railways along the route, or at the Port of Anchorage. These impacts should be addressed in the Mining, Access, and other Indirect and Cumulative Impacts in the Hazardous Waste Section and in other sections of the EIS where the construction and operational activity of the Ambler Road may have environmental consequences.	Section 3.2.3 discusses spills during transport would increase as more hazardous materials are shipped, transferred, and handled. Appendix H Table 2-5 identifies the number of supply trips anticipated.
24369	14	Subsistence	The Draft SEIS should do a much better job on incorporating the data and the analysis from other sections of the EIS into the analysis on subsistence impacts. I would suggest the analysis in the Draft SEIS should also include: A. Projected economic costs to rural federal subsistence users, if their subsistence resources are adversely impacted by the construction and operation of the Ambler Road and the mining development it would facilitate; B. Address how customary and traditional subsistence uses might be effected by this action; C. How access to subsistence harvest areas might be effected by the construction and operation of this right-of-way. And how disturbance, noise levels and vibrations to the ground would be generated by the operation of the road with over 5,000 truck trips/ month. The current document seems unable to make the connection that when the biological resources and the physical environment are impacted, subsistence resources and opportunities are also impacted. The information provided in the Affected Environment and Environmental Consequences section should be more closely interwoven with the analysis of impacts on subsistence.	The subsistence section incorporates the findings of the biological and other sections throughout its analysis, in addition to incorporating Indigenous knowledge regarding each topic. Specifically, the section cites the findings of the fish and aquatics, mammals, vegetation and wetlands, birds, socioeconomics and communities, recreation and tourism, transportation and access, and visual resources sections. The specific topics of impacts on customary and traditional uses, access to subsistence use areas, disturbance/noise levels, are all addressed in the subsistence section.
24369	15	Air quality and climate	Recent research linking the dangerous release of methane gases to thawing permafrost, is not adequately addressed in this analysis.	Permafrost and climate change is discussed in Section 3.2.7 of the Supplemental EIS and each alternative's footprint is discussed in relation to permafrost impacts. The Supplemental EIS notes, road project effects and mining project effects of the types discussed in this Supplemental EIS that can hasten permafrost thaw, coupled with the effects of a generally warming climate on permafrost, could cumulatively release CH4 and further contribute to climate change. The Supplemental EIS states such impacts to permafrost are anticipated in Section 3.2.1. The applicant's estimate of construction costs includes the anticipated construction costs associated with thicker embankments, or additional insulation, to preserve the existing soil thermal regime as much as possible and the necessary maintenance to keep the road functional and useful for its users. Impacts to water quality from the thawing of permafrost are addressed in Section 3.2.5.
24369	16	Hazardous waste	The transport of Hazardous Wastes over the Ambler Road and through Alaskan Communities is not addressed in this analysis.	Transport of hazardous wastes are addressed in Section 3.2.3 (Hazardous waste) of the Supplemental EIS. Public health risks are addressed in Section 3.4.5 (Socioeconomics and Communities).
24369	18	Noise	The Noise section is sadly lacking in its analysis of discussion of the noise and vibrations of truck traffic and aircraft, during the construction and operation.	Discussion of the impacts from vibration have been added to Section 3.2.6.
24369	19	Sand and gravel resources	Future gravel needs are identified, but no locations or detail are provided which would indicate how or where it would be obtained.	Proposed material sites are depicted in Volume 4 of the Supplemental EIS: Map 2-3 (3 pages) shows sites for Alternatives A and B; Map 2-4 (4 pages) shows sites for Alternative C. Appendix C, Table 2, lists the number of proposed material sites and the estimated footprint (area) for each Action Alternative. Material from acceptable sources would be obtained by excavation with heavy equipment and blasting in some locations.
24748	1	Subsistence	The impacts from the proposed industrial development would cause severe harm across the region to all the resources that the local cultures revere including caribou, fish, water resources, wetlands, and vegetation as well as to their opportunities for subsistence and the social cohesion, culture, traditions, language, health, and well-being that depend on participation in subsistence harvesting and sharing networks.	Impacts of the road on subsistence resources, subsistence activities, and cultural elements including sharing networks, social cohesion, and cultural identity, are discussed in Section 3.4.7, Sociocultural Impacts and Mining, Access, and Other Indirect and Cumulative Impacts.
24805	1	Mammals	Research from the adjacent Dalton Highway has also shown that although caribou will certainly cross the highway, it can cause delays and reroutes in migration which can adversely affect migration success and health of the herds. The proposed Ambler road could possibly have different effects as it parallels the east-west migration of caribou herds South of the Brooks Range instead of crossing it perpendicularly as the Dalton highway does.	The Dalton Highway is generally parallel to the migration route of the Central Arctic Herd and caribou frequently cross it or move parallel to it when migrating (e.g., Nichols et al. 2016). The proposed Ambler Road Alternatives A and B will be generally perpendicular to the north-south migration of the WAH, although that will depend on the wintering location of the herd and will vary annually.
24878	1	Subsistence	I know the impact on subsistence would be even greater for the neighboring 66 communities that rely on these resources for food security year round and could face significant restrictions on their subsistence practices if the road is built. The loss of subsistence resources would have long-term negative impacts on spiritual, cultural, and community well-being for Native communities in the region.	The potential impacts to the 66 subsistence study communities are addressed in Section 3.4.7, including impacts to spiritual and cultural well-being.
25185	1	Subsistence	The subsistence conclusion in the executive summary concerning the extent of subsistence impacts does not seem reasonable. Specifically, the conclusion states that the road “may significantly restrict subsistence uses for the communities of...Wainwright, Kivalina, Point Lay, Unalakleet.” It further states that the cumulative impacts may restrict subsistence use for Nuiqsut. (Page ES-7). Some of these communities are more than 250 miles away, straight-line distance. This is roughly the same distance as from Anchorage to Fairbanks. Roads in Anchorage do not affect hunting or fishing use in Fairbanks. The logic that supports these odd conclusions is not provided in the Executive Summary. Volume 1 of the DSEIS refers the reader to Appendices L and M. All of these villages harvest caribou to some extent, however limited it may be, from the Western Arctic Caribou Herd (WAH). The herd crosses the road and the DSEIS concludes that the road “could cause population level	The Executive Summary, by its nature, provides a summary. See Supplemental EIS Appendix M ANILCA Section 810 Analysis, Section B.2.1. Evaluation of the Effect of Use, Occupancy or Disposition on Subsistence Use and Need for the detailed analysis.

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			impacts” (page M-27) to the herd; thus, the DSEIS concludes that the road “may significant restrict subsistence uses” for these villages. The problem with this conclusion is that it is contradicted by history and lacks a discussion of the likely amplitude of impacts. The DSEIS quotes multiple studies that describe issues with caribou and some development and the potential for impacts. However, it neglects the more important information: whether these individual issues have had a population-level effect.	
25185	2a	Mammals	Three examples illustrate the problem. The Central Arctic Caribou herd has had a much greater level of roads and disturbance from the Prudhoe Bay Oil Field and the Dalton Highway than the WAH is likely to encounter from the proposed Ambler Road. Appendix L and M discuss multiple instances where Caribou movement is changed by development. Yet neither discusses the overall picture: the herd population has dramatically increased since the beginning of North Slope Construction. The figure on the next page shows the Alaska Department of Fish and Game’s estimate of population of the Central Caribou Herd since the beginning of oil production on the North Slope.1 [bar graph] While studies referenced in the document some particular aspects of the North Slope roads and facilities which may affect Caribou, they omit the overall picture, which contradicts the DSEIS conclusion: caribou population increased after North Slope production began. There may be individual circumstances which are a disadvantage to caribou, but overall, the development occurred alongside a caribou population increase. A similar issue occurs with respect to the Red Dog Road. The DSEIS discusses many potential impacts of the Ambler Road on Caribou including such items as the potential for toxic metals, collisions, etc. But these same issues occur on the Red Dog Road. Yet, the Red Dog Road has not had a population-level effect on the herd.	It is true that the WAH increased in size after development of the Red Dog Road (DMTS) but the area around the road corridor is only a small portion of the herd range that is primarily used during fall migration and only used by a fraction of the herd in most years. It is therefore unlikely that the road would have large enough impacts on the herd size to be noticeable and attributed to the DMTS. The Central Arctic Herd did increase in size despite extensive development on the summer range. This suggests that development impacts were not large enough to cause a decline in population during a period of herd growth but does not prove that there was no negative impact.
25185	2b	Mammals	The DSEIS should use the Red Dog road experience and studies to determine whether these issues actually affect caribou populations. For example, in response to heavy metal issues along the Red Dog Road, Teck contracted for an extensive risk assessment that included describing the potential effect on caribou and fish. The DSEIS does not discuss this extensive, risk assessment. The DSEIS references section does not even list that document (DMTS Fugitive Dust Risk Assessment, Exponent, 2007), which is far more detailed than anything done for the DSEIS. The dust and toxic metals risk from now-obsolete dust abatement practices from when Red Dog was first began is far higher than anything likely for the Ambler Road. Yet, the Exponent Study concludes that the risk from this far-more concentrated toxic metals contamination to Red Dog Road WAH Caribou is low (Table 3.9-2, quoted in the 2009 EPA EIS), and has not had a significant effect on population. If the much more concentrated soil and dust has not had effect on caribou near Red Dog, it is unlikely to do so on the less-concentrated sediment and dust of the Ambler Road. The DSEIS describes potential issues with toxic contamination without ever discussing the real-life effects of a much more serious situation.	Reference to Exponent 2007 was added. This document says that “Thus, food-web exposure models suggest the possibility for adverse effects to individual caribou from exposure to these three CoPCs, particularly for the individuals most highly-exposed to aluminum or barium.” for caribou that overwinter near the road, but few caribou overwinter near the DMTS, more caribou are likely to overwinter near the Ambler Access Project, but better dust abatement practices than were previously used at DMTS are required as mitigation measures for this project.
25185	2c	Mammals	Similarly, the DSEIS discusses the potential collisions between Caribou and vehicles but does not reference the EPA’s Red Dog SEIS finding the number of collisions on the Red Dog Road between 1998 and 2009 have been less than one per year (SEIS, page 3-120). While the Ambler road is longer, the Red Dog experience shows that collisions are not likely to occur in a frequency resulting in an overall population effect. All of the caribou issues referenced in the Ambler Road DSEIS occur at Red Dog. The DF&G studies and the 2009 EPA SEIS document the fact that the 35-year experience Red Dog Road has not had a population-level impact on the Western Arctic Herd. This information should have been included. The Pogo Mine Road is also within the outer range of the Forty-mile Caribou Herd. Potential impacts on the herd population were low enough that they were essentially dismissed in the EIS. The predictions of the EIS can be confirmed with DF&G. The fact that three mine roads actually in existence do not create the impacts forecast in the DSEIS should have been included in the DSEIS. It should provide context to the range of potential impacts that may be expected from the proposed Ambler Road. The Alaska history of development roads on Caribou population, Prudhoe Bay, Dalton Highway, Red Dog Road, and Pogo Road, should provide a range around potential impacts. The DSEIS lacks this range. It would significantly modify the “may substantially restrict subsistence” conclusions. A correct statement would be: there may be potential for road to have an effect on caribou population, experience with similar roads in Alaska have not had this effect. Such a conclusion would change the conclusions of the DSEIS and would certainly have eliminated some of the more distant communities which rely less on WAH from the list of potential significant effects.	Section 3.3.4 of the Supplemental EIS states, “Collisions on the DMTS road are rare: 11 caribou fatalities were reported between January 2004 and November 2017 (Teck 2018).” Whether or not an individual development will have a identifiable impact on a caribou herd will depend on the magnitude of the impacts and the duration and number of caribou exposed to that impact. An increasing population is not sufficient evidence that a development has no impact, it just shows that the impact is not large enough or affecting enough animals to cause a population decline. Therefore, while these 3 examples indicate that these 3 developments did not cause a population decline, they don’t prove that development had no negative impacts or that different developments in different areas will not have larger impacts.
25185	3	Fish and aquatics	The discussion of fish is even more problematic. Downstream from Alaska’s five metal mines, DF&G or the mine monitors fish populations, including population changes from access roads. Further, there is third-party monitoring reports every five years that provide an independent check on the mines’ or DF&G’s work. The third-party monitoring sometimes investigates items such as culvert jacking, etc. which is referenced as potentially affecting fish in the DSEIS. The dozens and dozens of reports from DF&G, mines, and independent contractors document the fact that two mines have resulted in increased fish populations (Red Dog and Fort Knox), and the other three have not had population-level effects - and this includes from access roads. This decades of history at different location should have resulted in the conclusion that population-level impacts are unlikely. Similarly, I am not aware that the Glenn or Parks Highway have been identified as having population-level fish impacts.	The Supplemental EIS identifies a variety of potential impacts to fish and aquatic habitat, including describing population-level impacts should an activity occur in a great enough magnitude. The Supplemental EIS also describes mitigation measures that may be implemented and how the measure would reduce or limit the anticipated impact, including preventing population-level effects. The Supplemental EIS notes (Section 3.3.2, Fish and Aquatics - Mining, Access, and Other Indirect and Cumulative Impacts), “Proper construction and management would minimize, but not eliminate, the potential for the road and reasonably foreseeable future development to adversely affect fish populations in this region.”
25185	4	Socioeconomics and communities	The Northwest Arctic Borough was formed around tax payments from the Red Dog Mine. Red Dog’s payments to the Borough is roughly 89% of the Borough’s general fund revenue (See Economic Development Journal / Spring 2015 / Volume 14 / Number 2; p. 27). The Red Dog Mine is expected to exhaust its current deposit it 2031. Further exploration at the site is speculative. Without some replacement, Red Dog tax payments to the Borough will be severely curtailed or cease. Without these payments, continued existence of the Borough is in jeopardy. Local government services and the ability of local government to make decisions such as providing funding for VPSOs, building schools, funding day care, etc. etc. will be imperiled. One major point of the road is to access development to maintain a tax base that funds local government services and provides local control over decisions either as soon as 2031 - or to extend the borough whenever the Red Dog deposit is exhausted. The demise of the Borough and a catastrophic effect on local government services would be a direct result of	Section 3.4.5: Socioeconomics and Communities (subsection on Mining, Access, and Other Indirect and Cumulative Impacts) discusses the potential local and regional economic consequences of future mining activities that would be supported by the proposed road.

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			denying the road. Maintaining the existence of the Borough and Borough services is one of the major points of the road, and yet these benefits are never addressed. The road would likely extend the Borough and provide the potential for development in communities that may support communities and government indefinitely.	
25185	5	Environmental justice	The executive summary indicates that subsistence effects would disproportionately affect local communities but that Impacts to employment would occur but would not be expected to disproportionately benefit low-income and minority populations. This conclusion is wrong in numerous ways. First, it implicitly defines indigenous, low income and minority populations as only those who live in the region. The Red Dog Mine employees are roughly 55% shareholders (i.e., Native, indigenous), and the shareholders receive roughly 48% of all Red Dog wages and salaries (Resources Policy, Vol 66; 2020. Long-term benefits to Indigenous communities of extractive industry partnerships: Evaluating the Red Dog Mine. M. Berman, R. Loeffler, J. Schmidt. p. 4). Given the involvement of NANA, and NANA land, there is no reason to believe that mining and even road construction jobs will not be similar. Thus, shareholders will disproportionately benefit from development of NANA resources, road-construction on NANA land, or mining on state land where NANA is a partner (i.e., South 32). Second, many of the shareholders employed at Red Dog do not live in the region. But the employees who do live in the region are a very large portion of regional workers. A University of Alaska study indicated that 26% of workers in the Northwest Arctic Borough had worked at the mine at some point. (Shareholder Employment at Red Dog Mine. ISER Working Paper 2012-2. April 2012. Institute of Social and Economic Research, University of Alaska. S. Haley; D. Fisher. Figure 9.). Thus, given the small population of the Borough, the existence of mining jobs and even construction jobs that occur with NANA participation is expected to have a huge impact on employment of the predominantly Native, minority and low-income employees in the Northwest Arctic Borough.	Section 3.4.6, Environmental Justice in the Supplemental EIS, states that the construction and operation of the proposed road are expected to provide employment for residents of NAB/YKCA communities, most of which have predominately minority populations and large low-income populations. However, the analysis notes that the minority and low-income populations in these 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. Based on the analysis in Section 3.4.5, Socioeconomics and Communities, text has been added stating that it is expected that workers employed by Alaska-based firms during road construction would come from all regions of the state. Moreover, as a state agency, AIDEA cannot offer a hiring preference to residents of the NAB/YKCA. The Supplemental EIS further notes that proposed mines located on land owned by NANA (e.g., Bornite Mine) may be developed under an operating agreement specifying that NANA shareholders receive direct and meaningful benefits from development at the mines. In addition, the Supplemental EIS states that the revenue the NAB and NANA would receive from mining development could be used to support public infrastructure and services in the region, which would be a long-term benefit to local communities.
25185	6	Socioeconomics and communities	Third, the income effect mining employment on the Borough is large. A variety of papers and previous EIS analysis document this effect. For example, the McDowell Group, quoted in the Economic Development Journal article previous cited (p. 26) concludes that “the 2013 total direct payroll of \$55 million in the region was 40 percent of all private sector wages and 30 percent of all wages, including government.”	Acknowledged. Section 3.4.5, Socioeconomics and Communities (subsection on Mining, Access, and Other Indirect and Cumulative Impacts) discusses the potential local and regional economic consequences of future mining activities (employment and income) that would be supported by the proposed road.
25185	7	Environmental justice	The state is not proposing to build the road out of tax dollars; rather, the road will not be built if a large economic project is not identified to pay for construction or pay back the cost of state revenue bonds. Therefore, the economic benefits of a NANA-owned, or NANA-partnered economic project will accompany the road. Those benefits will almost certainly “benefit low-income and minority populations” and those benefits are likely to be substantial. These effects are unrealistically minimized or ignored in the DSEIS.	See response to letter 25185, comment 5.
25185	8	Socioeconomics and communities	The DSEIS minimizes the cumulative effect on employment on the region by providing that many workers if hired for the high-paying mining jobs would move from the region. Specifically, the DSEIS states “... some mine employees from NAB/YKCA communities may not continue to reside in the region after they are hired. Mining has high average wages and allows workers to live where they prefer and commute to the work site on a rotating schedule (DOWL 2016). About half of the NANA shareholders recruited to work at Red Dog decided to move their families and live outside the NAB for lifestyle and/or economic reasons (Tetra Tech 2009).” (p 3-195). In a footnote to that statement, the DSEIS states “In comments on the Draft EIS, NANA indicated that data show the opposite--that workers in the NANA region who hold mining jobs stay in their local community. However, the comment did not include the source of the data.” The EIS team should have tracked down the source for that information. The source is a University of Alaska study that is both more recent and more detailed than Tetra Tech's analysis. Specifically, the peer reviewed journal Resources Policy, Vol 66; 2020 is the source: Long-term benefits to Indigenous communities of extractive industry partnerships: Evaluating the Red Dog Mine. M. Berman, R. Loeffler, J. Schmidt. That study found that, “...getting work at Red Dog was associated with a relatively small increase in the likelihood of leaving the NWAB” (Northwest Arctic Borough, quote from page 8). The study documented the relatively high mobility of all workers but found that work at the Red Dog Mine was not a large factor in increasing outmigration. Thus, the conclusion in the DSEIS has been superseded by more recent and more detailed data. The DSEIS then goes on to paint a potentially dire scenario prompted by the superseded information. The draft reads, “Should employment opportunities in remote mining projects in the District lead to depopulation of some NAB/YKCA communities, the effect on the range and level of local public services and facilities could be negative which, in turn, could prompt further outmigration. It is difficult to predict the number of NAB/YKCA residents employed by mining projects in the District that would choose to reside outside the region during their employment with the projects.” This language postulates a downward spiral in the quality of life in these communities created by giving local Native peoples a high paying job. This concept should be stricken from the draft. First, the data is based on has been superseded by new information. Second, Red Dog would have provided a real-life, nearby example of whether the villages have been depopulated. Before making such an insulting implication - that allowing indigenous peoples to take remote, high-paying jobs will decrease the quality of life in their community - the EIS team needs to at least check the census data in the communities, and Borough records to determine if this is true. In fact, it is not. Further, the DSEIS clearly implies but does explicitly state that providing an income which allows recipient to choose where they wish to live is somehow a bad thing. Providing real choices to any population, including Alaska Natives, is positive. The tone of the DSEIS with respect to economic development needs to be significantly revised.	The Supplemental EIS was revised to include finding from the more recent study. It should be noted that the Supplemental EIS presents both sides of the issue-- --“the jobs and economic stability that the mining projects would create could ease population reductions in NAB/YKCA communities by stemming outmigration. Stemming outward migration would help ensure that an adequate level of public facilities, such as utilities, schools, and health clinics, is maintained in the communities.” --“On the other hand, some mine employees from NAB/YKCA communities may not continue to reside in the region after they are hired. Mining has high average wages and allows workers to live where they prefer and commute to the work site on a rotating schedule (DOWL 2016). Should employment opportunities in remote mining projects in the District lead to depopulation of some NAB/YKCA communities, the effect on the range and level of local public services and facilities could be negative which, in turn, could prompt further outmigration. It is difficult to predict the number of NAB/YKCA residents employed by mining projects in the District that would choose to reside outside the region during their employment with the projects.”
25248	1	Alternatives	Right-of-way access through Gates of the Arctic for this project was granted in 1980 when the Alaska National Interest Land Conservation Act (ANILCA) was signed into law. Interestingly, in the 43 years since ANILCA was passed, opponents of the project have been unable to identify a reasonable alternative to the road or come up with some kind of compromise that would satisfy the wants, goals, and needs of all stakeholders. Further, amongst all the substantive comments submitted during the seven-year public process, no reasonable alternatives were identified.	The BLM explored and evaluated multiple alternatives routes that did not go through Gates of the Arctic National Preserve, including a route, Alternative C, that was brought forward for detailed analysis throughout the Supplemental EIS. Other alternatives that avoided GAAR but were dismissed from detailed evaluation can be found in Appendix G of the Supplemental EIS.

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25416	1	Fish and aquatics	AIDEA only assessed 55 waterbody crossings in the first 55 miles of the road, leaving more than 156 miles unanalyzed. This lack of data and preparation to mitigate or eliminate impacts to fish is unacceptable, especially in the face of existing declines in fish populations.	Should an action alternative be approved in the BLM's ROD, additional surveys and studies would be conducted as needed in support of other local, state, and federal permits. As described in Draft Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA - Biological Resources, fish surveys would be conducted to assess fish presence in rivers in streams for all life history stages along the selected alignment. The scope of these surveys would be coordinated with ADF&G, USFWS, and the National Marine Fisheries Service. The Supplemental EIS includes a description of design features and mitigation measures that are intended to reduce impacts to waterways, fish, and aquatic habitat from road construction and the installation of bridges and culverts (see Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA - Physical Environment, and Section 3.2.5, Water Resources - Impacts Common to All Action Alternatives).
25461	1	Mammals	Those who live in the Arctic and catch caribou/other game to survive maintain the belief that increased air traffic from people out of town harasses and otherwise harms the wildlife in the Arctic. The addition of approximately 1,700 flights associated with construction and operation of the road will certainly be an additional point of concern and contention for local users.	Discussion of the potential impact of aircraft on caribou and subsistence hunters is discussed in Section 3.3.4 of the Supplemental EIS.
25461	2	Public access	Additionally, the airstrips added to aid in the construction of the road will provide more opportunity for trespassing via aircraft. Aircraft activity from nonlocal users is currently a point of contention for local users in the northwest Arctic.	See Supplemental EIS, Appendix N, Section 3.4.2, Transportation and Access Potential Mitigation Measures 1 and 3 for proposed prohibitions regarding airstrips.
25461	3	Socioeconomics and communities	The proposal for Ambler road boasts that it will increase access to commercial services for communities; however, each community will be expected to construct and maintain these access roads. These connecting roads would need to range anywhere from 2-105 miles in length, which would prove too expensive of a task for many communities in the Arctic. Thus, the cost of these roads presents an insurmountable obstacle for several communities. The communities who are unable to build access roads to the Ambler road will miss out on one of the few and key benefits presented in favor of the Ambler road.	As noted in Supplemental EIS (Section 2.4.3)-- AIDEA has proposed that communities would be allowed to use the road for commercial deliveries. Development of spur roads however would depend on the community's proximity to the proposed road and ability to find construction funding. The cost of constructing and maintaining these spur roads is likely to be high given the challenging soil conditions and other factors. Some communities farther away from the alignments, such as Allakaket or Alatna, may find it cost prohibitive to construct a connection to the proposed access road. The Commercial Access Scenario presented in Appendix H (Section 2.2.1) provides greater detail concerning the specific communities likely to be affected by connections to the proposed road, and acknowledges that those communities would be responsible for obtaining separate access authorizations and for covering maintenance costs. Appendix H also acknowledges that some of those permanent connecting roads could be authorized as public roads, and therefore might involve some public funding (see Section 2.2.1 of Appendix H). See also Section 3.4.5, Socioeconomics and Communities in the Supplemental EIS for a description of the benefit of the proposed road due to commercial access for communities closest to the road.
25461	4	Public access	The road will provide new access routes for local and nonlocal hunters, who can be expected to trespass on the road outside of strict designated crossing areas. Such examples of trespassing have been seen along the Red Dog mine road, and should be expected with the construction of the road to Ambler. Providing additional access to nonlocal users will apply extra pressure to declining caribou herds, on top of the hindrance to migration that the road will surely cause. Data has shown that the Red Dog mine road affects caribou migration, and the road to Ambler will be longer, with less planned mitigation practices than Red Dog. The road to Ambler allows nonlocals more convenient access to a struggling resource, while the road itself can be seen as a blow to caribou population stability.	See response to letter 14098, comment 1.
25467	1	Subsistence	I read at one time that the average subsistence family would lose about \$10,000 value of subsistence foods, that was a few years ago so now more like \$13,000, That's a lot of money now, so even if someone has a paycheck from a job on this project, they will just have to spend more money on food that comes in from somewhere else and is not as healthy as the foods we can harvest here.	Reviewed Section 3.4.7 to ensure the economic impacts of a loss of subsistence foods is adequately addressed.
25540	1	Alternatives	.In any event, the road could easily go around the Gates of the Arctic with a bit more time necessary for the trip. When balancing the hardships of a longer road with the destruction of the Gates area I note that: 1. no one has measured the actual additional time to go around the Gates area; and 2. no one has explained why this would irreparable harm the mining interests.	The BLM explored and evaluated multiple alternatives routes that did not go through Gates of the Arctic National Preserve, including a route, Alternative C, that was brought forward for detailed analysis throughout the Supplemental EIS.
25549	1	Funding and bonding	What is the state paying for? Is there a plan for maintenance?	See response to letter 18932, comment 3. Maintenance is addressed in Supplemental EIS Section 2.4.3, Features Common to All Action Alternatives.
25643	1	Water resources	Pages 3-35 and 3-36: Coast Guard Permits-It appears in the SEIS that coast guard permits would not be required for Alts A and B? Would Alternative C require Coast Guard permits? Clarify and ensure accuracy.	Based on AIDEA's consultation with USCG for Alternatives A and B, with advanced approval granted for the Koyukuk River bridge and jurisdiction otherwise declined, no USCG permits are required. Alternative C would likely require USCG permits for crossing the Koyukuk River and Kobuk River; see discussion on navigable rivers in Section 3.2.5 under Impacts Common to All Alternatives. Clarified in this section.
25643	2	Proposed action	2.2.2 H-31: The topic of likelihood that the road would eventually be a public road or will be removed and the lands and waters rehabilitated is an important topic. Provide more clarity on the plan for reclamation of the road.	See response to letter 29489, comment 92.

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25643	3	Geology and minerals	3. Pages 3-12 and 3-13: Alternative A and B impacts, Geology and Soils-Include as mitigative measures the Corps of Engineers 404 permit special conditions that address asbestos/acid rock drainage (#s 29 and 30, Geotechnical Investigations), and permafrost (# 13 to 15, Mitigation Measures to Protect Thaw-Sensitive soils).	Section revised to add the noted proposed USACE mitigation measures described in Appendix N.
25643	4	Sand and gravel resources	Page 3-16: Impacts Common to All Action Alternatives, Sand and Gravel Resources- add reference to Corps of Engineers 404 permit special conditions that addresses asbestos/acid rock drainage (#s 29 and 30, Geotechnical Investigations), and fugitive dust impacts (#s 22 and 23, Airborne Dust).	Section revised to include reference to USACE proposed Airborne Dust mitigation numbers 22 and 23.
25643	5	Wetlands	Page ES-7: Proposed measures to Reduce Impacts- add that the Corps of Engineers 404 permit has special conditions to minimize impacts to wetlands and aquatic environment	Text revised as suggested.
25643	6	Purpose and need	Page 1-5: Purpose and Need for Federal Action. Replace The U.S. Army Corps of Engineers (USACE) is a cooperating agency for this project and also has its own purpose and needs to consider. Under Section 404(b)(1) Guidelines, the USACE has a basic purpose to determine whether the proposed project is water dependent. Then, the USACE has an overall purpose that, based on AIDEAs purpose and need, serves as the basis for identifying practicable alternatives to the applicants proposed project. In its review as a cooperating agency, the USACE indicated that its overall purpose is to provide year-round surface transportation access for mining exploration and development in the Ambler Mining District. The BLM confirmed with the USACE that its purpose and need for the proposed action had not substantively changed since the March 2020 Final EIS. Replace with this: The U.S. Army Corps of Engineers (USACE) is a cooperating agency for this project and is neither a proponent nor opponent of the project. Under Section 404(b)(1) Guidelines, the basic project purpose is used to determine whether the proposed project is water dependent. The USACE also determined an overall project purpose based on AIDEAs purpose and need which serves as the basis for identifying practicable alternatives to the applicants proposed project. In its review as a cooperating agency, the USACE indicated that the overall project purpose is to provide year-round surface transportation access for mining exploration and development in the Ambler Mining District. The BLM confirmed with the USACE that its purpose and need for the proposed action had not changed since the March 2020 Final EIS.	Text revised as requested.
25643	7	Birds	3.3.3 Birds: The bird section was written well and thorough. Aside from the time-of-year restriction regarding forest clearing the section on birds lacks identification of other mitigative measures. We recommend adding additional mitigative measures that would reduce impacts to birds and their habitats to include the Corps of Engineers 404 permit special conditions: #s 2 to 4, Fill Discharges (includes the use of clean fill materials and biodegradable natural fiber erosion control where practicable); #s 5 to 12, Mitigative measures to minimize impacts to streams, floodplains, and fish habitats; #s 13 -15, Mitigation measures to protect thaw-sensitive permafrost soils; #s 16 -17, Nutuvukti Fen and Nutuvukti Lake Protection; #s 18-19, Floodplains; # 21, Site Restoration of Ground Disturbing Activities; #s 22-23, Airborne Dust; and Geotechnical Investigations.	Added a paragraph explaining mitigation of direct habitat loss. Added a subsequent paragraph explaining potential mitigation of indirect habitat loss.
25643	8	Wetlands	3.3.1 Vegetation and Wetlands, Page 3-71, Mention the Corps of Engineers 404 permit special conditions #s 16 -17 to minimize impacts to Nutuvukti fen.	Reference to USACE permit special conditions 16 and 17 has been added to text addressing specific impacts to Nutuvukti Fen.
25643	9	Fish and aquatics	3.3.2 Fish and Aquatics, Impacts Common to All Alternatives: Add the Corps of Engineers 404 permit special conditions: #s 2 to 4, Fill Discharges (includes the use of clean fill materials and biodegradable natural fiber erosion control where practicable); #s 5 to 12, Mitigative measures to minimize impacts to streams, floodplains, and fish habitats; #s 13 -15, Mitigation measures to protect thaw-sensitive permafrost soils; #s 16 -17, Nutuvukti Fen and Nutuvukti Lake Protection; #s 18-19, Floodplains; # 21, Site Restoration of Ground Disturbing Activities; #s 22-23, Airborne Dust; and Geotechnical Investigations.	The special conditions not previously included have been added as requested to Section 3.3.2, Fish and Aquatics.
25643	10	Fish and aquatics	3.3.2 Fish and Aquatics, Pages 3-89 to 3-98, Impacts Common to All Action Alternatives: This section could benefit by reorganizing to make it flow better and more readable by creating subheadings. One recommendation is to place the information that describes how climate change is affecting the aquatic environment (see comment below) in the Affected Environment section under a subheading titled Climate Change.	The Fish and Aquatics section is organized consistent with other Supplemental EIS sections.
25643	11	Fish and aquatics	3.3.2 Fish and Aquatics, Affected Environment, Aquatic Habitat: The affected environment section should include the information regarding how climate change is affecting stream chemistry and hydrology in the project area from permafrost thaw, debris slumps, and water temperature. A reference is Potential Effects of Permafrost Thaw on Arctic River Ecosystems, by Jonathan ODonnell, National Park Service et al., Alaska Park Science, Volume 16.	Text has been added to the affected environment section (Supplemental EIS Section 3.3.2, Fish and Aquatics) describing climate change impacts to aquatic habitat.
25643	12	Fish and aquatics	3.3.2 Fish and Aquatics, Affected Environment, Pacific Salmon: Information should be provided in the affected environment section regarding the sensitivity of Pacific salmon eggs and alevins to pollutants such as levels of fine sediment in spawning gravels, pH and metals. One good source of information and additional references is in The Behavior and Ecology of Pacific Salmon and Trout, second edition, by Thomas P. Quinn.	Comment is noted. A more appropriate location for impacts like the one discussed here is in the Impacts Common to all Alternatives section. In this section we discuss many of the potential impacts to fish from various road activities, including from pollutants from sedimentation or spills. However, for clarity, we have added 2 sentences to reference impacts on sensitive life history stages from sedimentation (e.g., egg or rearing juveniles). Additional language related to changes in natural water chemistry and impacts to egg survival are mentioned throughout the text and referenced to Limpinsel et al. 2017.
25643	13	Fish and aquatics	Page C-11, 1.5.10 and 1.5.11: Need to include in discussion of impacts the mitigation actions from Corps of Engineers special conditions. This is especially important for the fish discussion as one of the primary drivers for requiring the culvert design special condition was to minimize impacts to fish habitat. Also need to mention indirect impact from dust on wetlands (this is documented in Corps of Engineers 404 b-1 analysis).	Reference to the USACE permit special conditions has been added to Appendix C, Section 1.5.11.
25643	14	Fish and aquatics	Page 3-102: Combined Phasing Option: The paragraph is confusing and not clear.	Edited for clarity.

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25643	15	Government to government consultation	1.5.3, 1-7 Government to Government and NHPA 106 Consultations with Tribes: The text doesnt fully or accurately match the G2G consultation information in Appendix I, Table 2. The table 2 shows more G2G consultations than stated on Page 1-7. I suggest explaining on Page 1-7 that the G2G consultations were held in-person in the villages as indicated in Table 2, Appendix I.	Text added to p. 1-7 as suggested.
25643	16	Geology and minerals	16. Page 3-9: Recommend adding discussion of insulating roadbed with polystyrene foam as a best management practice to reduce impacts to permafrost: Corps of Engineers condition # 15: The applicant shall use insulation in the roadway where necessary to reduce impacts to permafrost soils (for example, in area of thaw-sensitive permafrost soils). These areas shall be identified prior to construction and on-site changes made during construction as necessary to protect permafrost soils. These areas shall be identified in the final design that will be provided to the Corps for review prior to construction. If foam is used to insulate the permafrost from thermal degradation, it shall be composed of closed-cell extruded polystyrene or other closed cell foams (e.g., blueboard) rather than non-extruded expanded polystyrene foam.	Reference to USACE proposed mitigation 15 was added as described for the above comment number 3.
25643	17	Hazardous waste	Page 3-19: Impacts from spills discussion should include BMPs to reduce potential of spills. Also, consider discussing what the trucks will mostly be hauling, i.e., how much is chemical and how many loads are ore? Im thinking ore is the majority but the discussion in the EIS/SEIS doesn't make that clear? This would provide context to the discussion of risk of contaminant spills.	Appendix N includes potential mitigation measures for spills along the road. Appendix H, Table 2-5 describes the traffic generated by the 4 mining projects during production [majority (approximately 2/3) of loads are ore].
25643	18	Water resources	Page 3-26: The use of the word additional as in hundreds of named and unnamed smaller rivers and streams intersect the proposed alternatives, requiring 44 to 509 additional bridge (small and medium) and culvert (moderate and major) crossings as identified in Appendix D, Table 17 is misleading. The reader could interpret that as additional to what was discussed in the EIS. Recommend just deleting the word additional as it is unnecessary. (Its used several times in the additional text).	Deleted "additional" from text as recommended.
25643	19	Water resources	Page 3-29: Suggest adding Corps Special Condition requiring natural channel design for all culverts.	Revised in yellow box on p. 3-29 to added special condition 5 requiring natural channel design for fish passage crossings.
25643	20	Wetlands	Page 3-42: Modify the following sentence: 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. To: Approximately 60 percent of the Alternative A alignment is estimated to be in in areas with thaw-sensitive permafrost soils or emergent wetlands. The combined phasing option would be applicable to the entire length of road so the remaining 40 percent of the alignment that is not located within thaw sensitive permafrost soils or emergent wetlands would also be built to Phase II standards.	Text revised as suggested.
25643	20	Water resources	Page 3-42: Modify the following sentence: 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. To: Approximately 60 percent of the Alternative A alignment is estimated to be in in areas with thaw-sensitive permafrost soils or emergent wetlands. The combined phasing option would be applicable to the entire length of road so the remaining 40 percent of the alignment that is not located within thaw sensitive permafrost soils or emergent wetlands would also be built to Phase II standards.	Revised as recommended.
25643	21	Water resources	Page 3-43, first sentence, third full paragraph: The combined phasing option may result in more temporary disturbances near river and stream crossings associated with staging materials, specifically bridge girders and piles, and equipment that must be transported by truck. The Corps of Engineers does not concur with the conclusion that the combined phasing option may result in more temporary disturbance. The temporary disturbances would occur at some point even if the combined phasing option was not implemented. Temporary crossings/ice bridges/low water crossings (that will eventually contain a permanent bridge) are more impactful than constructing the bridge in the first place. The temporary disturbance is just happening earlier in the process because the bridge is being constructed earlier in the process. Recommend deleting or clarifying why you think that is true. Apply the changes to the text on page C-7 (SEIS 1) as well.	Paragraph deleted per recommendation. Similar sentences on C-7 deleted per recommendation.
25643	22	Water resources	Appendix C, Page C-9, 1.5.7: The first paragraph should be revised to include a discussion of the Corps special conditions. The effects discussion should describe how the Corps special conditions minimize the impacts.	Additional discussion of CWA Section 404 permit special conditions added to Section 1.5.7 on page C-9.
25643	23	Water resources	Appendix D, Page D-12 Table 17, recommend adding Total to each item in the first row.	Revised as noted.
25643	24	Fish and aquatics	The conclusions regarding the magnitude of the impacts to fish in Appendix C, Section 1.5.11 are not well supported in the Affected Environment Section where magnitude is not really discussed. In appendix C, recommend more clearly differentiating between direct and indirect impacts of the road and the cumulative impacts due to the reasonably foreseeable future actions of mining. Please include in the discussion of impacts, all Corps special conditions that are intended to mitigate, directly or indirectly, impacts to waters of the U.S, and hence fish habitat and fish species (at least 5-20, but really all of them). A list of all Corps permit special conditions are attached to these comments. Page E-3 and E-4 Volume 1 edits: Do not discuss jurisdiction in the SEIS. That is specific to the Corps of Engineers permit only. And does not change how wetlands were evaluated in the SEIS. Edit the sentence to delete all highlighted text below: Wetlands are those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (USACE 1987). Wetlands are areas that are covered by water or have waterlogged soils for long periods during the growing season. Plants growing in wetlands are capable of living in saturated soil conditions for at least part of the growing season.	Supplemental EIS Appendix C, Section 1.5.1, Approach to Summarizing Impacts to the Alternatives, includes a description and definition of how likelihood, magnitude, duration, and extent are used in the summary of impacts. These elements are not included in the Supplemental EIS Affected Environment and Environmental Consequences sections. Reference to the USACE permit special conditions has been added to Appendix C, Section 1.5.11. The Supplemental EIS states that wetlands are considered in the broad ecological context and specific jurisdictional WOTUS are addressed in the Section 404 CWA permitting process. The Supplemental EIS provides sufficient information for the USACE to complete a Least Environmentally Damaging Practicable Alternative determination.

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25643	25	Wetlands	Waters of the U.S. (WOTUS) is a legal term stemming from the adoption of the Clean Water Act (CWA) in 1972. Wetlands are a subset of WOTUS and must possess the following: (1) a vegetation community dominated by plant species, typically adapted for life in saturated soils; (2) inundation or saturation of the soil during the growing season; and (3) soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions (USACE 1987, 2007). The WOTUS and which wetlands are jurisdictional under the CWA have been the subject of repeated litigation. On March 20, 2023, the U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (USACE) Revised Definition of Waters of the U.S. rule (88 FR 3004) took effect. However, this revised definition of WOTUS was halted on May 25, 2023, when the U.S. Supreme Court published its decision in Sackett v. Environmental Protection Agency. This decision limits the application of the CWA to wetlands to those that have a direct surface connection to another body of federally protected water (i.e., a traditionally navigable waterway). The EPA and USACE are currently developing a new rule to amend the final Revised Definition of Waters of the United States rule based on the U.S. Supreme Courts decision in Sackett v. Environmental Protection Agency. The new rule will provide guidance on what wetlands and WOTUS are subject to the USACEs jurisdiction. The new rule is anticipated to be published by September 1, 2023. The U.S. Supreme Courts decision in Sackett v. Environmental Protection Agency limits the jurisdiction of federal agencies to regulate activities in some wetlands, but it does not change the ecological definition of wetlands. Wetlands are analyzed in this Supplemental EIS based on their ecological definition, including all identified impacts under the action alternatives, and the impacted quantities may differ in the projects USACE Section 404 permit. as only those wetlands that meet jurisdictional requirements would be identified.	Commenter is correct on the legal status (jurisdiction) of wetlands and how wetlands are analyzed in the Supplemental EIS (ecological definition).
25643	26a	Environmental justice	The Corps cannot concur with the EJ determinations in the SEIS until the following comments are responded to: i. Page 3-201, and Page F-16 and F-17 Environmental Justice: Add references for where you got the information to determine EJ communities and determined disproportionately and severe adverse impacts to EJ communities. Explain the metrics for determining minority and low-income EJ communities, cite appropriate sources. Provide overall conclusion among the alternatives regarding the relative impact to EJ communities.	As stated in the Supplemental EIS, information to determine EJ communities was obtained from the U.S. Census Bureau. See source note in Appendix F, Table 21. The metrics for determining minority and low-income EJ communities is described in Appendix F, Section 1.6.1. As stated Section 3.4.6, Environmental Justice in the Supplemental EIS, the overall conclusion among the alternatives regarding the relative impact to EJ communities is that some disproportionately high and adverse effects on minority and low-income populations would occur, including potential reductions in subsistence resource abundance and availability, increased exposure to public health risks, and damage to ethnographic resources and cultural properties. This conclusion is based on impacts to resources discussed in their respective sections, as summarized in the EJ analysis.
25643	26b	Environmental justice	ii. Page F-22, Environmental Justice: Impacts to visual resources would impact EJ communities because of the importance of the natural landscape to their culture and identity.	Text has been added to Section 3.4.6, Environmental Justice, stating that impacts to visual resources would impact environmental justice communities because of the importance of the natural landscape to their culture and identity.
25643	26c	Environmental justice	iii. Page F-20 and F-21, Environmental Justice: There needs to be explanation and sources for how the minority and low-income EJ communities were determined. Explain the method for determining minoring and low-income EJ communities and cite sources and executive orders.	See response to letter 25643, comment 26a.
25643	26d	Environmental justice	iv. Define study area for EJ. State study area in discussion in Appendix F or point to where in SEIS it is defined. Are all the communities on that table really in the Study Area.	Text has been added to Section 3.4.6, Environmental Justice, stating that the 66 study communities within the environmental justice study area include the primary subsistence study communities, caribou subsistence study communities, and fish subsistence study communities, as defined in Section 3.4.7, Subsistence Uses and Resources.
25643	27	Fish and aquatics	General Comment: The project if constructed, would be the first major road in this area of the south Brooks Range foothills covering a vast landscape. Therefore, the SEIS should describe in a section, how the impacts of this first large development may be fundamentally different in intensity or type, compared to if there were already similar infrastructure in the area. Provide any supporting scientific or Traditional Ecological Knowledge information, or explain that such information is lacking.	Text added as suggested.
25643	28	Wetlands	General Comment: The Corps is providing a list of the special conditions we require of the applicant in our permit for the discharge of fill in waters of the U.S. including wetlands. These conditions are applicable for the entire route Alterative A.	USACE permit special conditions are referenced throughout the Supplemental EIS in applicable sections and they are included in Supplemental EIS Appendix N, Potential Mitigation.
25649	1	Socioeconomics and communities	The DSEIS does not take into account concerns about production of minerals and oil and gas in the region to begin winding down. Should this happen, jobs and economic benefits will decrease, elevating the importance of replicating the successes of projects like Red Dog. According to the Northwest Arctic Boroughs (NWAB) Comprehensive Plan Update for 2030, 83% of the boroughs operating funds came from Red Dog in 2020. That is why the NAWB and North Slope Borough assemblies passed a joint resolution in April of 2023 in support of the AAP and development of the Ambler Mining District in recognition of the jobs, revenue, and good stewards mining companies can be.	See response to letter 23508, comment 19.
25724	1	Alternatives	One alternative means of transporting ore from the Ambler district that did not seem to receive adequate attention was using barges on the Kobuk River. The village of Kobuks major means of transportation are barge, plane, small boat, and snow machine. Daily scheduled air carriers serve a state-owned 2,500' lighted gravel airstrip. Crowley Marine Services barges fuel and supplies to Kobuk during the summer and fall, when high water stages occur (Source: https://www.manilaq.org/northwest-alaska/kobuk/). While the alternative of building a road to the Kiana barge site on the lower Kobuk River was considered and rejected; I found little mention of using barge transport from Kobuk. This would be seasonal access to tidewater, like at Red Dog Mine, so deserves consideration. It avoids constructing and maintaining over 200 miles of road that will cost hundreds of millions of dollars, if not cost magnitudes more if counting construction to Phase 3	Appendix G, Section 6.3 details the pros and cons of utilizing barges on the Kobuk River. This alternative was determined to not meet the purpose and need of the project and was eliminated from further analysis due to technical feasibility and practicality.

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			widths. This proposed road has the scent of boondoggle all over it. And to be frank, AIDEA has lost the trust of many Alaskans.	
25830	1	Compliance with other laws	Doyon has raised serious concerns, at various stages in the planning and review and subsequent processes relating to the AAP, that Federal agency obligations to consult with ANCs were not being properly recognized or appreciated. Earlier in the environmental review process, Doyon expressed that it was critical that the mandatory nature of these obligations be clear to the project proponent, Federal permitting agencies, and other stakeholders from the outset, to ensure that ANC concerns are sought and appropriately considered in the various Federal agency decision making processes relating to the Project. Doyon further explained that we expected to be engaged by BLM in meaningful consultation throughout each stage of the review and permitting process, and that we intended to provide further comments and input through consultation and the public comment process. Unfortunately, as Doyon explained in its scoping comments, BLM has failed to consistently meet its obligations to consult with Doyon prior to taking actions concerning Ambler Road that have the potential to affect Doyons interests. This included BLMs decision to suspend the right-of-way authorizations for the Project resulting in this SEIS process without first consulting with Doyon to consider its position and interests. It also included BLMs effort last year again, without first consulting with Doyon to block Alaska Industrial Development and Export Authority (AIDEA) from undertaking preliminary survey and field work activities on Doyon-owned lands. This was despite Doyons explicit agreement authorizing AIDEA to engage in such activities, and despite the fact that, as a private landowner, it is Doyon not BLM that has the power and authority to grant (or to deny) rights to third parties for access to and use of Doyon lands.	See response to letter 25830, comment 3.
25830	2	Compliance with other laws	BLM also inexplicably continues to misrepresent the nature and extent of its obligations to consult with ANCs. In the DSEIS, BLM states, in its discussion of Collaboration and Coordination, that, as a matter of policy, the BLM initiates consultation with Alaska Native corporations for actions that have a substantial direct effect on them. DSEIS, p. 1-7 (emphasis added); see also FEIS, p. 1-5 (containing the same statement).1 As BLM should be well aware because this has been the case for nearly 20 years, because Doyon specifically drew the agencys attention to it in its scoping comments on the SEIS (not to mention in response to countless other comment opportunities), and because it is noted in the NOA its obligations to consult with ANCs are not merely a matter of policy but are directed by federal law. In Executive Order (EO) 13175, Consultation and Coordination with Indian Tribal Governments, the President required federal agencies to implement an effective process to ensure meaningful and timely consultation with tribes during the development of policies or projects that may have tribal implications. While EO 13175 itself applies specifically to federally recognized tribal governments, pursuant to Pub. L. 108-199, 118 Stat. 452, as amended by Pub. L. 108-447, 118 Stat. 3267, Congress by statute specifically extended these obligations to ANCs, requiring the Office of Management and Budget and all Federal agencies, including BLM, to consult with Alaska Native corporations on the same basis as Indian tribes under Executive Order No. 13175.	Reference to consultation with ANCs has been revised to reflect the BLM's requirements under policy and law.
25830	3	Compliance with other laws	Appendix I of the DSEIS (Preparers, Consultation and Collaboration) also fails to accurately represent BLMs consultation obligations to ANCs and document BLM consultation meetings with ANCs. Section 2 of Appendix I addresses Government-to-Government Consultation, and includes a table (Table 2) that presents the dates, locations, and attending agencies and other entities involved in government-to-government consultation meetings associated with the Supplemental EIS and Section 106. DSEIS, pp. I2 - I-3. However, there is no corresponding section addressing ANC consultation. The only discussion of consultation with ANCs in this appendix is in section 3, which addresses Section 106 and includes two tables: Table 3, which presents the dates, locations, and attending agencies and other entities involved in Section 106 consultation meetings that have occurred since July 2020; and Table 4, which presents information regarding the regularly recurring meetings held to assist with implementation of the [Section 106 Programmatic Agreement]. DSEIS, pp. I-3 - I-4. Consultation under section 106 of the National Historic Preservation Act, however, is different from the consultation required pursuant to EO 13175, as extended to ANCs by Congress.	Appendix I has been updated to include formal consultations that have occurred between the BLM and ANCs related to the Ambler Road Supplemental EIS.
25830	4	Alternatives	Common to each of these action alternatives is that they presuppose that Doyon will grant a right-of-way for the construction and operation of the AAP across Doyon lands. Doyon has made clear, however, both in the context of this environmental review and in related litigation, that it has not committed to granting a right-of-way for the Project. It has cautioned BLM against limiting its consideration of action alternatives to alternatives that rely upon use of Doyon lands. In its previously-submitted comments on the Projects environmental review and in consultation discussions, Doyon had urged that variations of the routes westward from the Ambler Mining District that had been included in the 2012 Alaska (DOT&PF) Ambler Mining District Access Summary Report AKSAS 63812 (DOWL HKM, 2012) would provide significant comparative benefits and lesser impacts than previously reported and described in the DEIS and should be given further detailed consideration in the FEIS and BLMs decision making process. It urged BLM to reconsider its decision not to undertake a detailed evaluation of alternative routes to the west from the Ambler Mining District, such as the Nome/Council route that Doyon presented to BLM or any other route that would not require the use of Doyon lands.	See response to letter 25830, comment 5.
25830	5	Alternatives	In the DSEIS, the BLM asserts that it reconsidered various road and rail routes including certain westward routes, determined they are not reasonable, and eliminated them from detailed analysis. DSEIS, at 2-4 - 2-5. The result is that every single action alternative carried forward for detailed consideration involves a route that would cross Doyon lands and presumes that Doyon will authorize a right-of-way across approximately ten to twelve miles of Doyon-owned lands. Though BLM does acknowledge in its discussion of Socioeconomics and Communities that AIDEA would need to negotiate access across Doyon Lands, DSEIS, at 3-196, a presumption that AIDEA will have access across Doyon lands is inappropriate. As Doyon has explained to BLM, As a private landowner, it is Doyon and not BLM that has the power and authority to grant (or to deny) rights to third parties for access to and use of Doyon lands. Whether for short-term access for preliminary field work or long-term authorization of a right-of-way, any decision to authorize, restrict, or deny access to and use of Doyon lands is	The BLM has considered a range of alternatives—see Appendix G, Alternatives Development Memorandum—which details the alternatives considered and the rationale for which alternatives were considered reasonable alternatives to be studied in detail. The alternatives studied in detail included Alternatives A, B and C. The BLM fully evaluated the impacts of the various land ownerships that these three alternatives would need to cross. The BLM recognizes that AIDEA will need to negotiate access with Doyon and other private landowners. The BLM does not have control over AIDEA's negotiating approach with private landowners.

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			Doyons decision alone. BLM decisions do not determine or control the location of surface-disturbing activities on Doyon lands. Letter from A. Schutt to T. Stone-Manning, dated May 11, 2022, at 2-3 (attached).	
25830	6	Alternatives	Despite the findings in the DSEIS, Doyon continues to believe that detailed consideration of its alternative route is warranted based on BLMs determination that a deep water port at Nome is now considered reasonably foreseeable given funding for planning and construction of the port. DSEIS, at 2-5, G-34. As noted in the document that Doyon provided to BLM on August 3, 2019, Doyon also believes that the potential comparative benefits of this alternative route are greater, and the costs/impacts lesser, than previously reported for the western routes included in the Alaska DOT&PF 2012 report on potential corridor options, and than BLM has represented in the DSEIS. For instance, by better utilizing upland terrain and more closely following the Continental Divide, the amount of wetland habitat traversed and the number of stream crossings could both be reduced; the crossing of the Selawik Wild and Scenic River could be avoided (contrary to the DSEISs statement that the route crosses the Selawik River, DSEIS, at 2-5); and availability of material sites could be greatly improved (contrary to the DSEISs noting of limited material sites, DSEIS, at G-34). These factors also would be expected to result in improved constructability and lower construction costs.	See response to letter 25830, comment 5.
25830	7	Alternatives	BLMs consideration of action alternatives should include at least one alternative that does not rely upon use of Doyon lands. The BLMs dismissal of any western route alternative means that every action alternative that BLM considered in detail presumes use of Doyon lands. AIDEA has acknowledged that it does not possess the power of eminent domain to enable it to take private lands for use by the Project, and Doyon has not agreed and may not agree to authorize use of its lands for the Project something Doyon has consistently explained to both BLM and AIDEA in this environmental review process, in related litigation, and otherwise. The same could be true of other private landowners. As Doyon has indicated, and despite BLMs efforts to demonstrate benefits to Doyon in the DSEIS, Doyon does not currently anticipate that it and its shareholders will benefit from this Project in any meaningful way that would justify the impacts to communities or resources in its region. Doyon has therefore consistently recommended that BLM and AIDEA fully assess at least one route that does not cross Doyon lands.2	See response to letter 25830, comment 5.
25830	8	ANCSA	To date, AIDEA has not engaged with Doyon on substantive discussions regarding a potential right-of-way (ROW) across Doyon lands for the construction and operation of the Project. Doyon has raised serious concerns with both AIDEA and BLM about the Project that have not been satisfactorily addressed. In the event that the final selected route would propose to cross Doyon lands, among other conditions to its considering granting a ROW, Doyon would require appropriate compensation for the use of its lands, as well as other assurances. These assurances would include, but not be limited to, restrictions on the transfer or assignment of the ROW, or any rights thereunder, to any other entity (including any other state, federal, or local governmental entity). That AIDEA and Doyon will be able to reach agreement on terms and conditions for access to Doyon lands is by no means assured, and to assume that the proposed Project will occupy Doyon lands, as the DSEIS does, is presumptuous. As such, it is inappropriate for BLM to assume that AIDEA will be able to obtain a ROW across the entire route for any of the three action alternatives carried forward in the DSEIS. Indeed, the DSEIS appears to fail to fully appreciate landowners rights and the implications of those rights with respect to each of the action alternatives.	The BLM is required to analyze the proposed project as requested by the applicant through submission of SF299: Application for Transportation, Utility Systems, Telecommunications and Facilities on Federal Lands and Property. The Alternative A and B routes were submitted by AIDEA for analysis under NEPA. As stated in Section 1.4, Purpose and Need, the BLM's decision will be limited to whether to grant, grant with modifications, or deny the applicant's ROW application to cross BLM-managed lands.
25830	9	Alternatives	Absent permission to cross Doyon lands, none of the three action alternatives will meet the stated purpose and need of the Project. BLMs environmental analysis must consider the possibility that AIDEA may not be able to obtain use of all of the private lands required to accomplish the stated purpose and need for the Project under any of the action alternatives. It must identify and assess the impacts of one or more alternatives that do not require crossing Doyon lands. If BLM continues to only consider action alternatives that require rights to use Doyon, and perhaps other, private lands, other action alternatives would have to be developed and further subsequent NEPA analysis would be required in the event AIDEA is unsuccessful in obtaining the private ROWs needed under each of the existing action alternatives.	See response to letter 25830, comment 5. The BLM is required to analyze the proposed project as requested by the applicant through submission of Standard Form 299: Application for Transportation, Utility Systems, Telecommunications and Facilities on Federal Lands and Property. The Alternative A and B routes were submitted by AIDEA for analysis under NEPA. As stated in Section 1.4, Purpose and Need, the BLM's decision will be limited to whether to grant, grant with modifications, or deny the applicant's ROW application to cross BLM-managed lands.
25830	10	Alternatives	. BLM must complete and document a fair, meaningful comparison of proposed alternatives that consider the entire transportation and logistics chain and holds proposed alternatives to similar standards. Doyon also continues to have concerns that the BLM has not undertaken a true and fair comparison of western alternatives, such as Doyons proposed Nome/Council route, and BLMs preferred alternatives, and that BLM has given greater scrutiny to western routes than to the action alternatives. As Doyon has expressed to BLM on multiple occasions, BLMs assessment must look at the costs and impacts associated with the complete logistics and transportation chain i.e., not just construction and use of the Ambler Road itself, but of the complete transportation network, including the additional hundreds of miles of existing, improved, or new infrastructure that would be necessary to move concentrate, product, and other materials and resources to and from the Ambler Mining District. While BLM uses the potential need to improve other infrastructure as a basis from screening out all western routes, it does not apply the same scrutiny to the various action alternatives.	The BLM applied the screening criteria as detailed in Appendix G Section 6. The road routes to Nome were eliminated from detailed analysis due to a number of factors including cost (cost was estimated to be 4 times as much as the proposed route), greater environmental impacts (almost 2 times as much caribou habitat impacted compared to the proposed route, and the highest number [18] of anadromous stream crossings of all alternatives), and technical feasibility concerns (i.e., several speculative assumptions have to be made regarding the Port of Nome). The BLM cannot apply different screening criteria to certain alternatives and not others. For the practicality criterion, environmental metrics used during screening included caribou habitat, anadromous fish streams, and hydrology related to stream crossings and riparian acreage.
25830	11	Transportation and access	Among other information, Appendix G: Alternatives Development Memorandum identifies the Distance to Transportation Network (mi) (distance to existing port site) for each alternative. For the applicants Proposed Route (Alternative A), that distance is 939 miles (from Ambler Mining District to Port of Seward). For Alternative B, the distance is 956 miles (from Ambler Mining District to Port of Seward). For Alternative A, the DSEIS addresses only 211 of the 939 miles (approximately 22%) of total distance required for transportation between Ambler Mining District and the Port of Seward; for Alternative B, the DSEIS addresses only 228 of the required 956 miles (approximately 24%). DSEIS, at C-2. The DSEIS does not in any meaningful way, if at all, address to what extent improvements or additions to existing infrastructure will be necessary or the infrastructure construction and/or improvement costs, operation, and maintenance costs (for example, the increased costs for maintenance of the Dalton, Elliot and Parks highways), or impacts associated with that additional infrastructure and transportation. Instead, the DSEIS simply concludes that these alternatives do not rely on speculative assumptions or remotely feasible circumstances, DSEIS, at G-41 - G-42, and states that, while the overall distance to transportation network	See response to letter 23769, comment 1.

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			for Alternative A was a high number it was one that AIDEA appeared to be comfortable with and the majority of which (approximately 725 miles) would be utilizing existing transportation infrastructure. DSEIS, at G-41. For BLMs preferred alternatives, Alternatives A and B, the DSEIS states that BLMs analysis Includes no speculative assumptions/foreseeable circumstances. However, assumes adequate capacity/loading facilities at Port of Alaska or other existing port location in Southcentral AK. DSEIS, at G-C-1. The DSEIS, however, provides no basis for its assumption that the facilities at the Port of Alaska are adequate and gives no scrutiny to the project proponents comfort with the sufficiency of existing transportation infrastructure that will be necessary in connection with the road.	
25830	12	Transportation and access	Despite the increases in road traffic, rail traffic, and vessel transport that would be associated with the contemplated mining activity that would use the AAP for only a portion of the overall logistics train and concentrate transportation, the DSEIS does not consider whether the road, rail, and port facilities are sufficient to accommodate the type and levels of use associated with the contemplated mining activity. See DSEIS, at H-20 H-24.	The impacts of mining are analyzed to the extent that information is available to do so. No specific mining application/permit request for the District has been submitted to date. The BLM evaluated reasonably foreseeable mining development as indirect and cumulative impacts, using a hypothetical mining development scenario. When officially proposed, each mine would go through its own project-specific NEPA analysis and permitting process, which would provide further detail and analysis regarding the specific impacts of each mine operation.
25830	13	Alternatives	An apples-to-apples comparison factoring in the entire transportation route is particularly relevant here to a full assessment of comparative environmental impacts given that, as the DSEIS states, the Distance to the Transportation Network for the Selawik Flats route is less than half of that for Alternatives A and B402 miles (from Ambler Mining District to existing Nome port). DSEIS, at G-C-6. The DSEIS fails to discuss the comparative benefits that a shorter overall travel distance would offer, in terms of environmental and social impacts, cost, and otherwise.	The Appendix G screening results for the Selawik Flats route (see Section 6.4 of Appendix G) have been revised to include greater discussion of practicality and environmental concerns that led to the dismissal of the alternative.
25830	14	Alternatives	While, according to the DSEIS, [t]he BLM rescreened the Selawik Flats Route to reflect new information related to the reasonable foreseeability of a deep water port in Nome, this reconsideration appears to have been limited, and it does not appear that BLM gave any further consideration to the comparative benefits of a westward route as compared to the three action alternatives analyzed in the DSEIS. DSEIS, at G-28. Moreover, the DSEIS looks at the potential need to upgrade additional infrastructure of western routes in a way it did not for the action alternatives. For instance, the DSEIS states that the Selawik Flats Route would connect to the existing Nome-Council Road and, via that road, to a reasonably foreseeable deep water port at Nome. The Nome-Council Road is an approximately 73-mile-long seasonal road. It is likely that the road would require upgrades to make it operable for regular year-round mining support traffic, and that would be an additional cost. It further states that this alternative requires speculative assumptions regarding the reasonably foreseeable Port of Nome development; specifically, regarding the ports estimated completion date (currently estimated to be complete in 2030), storage capacity (TBD), and whether year-round access would be possible (i.e., with an ice breaker). In addition, this alternative assumes that Nome-Council Road may need to be improved. DSEIS, at G-35. The DSEIS makes similar statements concerning the Nome Route. DSEIS, at G-37. It also inconsistently and unfairly refers to Port of Nome as requiring speculative assumptions, despite determining that the Selawik Flats and similar routes met the screening criteria for being Feasibly and practically able to support mining exploration and development activities: Logical terminus would be the proposed deep water port at Nome, which is a reasonably foreseeable action with an estimated completion date of 2030. DSEIS, at G-C-6. Again, BLM provides no similar scrutiny to the sufficiency of other transportation infrastructure or port facilities that would be necessary to allow for transportation over the various action alternatives.	The conclusion is based on the application of the screening criteria for this conceptual alternative using the methodology described in Supplemental EIS Appendix G to compare potential alternatives.
25830	15	Alternatives	In summary, Doyon continues to believe that in excluding any western routes from further detailed consideration, BLM failed to meaningfully address significant considerations and criteria typically included in evaluations of access options to new mine development projects, and failed to evaluate western routes on a level playing field with BLMs preferred alternatives. Western routes, including the Nome/Council route that has been proposed by Doyon, should be further evaluated in detail as part of BLMs review and decisionmaking process. This review should hold all alternatives to the same standard with regard to the availability of existing infrastructure and the need for any additional infrastructure necessary to move supplies or product to/from the mining district and a port, and include serious consideration of relevant factors, including, but not limited to, the following: economics of corridor options as a function of the complete logistics chain; opportunities to provide access to other resource areas that currently lack access; corridor fit with overall state transportation and infrastructure plans; transport chain risk assessment; and cost and operational benefit of dedicated heavy haul road from port to mine.	The BLM applied the screening criteria as detailed in Appendix G Section 6. The road routes to Nome were eliminated from detailed analysis due to a number of factors including cost (cost was estimated to be 4 times as much as the proposed route), greater environmental impacts (almost 2 times as much caribou habitat impacted compared to the proposed route, and the highest number [18] of anadromous stream crossings of all alternatives), and technical feasibility concerns (i.e., several speculative assumptions have to be made regarding the Port of Nome). The BLM cannot apply different screening criteria to certain alternatives and not others. For the practicality criterion, environmental metrics used during screening included caribou habitat, anadromous fish streams, and hydrology related to stream crossings and riparian acreage.
25830	16	Alternatives	BLMs environmental review should seriously consider the fact that westward routes could facilitate additional development outside of the Ambler Mining District, providing important additional benefits in other areas of the State. As Doyon has stated, a westward corridor could provide important access for additional economic development opportunities on the Seward Peninsula, consistent with the long-term goals of the State. Although it has been suggested that such considerations are outside of this particular Projects purpose and need, such suggestions indicate that the Projects purpose and need is too narrow. The project proponent, AIDEA, is a public corporation of the State of Alaska, created in the interests of promoting the health, security, and general welfare of all the people of the state, and a public purpose, to increase job opportunities and otherwise to encourage the economic growth of the state, including the development of its natural resources, through the establishment and expansion of manufacturing, industrial, energy, export, small business, and business enterprises and other facilities . . . Alaska Statutes 44.88.010(b) (emphasis added). As Doyon has stated, the west corridors to the Seward Peninsula could provide access to the numerous mining districts (Koyuk District, Fairhaven District, Kougarak District, Council District, Nome District, and Port Clarence District), all having known potential for resource development. Each of these districts could benefit from port and road infrastructure. By comparison, the Brooks East Corridor has limited potential to spur the development of other mineral resource districts and deliver additional economic benefits to the State.	Regarding westward routes facilitating additional development: AIDEA has proposed to access the Ambler Mining District specifically. It is the minerals in that district that generate the need for the access. In other words the purpose and need is not to support mining across other mining districts such as the Koyuk District, Fairhaven District, Kougarak District, Council District, Nome District and Port Clarence District, but rather to support mining in the Ambler Mining District specifically. Regarding the suggestion that the Supplemental EIS should consider the merits of spurring development of other mineral resource districts and deliver additional economic benefits to the State, such development is not the purpose and need of the project. The BLM's purpose and need does not hinge on the delivery of economic benefits and is specific to the request for access detailed in AIDEA's proposal. See response to letter 30027, comment 11 regarding the purpose and need being too narrow. The BLM considered a full range of alternatives, including multiple routes that went west to the coast. The process held all alternatives to the same standard and used criteria that are typical for

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				mining access projects including the types of criteria suggested, economic feasibility, logistics, handling risk and operational challenges, and costs. These criteria were based on BLM's NEPA handbook. The western alternatives considered included alternatives that would have terminated at the Delong Mountain Transportation System port, Cape Blossom near Kotzebue, Nome, and Cape Darby on Norton Sound. NEPA does not require a detailed analysis of alternatives in an EIS if they are not reasonable alternatives. Western routes were not carried forward for detailed analysis in the EIS because they had issues with addressing the purpose and need, economic feasibility, environmental factors, and practicality. For details on the routes examined and the reasons some were not carried forward for detailed analysis, see Appendix G, Alternatives Development Memorandum.
25830	17	Purpose and need	AIDEAs charter suggests that, if the Authority has the opportunity to spur the development of additional natural resources and deliver additional benefits across the State in connection with its efforts to develop transportation infrastructure to connect the Ambler Mining District, then it should seriously consider the merits of doing so. And if the purpose and need of the EIS are stated in a way that doesnt provide for that, then the purpose and need statement should be expanded.	The BLM confirmed the text in Supplemental EIS Section 1.3, Applicant's Goals for the Project, with AIDEA.
25830	18	Alternatives	BLMs reliance on consideration of environmental factors in not carrying any of these Western alternatives forward for detailed analysis is also flawed. The DSEIS erroneously asserts that Selawik Flats Corridor alternatives would involve the greatest number of known anadromous fish stream crossings of any of the alternatives (18 streams). DSEIS, at G-35; see also DSEIS, at 2-5. Yet, according to Appendix E, Table 16, the number of known anadromous streams crossings for the various action alternatives is as follows: Alternative A; Alternative B; and Alternative C. DSEIS, at E-14. BLMs statement is thus incorrect, and any difference between the number of such crossings under Alternatives A and B and the Selawik Flats Corridor or similar alternatives is either non-existent or negligible.	Appendix G has been updated to reflect an accurate comparison of the number of anadromous fish stream crossings. Section 6.4 of Appendix G details various reasons why the Selawik Flats Route (Corridor) was not carried forward for detailed analysis: this was due to economic feasibility (the road would cost nearly 3 times more than the applicant's proposed route), practicality (the alternative requires speculative assumptions regarding the Port of Nome development), and environmental factors (the route would impact over 5000 more acres of caribou habitat than the applicant's proposed route).
25830	19	Alternatives	Moreover, while BLMs analysis concludes that the western alternatives would have some of the highest amounts of impacts to caribou habitat of any of the routes, that conclusion seems to be based wholly on acreage of land with fall migration use by the Western Arctic Caribou Herd (WAH) and does not meaningfully assess the potential for actual impacts or recent migration trends. DSEIS, at G-35. As an initial matter, BLM states that [c]aribou are most susceptible to disturbance during calving, DSEIS, at 3-136. The western routes proposed for BLMs consideration but rejected from detailed analysis are not near WAH calving grounds, which are located farther north, far from these proposed routes.	The conclusion is based on the application of the screening criteria for this conceptual alternative using the methodology described in Supplemental EIS Appendix G to compare potential alternatives.
25830	20	Alternatives	With regard to fall migration, the DSEIS indicates substantial uncertainty and variability with regard to how much of the WAH would pass through the project area, regardless of the alternative selected: Roughly 13 to 68 percent of the herd may pass through the project area during fall migration, between September and January, depending on the year (Joly et al. 2016; Joly and Cameron 2017). DSEIS, at 3-129; see also Map 3-23 (Fall and Winter Distribution of Collared Female Western Arctic Herd Caribou). With variability of 55 percent for the proposed project, there is no scientific basis for BLMs assumption that impacts on fall migration use through the western routes will be materially higher than for the action alternatives.	The conclusion is based on the application of the screening criteria for this conceptual alternative using the methodology described in Supplemental EIS Appendix G to compare potential alternatives.
25830	21	Alternatives	In addition, It is important to note recent patterns of 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 (Joly and Cameron 2022). WACH WG Draft Ambler DSEIS Comments, at 69 of 210 (citing Joly K, Cameron MD. 2022. Caribou vital sign annual report for the Arctic Network Inventory and Monitoring Program: September 2021 August 2022. Natural Resource Report NPS/ARC/NRR 2022/2484. National Park Service, Fort Collins, CO, USA), available here https://westernarcticcaribou.net/wpcontent/uploads/2023/12/00-2023-WACH-Binder.r.pdf . This recent pattern which would mean fewer animals migrating across the proposed western routes and thus fewer potential impacts on the WAH and the likelihood that it may be indicative of a future trend should be given meaningful consideration in the context of assessing the potential impacts of these alternatives.	The information presented in Appendix G, Alternatives Development Memorandum, explains the methodology used by the BLM to screen proposed alternatives for inclusion as action alternatives to be carried forward for further detailed analysis.
25830	22	Alternatives	Finally, BLM acknowledges in the DSEIS that mitigation measures and design features should reduce impacts on movement and migration and that the migratory patterns of the WAH as a whole would likely remain intact unless the road creates a barrier to movement. DSEIS, at 3-137 - 138. Based upon the analysis in the DSEIS, this should apply regardless of route and, therefore, be as applicable for western routes as it is for any of the action alternatives.	The information presented in Appendix G, Alternatives Development Memorandum, explains the methodology used by the BLM to screen proposed alternatives for inclusion as action alternatives to be carried forward for further detailed analysis.
25830	23	Socioeconomics and communities	With regard to BLMs assertion of economic benefits for ANCSA corporations, such as Doyon and NANA, from road construction, these purported benefits remain highly speculative and uncertain. Cardnos 2015 estimate of \$28.6 million in material sales for Alaskan Native entities or Native corporations was based on the development of 11 material sites on Native lands. Depending on which alternative is selected, there potentially could be between one and five material sites on Doyon lands. Regardless of the number of material sites, such material sales would be determined by the actual local construction requirements on or near Doyon lands, rather than the total number of material sites. A review of the proposed material site locations shown for Alternatives A and B are relatively tightly spaced over a short length of road corridor. Due to the limited engineering detail and other information provided in the DSEIS, it is not feasible to calculate an accurate estimate of the amount that Doyon could receive from material sales. Indeed, in a discussion of a significant number of uncertain project features, the DSEIS specifically acknowledges that Material site sources are untested and locations unknown, therefore the availability of appropriate types, quality, and volumes of mineral materials is unknown. DSEIS, at 2-12.	The Cardno 2015 estimate of potential material sales are based on assumptions specified in the report. The Supplemental EIS acknowledges that material site sources are untested and that locations are unknown.
25830	24	ANCSA	Moreover, with regard to BLMs assertions relating to sharing under section 7(i) and 7(j) of ANCSA, it is our understanding that the referenced project royalties that might be received by NANA would not be subject to sharing with other Alaska Native corporations under sections 7(i) and 7(j) of ANCSA, which is often the case with resource development projects in the	ANCSA Sections 7(i) and 7(j) apply to subsurface estates. Section 3.4.5 (Socioeconomics and Communities) discusses revenue sharing under ANCSA Sections 7(i) and 7(j) as it relates to future mining developments (i.e., subsurface estates), and not associated with the proposed road.

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			State. Doyon raised this same issue more than four years ago in our comments on the Draft EIS. Letter from A. Schutt to T. McMaster-Goering re Ambler Road Draft Environmental Impact Statement (DEIS), dated Oct. 29, 2019 (DEIS Comments), at 11. If BLM has different information, it should share it; otherwise, it should correct this statement accordingly. Doyon also notes that referring to the royalties that would be received by NANA as project royalties is a misnomer; they would not be from the Project as defined by the Project proponent and BLM for purposes of this environmental review, but from future mining development.	Because the Bornite project occurs on NANA land, it would be subject to revenue sharing under ANCSA Sections 7(i) and 7(j). Text has been revised to clarify.
25830	25	ANCSA	As noted in these comments, each of the action alternatives under consideration presumes access across ANCSA lands that have been conveyed to (or in some cases selected by) ANCs. Despite the significant expenditure of effort by the project proponent towards obtaining ROWs for the Project across federal lands (with the original SF299 application submitted more than eight years ago), the project proponent still has not engaged in any meaningful way with Doyon to seek authorization to access and use Doyon lands for the Project. In recent presentations, AIDEA has suggested that, while its preference would be to work in partnership with communities and landowners, it believes that it has rights to force access across ANC-owned lands without ANC consent. The DSEIS states that AIDEA would need to negotiate access across Doyon lands DSEIS, at 3-195. In its comments on the Draft EIS, AIDEA specifically asserted the following: Most of the proposed corridor would cross land owned by Doyon Limited, NANA, or the Alaska Department of Natural Resources (DNR). . . . In order to cross land owned by a corporation such as NANA, AIDEA will be negotiating an easement. This is an agreement by a landowner permitting another party to cross its lands. The easement will specify the conditions upon which AIDEA can use the land for the proposed road. It is anticipated that each landowner, whether it be Doyon Limited, NANA, or DNR, will impose restrictions on how the road is used in order to protect their particular land interests. Letter from M. Davis to T. La Marr re AIDEA Comments on Ambler Road Draft Environmental Impact Statement F-97112 (2810) 032 rw, dated Oct. 29, 2019, at 5 (emphasis added). And, in litigation concerning the Project, AIDEA and the State of Alaska both stated before the U.S. District Court for the District of Alaska that BLM does not dispute that ANCs like NANA and Doyon have exclusive authority to grant or deny third party access to use of their privately-owned lands. Joint Intervenor Defendants Reply Brief in Support of Motion for Clarification, D. Alaska No. 3-20:cv-00187-SLG (filed Mar. 9. 2023), at 6 - 7. Doyon requests that BLM confirm with AIDEA whether AIDEA concurs with BLMs statement in the DSEIS and whether it stands by its statements and its commitment set forth in its comments on the Draft EIS. Moreover, Doyon requests that BLM specifically require, as a condition of the ROW, that AIDEA agree (i) to negotiate with and obtain consent from ANC landowners for access to and use of any ANC lands in connection with the Project and (ii) that neither AIDEA nor any other State entity will seek to pursue any options that they believe they may have to force access across ANC lands in connection with the Project without the ANCs express consent.	As stated in Section 1.4, Purpose and Need, the BLM's decision will be limited to whether to grant, grant with modifications, or deny the applicant's ROW application to cross BLM-managed lands. AIDEA would be required to show proof of access and the ability to construct the road to any required standards prior to the BLM issuing them a NTP with construction.
25830	26	Funding and bonding	There continue to be questions whether the mine prospects are economic and whether the road is economically feasible based upon anticipated costs and toll revenues, considerations that are critically important given the project proponents plans for financing road construction and reclamation. In addition, it remains unclear how BLM will obtain sufficient financial assurance for reclamation if the road is constructed but mineral project development is economically infeasible or not permitted. As Doyon stated in its comments on the Draft EIS, this issue should be responded to publicly and should be considered as part of this review and permitting process. See DEIS Comments, at 8.	Supplemental EIS Appendix N, Section 2, Alternatives, includes Potential Mitigation Measure 2 that would require financial guarantees, such as a performance bond, maintenance bond, and reclamation bond, making funds accessible to the BLM to cover the full cost of construction, operation, maintenance, and termination/reclamation. See also response to letter 22770, comment 15.
25830	27	Proposed action	To date, AIDEA has not identified what specific actions with respect to mining exploration and development will have to occur before it would proceed with construction of the road. However, given the stated purpose and need for the road and the fact that AIDEA has stated that the road would be financed using revenue bonds repaid by the mining companies, road construction presumably will not proceed unless specific actions have been taken and AIDEA has appropriate assurances that mining development is certain to proceed. BLM should require AIDEA to make clear what these actions are, and, alternatively, what would happen if the road were to be built and the anticipated mining development does not materialize. As Doyon has stated in earlier comments, this should all be made clear as part of the federal agencies review and permitting process; it still has not.	See response to letter 32570, comment 132.
25830	28	Proposed action	These issues also have important implications for Project reclamation and associated impacts on local communities and resources. The DSEIS states that prior to any proposed mining action, the company would be required to provide Financial Assurance to the State for the Reclamation and Closure of the mine, DSEIS, at H-9. According to the DSEIS, AIDEAs application states that, at the projects 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. DSEIS, at 2-13. These statements raise questions as to how BLM will require appropriate financial assurance sufficient for reclamation of the road in a way that is not dependent upon hypothetical future mining revenues that may not materialize. Given BLMs recognition of this uncertainty, BLM should call upon AIDEA to present a plan for reclamation of the proposed Project for when there are no mining operations and ensure that appropriate assurances are in place to cover reclamation costs in the absence of funds contributed from mining development. This plan must address a scenario in which the road has already been built, but mineral project development is not economic. AIDEA should help make certain that these issues are addressed in BLMs permitting process and associated environmental review.	See response to letter 29489, comment 92.
25830	29	ANILCA 810 analysis	While, as we have emphasized throughout this environmental review process, Doyon prioritizes the protection of subsistence interests, we have serious concerns regarding this enormous expansion of the area evaluated for potential subsistence impacts. Rather than broaden the scope to communities far removed from the Project area, BLMs subsistence impacts evaluation should be focused on the communities actually located in or near the Project area and most directly affected by	See letter 23196, comment 6. In preparing the Supplemental EIS, the BLM updated and included any new information relevant to the analysis of subsistence use for all communities, including those closest to the action alternatives.

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			the Project. Its attention should be directed toward the subsistence resources (including species other than caribou and fish) of interest to these communities, access to those resources for subsistence harvest, and mitigation to address potential impacts on these communities related to such impacts. As noted in the DSEIS, [a] recent study comparing road-connected to non-road-connected communities showed that road-connected communities have substantially lower subsistence harvests than non-road-connected communities (Guettabi et al. 2016). DSEIS, at 3-237. The focus belongs on the communities in or near the Project area, rather than those that are hundreds of miles away, for which the DSEIS assumes, without scientific basis, that subsistence uses would be significantly restricted.	
25830	30	Mitigation/monitoring	In earlier comments on the environmental review process for the Project, Doyon shared its appreciation for the inclusion of certain mitigation measures in Appendix N to help mitigate impacts on subsistence uses and resources, but noted that some of the proposed measures were vague and it was unclear how they would be implemented to minimize potential impacts on subsistence resources, access, and use. The proposed road could create, in some cases, a potentially insurmountable obstacle to subsistence access and use. As stated in the DSEIS, Bettles, Evansville, Kobuk and Shungnak would have their hunting areas bisected by the project. Allakaket, Alatna and Ambler would have their subsistence hunting area partially intersected, while Selawik would be on the periphery of the project. DSEIS, at M-23. [L]ack of access to local hunters for the AMDIAR would introduce subsistence impacts with no offsetting subsistence benefit. DSEIS, at M-19. Providing clear direction on how subsistence access will be protected for residents of these communities, including specific, enforceable mitigation measures, is essential.	See Appendix N Sections 1.1, General Measures; 3.4.2, Transportation and Access; and 3.4.7, Subsistence Uses and Resources, for various potential mitigation measures that address access by subsistence users. Should the project be approved, the ROD will determine which mitigation measures will be required.
25830	31	Mitigation/monitoring	Among other guidelines, Doyon supports requiring AIDEA to consult with directly affected subsistence communities to discuss the siting, timing, and methods of road construction and operations to help discover local traditional and scientific knowledge, including locations needed to cross the Ambler Road, resulting in measures that minimize impacts to subsistence uses, potentially to include ramps for road crossing locations. DSEIS, at N-48. Doyon emphasizes, however, the importance of including federal, state, ANC, and other landowners in these discussions, given the role of landowners and government authorities in implementing certain measures to mitigate impacts on subsistence access and use. Moreover, while Doyon generally supports the inclusion of a new mitigation measure requiring AIDEA to prepare and submit a comprehensive Access Plan inclusive of construction and operational periods that would be developed in consultation with the State, NPS, BLM, ANCSA village corporations owning lands in the ROW, and the Subsistence Advisory Committee (SAC), and would be approved by the Authorized Officer, such a measure must specifically include consultation with ANCSA regional corporation landowners as well. DSEIS, at N-40.	Text revised as suggested.
25830	32	Mitigation/monitoring	Exhibit N also identifies as a potential BLM mitigation measure: AIDEAs road construction, operations, and closure/reclamation would not impede qualified rural residents from pursuing subsistence activities (Alaska National Interest Lands Conservation Act, Public Law 96-487). DSEIS, at N-47. While Doyon continues to believe this is a laudable goal, it also continues to urge BLM to clarify what this means and how BLM would implement and ensure compliance with this measure.	Should the project be approved, the ROD will determine which mitigation measures will be required.
25830	33	Mitigation/monitoring	The DSEIS explains that AIDEA has proposed working with subsistence users to provide crossing ramps to provide access to their subsistence resources (see Chapter 2, Section 2.4.4, Design Features Proposed by AIDEA). Appendix N indicates that these ramps would be installed during Phase 1 construction. DSEIS, at 3-225. Correspondingly, the DSEIS includes the following new potential mitigation measure: AIDEA would make provisions for suitable permanent crossings of the road ROW for the public where the road ROW crosses or runs along existing roads, active trails or routes, easements (including Alaska Native Claims Settlement Act 17b public easements), or other ROWs or known routes identified through AIDEA coordination with subsistence communities in the region and land managers. Provisions for crossings would be in place during Phase 1 or combined phasing construction. To ensure continued subsistence access, AIDEA would maintain any current trail in its current location or replace that access as a parallel trail or provide a crossing in a suitable location as determined by the Authorized Officer. This information would be included in the Access Plan (see mitigation measure 1, Section 3.4.2). DSEIS, at N-41. Doyon generally supports the inclusion of such a mitigation measure, provided it also includes consultation and coordination with landowners. Doyon also notes that in the past, it was not clear that such crossings would be in place during Phase 1. See Ambler Road Final EIS, at 3-110; Ambler Road Draft EIS, at 3-114. BLM should ensure that the Project provides for sufficient crossings for subsistence access during all phases of the Project.	Text has been revised to include coordination with landowners. Should the project be approved, the ROD will determine which mitigation measures will be required.
25830	35	Public access	Doyon continues to have concerns about Project airstrips facilitating aircraft landing in our region and making game much more easily accessible to hunters who would compete with local village residents. The FSEIS should set forth specific and enforceable mitigation measures to ensure that access to the airstrips is restricted and monitored during all Project construction and operation phases and thereafter. Accordingly, Doyon generally supports the inclusion of the following mitigation measure in the FSEIS and any ROW that may be issued: In keeping with operation of the Ambler Road as an industrial access road not generally open to the public, AIDEA would operate project airstrips for Ambler Road activities only, except for emergency landings. Public access to airstrips for recreation, hunting, or other general uses would not be allowed and would be monitored by construction camp/maintenance camp crews and Ambler Road security. Details regarding methods of restricting access to project airstrips would be included in the Access Plan (see mitigation measure 1, Section 3.4.2). DSEIS, at N-41; see also DSEIS, at 3-45 - 3-46 (Project airstrips would be located at construction/maintenance camps that would typically be staffed full time, so any trespass by unauthorized users at airstrips would likely be noticed immediately.).	Comment noted.
25844	2	Public access	The new draft SEIS conclusory surmises that trespass will inevitably occur improperly raising doubt for the Project. The project applicant outlines many ways in which it will address this concern and the SEIS ignores other examples where this model has been successful in Alaska (for example, the DeLong Mountain Transportation System (DMTS) and the Red Dog Mine in northwest Alaska).	See response to letter 23508, comment 8.

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25844	7	Remand of Final EIS	With respect to this current phase to supplement that analysis with a SEIS, RDC recognizes and wants to point out that a majority of BLMs extensive and existing analysis of the 2020 FEIS and JROD was upheld by the court. Therefore, the supplemental analysis beyond the specific issues identified in the court order was not required nor, as a matter of law, should the entire JROD and FEIS be reopened. However, BLMs draft SEIS exceeds this scope. For instance, the selection of Alternative A was not at issue in the courts remand, yet the draft SEIS proposes new routes not previously identified and now declines to identify a preferred alternative.	See response to letter 31764, comment 1.
25844	8	Remand of Final EIS	This draft SEIS illustrates BLMs interest in expanding the scope of the remand rather than providing critical predictability for the project applicant and other stakeholders. Instead of focusing solely on subsistence impacts and tribal consultation as outlined in the DOIs narrowly tailored voluntary remand, resources were spent on expanding existing analyses and cherry-picking data on issues beyond the remand, including a new and uneconomic phasing option for the road. The result is an extensive 1,283 page and four volume draft with unfounded opinions, speculations, and worst-case scenarios that minimize or exclude mitigation measures.	See response to letter 31764, comment 1.
25844	9	Public access	Newly-identified potential issues, such as those related to trespass, were discussed in great detail and sometimes positioned as inevitable. These issues were amplified and introduced without proper context or recognition of the fact that Alaska has numerous similar success stories of where development has happened in conjunction with protecting the environment and subsistence lifestyles.	See response to letter 23508, comment 8.
25844	10	ANILCA 810 analysis	The BLM further exceeds its scope of this SEIS by improperly expanding its subsistence ANILCA Section 810 analysis from 27 to 66 communities. There are approximately 10 communities most directly impacted by this project who have been previously and extensively consulted with. In the entire Alaska Native region in which this project is planned, the Doyon Limited Alaska Native region, there are only 35 communities. This is a serious overreach which appears intended to create doubt about the project rather than science- or fact-based evidence.	See response to letter 23196, comment 6.
25844	11	Subsistence	RDC believes subsistence is an important aspect of Alaskan culture and tradition that warrants serious consideration in permitting decisions. However, it should be focused on those communities most directly impacted rather than hypothesizing indirect impacts. Some of the new communities are hundreds of miles away from the road area being proposed. The draft SEIS assumes without scientific evaluation that subsistence uses for these far-flung communities will be significantly restricted. This is inappropriate and not based in science or factual evidence. Further, the draft SEIS fails to take into consideration decades of successful coexistence of other private industrial roads in Alaska like the DMTS at Red Dog Mine and the road to Pogo Mine. The DSEIS also fails to acknowledge current successful structures that are available to mitigate these concerns, such as Subsistence Advisory Committees. Subsistence advisory committees have been particularly successful with the Red Dog Mine operations in the NANA region in northwest Alaska. These committees allow communities to have management authority over issues impacting subsistence uses. These are successful models that show how subsistence needs are balanced with responsible resource development in the modern day. The draft SEIS does not reflect this reality.	See Supplemental EIS Appendix M, ANILCA Section 810 Analysis, Section B.2.1, Evaluation of the Effect of Use, Occupancy or Disposition on Subsistence Use and Need, for the detailed analysis.
25852	1	Subsistence	When the caribou did start migrating, us younger guys were always eager to hunt. The elders would say no, hold off. We didnt understand that they were allowing the first caribou to cross. After a day of heavy crossing, there was no stopping the caribou behind them. We worked together and went hunting for our winter food supply. Thats how it was done back then. But since my younger years, Sisualik folks noticed that the caribou migrate much later. As we eventually found out, the Port Site road, which was developed for the Red Dog Mine, turns the caribou back on their migration path. When they finally cross and come south, were able to hunt, but the bulls are already bad from the rut. Growing up, we used to be able to get bulls when they were in their prime, when theres plenty of body fat and goodskin.	The potential impacts of the road on caribou migration and subsistence availability in the context of impacts from the Red Dog road are discussed in Section 3.4.7
26067	2	Socioeconomics and communities	The DSEIS similarly discusses potential freight transportation benefits but ultimately leaves the question of whether AAP will, in fact, reduce the cost of living for residents of these rural communities unanswered given the lack of data needed to make this determination. NANA strongly suggests that BLM require neutral, independent economic studies to evaluate whether, in fact, AAP will reduce the cost of transporting goods, fuel, equipment, and supplies to these impacted communities and accordingly, reduce the extremely high cost of living.	The Supplemental EIS contains sufficient information for each of the action alternatives to adequately compare impacts among the alternatives and to make an informed decision on the ROW application.
26067	3	Public access	The DSEIS assumes Ambler, Kobuk, and Shungnak would pursue additional permanent roads connecting to the AAP, and that the connecting roads would be authorized as public roads funded in part by public dollars. The DSEIS further supposes that the public, especially residents of the communities, would use the connecting roads. See Appendix H at H-29, 30. BLM cites to the Northwest Alaska Transportation Plan 2022 Update prepared for the Alaska Department of Transportation and Public Facilities report that includes a potential Ambler-Shungnak-Kobuk connection route linking to the Bornite Road. Appendix at H-33. Given the strong desire of these local communities that AAP remain private, NANA challenges the validity of the DSEIS assumptions, due to their unsupported and speculative nature. Moreover, as the indigenous private owner of land in these areas, NANA would need to undertake significant review of any additional potential road developments that would be on or near our lands, particularly if the assumption is that they would be public.	The access scenarios presented in Supplemental EIS Appendix H, Indirect and Cumulative Scenarios, are based on assumptions as described in the appendix in order to analyze the potential effects of reasonably foreseeable actions.
26067	4	Socioeconomics and communities	It is imperative that AIDEA submit a workforce development and employment plan as a component of the federal review process to verify that AIDEA is conducting the due diligence required to ensure Alaskans, including NANA shareholders, will be trained and ready for employment as part of AAP should it be authorized. Currently, while the DSEIS provides an overview of the projects employment potential, and identifies the development of an AIDEA workforce development plan as a mitigation measure to identifying and promoting work and training opportunities for local residents,9it remains challenging to assess whether such a plan will come to fruition, or if it would sufficiently result in meaningful employment and training for	Developing training programs for local residents at this point has only been identified as a potential BLM mitigation measure but is not required by the BLM as part of this environmental review. Furthermore, AIDEA (as a state agency) cannot offer a hiring preference to residents of the NAB/YKCA. ANCSA Corporations will have the ability to negotiate training and hiring requirements if a mine is developed on their lands (similar to the Red Dog Mine).

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			local residents, including NANA shareholders. Without additional information about the employment and training plan and its timeline for development and implementation, it remains difficult for the public to weigh the potential benefits of AAP against the risks identified in the DSEIS.	
26067	6	Mammals	The DSEIS specifically adds information related to fish and caribou, but these data and the conclusions drawn are incomplete and do not provide NANA, subsistence users, and the public with an accurate analysis of the potential impacts the project could have. Specifically, information on caribou does not discuss how caribou move with respect to other natural linear features in the landscape and studies that draw conclusions from what may not be a representative sample of collared animals. It is essential that the BLM share more information in the DSEIS related to the interaction of caribou with other linear features in the landscape and address the incomplete data presented in the DSEIS.	Additional information on caribou movements along linear features was added. Although caribou do tend to follow rivers and other linear features that are generally parallel to their movements, roads can still change caribou distribution and cause delays in movements that could have negative impacts on the animals.
26067	7	Air quality and climate	Additionally, the DSEIS assumption that with covered trucks there is significant dust dispersal is unfounded and overestimates the potential impacts of dust to caribou, fish, and vegetation. The studies cited do not clearly differentiate dust from potential truck concentrate dust versus road dust. Any fugitive dust related to the road can be controlled by utilization of dust palliatives that are not toxic, nor harmful to caribou, fish, or vegetation.	Supplemental EIS Section 3.2.7 recognized that during construction, operations, and decommissioning the anticipated main concern would be the generation of particulate matter from various sources. However, the development of an enforceable, comprehensive dust control plan is proposed as a mitigation measure. This plan would be reviewed by multiple agencies and must be approved by the authorized officer prior to any surface disturbing activities (see Appendix N). The dust control plan, with appropriate methods and usage of palliatives, would mitigate much of the construction air quality impacts associated with fugitive dust. In addition, air quality permitting requirements for the proposed construction camps would ensure compliance with regulations and would help to ensure that construction emissions would not exceed the NAAQS or AAAQS. The method of dust control or type of palliative has not been decided and will be chosen with consideration of all environmental factors. In addition, Alaska's Air Quality Regulations includes the prohibition under 18 AAC 50.045(d) which requires that a person who causes or permits bulk materials to be handled, transported, or stored, or who engages in an industrial activity or construction project shall take reasonable precautions to prevent particulate matter from being emitted into the ambient air.
26067	8	ANILCA 810 analysis	The DSEIS evaluates subsistence impacts pursuant to ANILCA Section 810 throughout the entire length of AAP. See generally DSEIS, Appx. M; id. at M-3-M-7. However, ANILCA Section 810 does not require a subsistence evaluation for [federal] actions regarding private lands. Angoon v. Hodel, 803 F.2d 1016, 1028 (9th Cir. 1986) (explaining that, while Section 810 does not specify whether it applies to private lands, other provisions of ANILCA tend to belie the applicability of section 810 to private lands). Here, as explained below, BLM agreed in 2014, pursuant to the Alaska Land Transfer Acceleration Act (ALTAA), to transfer to NANA approximately 11,000 acres of land in Township 19 North, Range 11 East, Kateel River Meridian, pursuant to Section 12(c) of ANCSA. These lands directly underlie the route proposed under Alternatives A and B and are treated by BLM as public lands for purposes of the DSEIS. As emphasized below, NANA has not consented to BLMs use of its lands and as recognized by ANILCA Section 102(3),11 these are not public lands subject to ANILCA Section 810 and should not be evaluated as part of the Section 810 analysis. NANA is opposed to any attempt by the federal agencies to erode its sovereignty over its lands, whether through National Historic Preservation Act (NHPA) Section 106 or ANILCA Section 810 or any other interpretation of law. NANA and NANA alone has the right to manage its lands for subsistence purposes and to balance those goals against its need to responsibly develop its lands in the best interests of its Lupiat shareholders. Had BLM promptly transferred these lands in 2014, as it agreed to do, NANA would have the ability to fully manage and protect subsistence uses and resources on these lands, rendering the federal agencies ANILCA Section 810 review both legally prohibited and unnecessary. Though NANA appreciates the information resulting from the ANILCA Section 810 evaluation, the Final SEIS must acknowledge NANAs entitlement to these lands and the impact that entitlement has on AAP.	See response to letter 29489, comment 28.
26067	9	Mitigation/monitoring	NANA has more than 50 years of experience managing resource development on our lands while maintaining the traditional subsistence way of life of our people.12 AIDEAs application included a subsistence committee to evaluate potential impacts of the AAP. NANA supports the criteria identified in the DSEIS in how the committee will be selected working with Tribes. NANA supports developing the wildlife interaction avoidance plan, the access plan, hazard mitigation plan, and wildlife monitoring plans. While the development and implementation of each of these plans is critical for all phases of AAP, the DSEIS only acknowledges the need for AIDEA to consult with other governmental agencies as appropriate and in so doing, only acknowledges ANCSA village corporations to develop these plans. Appendix N at 14, 30, 31, 40. In finalizing the SEIS, BLM must acknowledge the need for AIDEA to develop these plans with Regional ANCs, particularly NANA, which merged with 10 of the 11 village ANCs in the NANA region and consequently performs the duties of both village and regional corporations as a landowner. Because Regional and Village ANCs are necessary participants in the development and approval of these plans, the SEIS must recognize the right of both to be at the table in any further evaluation of AAP. The Federal Land Policy and Management Act (FLPMA) under 43 USC 1702(e) excepts lands held for the benefit of Indians, Aleuts, and Eskimos from the definition of public lands. NANAs shareholders are the Lupiat who have stewarded their traditional homelands for time immemorial.	Text revised to include regional corporations.
26067	10	ANCSA	NANA will not grant support for AAP without federal agencies and AIDEAs acknowledgement and protection of NANAs land interests. As a preliminary matter, and as indicated above, NANA has not consented to issue a ROW across NANA lands. Any future consent by our corporation will be conditioned on AAP remaining private. While the involved federal agencies have taken the position that they can control what occurs on our owned lands under the auspices of NHPA Section 106, that statute cannot be read that expansively. NANA knows of no legal principle that would allow BLM to dictate how NANA uses or	Comment noted.

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			manages our lands that we own in fee simple, especially here, where NANA is not a signatory to the Programmatic Agreement (PA) entered into by BLM with AIDEA and other consulting parties under NHPA Section 106.	
26067	11	ANCSA	Similarly, NANA has not consented to ROW access across approximately 11,000 acres of selected lands, as we continue to wait for BLM to convey our lands to us under a 2014 Settlement Agreement with BLM pursuant to the ALTAA.BLM entered into a binding contract with NANA more than nine years ago to transfer lands validly selected by NANA in 1975 under ANCSA and that NANA is lawfully entitled to now own in fee simple. As of this writing, BLM is in breach of that binding commitment. These selected lands are lands that are by law rightfully NANAs and by law should have been conveyed to NANA under ANCSA Section 12(c). BLMs authority to grant a ROW for AAP construction, and to otherwise control whether and how AAP is actually built, is premised, in part, on BLMs illegal possession of lands that are rightfully NANAs. BLMs own regulations require that the agency consult with NANA prior to issuing a right-of-way through our selected lands.15 And, under ANILCA Section 102, 16 U.S.C. 3102, lands selected by a Native Corporation under ANCSA that are not yet conveyed (and not otherwise determined to be invalid or relinquished), are not public lands. At a minimum, BLM must seek NANAs consent as to what happens to these lands that are rightfully NANAs. 43 C.F.R. 2650.1(a)(2). BLMs failure to either seek or obtain such consent renders any future re-issued ROW procedurally and substantively flawed and invalid.	Comment noted. The ROW issued to AIDEA is currently suspended. Should the BLM decide to reinstate the ROW, we will seek and obtain the views of NANA pursuant to 43 CFR 2650.1(a)(2) for any selected lands.
26067	12	ANCSA	Relatedly, AIDEA (in the context of the Statehood Defense and Unlocking Alaska Initiatives) has made public statements articulating both the legal right and the desire to consider taking privately owned land from ANCs like NANA (without ANC consent) to facilitate the construction of the AAP. The States goals with these initiatives are to expand public access and state management and regulatory authority over lands and waters. The State claims that it is entitled to 77,028 acres of submerged lands beneath what it deems to be navigable waters, contending that these lands were wrongfully granted to Regional ANCs pursuant to ANCSA. Significantly, 3,277 of these acres are lands owned in fee simple by NANA. The maps below are illustrative of the States intention to expand its footprint in Northwest Alaska. To the extent that BLM may have a role in determining what lands may be eligible to be taken by the State, BLM should acknowledge NANAs rights to lands pursuant to ANCSA.	See response to letter 26067, comment 11.
26067	13	ANCSA	In short, BLM must condition any future authorizations to AIDEA on assurances from AIDEA and the State that they will not attempt to access NANA lands without NANAs explicit consent, and that they will not attempt to take NANA lands by eminent domain or otherwise.	See response to letter 25830, comment 25.
26067	14	Section 106 consultation	For the purposes of the NHPA, historic properties are considered within an APE, which is the geographic area within which a proposed project may result in direct or indirect adverse effects to historic properties. 36 C.F.R. 800.16(d). BLM originally defined the APE for this project as a one-mile buffer on each side of the project corridor and around all project components. See Appx. J, Attachment A. On that basis, the signatories to the PA contractually agreed to perform a Section 106 evaluation of that one-mile APE. To NANAs knowledge, that PA has not been amended. Unless, and until, the PA is amended, BLM is legally bound to use the APE contractually agreed to by the PA signatories throughout the duration of the Section 106 consultations. We understand, however, that as part of the remand, BLM has revisited the scope of the APE to purportedly ensure that potential adverse effects are adequately considered, presumably in light of the issues identified by the Tribal plaintiffs in the underlying litigation.17 As a result, the DSEIS now proposes to establish a 10-mile-wide study area (5 miles on either side of the road) to broadly encompass an expanded APE, while using the ROW corridor (generally 500 feet wide)18 to address cultural resources that are most likely to be destroyed or damaged from construction of the road and associated project components (e.g., turnouts, camps, staging areas, material sources, airstrips, access roads, maintenance stations). See DSEIS at 3-246. The DSEIS offers no rationale for this five-fold increase. Without any explanation for this increase in the study area, it is difficult, if not impossible, to offer constructive comments on the propriety of that scope which would appear arbitrary and capricious without that explanation and justification. However, it should be noted that a five-fold increase in the scope of the APE would dramatically increase the number of potential historic properties deemed eligible for listing on the National Register that would be required to be evaluated as part of the NHPA Section 106 consultation.	The study area for cultural resources as described within the Supplemental EIS is the same study area that was used in the 2020 EIS. Under NEPA, the BLM is required to identify impacts to cultural resources that could be affected by the proposed action and alternatives, not just those that may be relevant under the NHPA. The BLM affirms in the Supplemental EIS that the 10-mile-wide study area around each action alternative as originally proposed remains adequate to analyze potential impacts to cultural resources from each route. Any changes to the APE for the project can only be made through the Programmatic Agreement amendment process.
26067	15	ANCSA	Between NANA and Doyon (and excluding the selected lands that BLM should have already conveyed to NANA pursuant to the ALTAA 2014 Settlement Agreement), ANCs own 15% of the land crossed by the AAP.19 It is likely that a five-fold increase in the scope of the APE would encompass additional lands owned by NANA. While BLM may arguably have the obligation to consider the effects of its undertakings on historic properties located on private lands, that obligation does not vest the agency with jurisdiction to control activities on those private lands that do not themselves require any federal authorization.	Comment noted. See response to letter 26067, comment 16.
26067	16	Section 106 consultation	In short, as demonstrated above, because BLM has no authority to restrict activities on privately held lands owned by NANA, it cannot use the NHPA Section 106 consultation process to do so through expansion of the APE or any other means. Nor can BLM use its contracting authority through a NHPA Section 106 PA to enlarge its jurisdictional authority only Congress can do that. Indeed, a programmatic agreement cannot take effect on ANC-owned lands unless and until the ANC explicitly agrees to it. The PA recognizes the above: This PA shall apply to the Project and all of its Phases, Components, and Stages, including those not known at this time, not defined in the EIS, or not specified in the permits, permit applications, or other Project documents, so long as the activities occur within the jurisdiction of a state or federal agency. Programmatic Agreement II(A) (emphasis added). Because NANA is not a signatory to the PA, BLM cannot cite to the PA as a basis to control activity on NANAs lands.	The BLM has the authority and responsibility to enforce the terms and conditions of the Programmatic Agreement (Appendix J) prepared pursuant to Section 106 of the NHPA as against the applicant, as applicable to the entire Ambler Road APE.
26067	17	Section 106 consultation	Finally, as emphasized above, NANA supports BLMs efforts to ensure that the subsistence evaluation it conducts as part of the ANILCA Section 810 analysis and accompanying National Environmental Protection Act (NEPA) evaluation is thorough and fully addresses impacts facing NANAs shareholders. But BLM should not confuse or conflate those analyses with the	NEPA, NHPA, and ANILCA are all separate laws with separate responsibilities in terms of providing resource analysis or data, some of which may overlap spatially or temporally. Each law also has specific requirements that the BLM will apply per regulation and policy.

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			evaluation it is required to undertake pursuant to NHPA Section 106. NANA is particularly concerned that the federal agencies may be asked to designate traditional cultural landscapes (TCLs) in any expanded APE under NHPA Section 106 based on arguments addressing subsistence impacts. To evaluate and address subsistence impacts resulting from BLMs ROW decision concerning AAP, Congress intended that BLM would use ANILCA Section 810 not the NHPA.	
26067	18	Section 106 consultation	Although ANILCA, by its terms, applies on public lands, while BLMs Section 106 obligations apply to all federal undertakings, BLM cannot substitute a NHPA Section 106 evaluation for an ANILCA Section 810 evaluation.	A stand-alone ANILCA 810 evaluation is included as Appendix M to the Supplemental EIS.
26067	19	Section 106 consultation	BLM must also guard against basing its identification of historic properties on subsistence characteristics that are to be evaluated under ANILCA, not the NHPA. This would include any future determination as to whether a particular tract of land or an entire landscape is eligible for listing on the National Register. See <i>Alatna Village Council, et al. v. Cohn, et al.</i> , No. 3:20-cv-00253-SLG, Dkt. 111 at 20 n.15 (D. Alaska Feb. 22, 2022) (federal defendants motion for voluntary remand acknowledging governments intent to reconsider whether there are landscape-scale properties with cultural significance to Tribes that might require that the APE be extended). Again, as explained throughout this comment letter, NANA has a particular interest in ensuring that it alone retains the right to manage the lands it owns in fee simple for subsistence and other purposes and is concerned that the Tribal plaintiffs may attempt to use the NHPA Section 106 process to encumber its lands through a proposed traditional cultural landscape designation based on subsistence uses.	The BLM will use the criteria established by the NRHP in evaluating the eligibility of any property for listing.
26067	21	Land use/management	The subject of Native Lands is mentioned in two places within Volume 1, DEIS: 1) on page 3-157 (Native Lands), and 2) Table 5 on page F-9 (Alaska Native Lands patented or interim conveyed or specifically Native selected). NANA is concerned that Native Lands, especially validly selected Native Lands, are not addressed accurately at either place nor throughout the DSEIS.	Text has been reviewed, and no changes are needed.
26067	22	Land use/management	BLM needs to distinguish between public lands and Native Lands, including validly selected Native Lands. All lands validly selected by ANCs are Native Lands under ANCSA and ANILCA21 and not public lands. Pertinent to this DSEIS, NANAs validly selected lands located within Township 19 Range 11 E are crossed over by the routes proposed under Alternative A and Alternative B. As a reminder to BLM, NANA validly selected these Township 19 Range 11 E lands in 1975, almost 50 years ago; under the terms of ANCSA, these selected lands are under the conveyance requirements set out in the Alaska Land Transfer Acceleration Act of 2004 enacted almost 20 years ago, and are part of the 2014 conveyance settlement agreement between BLM and NANA executed almost 10 years ago. By law and agreement, these Township 19 Range 11 E selected lands should have been conveyed to NANA already. At a minimum, BLM should state in this DSEIS that Native validly selected lands are not public lands and therefore not subject to ROW authorization without NANAs consent.	Text in Chapter 3 Section 3.4.1, Land Ownership, Use, Management, and Special Designations, has been revised.
26067	23	Land use/management	NANA objects to any decision by BLM to issue a ROW authorization across NANAs validly selected lands located in Township 19N Range 11E without first receiving NANAs consent. It should be NANAs decision to burden our Native-selected lands. From NANAs perspective, BLM does not have the authority to issue a ROW authorization across any Native validly selected lands since these lands are not considered public lands, but are Native Lands, by law.	The ROW issued to AIDEA is currently suspended. Should the BLM decide to reinstate the ROW, we will seek and obtain the views of NANA pursuant to 43 CFR 2650.1(a)(2) for any selected lands.
26067	24	Land use/management	BLM needs to clarify this distinction between public lands and Native-selected lands within this section and throughout the DSEIS, including on relevant maps in Volume 4. In this section, BLM references Volume 4, Map 3-24 as showing Native corporations selected lands; 22 however, that map has been removed from the DSEIS Volume 4. Please note that the 2020 Final EIS does show Map 3-24 (tilted Administered Lands) and includes the description Native Selected in the legend and a hatched color code over selected lands on the map a color/hatching distinct from BLMs color and for the Alaska Native Lands. Of concern, in the DSEIS Volume 4, BLM added Map 2-2b (titled Alternatives Overview with Administered Lands) in which there is no reference to Native Selected in the legend and the distinctive color hatching has been removed from the map. In light of the deletion, addition and subtraction to Administered Lands (Maps 3-24 and Map 2-2b), NANA is requesting BLM explain why the changes were undertaken to the maps within the DSEIS and to return the distinction between BLM and Native-selected lands.	Given the importance of land status to the proposed project, the BLM moved the original Map 3-24 map so that it would appear at the front of the mapbook--to Map-2-2b--for easier reference. The lack of selected lands on the map is a mistake and was not intended by the BLM. Corrections to Map 2-2b have been made. Map 3-24 is now back in Volume 4.
26067	25	Land use/management	BLM Provides: Page F-9, 1.1.2, 1.1.2 Environmental Consequences, Table 5. Acreage of land by owner within the right-of-way by alternative NANA Comment: Table 5 shows the amount of land by owner that would be within the project right-of-way for each of the three alternatives. Table 5 should be revised to subtract acreage totals for Alaska Native-selected lands from DOI lands and place as a subset of Alaska Native Lands. The patented and interim conveyances would also be a separate subset of Alaska Native Lands. This change to Table 5 would provide accurate information for landowner status within the project ROW per alternatives.	Corrections have been made to the table. Table 5 in Appendix F was updated to subtract the Native-selected lands acreage from the DOI lands and instead included under the Alaska Native Lands acreage.
26067	26	Land use/management	Map A-14 in Appendix A, Volume 2 shows NANAs selected lands as BLM lands with no indication that the lands are Alaska Native-selected lands. Similar to other maps and references in the DSEIS,23 this BLM Map A-14 in Appendix A, Volume 2 does not show the Native-selected lands designation in the legend or on the map. As we have discussed in our earlier comment, there is legal significance to Native Lands selected pursuant ANCSA and its exception to public lands managed by BLM. As to the Native-selected lands that should be shown on this map, these are NANA-selected lands that were described in an earlier comment. At a minimum, this Map A-14, and any other map showing Alaska Native-selected lands, needs to include Alaska Native-Selected Lands on the legend and the map itself.	We do not understand which figure is being referenced by the commenter (Map A-14). However, the native selected lands layer has now been added to any figure in Volume 4 where we show the “administered lands” layer.
26067	27	Land use/management	Map 2-3 Page 3 shows the route for both Alternatives A and Alternatives B from MP 170 for Alternative B to the end of both routes on BLM-managed lands (State-selected lands). This map does not show the selected status for NANA-selected lands located between MP 200 to MP 210 of Alternative A. Instead, these selected lands are color coded as lands administered by BLM with no indication that these lands are Native-selected lands. NANA requests that BLM distinguish these selected lands	The native selected lands layer has now been added to any figure in Volume 4 where we show the “administered lands” layer.

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			from other BLM-administered lands by creating two sublayers under Alaska Native Lands in the legend: one layer for patent or interim lands and one layer for Native-selected lands with a distinctive color code.	
26067	28	Land use/management	Map 2-3 Page 3 shows two material sites and an access road to a State-owned water source on the NANA-selected lands discussed in the above comment. There are three (3) concerns with these material sites and the access road: i. Would the two material sites be a part of the proposed BLM ROW? The access road crossing NANA-selected lands to a water source located on state lands appears to be part of the ROW. NANA is concerned that, should BLM decide to authorize the ROW, the project proponent AIDEA will be seeking to extract gravel from these material sites and construct the access road on NANA-selected lands. As a point of emphasis, if BLM does not intend to convey these selected lands to NANA prior to any BLM ROW authorizations, then NANA is requesting BLM seek NANAs consent to issue the ROW authorization across NANAs selected lands. ii. The access road to the western material site appears to cross NANA-owned lands. A reminder, NANA has not issued a ROW to AIDEA to cross our lands and that includes not issuing one for this access road to the western material site. iii. The western material site is divided by the boundary line between NANA-selected lands and NANA-owned lands. This boundary issue could be an administrative issue for payment of gravel resources by AIDEA, if BLM decides not to convey the selected lands to NANA pursuant to law and agreement.	The ROW issued to AIDEA is currently suspended. Should the BLM decide to reinstate the ROW, we will seek and obtain the views of NANA pursuant to 43 CFR 2650.1(a)(2) for any selected lands.
26067	29	Land use/management	Despite BLM stating that its mission is to public lands, BLM uses the terms public land or public lands and BLM managed lands throughout the DSEIS. The mission of BLM does not include BLM managed lands nor does the SEIS provide a definition of it. The use of both terms may confuse the public as to the scope of BLMs jurisdiction and authority. NANA requests clarification from BLM on whether BLM managed lands is a statutorily defined term and BLMs preference to use this term instead of the statutorily defined public lands throughout the DSEIS.	The BLM uses the term “BLM-managed lands” to indicate those public lands managed by the BLM, and differentiate them from public lands managed by the NPS (or another federal agency).
26067	30	Land use/management	BLM needs to distinguish public lands from Alaska Native validly selected lands as these selected lands are not public lands; in particular, those lands crossed over by the proposed Alternative A and Alternative B that BLM agreed to convey to the NANA pursuant to the 2014 Settlement Agreement under the authority of the Alaska Land Transfer Acceleration Act of 2004.	Text has been added to Chapter 3, Section 3.4.1, Land Ownership, Use, Management, and Special Designations, to include Native-Selected Land, and Map 2-2b has been revised to depict selected lands.
26067	31	Compliance with other laws	The consultation and coordination with ANCSA landowners derive first from federal law: 54 U.S.C. 300309; Pub. L. No. 108-199, 118 Stat. 3, as amended by Pub. L. No. 108-447, 118 Stat. 2809. Under this federal law, BLM is required to engage in meaningful and timely consultation with ANCs like NANA during the development of policies or projects that may affect our interests on the same basis as Indian tribes under Executive Order No. 13175. Id. As such, federal law requires BLM to consult with ANCSA landowners; it is not just DOI policy. NANA requests BLM add this clarification into this section of Table 1.	See response to letter 25830, comment 2.
26067	32	Alternatives	The approximately three-mile portion of the AAP that is a part of terminus for Alternatives A, B, and C is not necessary at this time and NANA requests it be removed from consideration for BLM ROW authorization. As BLM states on page ES-3, the three-mile segment is to serve the Smucker prospect located on the western side of the Ambler Mining District and would require a bridge over the Ambler River. Yet, as shown in Table 2.9, Smucker is the last of the four mining projects (Arctic, Bornite, Sun, and Smucker) projected for development and is not anticipated to begin production until 2051. Based on the economic information provided in Volume 1, Table 15 (Pages F-14 and F15), NANA questions whether the Smucker project would be developed as it seems it would barely break even over a mine production life of five years. As shown on the map on Page H-55, the other three projects do not need secondary access via the three-mile segment. The most advanced mining projects, Arctic and Bornite, can be accessed over lands located prior to the three-mile segment; and the Sun project is accessed off state lands located miles prior to the three-mile segment. In addition, removing the last three miles of the western side of the route would address two additional issues: 1) eliminating the jurisdictional landownership issues that will arise due to the material site, maintenance facility, and airstrip straddling the boundary line between BLM-managed/State-selected lands and NANA-owned lands (see DSEIS Volume 4, Map 2-3 Pages 3, 7); and 2) lessen environmental consequences by removing both the Shungnak bridge currently designed in order to reach the three-mile segment and the material site at the terminus. Removing the Shungnak River bridge and the western terminus material site, and relocating the facilities and nearby construction camp to a site a few miles east along the proposed route on the same Ambler lowlands would eliminate many issues with the three-mile segment. Finally, NANA questions why BLM would even consider issuing a ROW authorization for this three-mile segment considering that the only way to access this three-mile segment is through NANA-selected and NANA-owned lands. NANA has stated publicly that we have made no decision in support or opposition to the AAP. NANA has also not agreed to a ROW across our lands for this project. Considering NANAs position, it seems premature for BLM to issue a ROW for this three-mile segment at the western terminus. For these reasons, NANA requests BLM deny a ROW for this three-mile segment crossing BLM-managed/State-selected lands at the western terminus.	The BLM is required to respond and analyze impacts related to the requested ROW from the applicant and cannot separate out portions of the ROW request.
26067	33	Hazardous waste	The spill report references national averages for trucking of hazardous material (chemicals, etc.). No comparison of concentrate trucking spills is cited. In addition, the SEIS appears to blend truck and transportation related spills together. There needs to be more clarity because some of the transportation related spills may in fact be process water spills into containments. If this is the case, then the large volume of process water spills into containment areas is skewing the analysis of spills.	Text has been revised to indicate the nature of spills that could occur, including concentrate.
26067	34	Air quality and climate	The issue of fugitive dust in the reports related to Red Dog represents a significant flaw in interpretation of the studies cited because there is no way to differentiate dust distribution from before the trucks were covered (approximately 2001) to after they were covered. The studies by Neitlich et al., and Hasselbach et al. do not mention such a baseline (e.g., before covered trucks and after). Therefore, the assumption by BLM that even with covered trucks there is significant dust dispersal is unfounded. Additionally, the studies do not clearly differentiate dust from potential truck concentrate dust versus road dust.	Supplemental EIS Section 3.2.7 recognized that during construction, operations, and decommissioning the anticipated main concern would be the generation of particulate matter from various sources. However, the development of an enforceable, comprehensive dust control plan is proposed as a mitigation measure. This plan would be reviewed by multiple agencies and must be approved by the authorized officer prior to any surface disturbing activities (see Appendix N). The dust control plan, with appropriate methods and usage of palliatives, would mitigate much of

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			Trucks at Red Dog are now fully covered and washed; therefore, any fugitive dust related to the road can be controlled by utilization of dust palliatives. We request more clarification by BLM of these studies or take them out of the SEIS.	the construction air quality impacts associated with fugitive dust. In addition, air quality permitting requirements for the proposed construction camps would ensure compliance with regulations and would help to ensure that construction emissions would not exceed the NAAQS or AAAQS. The method of dust control or type of palliative has not been decided and will be chosen with consideration of all environmental factors. In addition, Alaska's Air Quality Regulations includes the prohibition under 18 AAC 50.045(d) which requires that a person who causes or permits bulk materials to be handled, transported, or stored, or who engages in an industrial activity or construction project shall take reasonable precautions to prevent particulate matter from being emitted into the ambient air.
26067	35	Geology and minerals	The SEIS suggests the unevaluated surficial deposits are likely to have measurable amounts of NOA. Additionally on page 43, BLM states that areas targeted for mining likely contain NOA. These are clear overstatements/simplifications. For example, the Bornite deposit is hosted by carbonate rock, which contains no NOA. BLMs assertions are based upon a broad stroke geological evaluation that does not have support; there is no detailed geological mapping or sampling in the area to support the statements in this DSEIS. In addition, based on statute and regulation, the State of Alaska has specific policies and procedures for dealing with NOA-bearing materials if they are encountered in a materials site, for example. Overall, the references to NOA throughout the SEIS are very generalized and overstated. References should either 1) have geological backup or 2) be deleted.	Text has been revised.
26067	36	Mammals	The DSEIS identifies that the primary concerns related to all routes are the potential impacts to caribou migration and the wintering grounds of caribou. The DSEIS includes more data on caribou and specifically looks at studies related to the Delong Mountain Transportation System and roads and pipelines on the North Slope oil fields. The DSEIS however, does not compare the relationship between caribou bouncing off other linear features such as river systems to determine if there is a significant difference or impact between rivers and roads in these areas.	Information on caribou movements along linear features was added. Although caribou do tend to follow rivers and other linear features that are generally parallel to their movements, roads can still change caribou distribution and cause delays in movements that could have negative impacts on the animals.
26067	37	Mitigation/monitoring	Unfortunately, with respect to BLMs Comprehensive Fish and Wildlife Monitoring Plan mitigation measure, the DSEIS incorrectly assumes that [i]t is unlikely that other land management agencies would require similar but separate commitment from AIDEA. N-31. In the case of the DMTS, NANA has requirements for wildlife monitoring, avoidance, and reporting of spills. NANA currently requires lease and permit holders to avoid wildlife, establish bonds and/or proof of insurance to protect our lands, and notify of spills and the response as soon as they occur on or adjacent to our property. NANA supports the development of the wildlife interaction avoidance plan, access plan, hazard mitigation plan and wildlife monitoring plans. As stated in the DSEIS, each of these plans should be revisited on a regular cycle to ensure continuous improvement and adjust for other changes that may arise that are not related to AAP that may be impacting flora and fauna. These plans should also include review and incorporation of the best available technology to support these plans. If the AAP were to advance, NANA would require plans to the effect of those listed above, and it appears baseless to state other land management agencies would not require these commitments. BLM needs to correct these statements that misrepresent the interest of NANA, and potentially other Alaska Native Corporations.	Each land manager that issues a ROW or some other right of access is responsible for ensuring compliance with the terms of the grant for access. As stated in Section 1.4, Purpose and Need, the BLM's decision will be limited to whether to grant, grant with modifications, or deny the applicant's ROW application to cross BLM-managed lands.
26067	38	Mitigation/monitoring	BLM correctly identifies that all wildlife would have the right of way on the proposed AAP. However, the mitigation measure suggests that the Authorized Officer may require temporary cessation of traffic without reference to the wildlife interaction avoidance plan. The plan references in the mitigation measures should be developed to determine when traffic must be stopped to address any interactions with wildlife, and NANA recommends that even if the Authorized Officer has this authority, that BLM will make these determinations in alignment with the plan. Additionally, the plan should require the disclosure of all data as referenced be shared with NANA and other Alaska Native Corporation landowners.	PMM has been revised as suggested.
26067	39	Fish and aquatics	The primary effects to fish and aquatic organisms would result from degrading habitat quality at and downstream of conveyance structures and gravel mine sources near rivers, potentially impeding seasonal habitat connectivity, modifying hydrologic conditions along the entire length of the road embankment, changes in water quality or quantity available in source lakes or rivers due to ice road development and maintenance; and introducing the potential for accidental spills of petroleum products, mineral concentrates and other contaminants into aquatic habitats. NANA Comment: The statement above does not take into consideration existing regulations for gravel mining activities that are specifically focused to prevent damages to waterways and especially fish habitat. Gravel mining related to this project will need to adhere to state, U.S. Army Corps of Engineers, and other federal permits. This section of the DSEIS should clearly describe the level of risk posed by gravel mining activities while also describing the mitigation measures afforded through various regulatory requirements for gravel mining activities.	The statement cited by the commenter accurately describes the potential impacts that could result from project construction, including the development of gravel material sites. Section 3.3.2, Fish and Aquatics, includes descriptions of mitigation measures and USACE permit special conditions that are intended to mitigate or lessen these potential effects.
26067	40	Mitigation/monitoring	The new mitigation measure for avoidance of cultural resources proposed by BLM regarding consultation with local communities and Tribes ignores the rights of Alaska Native Corporations to participate in the Section 106 process specifically for lands owned by the Corporation. BLM needs to recognize both the rights of Tribes and ANCs24 in the identification of these important cultural sites. Additionally, this section should not be the intent of AIDEA (as well as BLMs suggestion regarding wildlife monitoring) to protect fish species and their relationship to gravel mining.	Text revised as suggested.
26067	41	Socioeconomics and communities	The DSEIS over emphasizes the risk of outmigration due to an increase in compensation related to resource development and underestimates the impact of continued lack of economic development on outmigration. The DSEIS does not take into consideration the lack of economic development, its impacts on the cost of living in rural Alaska, and the threat of school closures due to outmigration in areas where the cost of living and lack of childcare are issues impacting the ability of working	See response to letter 29489, comment 86.

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			adults and their families to remain in the community. ANCs, both regional and village corporations, are included in the definition of Indian tribe under the NHPA. 54 U.S.C. 300309.	
26067	42	Subsistence	The DSEIS assumes that subsistence will remain the same in a no action alternative setting, but does not account for the increased cost of energy for homes where subsistence resources are stored and of transportation to harvest resources. The subsistence economy and the cash economy are intertwined, and so the ability to participate in subsistence activities is impacted by the lack of jobs. Outmigration can occur because of the lack of affordability for families in rural communities, which would also further sever ties to establishing and maintaining subsistence practices.	Section 3.4.7 acknowledges that current trends and impacts on subsistence will continue under the No Action Alternative. Added text specifically about the continued high costs of fuel, food, and equipment, and the high unemployment rates, affecting residents' ability to engage in subsistence.
26067	43	Public access	The DSEIS proposed mitigation measures related to wildlife interaction avoidance and access planning are critical to addressing the issues of trespass along the entire route. In NANAs comments to the first EIS, NANA requested consistent use of measures across the entire route to ensure public access is not possible.	See responses to letter 14098, comment 1 and letter 25461, comment 2.
26067	44	Mitigation/monitoring	Though NANA agrees with the development of this plan with the expectation that Regional Alaska Native Corporations be added, BLM needs to clarify if the intent is for the Authorized Officer to approve the initial plan prior to construction before notice to proceed is provided to AIDEA.	Text revised as suggested.
26067	46	Socioeconomics and communities	BLM Provides (3-187): Employment and Income: Road construction could also potentially generate economic benefits for ANCSA corporations, such as Doyon Limited and NANA. For example, portions of the road alignments cross 10 to 12 miles of land that Doyon Limited owns, including ownership of the surface and subsurface (Alternatives A and B) or subsurface only (Alternative C). Furthermore, there are proposed project material sites located on land for which Doyon Limited owns the subsurface estate. Elsewhere, Doyon Limited manages 40 sand, gravel, and rock sources in 34 villages within the Doyon region to generate revenue (Doyon Limited 2019). Road construction would require approximately 23.6 million cubic yards of material for a total estimated cost of \$160.2 million (\$205 million in 2023 dollars), which includes labor and the material expense. Of this total amount, under a 2015 approximation of the current Alternative A, approximately \$28.6 million (or \$36.6 million in 2023 dollars) in revenues could accrue to Alaska Native entities (Cardno 2015). NANA Comment: The above BLM reference from the DSEIS is informative as to Doyon Limited. Other than the statement Road construction could also potentially generate economic benefits for ANCSA corporations, such as Doyon Limited and NANA, BLM does not mention nor provide any information related to NANA. In light of this oversight, NANA requests BLM provide information pertaining to NANA.	Section 3.4.5:Socioeconomics and Communities (subsection on Mining, Access, and Other Indirect and Cumulative Impacts) discusses the potential local and regional economic consequences of future mining activities that would be supported by the proposed road; including potential impacts to ANCSA Corporations. The Supplemental EIS notes that “because the Bornite Mine site is on NANA lands, NANA village corporations and residents of the NANA region would stand to benefit from payments made by the mining companies. economic benefit. As with the Red Dog Mine, which is also located on NANA land, the Bornite Mine likely would be developed under an operating agreement specifying that NANA shareholders receive direct and meaningful benefits from development at the mine. As landowners at the mine site, NANA would receive income through lease, surface use agreement, and royalty payments, and the mining company or NANA may fund scholarships. These proceeds would allow NANA to create economic opportunities for shareholders through the development of NANA businesses, job creation and training, enhanced education, and dividend distributions. Funds paid to the NAB and NANA would help fund education, search and rescue, community infrastructure, and other efforts in the region and could be important replacement for funds that would be lost when the Red Dog Mine closes.”
26067	47	Socioeconomics and communities	As stated in the sections related to subsistence, the assumption that outmigration would occur due to higher paying jobs is incorrect. The DSEIS does not provide adequate data used to evaluate this unfounded assumption. In NANAs experience, and as shared through work at the University of Alaska Anchorage Institute for Social and Economic Research, outmigration of shareholders related to mining jobs is not significantly different from normal rates of outmigration and the longer an individual holds a job in this field, the less likely they are to leave the region. BLM needs to base these statements in facts and data that actually reflect trends related to outmigration. This includes assessing the relationship between school closures and other socio-economic pressures that exacerbate outmigration which increases severing the ability of Alaska Native people to participate in subsistence activities generationally.	See response to letter 29489, comment 86.
26067	48	Socioeconomics and communities	Appendix F, Table 12 is missing data for heating fuel and gasoline in 2022 for Ambler, Kobuk, and Shungnak. These data can be obtained from the Northwest Arctic Borough. These data need to be updated to reflect the additional increases in the cost of fuel that occurred in 2022 to provide an accurate picture of the cost of energy.	Appendix F, Table 12 data will be updated accordingly.
26067	49	Cumulative and indirect effects analysis	BLM Provides (3-184): The Red Dog Mine, which is the largest zinc and lead mine in the world NANA Comment: The Red Dog Mine is not the largest zinc and lead mine in the world; it is either the first or second highest producing zinc and lead mine in the world. BLM needs to correct this misstatement in the final EIS because it gives a false impression of magnitude of mine operations.	Text has been revised to say “one of the largest” in the world, which is consistent with what is stated on Teck, Inc.’s website for the mine.
26067	50	Cumulative and indirect effects analysis	BLM Provides (H-37): BLM is not required to speculate about future actions. NANA Comment: The reference to the Reasonably Foreseeable Actions is overstated and not supported. Though BLM states it is not required to speculate about future actions, it goes on to list several including impacts from potential development of Graphite One and expansion of the Port of Nome, both on the Seward Peninsula and the Manh Cho deposit by Tetlin as examples of actions that may impact the SEIS.	Per the BLM's NEPA Handbook (H-1790-1), reasonably foreseeable actions are those for which there are existing decisions, funding, formal proposals, or which are highly probable, based on known opportunities or trends. Statement in Appendix H has been revised.
26084	1	Fish and aquatics	Fish are similarly a critical subsistence resource on the Kobuk River and along other portions of the proposed route. One of only two sheefish spawning grounds in northwest Alaska is located within the upper Kobuk watershed traversed by the proposed road, and habitat for many other important fish species is found in the area as well.	Supplemental EIS Section 3.3.2, Fish and Aquatics, describes the two sheefish spawning grounds (Kobuk River and Alatna River), and these areas are identified in Supplemental EIS Map 3-18 (Supplemental EIS Volume 4).
26100	1	Socioeconomics and communities	We urge the Bureau of Land Management (BLM) to conduct a Health Impact Assessment/Statement in addition to the SEIS. The current Draft Supplemental Environmental Impact Statement (SEIS) fails to address the long-term effects on the communities in proximity to the Ambler Industrial Access Road and Mining District.	Section 3.4.5 of the Supplemental EIS (Socioeconomics and Communities) addresses both the short- and long-term public health effects from the proposed road, and from past, present, and reasonably foreseeable actions. The BLM had an independent Health Impact Assessment prepared in 2019 for the initial EIS. The HIA was conducted based on published Alaska DHS guidelines, which are consistent with international HIA guidelines and was prepared by a reputable 3rd-party contractor selected through a competitive bidding process. The HIA is based on the best available information and

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				was reviewed by the DHS as part of the State of Alaska's role as a cooperating agency. No specific deficiencies in the original HIA have been identified by the commenter.
26152	1	Cumulative and indirect effects analysis	South32 (through subcontractors Remote Site Services LLC and more recently, Alaska Earth Sciences) has operated out of Coldfoot, staking thousands of claims along the course of the Ambler Road, but outside the actual mining district. These claims are a matter of public record, viewable on Alaska Mapper, a state GIS website. Anecdotally from workers, logically, and financially, these claims are a direct result of the proposed Ambler Road. They are not currently accessible or economically viable to develop, but will be should a road be built through the corridor. As such, any EIS that does not analyze the impacts of spur roads and additional mines outside the Ambler Mining District is incomplete. If a mine at Ambler has "no formal development proposal" but is still being considered under indirect and cumulative impacts, then there is no reason why these claims should not also be considered. They have been staked, drilled, camps built, hundreds of thousands, if not millions, spent on prospecting--all of which seem to be reasonable indications of intent to develop should the Ambler Road be built. They are not just related; they are a result.	Appendix H has been updated to include additional details regarding the acreage of mining claims staked east of the District (e.g., Trilogy Metals claims for Helpmejack and Malamute, and South32 claims for Roosevelt). Appendix H maps have also been updated to show the most current DNR State Mining Claim data.
26173	1	Alternatives	The proposed Ambler Road traverses about 200 miles in ice-rich permafrost. Its cost is excessive (1) in Dollars, and (2) irreversible damage to a large wilderness area. My proposed road, or preferably railroad, is only about 50 miles long to the Bering Sea and world oceans. It would reduce the net road construction by 75%. The amount of open water in the Bering Sea will continue to increase as our climate continues to change. The development of rich mining areas in western Alaska is best done by shipping products to the Bering Sea. This also aids growth of communities in western Alaska, such as Nome.	Various rail routes were considered in Appendix G, Section 6.4 but were eliminated from detailed analysis due to practicality, feasibility, and/or environmental concerns.
26173	2	Alternatives	According to the U.S. Government Accountability Office the most economical, and safest way to handle freight is by water. For overland shipping, rail is by far the best, and trucks use by far the most fuel, and operationally are the most expensive as well as the most dangerous.	Various rail routes were considered in Appendix G, Section 6.4 but were eliminated from detailed analysis due to practicality, feasibility, and/or environmental concerns.
26173	3	Alternatives	If there are mining products that need to be transported from western Alaska, the most economical way is to use the near-by world ocean. Water transportation costs far less than overland transportation. Also, the distance involved is only about 50 miles rather than several hundred miles. The overland route involves construction and maintenance that cost far more in both Dollars and Irreversible Damage to a valuable wilderness area.	Appendix G, Section 6.4 details various alternatives that considered routes west to ports. These alternatives were eliminated from further analysis as they did not meet the purpose and need of the project and/or were eliminated due to feasibility or environmental concerns.
26230	1	Public access	We would also reassert that the permit request for the AAP is for industrial use only and object to the inference in the DSEIS that public use of the road is foreseeable. There are concrete plans to control access to the Road; it would be limited to industrial use by toll paying mining companies only. This is a top priority for the residents in the NANA and Doyon region and therefore our priority, as well as the project proponent, to ensure access is prevented that would endanger subsistence resources, or otherwise cause harm to local communities.	See response to letter 23508, comment 8.
26230	2	ANILCA 810 analysis	Furthermore, in the Draft Supplemental Environmental Impact Statement (DSEIS), the BLM has vastly expanded the ANILCA 810 analysis from 27 to 66 communities, some of which are hundreds of miles from the proposed road, but even so, we remain committed to meaningful consultation efforts. This expansion of the impacted communities will undercut the decision process for Alaska Native communities to enter meaningful discussions, reach decisions, and actually execute important engagement documents like work and land access agreements.	See response to letter 23196, comment 6.
26253	1	Transportation and access	If this is a private business then how will the cost of plowing, maintenance and upkeep be managed?	Under AIDEA's proposed application for the road, AIDEA would be responsible for road maintenance and maintenance costs would be paid for by tolls paid by road users (e.g., mining companies).
26253	2	Cumulative and indirect effects analysis	Additionally there is limited electricity and running water in nearby villages and towns. Places that are fortunate to have both will often have outages due to weather and poor service so how will the mining operation work around this without crashing the limited powergrid.	As described in Appendix H (Section 2.1.4), the power supply for reasonably foreseeable mining developments is expected to come from either LNG or diesel generators to provide power to the process area, with underground lines used to supply power from the process area to other areas of the mine. Given the lack of detailed mining proposals at this time, the specifics of developments of each mine component (such as power supply systems) and their resulting impacts on communities would be further discussed as part of future NEPA analyses and permitting for proposed mines.
26253	3	Socioeconomics and communities	Since there is a lack of roadways there are also a lack of runways and airports. In cases of emergencies, locals have to take multiple planes to reach Anchorage for emergency care. If there is an issue with the operation where everything needs to be shut down, then how will locals reach the sparse airports? For example, fires or spills can shut down a whole region depending on the scale and the emergency response.	Section 2.2 discusses road access scenarios. There will be airstrips along the road that could be used to support emergency situations such as a wildfire or search and rescue efforts. These improvements in air infrastructure (i.e., new landing strips associated with road construction and maintenance) would facilitate redundancy for emergency evacuation for health-related emergencies or during disasters for communities.
26253	4	Socioeconomics and communities	Without the building of a massive mancamp there is no place to house the thousands of workers needed to run this mining operation. Women and girls have a 75% more likely chance of being murdered when located near these work camps. How will this be built in a way that does not further destroy the land and work with the local economy. The cost of building these camps would bankrupt any operation, so how can you confirm that you can pay fair wages and supply workers with clean records to man these positions. There are no major stores that can provide emergency supplies for a town let alone these man camps. Will local villages have to go without precious resources in order to protect the mining operations?	AIDEA has indicated they will not go forward with construction without having operations and maintenance agreements in place with potential road users. It is expected that the bond market would also require additional due diligence on AIDEA's part to have a successful bond sale. The BLM anticipates AIDEA's ongoing project development process will only be successful if the project is economically viable. The BLM is not in a position to speculate about the project's economic feasibility or second guess the financial wisdom of moving forward. Under 43 CFR 2804.26, the BLM can deny an application if the applicant cannot demonstrate the technical or financial capability to construct the project or operate facilities within the ROW. To date, AIDEA has demonstrated that it has the technical and financial capability to construct, operate, and maintain the proposed project within the ROW. For example, AIDEA has successfully developed

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				similar industrial projects, such as the DMTS, and has demonstrated sufficient capitalization to carry out the proposed project. See also response to letter 32570, comment 132 regarding bonding requirements.
26253	5	Hazardous waste	There are no clean up plans provided to the public if there is a chemical spill or a waste spill. As well as the latest reports standing that there are no major environmental impacts due to the project which sounds too good to be true especially since Alaska has a long history of environmental disasters. The most well-known is the Exxon Valdez but there are 18 other oil spills linked to the pipeline alone as well as the destruction of the tundra from the Red Dog Mines which is currently the largest producer of toxic gas in the entire country. Without going into detail it is easy to see by speaking with residents of the borough that there are many people with health issues that have not been seen until the mine was put into place. These include rampant cases of cancer, birth defects and lung issues that can be linked to toxic gasses. There are also no plans to protect the roadway from leaking toxic chemicals and metals from transport trucks.	Appendix N includes potential mitigation measures for spills along the road. Because no detailed mining permit in the Ambler Mining District has been applied for, the type and extent of hazardous substances cannot be known.
26253	6	Subsistence	Near mining and oil drilling sites there are reports of severe animal mutations that lead to the animals being unsafe to eat and spread diseases. These include extra bones, sores, chronic wasting disease and other transferable illnesses.	The potential impacts of contamination, including from spills and dust deposition, are discussed in Section 3.4.7.
26263	1	Alternatives	The FEIS did not take a hard look at reasonable alternatives. The presented action alternatives significant adverse impacts in the preserve that could mitigated with the route identified on the map in Appendix A of these comments. The impacts would substantially degrade the “4(a) ... wild and undeveloped character of the area, ... and ... protect habitat for and the populations of, fish and wildlife, including, but not limited to, caribou, grizzly bears, Dall sheep, moose, wolves, and raptorial birds.” I recommend that a new Supplemental EIS analyze in detail an Alternative (for reference described as Alternative W1). This alternative would be feasible, prudent, and would result in fewer or less severe adverse impacts upon the preserve. The proposed W1 route is consistent with the requirements of ANILCA and NEPA, including the direction in ANILCA that states, “4(b) Congress finds that there is a need for access for surface transportation purposes across the Western (Kobuk River) unit of the Gates of the Arctic National Preserve (from the Ambler Mining District to the Alaska Pipeline Haul Road) and the Secretary shall permit such access in accordance with the provisions of this subsection.”	Appendix G Section 6.4 details various alternatives that considered routes west to ports. Various rail routes were considered in Appendix G Section 6.4 but were eliminated from detailed analysis due to practicality, feasibility, and/or environmental concerns.
26263	2	Alternatives	BLM's failure to consider a rail option is particularly troubling. BLM states that during screening discussions, concerns were noted about construction costs for an alternative requiring use of a railroad along the same route as AIDEA's proposed route. 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. The BLM in the FEIS states, “The BLM determined that this alternative is not practical due to substantial material handling inefficiencies at both ends. The BLM determined an isolated rail system, not connected to a port or railroad, to be not practical. It was largely duplicative to the AIDEA-proposed road. With a maintenance road alongside the tracks, it would not have the suggested advantage of discouraging unauthorized users, and it would have similar impacts and no construction or operational cost advantage.” A road along a railroad is not necessary. The resource benefits of a railway vs. a roadway greatly outweigh BLM's concerns that a railroad is “not practical due to substantial material handling inefficiencies.”	The conclusion is based on the application of the screening criteria for this conceptual alternative using the methodology described in Supplemental EIS Appendix G to compare potential alternatives.
26263	3	Alternatives	The proposed Alternative W1 route should be analyzed in detail for both road and railroad construction (without an adjacent road next to the railroad) from the Dayton Highway to the Mining District area. Recognize that the proposed alignment of Alternative W1 may need to be adjusted by the planning team to control for maximum grades.	Various rail routes were discussed in Appendix G Section 6.4 but were eliminated from detailed analysis due to practicality, feasibility, and/or environmental concerns.
26263	4	Fish and aquatics	The proposed Ambler Industrial Access Road would cross 11 major rivers, nearly 3,000 streams, and fill in thousands of acres of wetlands, creating significant and irreversible impacts to fish passage and healthy aquatic habitat used by culturally and ecologically important species such as sheefish and salmon. AIDEA only assessed 55 waterbody crossings in the first 55 miles of the road, leaving more than 156 miles unanalyzed. This lack of data and preparation to mitigate or eliminate impacts to fish is unacceptable, especially in the face of existing declines in fish populations.	Should an action alternative be approved in the BLM's ROD, additional surveys and studies would be conducted as needed in support of other local, state, and federal permits. As described in Draft Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA - Biological Resources, fish surveys would be conducted to assess fish presence in rivers in streams for all life history stages along the selected alignment. The scope of these surveys would be coordinated with ADF&G, USFWS, and the National Marine Fisheries Service. The Supplemental EIS includes a description of design features and mitigation measures that are intended to reduce impacts to waterways, fish, and aquatic habitat from road construction and the installation of bridges and culverts (see Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA - Physical Environment, and Section 3.2.5, Water Resources - Impacts Common to All Action Alternatives).
26263	5	Proposed action	AIDEA has stated they will reclaim the road, yet no plans have been shared any reclamation plans, meaning the road will most likely be permanent, impacting the landscape in perpetuity.	See response to letter 29489, comment 92.
26263	7	Alternatives	The FEIS failed to develop and analyze in detail alternative route locations that protect the Gates of the Arctic Preserve values. Proposed Alternative W1 should be further developed and analyzed in detail.	Various rail routes were considered in Appendix G Section 6.4 but were eliminated from detailed analysis due to practicality, feasibility, and/or environmental concerns.
26547	1	Fish and aquatics	I am an aquatic ecologist who studied Arctic Char for NPS and I have special concerns regarding sedimentation and other impacts associated with building road/bridges across Arctic rivers and streams.	Risk to fish and aquatic habitat from the construction of the proposed road are described in Section 3.3.2, Fish and Aquatics.
26548	1	Cooperating agency involvement	Additionally, Alaska Industrial Development Authority (AIDEA), BLM and the US Army Corps of Engineers (USACE) must do extensive additional fieldwork, study, and analysis to adequately understand the ecological baseline for fish and current	See response to letter 32570, comment 158.

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			stressors to begin to understand the effects of the proposed Ambler Road, and follow-on open pit mines. The ecological, scientific, and engineering information currently described in the DSEIS, and administrative record is insufficient for the BLM to make a science-based legally defensible decision regarding the requested right-of-way, and similarly, the USACE dos not have enough information to establish a credible baseline condition, identify the least environmentally damaging practical alternative, and defend the final permit decisions made in 2020.	
26583	1	Cumulative and indirect effects analysis	Since the full scope of projects that will be along the road are not being considered (as many are likely awaiting a road to be considered) the environmental impact report is not fully encompassing the issues it will bring about.	See responses to letter 23145, comment 3; letter 26152; comment 1; and letter 23434, comment 13.
26602	1	ANILCA 810 analysis	The proposed ambler road project would threaten the food source of many communities due to its impacts on wildlife in the region. It is difficult to accurately report harvest of wildlife and other subsistence activities, fish and game need to reevaluate their forms of data collection to more accurately reflect the subsistence lifestyle of the people in these communities via 810 analysis.	See response to letter 7303, comment 1.
26718	1	Socioeconomics and communities	Long-Term Sustainability: Any boosts to short-term economic activity are purely speculative, and it is appropriate to question the long-term sustainability of this project. The SEIS does not promise any tangible jobs or positive benefits to local economies. Mining is inherently a finite resource development activity. When the minerals are depleted, job opportunities and economic activity would potentially decline. The region might be left with an unused road and potential environmental issues from mining. It's crucial to consider sustainable, long-term alternatives for job creation and economic growth and consider any short term or cumulative impacts.	The Supplemental EIS discusses both beneficial and adverse impacts to the physical, biological, and social systems in the project area. Section 3.4.5, Socioeconomics and Communities (subsection on Mining, Access, and Other Indirect and Cumulative Impacts), discusses the potential local and regional economic consequences of future mining activities that would be supported by the proposed road. Year-round, long-term employment opportunities would be available if mining operations occur.
26718	2	Proposed action	Lack of Detailed Reclamation Plans: AIDEA's proposal to remove the road and restore the ROW after cessation of mining activities lacks a detailed reclamation plan. How environmental regulations are applied in Alaska is dismal. The ability to enforce and oversee mining operations in Alaska is amongst the worst in the nation. The lack of good environmental regulations in Alaska is concerning as potential environmental damages, restoration costs, and technical feasibility have not been thoroughly analyzed.	See responses to letter 22770, comment 15 and letter 29489, comment 92.
26718	3	Proposed action	Uncertainty of Mining Development: The access road's primary purpose is to facilitate further mining exploration and development. The reliance on other entities to carry forward the actual mining activity, which will require separate permitting and presumably NEPA review, adds a degree of uncertainty to the project's viability and justification for the road's construction.	See response to letter 21906, comment 1.
26718	4	Decision process - general	Reliance on Previous Studies: The proposal relies heavily on previous studies conducted by DOT&PF and AIDEA itself. While it's logical to base decisions on prior research, the rapidly changing environmental conditions and continual evolution of best practices in infrastructure development necessitate fresh peer reviews that include local peers. Additionally, those studies were conducted almost a decade ago, which raises concerns about their current applicability. Consultations under ANILCA would help ensure the most recent environmental, economic, and social data are incorporated into the decision-making process.	Previous studies conducted by ADOT&PF and AIDEA were used by AIDEA to evaluate and select their proposed route (Alternative A) and the Alternative B route, and by the BLM to consider and screen additional alternatives. In preparing this Supplemental EIS, the BLM re-examined alternatives concepts proposed during the previous EIS process and considered new alternatives concepts that could reduce overall potential impacts. This process was informed by public scoping and cooperating agency input, and Appendix G (Alternatives Development Memorandum) has been updated to incorporate any new and relevant information since the 2020 EIS was prepared. Tribal consultation carried out by the BLM is listed in Appendix I. Indigenous Knowledge and the data from more recent studies have been incorporated in Chapter 3, Affected Environment and Environmental Consequences sections for numerous resources; in Appendix M, ANILCA Section 810 Evaluation; and is the basis for much of the data cited in Appendix L, Subsistence Technical Report.
26718	5	Government to government consultation	Inadequate Representation of Indigenous Knowledge: The process outlined does not seem to adequately incorporate the traditional ecological knowledge of Indigenous communities, which is important in any environmental evaluation. Indigenous knowledge systems can offer profound insights about the local ecology that current scientific approaches might overlook. Weighing Indigenous knowledge equally with western scientific data can lead to the development of more holistic and sustainable solutions.	Indigenous Knowledge has been incorporated in Chapter 3, Affected Environment and Environmental Consequences sections, for numerous resources; in Appendix M, ANILCA Section 810 Evaluation; and is the basis for much of the data cited in Appendix L, Subsistence Technical Report.
26718	6	Mitigation/monitoring	Lack of Impact Mitigation Plans: The consultation process is designed to identify potential impacts on Tribal communities, but there are not substantial plans to mitigate the potential impacts from the alternatives and consequently the impacts that could potentially arise are not trivial. Indigenous communities often bear the brunt of environmental changes, and any development plan should include comprehensive impact mitigation strategies that prioritize the welfare of these communities.	Appendix N Sections 3.4.5, Socioeconomics and Communities, and 3.4.7, Subsistence Uses and Resources, discuss potential mitigation measures to reduce impacts to communities, socioeconomics, public health, and subsistence.
26718	7	Government to government consultation	Insufficient Communication and Engagement: Although multiple letters were sent and meetings held, the approach seems largely one-sided with the BLM providing information rather than genuinely seeking input. Ongoing, two-way dialogue is essential for meaningful engagement. Consultations should provide ample space for Indigenous communities to voice their concerns and suggestions, ensuring their perspectives are genuinely heeded in decision-making.	See response to letter 17991, comment 2.
26718	9	Public and stakeholder involvement	BLM reinstated hearings after the SEIS was published in a rapid manner across the state. The public had opportunities to participate, but those public hearing opportunities were brief and were not two-way. Native Movement is proposing that there may be neglect of Indigenous voices on key issues raised by BLM: Despite the BLM's assertion of comprehensive consultation and outreach, there has not been enough time for the voices and concerns of the Indigenous communities.	As described in Section 1.5.3, Government-to-Government and National Historic Preservation Act Section 106 Consultation with Tribes in the Supplemental EIS, the BLM conducted consultation meetings and other outreach during the previous and current EIS processes. See Appendix I for a summary of the dates, locations, and attending agencies and other entities involved in government-to-government consultation meetings associated with the current Supplemental EIS and Section 106. In addition, BLM conducted a series of Talking Circle workshops in communities

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				associated with the current Supplemental EIS public meetings. A report on these workshops has been included in Appendix Q of the Supplemental EIS. See also response to letter 217, comment 2.
26718	10	Public and stakeholder involvement	Public Outreach: The public outreach campaign set out by the BLM is more of the same kind of meetings with limited opportunities rather than a sincere attempt to solicit public opinion and take it into account in a two-way manner. The heavy reliance on digital and print media is of concern considering the accessibility challenges that played out during this comment period (weather cancellations). In order for engagement with Indigenous communities to be successful it must require active participation with them rather than merely disseminating information to them. Ideally engagement would take place over a period of days in each community with active participation within the SEIS materials. Additionally, there should be some feedback mechanism that allows the federal agency to receive feedback about how engagement took place.	See response to letter 33781, comment 3.
26718	11	Socioeconomics and communities	Economic Growth at What Cost?: While economic benefits from mining exploration and development are highlighted, they are presented without a comprehensive analysis of the social, cultural, and environmental costs. The potential for increased state revenue, jobs, and reduced living costs appears to take precedence over the rights, livelihood, and cultural heritage of the Indigenous communities and again are speculative without tangible promises for economic prosperity. If the Ambler Road project were approved it appears that business as usual would take place, i.e., mine developers would be the primary beneficiaries of extraction while local benefits would be left to speculation.	See response to letter 23784, comment 3.
26718	12	Environmental justice	While the narrative presented in the 'Funding and Costs' section may be an accurate reflection of AIDEA's financial plans and the State of Alaska's legal obligations, it fails to acknowledge the profound cost of the project that falls on Indigenous communities - a cost that is difficult to measure in dollars and bonds and for which BLM has failed to account. If some fraction of the impacts are realized by Indigenous communities from the Ambler Road project they will bear a cost and that cost could be large considering the many social problems that already exist as a result of colonization. The proposed road, if cut through ancestral lands, disregards the sacredness of the land and the deeply rooted connections that are maintained within it. The project's financial viability is emphatically stressed, yet the social, cultural, and spiritual costs imposed on our communities are largely omitted.	Sociocultural impacts are discussed in Section 3.4.7 of the Supplemental EIS (Subsistence Uses and Resources).
26718	13	Funding and bonding	AIDEA's assertion that there would be no state General Fund dollars or federal funds used for construction might be speculative. Their assurance that investors or bondholders would bear the risk of the project's revenues falling short is a speculation that deserves special consideration. If speculation about costs fail it seems that communities will bear the enduring impact of this project. Payments made by mining companies for using the road may not ensure the project's financial sustainability. The Ambler Roads sustainability depends on many factors that may not be fully characterized, such as market forces or future environmental conditions. Clearly, communities are gravely concerned about their cultural sustainability if the Ambler Road is constructed? Based upon the overwhelming testimony already given Native Movement is compelled to question the equity of such an arrangement. This project, in its current form, appears to intensify the marginalization of Indigenous communities by prioritizing uncertain financial gains over cultural preservation.	See response to letter 18932, comment 3.
26718	14	Proposed action	The closure and reclamation plan as proposed by AIDEA raises significant concerns. Although it promises the restoration of the environment post-construction, its practicality and effectiveness remain unclear. The plan appears to be more a nominal gesture than a realistic commitment, with no explicit guarantees or safeguards ensuring the proper implementation. The potential negligence in restoring the natural habitats could lead to prolonged devastation. The restoration of ecosystems is a complex, intricate process that goes beyond simply removing the infrastructural elements. There is a profound risk that the disruption caused by the road could have irreversible effects, forever altering the biodiversity and ecological balance of the region. Therefore, the assurance of closure and reclamation must be evaluated not merely on the basis of intent but through a careful review and enforceability of the plans.	See response to letter 29489, comment 92.
26718	15	Air quality and climate	Rather than noting climate change is happening, BLM should consider how the Ambler Road will contribute to global temperature rises for a more holistic view of the climate changes experienced in different regions.	Comment noted. See response to letter 132, comment 2.
26718	16	Government to government consultation	BLM proposes increases in culvert widths, bridge spans, and installation of overflow culverts, to be conscious of water flow issues. Despite that mitigation it could still alter natural waterways and disrupt the life cycles of species that Indigenous communities depend on for their livelihoods. There doesnt seem to be a good record of consultation with Indigenous communities to understand the potential impacts of these alterations.	See response to letter 17991, comment 2.
26718	17	Noise	The noise reduction techniques, though commendable, do not negate the disruption that construction itself would cause to the tranquility and natural harmony of Indigenous lands. The constant presence of construction activity could have profound psychological and spiritual effects on Indigenous communities, a fact overlooked by the mitigations proposed.	See response to letter 34254, comment 2.
26718	18	Mitigation/monitoring	The use of dust palliatives and construction emissions minimization techniques do not address the potential irreversible damage to the quality of air and soil, and the subsequent effects on the flora and fauna that the Indigenous communities rely upon.	Appendix N, Section 3.2.7, Air Quality and Climate, discusses a potential BLM mitigation measure which would require AIDEA to submit a Dust Control Plan which would be subject to approval by the Authorized Officer and review by ADEC. At a minimum, this plan would include a literature review of the effectiveness and environmental effects of palliative options, documentation of consultation regarding palliative selection, and rationale for selection of palliatives that includes consideration for minimizing effects on fish, wildlife, vegetation, and water quality.
26718	19	Mitigation/monitoring	BLM has a burden of proof to show the proposed mitigations will in fact work, otherwise there is failure to recognize and address the intrinsic relationship between Indigenous communities and their natural environment. Without a true understanding and acknowledgement of this relationship, any mitigations proposed will merely scratch the surface of the real	The proposed mitigation in the Supplemental EIS Appendix N contains measures that serve to minimize potential impacts to resources from the project. Should the project be approved, the BLM will make a decision on what mitigation measures will be required in the ROD.

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			concerns. Consequently, a more holistic approach that acknowledges Indigenous land rights and respects their traditional knowledge and practices is necessary.	
26718	20	Socioeconomics and communities	During public hearings the concern for construction camps harming Indigenous people was voiced. That concern out of community safety should not be minimized. BLM must abide by regulations that address the direct, indirect, and cumulative impacts of a project. There is emotional, spiritual, and cultural harm that is not well understood or accounted for. 'Direct effects' are those that desecrate our sacred lands at the time of the project. 'Indirect effects' are the lingering wounds that may not be immediately evident but will scar generations to come. 'Cumulative effects' are the compounded traumas from this project combined with past, present, and reasonably foreseeable future violations. The Draft SEIS presumes to anticipate these effects based on a limited understanding of the region and Indigenous way of life and only briefly mentions the impact to Indigenous communities from construction camps.	See response to letter 26100, comment 1. The BLM values Indigenous Knowledge and has made a concerted effort to reach people in rural Alaska. Numerous scoping meetings, hearings, government-to-government meetings, and teleconferences have been held in potentially affected communities to gather input, including indigenous knowledge. The BLM has specifically reviewed the comments and included indigenous knowledge in the Supplemental EIS. The Subsistence Technical Report (Appendix L) incorporates indigenous knowledge derived from public scoping testimony. Appendix L, attached to the Supplemental EIS and summarized in Supplemental EIS Section 3.4.7, Subsistence Uses and Resources, is a subsistence technical report. Appendix M is the BLM's ANILCA Section 810 Subsistence Evaluation, which assesses potential restrictions/impacts that could occur because of the project. Much of the source of information for Appendix L is ADF&G subsistence use reports, which compile Indigenous Knowledge of subsistence activities and resources.
26718	21	Mammals	While the “Caribou Impacts” section acknowledges the potential for habitat loss and the importance of lichen as a food source, it falls into a common trap of ecological assessments: the fallacy of dependency on numerous variables. Although it is true that environmental impacts result from a complex interplay of factors, overemphasizing this complexity can lead to a lack of concrete action or mitigation strategies. BLM seems to be characterizing impacts as being 'dependent on numerous variables such as vegetation type, environmental conditions,' without adequately explaining or quantifying these effects. BLMs approach obscures risks posed by habitat destruction and seems to pave the way for development.	Section 3.3.4 of the Supplemental EIS describes potential impacts to caribou and potential mitigation measures using relevant and available information. Quantifying future impacts is difficult because it requires assessment of multiple interacting factors.
26718	22	ANCSA	There seems to be a weak analysis of ANCSA 17(d)(1) withdrawals and that seems to be a significant omission for the following reasons: 1. Land Management Changes: The potential revocation of ANCSA 17(d)(1) withdrawals would be a drastic change to land management. That change could lead to increased development and exploitation of natural resources within caribou habitat, potentially causing habitat loss and fragmentation.	ANCSA 17(d)(1) withdrawals and RMP revisions are included in the list of reasonably foreseeable actions (see Section 2.3.3 of Appendix H). Potential cumulative effects of ANCSA 17(d)(1) withdrawals are analyzed in table 3-1 of Appendix H, as well as in Chapter 3. The potential cumulative effects of future RMP revisions are not analyzed in detail because, as stated in Appendix H, “While these plans would affect how people may use the lands for recreation, subsistence, hunting and fishing, transportation, and commercial ventures, it is not reasonably foreseeable how land management will change based on those updates at this point in time.”
26718	23	ANCSA	2. Impact on Subsistence Harvesting: The change in land management from federal to state could impact subsistence harvesting, which is an essential aspect of local Indigenous communities' livelihoods and cultural practices.	See response to letter 26718, comment 22.
26718	24	ANCSA	3. Species Protection: ANCSA 17(d)(1) withdrawals play a crucial role in species protection. ANCSA 17 (d) (1) withdrawals should not be overlooked compared with the threats posed to the caribou population in the area by the Ambler Road project.	These impacts are addressed in the cumulative impacts analysis. Please see Sections 3.3.4, Mammals, and 3.4.7, Subsistence, which address potential impacts to caribou and subsistence harvest of caribou in the event that 17(d)(1) withdrawals are lifted in the Kobuk-Seward Planning Area.
26718	25	ANCSA	4. Sustainability of Caribou Populations: The potential for increased development on the lands covered by ANCSA 17(d)(1) withdrawals could threaten the sustainability of caribou populations. If the Ambler Road project is approved it could drastically increase risk to caribou and Indigenous communities that rely on them.	See response to letter 26718, comment 24.
26718	26	Socioeconomics and communities	BLMs argument that freight delivery would lower the cost of goods could be overly simplistic. Road access could reduce transportation costs, but it does not necessarily translate to cheaper goods. Other factors such as inflation, market demand, and national and international trading practices may offset any savings from transport costs. Therefore, the promise of lower living costs is not guaranteed.	Acknowledged. The potential to lower the cost of living is solely attributable to the potential for lower transportation/delivery cost. The Supplemental EIS states, “AIDEA's application indicates that a secondary benefit of the proposed road would come from commercial access for communities closest to the road, creating opportunities for less expensive <i>transportation</i> of goods to and from some NAB/YKCA communities.”
26718	27	Socioeconomics and communities	BLMs assumption that fuel delivery by truck would result in substantial cost-saving could be flawed. This argument does not consider the environmental and maintenance costs associated with increased road traffic. Regular upkeep of roads, especially in challenging soil conditions, could outweigh the cost savings from truck delivery. The construction of additional roads for mine development, while said not to impact the existing transportation system, ignores the potential for environmental degradation and disruption of wildlife habitats. This could lead to unforeseen costs related to environmental cleanup and the loss of biodiversity. Therefore, the anticipated benefits of lowered cost of living must be weighed against the potential environmental and social costs.	The Supplemental EIS discusses both beneficial and adverse impacts to the physical, biological, and social systems in the project area. However a full accounting or valuation of the environmental/societal costs and benefits of these effects is beyond the scope of the Supplemental EIS.
26820	2	Alternatives	- **Lack of Exploration of Alternatives:** - Questions arise about the absence of exploration of alternative transportation methods. - If it's about one mine, why not consider a rail to a nearby port?	Various rail routes were considered in Appendix G, Section 6.4 but were eliminated from detailed analysis due to practicality, feasibility, and/or environmental concerns.
26912	2	Mammals	Prior to the Dalton coming through people were promised two things - the road would remain public and caribou would not be impacted. The public road serves everyone except the residents of the region and no one has seen the annual massive caribou herd migration since. Data backs that yet is not present in the SEIS.	Section 3.3.4 of the Supplemental EIS describes the reported change in caribou availability following the construction of the Dalton Highway. Due to the lack of pre-construction data on caribou movements and uncertainty in herd identity of caribou observations, it is difficult to add more detail.
26929	3	Fish and aquatics	Culverts and bridges play a critical role. Implementing the right kind of culvert for size, stream flow mitigators, and assessing conditions over time. With 3,000 stream crossings in the Ambler Road project path, it seems incredibly unrealistic that the	Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA - Physical Environment, describes commitments made by AIDEA to reduce impacts from the installation of culverts. Supplemental EIS Section 3.2.5, Water Resources - Impacts Common to All Action Alternatives,

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			installation and monitoring of culverts, even with the heavy requirements based on the permitting, will be adequate for salmon passage and habitat protection.	describes mitigation measures that would be employed to minimize impacts from culverts as well as the anticipated impacts from culvert installation. AIDEA would develop a monitoring and maintenance plan for culverts to prevent them from being blocked by mud and debris. The plan would include a mechanism for funding culvert repairs and replacement, and would be required to be approved by ADF&G. Culvert monitoring and maintenance would be conducted by AIDEA.
26929	4	Fish and aquatics	Culverts in salmon bearing streams may act as a chief “barrier” to salmon if not maintained, summer and winter. Some species of salmon spawn well into late fall and under the ice. Salmon alevin9 and juveniles habitat needs protection in all seasons. Similarly, bridges need to be assessed and designed according each of the crossings. Table 14.2 Monitoring Questions, Parameters, Effectiveness, Criteria and Field Methods (adapted from Harris 2005) of the Design of Fish Passage at Bridges and Culverts Hydraulic Engineering Circular10 was part of a Fish Passage Summit meeting in Denver in 2006 offering key questions that need to be asked for culvert and bridge design to mitigate anadromous fish passage. It's quite a daunting list when you think about 3,000 stream crossings. So who is going to monitor those culverts on a seasonal basis and who is going to be responsible for repair, clean up, replacement over time? While agencies may be passing the ball or wrangling over this responsibility, significant numbers of salmon could be extirpated in the process.	Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA - Physical Environment, describes commitments made by AIDEA to reduce impacts from the installation of culverts. Supplemental EIS Section 3.2.5, Water Resources - Impacts Common to All Action Alternatives, describes mitigation measures that would be employed to minimize impacts from culverts, as well as the anticipated impacts from culvert installation. Appendix N describes the mitigation measures that are intended to minimize impacts from culverts. The project's final culvert design would be based on site-specific conditions and would be guided by the applicable mitigation measures (see Appendix N) adopted in the BLM's ROD. Bridges would be designed to pass the 100-year discharge and culverts would be designed to the 50- to 100-year discharge. AIDEA would develop a monitoring and maintenance plan for culverts to prevent them from being blocked by mud and debris. The plan would include a mechanism for funding culvert repairs and replacement, and would be required to be approved by the Alaska Department of Fish and Game. Culvert monitoring and maintenance would be conducted by AIDEA.
26938	1	Compliance with other laws	While in Section 201(4)(b) of ANILCA Congress finds there is a need for access for surface transportation across the Preserve, it is only to access the Ambler Mining District. It must be clearly demonstrated that mining in the Ambler District is so economically viable and critically important to the nation that a permit is issued. It must also be demonstrated that both the short term and long term adverse impacts to GAAR and the surrounding communities be fully mitigated. However, the draft SEIS fails to make the case for mitigating the substantial impacts. And while this section of ANILCA authorizes a mine access road through the Preserve, subject to terms and conditions intended to minimize adverse impacts of a road, it does NOT authorize the construction of gravel mines, maintenance stations, airstrips, or other facilities associated with construction or future maintenance of the road. It also does NOT authorize use of the industrial access road to facilitate public access to or through the Preserve. As a result, any proposals to construct gravel mines or other infrastructure within GAAR or to eventually use the road to facilitate public access need to be removed from consideration in the draft SEIS, as it is contrary to ANILCA.	The Environmental and Economic Analysis prepared by the NPS pursuant to ANILCA Section 201(4)(d) responds to the application received by the NPS for surface transportation through GAAR.
26938	3	Cooperating agency involvement	In its 2022 motion for remand, NPS acknowledged that there were problems related to the EEA's subsistence analysis and suspended its own right-of-way authorization. As a result, in conjunction with preparation of the SEIS under the remand process, one would also expect the NPS to review their previous authorization of the project as described in the July 2020 Final EEA and Record of Decision. 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 current and complete information about this project. We commented extensively on NPS's draft EEA in 2019 and are now very concerned that NPS has not undertaken a review of its 2020 final EEA as part of this remand process. Many of our 2019 comments on the EEA remain relevant to the current draft SEIS and are attached for your reference and further consideration.	The EEA was not identified for re-evaluation as part of the remand. No deficiencies were identified with the EEA. The ANILCA 810 evaluation for the Ambler Road Project has been revised.
26938	4	Compliance with other laws	We have a major concern that the draft SEIS treats consideration of impacts to the Preserve as if it were any other federal public land. It is not. As stated previously, both ANILCA Section 201(4)(a) and the NPS Organic Act mandate that GAAR be managed for conservation purposes. And as described in the park unit's Foundation Document, “the purpose of Gates of the Arctic National Park and Preserve is to preserve the vast, wild, undeveloped character and environmental integrity of Alaska's central Brooks Range and to provide opportunities for wilderness recreation and traditional subsistence uses.”	See response to letter 26938, comment 1.
26938	5	Cooperating agency involvement	In contrast to BLMs preparation of an EIS following NEPA procedures, ANILCA section 201(4)(d) requires the Secretaries of the Interior and Transportation to jointly prepare an environmental and economic analysis solely for the purpose of determining the most desirable route for the right-of-way through the Preserve and terms and conditions which may be required for the issuance of that right-of-way. In its 2022 motion for remand, NPS acknowledged that there were problems related to the EEAs subsistence analysis and suspended its own right-of-way authorization. As a result, in conjunction with preparation of the SEIS under the remand process, one would also expect the NPS to review their previous authorization of the project as described in the July 2020 Final EEA and Record of Decision. 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 current and complete information about this project. We commented extensively on NPSs draft EEA in 2019 and are now very concerned that NPS has not undertaken a review of its 2020 final EEA as part of this remand process. Many of our 2019 comments on the EEA remain relevant to the current draft SEIS and are attached for your reference and further consideration.	See response to letter 26938, comment 3.

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26953	1	Air quality and climate	The social cost of carbon is not mentioned in the relevant section (or is very hard to find), and there is no recognition of the likelihood that the social cost of carbon is likely to soon quadruple or that escalation over time would be reasonable. Also, the discounted rates give a much skewed sense of costs. It is much more reasonable for a policy maker or the public to consider annual tax revenue from a project against annual environmental damages, for instance. Assuming a cost of carbon of \$190, as proposed, the annual emissions from mine-related transportation alone reaches the not insignificant sum of \$10 million per year. Similarly, it would make sense to present the cumulative cost of carbon in the same format that a mining company might tout cumulative tax payments to local or state government as a simple sum. In this way, the cumulative climate-related damage stemming from the proposed action is easy for the public to assess and can be seen as significant.	Comment noted. The social cost of carbon is discussed in Section 3.2.7 and elaborated in Appendix D.
26953	2	Cumulative and indirect effects analysis	Also, while it is admittedly difficult to quantify emissions of the mining activity itself, it is not reasonable to eliminate those emissions from consideration entirely. It is clear that mining activity is dependent upon and would be the direct result of road construction. Emissions from mining activity are likely to be at least as large as those from transportation. Presenting GHG emissions in a context that would be useful to policy makers and the public requires the inclusion of some best estimate a range could cover the uncertainty of mining-related emissions.	Section 3.2.7 of the Supplemental EIS (Air Quality and Climate Change) addresses GHG emissions associated with the reasonably foreseeable mining development scenario. In addition, GHG emissions from the road operations (principally mining vehicles on the road) are estimated in Appendix D, Section 3.2.7, Table 26, and the social cost of GHG emissions from road construction and operations are estimated in Appendix D, Section 3.2.7, Table 27. The Supplemental EIS describes how air quality impacts associated with reasonably foreseeable mining activities would be analyzed on a case-by-case basis as part of each site's own permitting process and would be subject to appropriate measures to reduce impacts unique to each proposal.
26956	1	Socioeconomics and communities	The SEIS did not adequately account for the significant economic benefits of the Project. The construction as well as operations will off hundreds of short-term and long-term jobs. Building the road will make it more possible for construction and operation of mining projects, which in turn, will provide thousands of direct jobs. Expanding access enables growth in the mining industry, which will create additional sources of local and state revenues.	See response to letter 27727, comment 7.
27094	1	Vegetation	A 2016 study shows non-native invasive species of plants NNIS) occur in high concentrations in the project area immediately adjacent to the Dalton Highway (Carlson et al. 2016). A previous environmental analysis revealed that the spread and establishment of NNIS along the action alternatives is considered likely, Chapter 3-44. Another more problematic invasive is elodea, an aquatic plant. Its around Fairbanks. If someone from that side were to use the road and launch their boat over here, one tiny fragment of elodea in their motor or bilge could regenerate and be a huge infestation. We are concerned about the effects of these invasive species on the subsistence lifestyle and health of the environment. Invasive species will likely crowd out or affect native vegetative which is a core of our diet and fish and animal habitat.	Section 3.3.1, Non-native Invasive Plants, cites the Carlson 2016 document and includes new NNIS species records on Map 3-11 and the discussion highlights the current known infestation density on the Dalton Highway, and the risks of NNIS spread through the region with the development of the proposed project. New collection data for Elodea were also included in the same section and on Map 3-12 along with identification and discussion of the most vulnerable river corridors to expanding Elodea ranges.
27094	2	Mitigation/monitoring	We are concerned about who will hold responsibility for the damage to our habitat and native subsistence ways. What will AIDEA do to prevent this damage and who will be responsible for fixing the problem? Who will be accountable for the environmental damages that will be affecting our future generations? We want to ensure subsistence rights for our future children.	Each land manager that issues a ROW or some other right of access is responsible for ensuring compliance with the terms of the grant for access. The BLM will recover its monitoring costs through a cost reimbursable agreement with the ROW holder.
27369	1	Alternatives	We suggest that Alternative B, AIDEA's preferred route, would result in the fewest impacts; provided that the route is adjusted to avoid crossing the Koyukuk River at Gogo Mountain, which we consider sacred. We also suggest that preserving the original plan for a three-phased approach would make more sense, as it allows time to determine whether a two-lane road is even needed.	Comment noted.
27369	2	Cumulative and indirect effects analysis	Cumulative Impacts: There is limited consideration of the cumulative impacts associated with mining (see ES-3). Yet the impacts of Ambler Road cannot be fully evaluated without knowing what kind mining will result and the extent of traffic and volumes of materials (including potentially hazardous materials) to be extracted. It would be helpful if BLM would hold a public meeting with all mining companies that support the road so affected communities and the public could better understand the nature of the mining that could result from the road. Without more input from mining companies, the estimated amounts of ore processed; minerals extracted; jobs created; and road, rail, and ship traffic generated are highly speculative.	See response to letter 23434, comment 13.
27369	3	Public access	Public Access: We appreciate the acknowledgement that even if the road is not currently intended be open to the general public by design, public use and trespass are reasonably expected to occur and should be analyzed (ES-4). Failure to consider this substantial likelihood was a flaw in the previous EIS. We appreciate the acknowledgement of the risk of importation of illegal substances and the collateral violence resulting from this (3-205). Please note that this may occur not only from mine workers, but also from those who trespass the road to import these substances.	Text revised to include importation by trespassers.
27369	4	Mitigation/monitoring	Community Access: We support AIDEA's proposal that communities would be allowed to use the road for commercial deliveries (3-169)--this is a mitigation measure that should be documented in the EIS.	Comment noted.
27369	5	Geology and minerals	Permafrost Thaw: Appreciate the improved consideration of climate change and permafrost thaw (2-12-2-14, 3-8). It is important to consider the feedback loop the road will create with thawing permafrost. The SEIS is still not clear on what will happen as the road slumps and needs to be repaired, other than a brief mention that more gravel will be needed for repairs (3-9). The SEIS should clarify how roads will be repaired and what might be the impacts of slumping and a continual need for repairs.	The need for thermal insulation is discussed in Section 3.2.1, and is included in the applicant's cost to construct and maintain the road. Design features and mitigation related to permafrost, including geotechnical testing, thermal modeling, and specific measures to control permafrost thaw would be identified in the design and permitting stage. See Section 2.4.4 of the Supplemental EIS for design features and Appendix N, Section 3.2 for potential mitigation measures to minimize impacts to permafrost.
27369	6	Water resources	* Flood hazards: The DSEIS states that "AIDEA has proposed that bridges would be designed to pass a 100-year flood event with limited impact to the floodplain" (3-35). Yet what is called 100-year floodplain may flood far more frequently than once every 100 years, given that many maps are outdated and have not kept up with climate change. For this reason, it may be better to build to what is called 500-year floodplain.	Understood that a 100-year floodplain is based on a statistical calculation and that a 100-year flood may occur more than once every 100 years. Impacts on climate change on flood recurrence and magnitude is discussed under Section 3.2.5, Mining, Access, and Other Indirect and Cumulative Impacts and Appendix H. No mapped regulatory floodplains are crossed by the

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				proposed action alternatives (e.g., FEMA has not published floodplain/floodway maps or denoted base flood 100-year flood flows or elevations for any rivers crossing by the proposed road alternatives). Additional design would be performed for any bridge and culvert crossings; standard practice for bridge and culvert structures is to complete a hydrologic and hydraulic analysis/report for each structure, which would include hydrologic calculations to estimate the 100-year flow based on best available data and practices, including consideration to climate change impacts. Additionally, standard practice for bridge design is to evaluate structures for conveyance, water surface elevation, and scour for the 500-year flood event to minimize the likelihood of the structure failing during storms exceeding the 100-year flood event.
27369	7	Mammals	Wildlife impacts: Please include impacts to beavers when discussing small mammals (3-132).	Additional text on beavers was added.
27369	8	Public and stakeholder involvement	Subsistence impacts: We appreciate the inclusion of Indigenous knowledge on fish (3-86, 3-223) and caribou (3-210, 3-221, App. M) and the acknowledgement that impacts to subsistence also impact Indigenous knowledge transmitted through subsistence (3-206). We appreciate the acknowledgement that the road can lead to increased outsider hunting, which can impact caribou (3-139). We agree with the ANILCA 810 finding that Alternatives A, B, and C and cumulative impacts may result in a significant restriction to subsistence uses for Allakaket (M-27, M-30, M-33, M-40). We would appreciate your holding an ANILCA 810 hearing in our community.	An ANILCA 810 hearing was held in Allakaket November 14, 2023.
27369	9	Cultural resources	Cultural resources: We appreciate the additional information on cultural resource impacts, particularly the role of the Jim River ACEC nominated by Allakaket through the Central Yukon Regional Management Plan process (3-245). The DSEIS should note that numerous Traditional Cultural Properties (TCPs) were nominated though the Central Yukon process. Even if they are not in the direct path of the road, if the road results in trespass by outside hunters and others, these TCPs may be affected.	Indirect impacts to cultural resources, including TCPs, caused by increase access are addressed in Section 3.4.8 under Impacts Common to All Action Alternatives as well as the Mining, Access, and Other Indirect and Cumulative Impacts section.
27369	10	Mitigation/monitoring	Mandatory language: Globally in Appendix N, “would” and “should” should be changed to “shall” or “must” or “will.” This would not only make the proposed stipulation more effective; it would make the document more consistent, since some places do use mandatory instead of conditional language.	Supplemental EIS Appendix N presents potential mitigation measures. Should the project be approved, the ROD will determine which mitigation measures will be required.
27369	11	Cooperating agency involvement	The FSEIS should require standards as good or better than those of USACE. It appears that many of the standards are there (e.g., 100-foot undisturbed vegetation buffer (N-21), and we appreciated that. While the recent Supreme Court decision may have reduced the volume of waters defined as wetlands subject to USACE jurisdiction under CWA 404, it is also important that “the ACCS [Alaska Center for Conservation Science] mapping [relied on by BLM in this DSEIS] greatly underestimates the true extent of wetlands in the area.” (3-63) Thus, there should be no reduction in the waters to which the 2023 Supplemental Record of Decision (ROD) apply, compared to the 2020 ROD.	Should the project be approved, the ROD will determine which mitigation measures will be adopted. The USACE terms and conditions are considered as proposed mitigation in the Supplemental EIS.
27369	12	Hazardous waste	Toxics: Special conditions number 29 and 30 of the USACE CWA Section 404 permit require that use of materials containing NOA (defined as 0.1 percent asbestos by mass) be avoided to the greatest extent practicable, geotechnical investigations be conducted to identify areas to be avoided due to NOA and sulfide minerals that can cause ARD, and that a final project plan be developed for construction that incorporates all required and proposed mitigation measures (USACE 2020)” (3-38)--these should also be stipulations in the Ambler Road ROD. Further, cyanide and mercury should not be allowed to be used for mining or carried along the road, given the availability of substitutes such as non-toxic thiosulphate.	Appendix N includes mitigation measures for dealing with and minimizing human exposure to NOA. Because no detailed mining permit in the Ambler Mining District has been applied for, the type and extent of hazardous substances cannot be known. When a mining permit is applied for, NEPA analysis for hazardous substances proposed would be evaluated.
27369	13	Mitigation/monitoring	Reclamation: We appreciate the new mitigation measure to require a bond to ensure reclamation (N-8). Allakaket had previously commented on the need for this. The bond should be high enough so that it adequately covers anticipated costs. In the oil and gas industry, we have seen bonds that are too low to ensure reclamation (see Ristroph, E.B. and M. Robards. 2019. “Preparing for the Aftermath of Drilling on Arctic Lands.” LSU Journal of Energy Law and Resources 8(1):155-206.)	Comment noted.
27369	14	Mammals	Wildlife: We appreciate the new requirement to develop comprehensive fish and wildlife monitoring and avoidance plans, based in part on Indigenous knowledges (N-30). Effective plans and monitoring cannot occur without the involvement of Indigenous persons. We appreciate the new requirement to slow down or stop and wait to permit the free and unrestricted movement of wildlife across the road at any location (N-37).	Comment noted.
27369	15	Socioeconomics and communities	Health: We appreciate the new requirement to prohibit its employees, contractors, subcontractors, and their employees from visiting local communities while on-duty or while staying at project facilities except for the conduct of official business (N-48). This should be extended to the five-mile radius around each community where community members are likely to be fishing or gathering, to avoid the illicit exchange of illegal substances.	Text revised as requested.
27369	16	Subsistence	Subsistence: We appreciate the new mitigation measures that better protect subsistence, as Allakaket had requested. We are considered about the limited involvement of Subsistence Advisory Group. The DSEIS indicates that the Group has yet to document locations of subsistence travel routes intersecting the proposed road. (3-165) We are concerned that the Group is not fully connecting with Tribal Councils and is not funded to have sufficient meeting time to carry out this important work. For the main mitigation measure relating to subsistence and Tribal involvement (N-48), we suggest the following tracked change edits to strengthen the measures regarding consultation: o In order to ensure that representatives to the working group are recognized for their expertise and have the ability to speak for the community, all representatives would will be nominated and approved by the Tribal Council for the community that they represent. o AIDEA would will consult with directly affected subsistence communities to discuss the siting, timing, and methods of road construction and operations to help discover local traditional and scientific knowledge, including locations needed to cross the Ambler Road, resulting in measures that minimize impacts to subsistence uses, potentially to include ramps for road crossing locations (see also Section 3.4.2,	Text has been revised as suggested.

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			Transportation and Access). To the maximum extent practical, this consultation shall take place in a manner that involves face-to-face meetings with Tribes, preferably in their communities. o During this consultation, AIDEA would will share the results of road use monitoring (both permitted and unpermitted uses). AIDEA will also provide monthly updates on road use. o At the request of Tribes, AIDEA would will negotiate conflict avoidance agreements or similar mitigating measures to ensure that road construction activities and operations and maintenance activities do not result in unreasonable interference with subsistence activities. In the event that no agreement is reached between the parties, the Authorized Officer would will determine which road activities would occur, including the timeframes. (Note: There is precedent for requiring an industrial entity to enter a conflict avoidance agreement with a Tribal entity. The Bureau of Ocean and Energy Management has issued lease stipulations to energy companies requiring conflict avoidance agreements with the Alaska Eskimo Whaling Commission. See, 85 Fed Reg at 79267, 79272-73, and generally Section I.E.3 of the Proposed Rule 85 Fed Reg at 79280-81) o AIDEA would will hire a project liaisons dedicated to receiving feedback from potentially affected communities. o AIDEA would will hire subsistence monitoring representatives in communities closest to the road corridor. These subsistence monitors would will communicate with AIDEA or AIDEA's designated project liaison regarding subsistence impacts, community concerns, and subsistence activities occurring in the vicinity of the road. o AIDEA would will consult with affected communities in the development of monitoring plans for subsistence resources. o The Subsistence Advisory Group will help establish and update mitigation measures across the region (beyond just one community) and will determine, in consultation with AIDEA and BLM, where subsistence crossings are placed.	
27369	17	Cultural resources	Cultural resources: We appreciate the additional proposed mitigation to protect Traditional Cultural Properties(N50), as Allakaket had suggested. We suggest the following tracked changes to make it stronger: AIDEA would will consult with the BLM, local communities, and Tribes to seek ways to avoid damaging or disturbing cultural landscapes, Traditional Cultural Properties, or other places of traditional cultural importance located along the project area route that are locally or regionally important but may not meet the criteria of a historic property. This consultation should take place in the Tribes' villages and will include (at the request of the Tribe) gathering information and data related to Tribes' origin stories and Tribal history of the project area; historic travel routes (e.g., winter trails and river routes); and their lifetime use areas and traditional use areas. AIDEA will enter a data management agreement to secure the sensitive intellectual property of Tribes regarding their information.	Text has been revised as suggested.
27372	2	Decision process - general	The Ambler Access efforts to date, and decisions by DOI, are not indicative of a commonsense approach and have been structured to delay and greatly complicate the process; thereby contributing to options for potential litigation. Foremost in this situation is the action by DOI claiming total control of the process, which is not supported since most of the proposed routes cross lands held by the State of Alaska and that right for a segment crossing true federal interest, the Gates of the Arctic National Park (GAAR), was previously identified and authorized within the Alaska National Interest Conservation Act (ANILCA). The issuance of the principal federal permit for a proposed project is the methodology for the determination which federal agency will take the lead for an EIS. However, the dual land-ownership status for the proposed Ambler Access ROW should have resulted in a Joint Federal-State directed EIS since the majority of the lands to be crossed are under management of the State of Alaska. This is further underscored by examination of the listing of parties involved in the EIS and SEIS document cover pages that clearly illustrates this affront because the State of Alaska should have been identified after DOI-BLM, as co-author. The structure of the SEIS document does not provide sufficient recognition to the State of Alaska agencies and personnel who conducted requisite studies and analyses for those road segments crossing State of Alaska lands and waterbodies in the original EIS.	The State of Alaska participated in the Supplemental EIS process as a cooperating agency, as described in Chapter 1 and in Appendix I, Preparers, Consultation, and Collaboration.
27372	3	Remand of Final EIS	the justifications requiring this SEIS, as determined and presented by the Secretary of the Interior, were unwarranted. The uniform claim by those opposed to resource development is that insufficient parameters and analyses were utilized for an EIS, which are then utilized as the basis for filing litigation challenging the effort. Consequently, under the SEIS, the guideposts previously in place for the first EIS were in effect greatly expanded; well beyond the practical corridor and incorporated an abundance of new parameters encompassing physical, political, and societal that are subjective and derived from the bias of the lead agency.	See response to letter 31764, comment 1.
27441	1	Alternatives	Upon reviewing the Ambler Road Draft Supplemental EIS, the most shocking and disappointing short coming was the absence of a no action alternative.	The Supplemental EIS analyzes the No Action Alternative in addition to the three action alternatives (Alternative A, Alternative B, and Alternative C).
27585	1	Socioeconomics and communities	The current SEIS falls short in addressing the concerns and rights of Indigenous communities regarding the Missing and Murdered Indigenous Women (MMIW) crisis.	See response to letter 34767, comment 94.
27727	1	Compliance with other laws	The mineral deposits to be accessed by the AAP are on State of Alaska and ANCSA corporation lands. Article 8 of the Alaska State Constitution states that “It is the policy of the State to encourage the settlement of its land and the development of its resources by making them available for maximum use consistent with the public interest.” And “The legislature shall provide for the utilization, development, and conservation of all natural resources belonging to the State, including land and waters, for the maximum benefit of its people”. ANILCA Section 201(4)(b) also clearly states that “Congress finds that there is a need for access for surface transportation purposes across the Western (Kobuk River) unit of the Gates of the Arctic National Preserve (from the Ambler Mining District to the Alaska Pipeline Haul Road) and the Secretary shall permit such access in accordance with the provisions of this subsection.” The Draft SEIS needs to take these existing mandates into consideration and emphasize them more clearly.	The BLM's authority to issue a ROW over BLM-managed lands is found in FLPMA. Section 201(4)(b) of ANILCA only addresses a ROW through the Western Kobuk River Unit of GAAR.
27727	2	Compliance with other laws	A no access alternative is not allowed given that access is authorized under ANILCA, and the no access alternative should be excluded from any subsequent draft SEIS documents and the final SEIS.	See response to letter 23034, comment 1.

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27727	3	Remand of Final EIS	The current AAP draft EIS discusses alternative routes to access the Ambler Mining District. Including these alternate routes is inappropriate in this SEIS and those alternative routes should be removed from the document. Alternatives being reconsidered ("resurrected") are inappropriate because the alternative selected in the JROD is not subject to judicial review and was determined by USACE to be the alternative with the least environmental impact.	See response to letter 58, comment 3.
27727	4	ANILCA 810 analysis	The expansion of the impacted communities to 66 is unfounded since that number encompasses all potential alternatives being reconsidered. As stated above, only the approved alternative in the JROD should be included in the SEIS, and with that, only communities impacted by the approved alternative should be in the SEIS. Therefore, the focus of the SEIS should remain on the 10 villages closest to the 211-mile access route (JROD approved).	See response to letter 23196, comment 6.
27727	5	Public access	There is either a misunderstanding by the SEIS preparers or misrepresentation in the SEIS regarding potential access to the proposed road. There are unfounded opinions, speculations, and worst-case scenarios that will likely never occur but are stated as fact. One example is the assumption that the road would experience numerous unauthorized users or trespassers that would result in significant catastrophic scenarios. In Alaska, there are industrial-private access roads that have existed for decades with little to no impacts of this nature like the DeLong Mountain Transportation System (DMTS) and Pogo Mine road. Alaska's physiogeographic conditions severely limit the potential for unauthorized access. Restrictions used on the access roads for the Red Dog and Pogo mines have successfully restricted unauthorized access These restrictions should be documented and stated within the final SEIS.	See response to letter 23508, comment 8.
27727	6	Public access	Language speculating the AAP may become a public road in the future is inappropriate and should be removed from the SEIS. The proponents of the AAP have proposed a private, controlled industrial-access road. The permits are all based on a private, controlled industrial access road. The mining companies seeking surface access to their projects support a private access route. Engineering and geotechnical studies along the proposed route assume a private industrial road built to those specifications and not built to public road specifications. No federal public funds will be used on the road with strings that mandate public access, like what occurred with the Dalton Highway. The ANCSA corporations, whose land the road must cross, do not support a public road. The federal government, whose land the road must cross, does not support a public road. The State of Alaska has the authority to grant a road with limited access, as demonstrated with past access projects, and these examples could be cited in the SEIS.	See response to letter 23508, comment 8.
27727	7	Socioeconomics and communities	This project will lead to the future success of Northwest Alaska through jobs and economic opportunities This project will provide much needed jobs, and economic and community benefits in this region of the state. The positive impacts of the project, such as job creation, are not given due consideration in the draft SEIS. The exclusion of these positive impacts of the AAP lead to a biased draft SEIS document.	Section 3.4.5, Socioeconomics and Communities, discusses the potential local and regional economic consequences of road construction and maintenance, as well as of future mining activities that would be supported by the proposed road. The discussion includes potential employment and income effects, local, regional, and state government revenues, as well as potential for improvement in cost of living in the region.
27727	8	Socioeconomics and communities	I believe that the Draft SESI underrepresents the rate of unemployment in the area or the Northwest Arctic Borough by using 9% as its basis. My experience indicates that the unemployment rate is much higher in the communities close to the AAP. AIDEA's Workforce Development Working Group is highly concerned about the high rate of unemployment in the region.	The data presented in the Supplemental EIS are from the Alaska Department of Labor and Workforce Development. This source provides the only consistent and reliable data for unemployment rates and are only available at the regional level. The Supplemental EIS however notes that "unemployment data likely underestimate the number of people who would like to work, particularly in more remote communities, because the unemployment rate includes only people who are actively seeking work. Several of the study area communities are off the road system, making commuting to a job in another town or city impractical. Consequently, some people may cease to actively search for work (Robinson 2009)."
27727	9	Decision process - general	Additional biases in the Draft SEIS document can be found by excessively emphasizing potential negative impacts and not including the likelihood of such negative impact events. For example, the Draft SEIS provides a worst-case scenario of potential spills of fuel. Catastrophic scenario analysis is not standard practice for NEPA documents and should be removed or qualified with its low likelihood. As another example, the dust impacts on vegetation have been over-emphasized and should be qualified by the low probability of being an impact. Speculative impacts, like dust on vegetation, need to be qualified to reflect the ability to mitigate as has been accomplished along the DeLong Mountains Transportation System. Also, suggesting this project will damage fish habitat or negatively impact hydrology is unfounded based on permitting requirements, economically feasible mitigation measures, and examples of successful improvements to fish habitat and hydrology at Alaska's Fort Knox Mine and Red Dog Mine.	The Supplemental EIS analysis is based on the best available information for each of the resources evaluated and impact conclusions are supported by references to the data sources used. The Supplemental EIS analysis presents estimates of both beneficial and adverse effects, along with descriptions of potential mitigation measures that could be applied to reduce adverse effects. Section 3.1 of the Supplemental EIS further explains how the BLM considered both the duration and magnitude of potential effects in the Chapter 3 impact analyses.
27727	10	Mammals	Negative impacts to the Western Arctic Caribous Herd are overemphasized and alternative scenarios are not discussed. Caribou research is ongoing and inconclusive at its current stage regarding the AAP. The uncertainties in the research and impacts due to current climate trends unrelated to the AAP should be more clearly stated. Research regarding caribou migration and population trends with respect to the DeLong Mountain Transportation System and Dalton Highway should be summarized.	It is true that the WAH increased in size after development of the Red Dog Road (DMTS) but the area around the road corridor is only a small portion of the herd range that is primarily used during fall migration and is only used by a fraction of the herd during migration in most years so the number of caribou potentially impacted by the road in a given year is generally a small portion of the herd.
27727	11	Cumulative and indirect effects analysis	The Draft SEIS document assumes that all foreseeable mines in the Ambler Mining District, or along the proposed AAP, will be built at the same time and will become a reality. This is ludicrous and therefore the impacts need to be reconsidered. It is easy to document that the Arctic Project is the only project close to the permitting stage currently, while other projects like Bornite, Sun, and Sunshine are further from the mine permitting stage. These other projects may not reach the mine permitting stage for a number of reasons, but if there is a decision to proceed towards mining, then mine permitting and construction will proceed at different times.	See response to letter 29489, comment 57.
27734	1	Vegetation	I am concerned about several things this road will bring to our region. I am concerned about things we do not know will be brought to our region. I have read a lot of the draft SEIS. I don't recall reading about this aquatic plant, elodea, which is an	Section 3.3.1, Non-native Invasive Plants, cites the Carlson 2016 document and includes new NNIS species records on Map 3-11 and the discussion highlights the current known infestation

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			invasive species. What happens when this plant, comes to our Kobuk River in the bildges and motors of boats trailered from Fairbanks? A huge infestation of elodea could happen.	density on the Dalton Highway, and the risks of NNIS spread through the region with the development of the proposed project. New collection data for Elodea were also included in the same section and on Map 3-12 along with identification and discussion of the most vulnerable river corridors to expanding Elodea ranges.
27734	2	Mitigation/monitoring	I read in the draft SEIS that this road will be reclaimed after 50 years. I do not trust AIEDA, nor the state of Alaska, nor the Federal Government to reclaim this development. How can you reclaim something and make it perfect once again? Already we see the results of climate warming. We do not need to advance the destruction of habitat any more than it already is.	Supplemental EIS Chapter 3, Section 2.4.3, includes a section describing project closure and reclamation. As stated in that section, AIDEA proposes to submit a detailed closure and reclamation plan for the road and related facilities as the time for closure approaches. Text has been updated.
27839	1	Fish and aquatics	The town of Cordova has seen the impacts of improper culverts not allowing fish to their spawning grounds and now the benefits by recently replacing many culverts on the Copper River Highway. These new culverts are massive compared to the ones they've replaced and cost millions of dollars to put in. I can't imagine a road development project that will need close to 3,000 culverts that meet todays standards of proper AOP design.	Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA - Physical Environment, describes commitments made by AIDEA to reduce impacts from the installation of culverts. Supplemental EIS Section 3.2.5, Water Resources - Impacts Common to All Action Alternatives, describes mitigation measures that would be employed to minimize impacts from culverts, as well as the anticipated impacts from culvert installation. Appendix N describes the mitigation measures that are intended to minimize impacts from culverts. The project's final culvert design would be based on site-specific conditions and would be guided by the applicable mitigation measures (see Appendix N) adopted in the BLM's ROD.
27917	1	Socioeconomics and communities	The health impacts to the communities of this proposed road are significant. Gravel mining, excavation and road construction activities will mobilize cancer -causing asbestos containing mineral deposits that are common in the area. This will exacerbate pre-existing conditions like asthma, allergies and other respiratory diseases such as pneumoconiosis, asbestosis, and silicosis caused by inhaling fine particles from the large amounts of dust generated by mining activities such as blasting and drilling. Lung cancer and cardiovascular disease are also strongly associated with mining activities. Pollution of the air, water, food and wildlife are not development and community advancement, is the opposite. Whoever claims that haven't read the scientific facts and/or talk to communities destroyed by it.	NOA and associated health and safety effects are analyzed in Section 3.2.1 (Geology and Soils), Section 3.2.7 (Air Quality and Climate) and Section 3.4.5 (Socioeconomics and Communities) and are further discussed in the HIA. Mitigation measures to address materials containing NOA are included in Appendix N, Sections 3.2.1, 3.2.3, 3.2.7, 3.4.5, and 3.5.12.
27931	1	Remand of Final EIS	This draft supplemental EIS expands the scope of the analysis beyond the scope of the court order. The voluntary remand that DOI submitted identified two issues to be addressed: subsistence uses in ANILCA and tribal consultation under the National Historic Preservation Act. However, the DSEIS included expanded and additional analyses on issues beyond the remand, including a new phasing option for the road. The scope of the DSEIS should be constrained to the two issues identified in the remand. Allowing scope creep invites further debate on issues already addressed or beyond the directly relevant project issues.	See response to letter 31764, comment 1.
27931	2	Alternatives	Additional alternatives included in this DEIS again represent scope creep beyond the mandated supplemental analysis. All alternatives must take into account that access to our mineral resources were granted at Statehood and access to the Ambler Mining District was expressly provided for in ANILCA.	See responses to letter 58, comment 3 and letter 31764, comment 1.
28017	1	Socioeconomics and communities	The roads potential LONG TERM health affects on the people in rural Alaska deserves better consideration because PFAS are forever chemicals and cannot be easily nor completely cleaned from an environment AND they are not yet fully regulated NOR do they yet require reporting in many use cases. PFAS are used heavily in mining and roadway construction and materials and WILL affect our human health, our animals health, and our ecological health.	Public health effects are analyzed in Section 3.4.5 (Socioeconomics and Communities) of the Supplemental EIS, and are further analyzed in the HIA prepared for the project. This includes health effects from exposure to hazardous chemicals.
28020	1	Cultural resources	Has BLM studied and given honest information to the native villages about the full impact on their historic tribal and cultural resources form the impact of the road construction and mines?	Based on a review of the data that is available, summarized, and cited in this document and accompanying appendices, the BLM has made a good faith effort to ensure potentially significant impacts are disclosed.
28045	1	Mammals	Prior to the Dalton coming through people were promised two things the road would remain public and caribou would not be impacted. The public road serves everyone except the residents of the region and no one has seen the annual massive caribou herd migration since. Data backs that yet is not present in the SEIS.	See response to letter 26912, comment 2.
28171	1	Fish and aquatics	While regional warming, permafrost thaw associated with road construction, acid rock drainage (ARD), and effects to aquatic life from ARD are all mentioned, they are not specifically linked. Currently across northern Alaska rapid warming and permafrost thaw are leading to accelerated natural ARD that due to its scale and pace is likely contributing to crashes in Yukon basin Chinook populations and reductions in their body size because their first winter habitat is sevely impaired by iron, aluminum, zinc and other metals. Because road construction will exacerbate permafrost thaw, only the NO ACTION alternative will not further the problem.	Supplemental EIS Section 3.3.2, Fish and Aquatics - Impacts Common to All Action Alternatives, discloses the potential impacts of acid rock to degrade habitat quality, alter water chemistry, and affect the health of fish and invertebrate populations. Supplemental EIS Section 3.2.1, Geology and Soils, contains additional discussion on the presence of acid rock in the project area, and potential impacts from acid rock disturbance. To avoid or minimize potential impacts from acid rock, mitigation measures have been proposed that would require geotechnical investigations and testing to identify areas with high acid rock drainage potential (see Appendix N, Potential Mitigation). Cuts (excavations) would be minimized in areas with high potential for acid rock drainage. Additionally, a mitigation measure would require the applicant to submit a final plan to the USACE prior to beginning permitted work that identifies areas to avoided due to the presence of sulfide minerals that can cause acid rock drainage in cut and fill areas.
28428	2	Geology and minerals	The road will assist in the development of deposits of much-needed copper, graphite, cobalt, zinc, lead, silver, gold and more. * Critical minerals in the Ambler mining district, such as copper, cobalt and germanium, play an essential role in powering	Comment noted.

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			modern technologies to include renewable energy systems, electric vehicles, advanced electronics and national defense systems. * Access to critical minerals is authorized under the Alaska National Interest Lands Conservation Act.	
28467	1	Mitigation/monitoring	If the Ambler Road is built all hunting and fishing needs to be precluded in the issuance of the construction permit issued. Mitigation of impacts to fish and wildlife is accomplished by not allowing transportation of hunters, fishers, fish or wildlife, hunting and fishing gear.	Appendix N Section 3.4.3, Recreation and Tourism, includes potential mitigation measures which would prohibit authorized users from hunting, fishing, shooting, or trapping from within the authorized ROW while on duty or living at camp.
28467	2	Funding and bonding	The EIS final should mention this flaw in the analysis, regarding lower over all cost and impact to subsistence resources. At this time total costs of the Abler road are unknown. There has been minimal on the ground analysis to develop a design plan, let alone the real cost of construction. The Dalton Highway re-construction of sections of the existing roadbed is 1.5 to \$2 million per mile, with bridges and most infrastructure in place. It is very reasonable to expect the Ambler road in this environment would be a minimum 8 million per mile. Total cost would be a minimum of \$1.68 billion once completed.There is no agreement or discussion of a toll rate that industry would be willing to pay.	See response to letter 22770, comment 15.
28467	4	Mitigation/monitoring	The Ambler Access Road of course will have these same circumvents for hunting guides and savvy hunters, who stake mining claims in the Ambler mining district. There has been no proposed restrictions on off-road vehicle use or firearms found in the Dalton Highway Corridor. De facto public access will allow significant impacts to subsistence resources and users associated to the amber road. These impacts will reach out to 100 miles with the use of all ORV, and to 200 miles with boats launched into the river drainages of the Koyukuk and Kobuk rivers.Migratory species of fish and wildlife will be very affected. The inevitable loss of Caribou and Sheefish declines will affect large areas of northwest, Alaska, and the Yukon drainage. The reality is, there will be hundreds of truckers, miners, contractors and maintenance crews that will build and use the road, under the guise of a private road. There is no regulatory structure or preclusion from them not hunting, fishing or trapping. These legitimate users alone would have a huge impact on fish and wildlife populations used locally. In combination with public hunters and fishers who have paper staked mining claims to gain access, there will be a need to regulate the use to none consumptive use of fish and wildlife, Industrial transportation only. It is, therefore imperative that both the BLM and NPS, issuance of permitting clearly regulate all permitted industrial users of the Ambler Road across federal lands.The only way of maintaining the Ambler industrial Road or industrial use only, is to preclude all hunting and fishing. This is accomplished by issuing a permit that states transportation of hunting or fishing equipment, off-road vehicles, or boats or gear that will be used to take fish and wildlife, or the transportation of game or fish parts across the federal BLM and NPS Lands are prohibited. This mitigation action to preclude industrial and public use of fish and wildlife on or from the Ambler Road will maintain the true industrial reason for construction.	Should the project be approved, the ROW issued by the BLM would be for industrial use only.
28509	7	Socioeconomics and communities	The Ambler Access Road is a project promoted by the state looking for revenue and a mining company looking for profits, and they are pushing misinformation about the road and the mines along with vague promises of economic benefits to the local people and inaccurate claims of helping to move toward greener energy technology and national self-reliance. At what cost to the wildlife and environment, to the Native people whose subsistence use is such an integral and necessary part of their cultures, to the values that wilderness holds for so many? These are permanent changes that are being considered, both for the people who live there now, and for future generations. There are social and economic issues in the village that are not easily resolved, but the Ambler Access Road is not a solution to those issues, and the road and the development of the Ambler Mining District represent risks and permanent changes that simply do not make sense in light of all the points laid out above.	See response to letter 26718, comment 27.
28509	8	Socioeconomics and communities	There is another major difference between the Red Dog Mine and the mines Ambler Metals wants to build, (if the State of Alaska does provide them the Ambler Access Road). The Red Dog Mine is on land owned by NANA, and fees and profit sharing required by the partnership agreement with the mining company operating that mine are a major part of budgets of not only NANA but Native corporations throughout the region and the state, due to rules included in the 1971 Native claims settlement legislation. In 2020 NANA received \$175 million from Red Dog revenues and redistributed \$100 million to other Native regional corporations. In some years these resource revenues have been responsible for more than half of their annual revenues. That is a benefit that does not apply to the Ambler Mining District since the land is not owned by a Native corporation. There may be some sort of taxation or fees involved beyond what the state will receive, but it is entirely speculation as to what revenue local or regional governments would receive, if any. The economic benefits that the AIDEA touts for the northwest Alaska region could be limited to a few hundred jobs a year, if there are sufficient numbers of locals that desire to take those jobs. Forever changing a remote, pristine wilderness that spreads over three major watersheds, which could impact traditional subsistence practices and cultural lifestyles for future generations as well just doesn't make any sense.	It is true that not all potential mining operations would occur on lands owned by ANCSA Corporations. However, as noted in the Supplemental EIS, "NANA owns the land in which the Bornite project is located (Cardno 2015). As with the Red Dog Mine, which is also located on NANA land, the Bornite Mine likely would be developed under an operating agreement specifying that NANA shareholders receive direct and meaningful benefits from development at the mine. As landowners at the mine site, NANA would receive income through lease, surface use agreement, and royalty payments, and the mining company or NANA may fund scholarships."
28509	9	Cumulative and indirect effects analysis	One other note on potential mining revenues in northwest Alaska is the possibility that there is another significant deposit approximately ten miles from the existing Red Dog Mine that would extend the life of that already established mine and transportation infrastructure for decades, and also extend the associated jobs and local and Native corporation income. That adjacent site development would require its own assessment of benefits and risks and costs, but it certainly should be acknowledged when considering the establishment of a new and very remote industrial landscape in a broad swath of mountain wilderness.	The potential extension of Red Dog Mine is already included as a reasonably foreseeable action in Appendix H.
28524	1	Public access	This supplemental review fails to account for the fact that this project will not be used by the public for surface transportation. As outlined by the Alaska Department of Natural Resources, use of this road would be restricted to approved commercial users and not the public. While the bureau rightly notes that the Dalton Highway, a similar development to access a separate mineral resource development project, was eventually opened to public use, the bureau failed to consider that the Dalton highway was only opened to the public after its developers donated the route to the state of Alaska which in turn opened it to	See response to letter 23508, comment 8.

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			public use. This contrasts with the Ambler Road proposal which includes full pre-funding for reclamation efforts on the affected area after mining activities cease in an estimated 50 years. In addition to prefunding of reclamation efforts, the AIDEA has committed to working with residents to maintain the road in perpetuity to maintain access to emergency services and essential goods.	
28616	1	Fish and aquatics	The current SEIS remains inadequate as it fails to even consider the effects on the majority of stream crossings - particularly the thousands of culverts needed that block fish passage. Nor does it consider the emerging threat of 6PPD-quinone that is shed from tires on our nations roads and has been shown to kill Coho salmon in the Pacific Northwest (see attached papers). No one knows what affect it will have on the precious sheefish and the subsistence fishery they support, and that the Inupiat depend on.	6PPD has been used for decades as a bonding agent to prevent cracking and reduce general wear in tires. When the tire surface reacts with atmospheric ozone or oxygen, it forms a new compound, 6PPD-Quinone, which has recently been determined to be a very toxic compound for aquatic life. Stormwater exposure in the Pacific Northwest has been observed to cause mortality when adult salmon migrate to urban creeks to reproduce. While the source of urban coho die offs has been determined to largely stem from tire dust, and the toxicity of 6PPD is now widely recognized, 6PPD is not anticipated to be a project-related contaminant due to the low traffic volumes and reduced rubber tire dust a gravel road would generate. The U.S. Tire Manufacturers Association is investigating alternatives to 6PPD, but they have yet to find an alternative that is technically feasible and 6PPD continues to be in use.
28628	1	Remand of Final EIS	The AAP DSEIS totals 1,283 pages and four volumes and includes an analysis of: water resources, air quality and climate, vegetation and wetlands, fish and aquatics, birds, mammals, transportation and access, environmental justice, subsistence, and cultural resources. AAP DSEIS Vol. 1 The voluntary remand that DOI submitted identified two issues to be addressed: subsistence uses in ANILCA and tribal consultation under the National Historic Preservation Act. However, the DSEIS included expanded and additional analyses on issues beyond the remand, including a new phasing option for the road. The scope of the DSEIS should be constrained to the two issues identified in the remand.	See response to letter 31764, comment 1.
28628	2	Remand of Final EIS	I question why additional alternatives are included in the DSEIS. In 2020, the National Park Service (NPS) and the U.S. Army Corps of Engineers (USACE) selected alternative A as the preferred route and those decisions still stand today. The alternative selected in the 2020 JROD was not subject to judicial review and was determined by the U.S. Army Corps of Engineers to be the alternative with the least environmental impact.	See response to letter 58, comment 3.
28628	4	Mammals	The DSEIS cites data about caribou population that is not actually definitive and ignores that post-DMTS construction and operation, the Western Arctic Herd population actually increased in the region upwards of >500,000 animals.	See response to letter 23508 comment 14.
28628	5	Subsistence	The DSEIS failed to acknowledge current successful structures of Subsistence Advisory Committees in which communities have management authority in issues impacting subsistence uses. This is irresponsible and must be taken into consideration moving forward.	In several places, Section 3.4.7 of the Supplemental EIS discusses the Ambler Access Road SAC and its role in reducing potential impacts to subsistence.
28628	6	Fish and aquatics	In no place does the DSEIS acknowledge that Alaska has a history of roads coexisting with the environment, wildlife, and human health. Not even the road into Denali National Park. If the agency is going to amplify concerns such as suggesting the road project would damage fish habitat, then it must also outline permitting requirements and mitigation measures required by the Alaska Department of Fish and Game that has successfully regulated projects near fish habitat for decades.	The purpose of an EIS's analyses is to identify potential project impacts, including ways to minimize impacts. Supplemental EIS Section 3.3.2, Fish and Aquatics, includes descriptions of ADF&G's involvement as a consulting and permitting agency. Note: The Supplemental EIS includes acknowledgement of ADF&G's Fish Passage Inventory Database, which has identified several culverts that limit or preclude fish passage along the Dalton Highway.
28628	7	Water resources	The SEIS infers the road will sever hydrology in some areas and ignores that the applicant has proposed a significant number of bridges and culverts to maintain connectivity. The objective balance of both must be considered.	See response to letter 23508, comment 17.
28628	9	Socioeconomics and communities	The DSEIS significantly downplays the economic benefits and opportunities if development were to take place: in the 1,200+ page document, the term is only mentioned 11 times! This project holds the potential for the creation of thousands of direct AND indirect, quality jobs, especially for those living closest to the project through construction and operation phases. Alaskas mining industry provided for 11,400 direct and indirect jobs in 2022, with an average annual wage of over \$130,000.	See response to letter 27727, comment 7.
28632	1	Alternatives	After years of rigorous studies conducted under two separate Federal administrations starting under the Obama administration, the BLM and NPS compiled a robust data set that thoroughly covers all relevant requirements of the National Environmental Policy Act (NEPA) and the Alaska National Interest Lands Conservation Act (ANILCA – particularly section 20I(4)(b)) in the form of the Final EIS. This lengthy and thorough process made it clear that the Alternative A route for AMDIAP was the best alternative. In 2020, the BLM, National Park Service (NPS) and the U.S. Army Corps of Engineers (USACE) selected Alternative A as the preferred route through a joint record of decision (JROD) and those decisions still stand today. The alternative selected in the 2020 JROD was not subject to judicial review and was determined by USACE to be the alternative with the least environmental impact. Therefore, the inclusion of new additional alternatives is outside the BLM's scope of authority for the DSEIS. The submission of an entirely new DSEIS is also outside the BLM's scope of authority – the document should only have covered the issues that were raised as part of the remand notice.	See responses to letter 58, comment 3 and letter 31764, comment 1.
28632	2	Remand of Final EIS	When the federal agencies filed their motion for remand, the court advocated for a relatively narrow, targeted and timely remand process. The BLM must recognize that this process be expedited as dictated by the court ruling and should be consistent with ANILCA.	See response to letter 31764, comment 1.

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28632	3	Remand of Final EIS	The federal agencies needlessly extended the timeframe for the remand process by including a scoping period, and they are significantly expanding the scope of the remand by significantly expanding the scope of the supplemental EIS and by including alternatives that have already been analyzed. This is inappropriate and contrary to the law. This DSEIS needs to be limited to the deficiencies identified by the Declaration of Deputy Secretary of the Interior ECF No. 1130-1 of Feb 22, 2022. This new DSEIS totals 1,283 pages and four volumes and includes an analysis of: water resources, air quality and climate, vegetation and wetlands, fish and aquatics, birds, mammals, transportation and access, environmental justice, subsistence, and cultural resources. AAP DSEIS Vol. 1 Far beyond the scope of the items identified as needing supplemental information as per the remand. The voluntary remand that DOI submitted identified two issues to be addressed: subsistence uses in ANILCA and tribal consultation under the National Historic Preservation Act. However, the DSEIS included expanded and additional analyses on issues beyond the remand, including a new phasing option for the road. The scope of the DSEIS should be constrained to the two issues identified in the remand. The DSEIS significantly expands the mandated analysis and identifies multiple potential issues, but doesnt put them into context or identify the severity of those impacts. Possible negative impacts appear to be amplified and treated as inevitable, while any potential benefits are minimized or relegated to an obscure part of the needlessly voluminous document.	See response to letter 31764, comment 1.
28632	4	Remand of Final EIS	Route A is the obvious choice as the Preferred Alternative and is the route I continue to support. Route A was already selected by multiple cooperating government agencies based on fewer overall environmental impacts. This decision was not subject to judicial review. The Alternatives sections including the Phased Approach option need to be removed as this is outside the scope of the remand notice.	See response to letter 58, comment 3.
28632	5	Remand of Final EIS	BLM includes new additional alternatives in the DSEIS without sufficient explanation. In 2020, the BLM, National Park Service (NPS) and the U.S. Army Corps of Engineers (USACE) selected Alternative A as the preferred route and those decisions still stand today. The alternative selected in the 2020 JROD was not subject to judicial review and was determined by USACE to be the alternative with the least environmental impact. The inclusion of new additional alternatives is outside the BLMs scope of authority for the DSEIS.	See response to letter 58, comment 3.
28632	6	Compliance with other laws	Although it is recognized that the No Action Alternative must be included in all NEPA documents, the BLM must not choose the No-Action Alternative. The BLM authority here is to grant a Right-of-Way across only the BLM lands the majority of which occur in the Pipeline Utility Corridor and are administered by the current Utility Corridor Land Use Management Plan EIS, where the Ambler Access Road (the current proposed AAP) is consistent with the current land use plan: The primary function of the Corridor is the transportation of energy resources (see 1-8). In fact, the document further recognizes that: This RMP addresses rights-of-way corridors to the fullest extent possible and include: 1) the Trans-Alaska Pipeline Utility Corridor and 2) the Ambler Mining District/Dalton Highway access corridor [Sec. 201(4)(b) ANILCA] (see page 2-23). Furthermore, on page 2-25 of the document: To facilitate issuance of rights-of-way from the Ambler Mining District to the Dalton Highway in accordance with the provisions of Sec. 201(4) (b-e) of ANILCA, the draft RMP recommended designation of a transportation corridor near Prospect/Pump Station 5 (Map 2.1). Also, on page 2-120: BLM identified this same area in the draft plan (USDOI, BLM, 1987) as the appropriate location for the Ambler Mining District Transportation Corridor. The corridor was identified to facilitate BLMs responsibility under ANILCA Sec. 201 (4)(b) to provide a right-of-way from the Ambler Mining District (AMD) to the Dalton Highway. And again on page 4-4 and 4-19: BLM is directed to allow for access from the Ambler Mining District to the Dalton Highway by Sec. 201 (4)(b-e) of ANILCA. And finally, directly from the Utility Corridor Land Use Management Plan EIS and Record of Decision signed January 11, 1991 by Edward F. Spang: However, as required by section 201(4)(b) of the ANILCA, the need for access to the Ambler Mining District is hereby recognized and will be provided upon application by the State of Alaska,.. All of these references in the current BLM Land Management Plan make it clear that the BLM must grant the right of way across the Utility Corridor Lands and therefore the No-Action Alternative must NOT be selected. Furthermore, both ANILCA Title 2 and the BLM current Land Use Management Plan Record of Decision expressly recognize and guarantee a right of way across federal lands for the Ambler Road therefore, the NO ACTION Alternative should be off the table!	See response to letter 23034, comment 1.
28632	7	Public access	This is totally inappropriate and it is factually untrue that this DSEIS will be the document used to make that decision. It would appear that the BLM has no other purpose than to intentionally confuse the public since the parts of the DSEIS that make that clear are again relegated to obscure part of the purposefully voluminous document. If the BLM insists on pointing out that the AAP could become a public road, then it should also state what would be required for that to happen. All opinions on this matter should be removed from the document.	See response to letter 19418, comment 3.
28632	10	Fish and aquatics	Fish and Aquatics pg C-11: The following statement needs to be added to the fish and aquatics section as it is pertinent to the issues that were identified during the remand process, and is important for the route selection. Alternative A is the most direct route and therefore has the smallest Project footprint in wildlife habitat, wetlands, and fish habitat and is also the most economically feasible to construct, operate, maintain, and eventually reclaim. The overall Project footprint is less for Alternative A than Alternative B, and significantly less than Alternative C. Of particular relevance to subsistence impacts, Alternative A places a river crossing on the Reed River 7 miles farther from known sheefish spawning habitat than Alternative B, which means less potential for impacts to this important subsistence resource. Alternative A also places the road outside of Amblers vegetation subsistence harvest area, while Alternative B overlaps it. Alternative A requires fewer disturbed acres (4,524 acres, of which 1,022 acres are on DOI-managed land) than Alternative B (5,138 acres, of which 1,033 are on DOI-managed land) and Alternative C (8,210 acres). Alternative A also avoids placing an airstrip, construction camp, and maintenance facility within GAAR, while Alternative B includes these features within GAAR. Direct quote on page 9 from Section 6.2 Bureau of Land Managements Rationale for Adopting Alternative A Joint Record of Decision 2020. By BLMs own	Supplemental EIS Appendix C, Chapter 2, Alternatives Tables and Supplemental Information, Section 1.5.11, Fish and Aquatics, summarizes the anticipated impacts the alternatives would have on fish and aquatics; other sections in this appendix summarize the impacts to other resources (e.g., wildlife habitat, wetlands, subsistence). Section 1.5.11 includes metrics comparing the action alternatives.

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			language, and in particular to subsistence impacts, Alternative A is clearly the best route for having overall significantly lower environmental and subsistence impacts. This language needs to be included in the DSEIS.	
28632	12	Subsistence	Some of the new communities are hundreds of miles away from the road area being proposed. BLM assumes without scientific evaluation that subsistence uses for these communities will be significantly restricted. This is inappropriate and not based in science or factual evidence. This is opinion and needs to be removed from the DSEIS.	The selection of study communities was broad to capture potential direct and indirect impacts to subsistence resource abundance and availability. If population-level impacts to migratory resources such as caribou and fish occur, then any users of those resources stocks (e.g., WAH, Kobuk River sheefish) could be affected.
28632	13	ANILCA 810 analysis	The focus of the DSEIS should remain on the 10 villages closest to the road. Further, BLM should take into consideration that decades of successful coexistence of other private industrial roads in Alaska like the Delong Mountain Transportation System (DMTS) at Red Dog Mine and the road to Pogo Mine.	See response to letter 23196, comment 6.
28632	14	Mammals	The DSEIS cites data about caribou population that is not actually definitive and ignores that post-DMTS construction and operation, the Western Arctic Herd population actually increased in that region.	See response to letter 23508 comment 14.
28632	15	Subsistence	The DSEIS fails to acknowledge current successful structures of Subsistence Advisory Committees, particularly at the Red Dog Mine, in which communities have management authority in issues impacting subsistence uses. This is irresponsible and must be taken into consideration moving forward.	In several places, Section 3.4.7 of the Supplemental EIS discusses the Ambler Access Road SAC and its role in reducing potential impacts to subsistence.
28632	16	Fish and aquatics	In no place does the DSEIS acknowledge that Alaska has a history of roads coexisting with the environment, wildlife, and human health. If the agency is going to amplify concerns such as suggesting the road project would damage fish habitat, then it must also outline permitting requirements and mitigation measures required by the Alaska Department of Fish and Game that has successfully regulated projects near fish habitat for decades. This is an oversight by not including the track records for projects across the State in the DSEIS.	The purpose of an EIS's analyses is to identify potential project impacts, including ways to minimize impacts. Supplemental EIS Section 3.3.2, Fish and Aquatics, includes descriptions of ADF&G's involvement as a consulting and permitting agency. Note: The Supplemental EIS includes acknowledgement of ADF&G's Fish Passage Inventory Database, which has identified several culverts that limit or preclude fish passage along the Dalton Highway.
28632	17	Water resources	The DSEIS infers the road will sever hydrology in some areas and ignores that the applicant has proposed a significant number of bridges and culverts to maintain connectivity. The objective balance of both must be considered	See response to letter 23508, comment 17.
28632	19	Socioeconomics and communities	Villages in the Kobuk and Koyukuk regions that choose to connect to the Ambler Road could have opportunity to bring in commercial goods, fuel and equipment at significantly lower costs than currently available. In addition, they could decide to access the Fiber Optic high speed internet for tele-medicine and tele-education. These important improvements would only be made possible if the Ambler Road is approved. The associated fiber optic line should be approved, and access and socioeconomic benefits of greater connectivity to schools, health clinics, and local villages and communities throughout the region should be a priority. These points are not mentioned anywhere.	The potential impacts of the proposed road project and of future mining activities, access, and other indirect and cumulative impacts, including fiber-optic projects and community services, are discussed in Section 3.4.5 (Socioeconomics and Communities) of the Supplemental EIS. Appendix H also discusses the potential effects of improved community access, including potential fiber-optic development.
28632	20	Socioeconomics and communities	The DSEIS ignores concerns about production of minerals and oil and gas in this region to begin winding down. Should this happen, jobs and economic benefits will decrease, elevating the importance of replicating the successes of projects like Red Dog. According to the Northwest Arctic Boroughs (NWAB) Comprehensive Plan Update for 2030, 83% of the boroughs operating funds came from Red Dog in 2020. In April 2023, the governing bodies of the NAWB and North Slope Borough (NSB) each passed joint resolutions in April of 2023 in support of the AAP and development of the Ambler Mining District in recognition of the jobs, revenue, and good stewards mining companies can be.	See response to letter 25649, comment 1.
28632	22	Alternatives	Chapter 1 pg 1-4, Section 1.2.2: First yellow paragraph need to specify which route was selected this has been left out and in actuality was decided jointly to be Alt A.	No route has been selected and no preferred alternative has yet been identified.
28632	23	Geology and minerals	Chapter 1 pg 1-4, Section 1.2.3: Second paragraph from FEIS was removed why? This is an important statement given that cobalt and germanium are both critical metals and are found in the district with significant studies conducted on both. The sentence removed was Studies have also identified cobalt and molybdenum as having real or potential economic value in the mineral deposits based on currently active prospects (USGS 2018a). This needs to be reinserted!!	At this time, foreseeable development within the Ambler Mining District is focused on exploration for copper, zinc, lead, silver, and gold.
28632	24	Cooperating agency involvement	Chapter 1 pg 1-5, Section 1.5.1: Why were the US Coast Guard and NWAB removed as cooperating agencies? They were part of the process need to go back in.	The USCG determined that it does not have regulatory jurisdiction over the project and thus is no longer a cooperating agency. The NWAB was offered cooperating agency status but did not accept.
28632	25	Public access	2.3.1 Modes & Concepts pg 2-3; Last paragraph and 3rd sentence this needs to be removed. The way it is written implies the road will become public which is inaccurate and untrue. Appendix H is the only thing that should be referenced here because the written explanation in Appendix H is the best explanation.	See response to letter 19418, comment 3.
28632	26	Proposed action	Pg 2-13 Section 2.4.4 General Completion of Use (Reclamation/Restoration): Remove last sentence from yellow box this is OPINION and needs to be removed. The reclamation bond for the road is put into place with AIDEA finances meaning the bond holders are required to put the reclamation bond in place. Your statement here is incorrect and inaccurate. Remove this last sentence!	The Reclamation Reserve Fund or bond instrument described in Section 2.4.4, Design Features Proposed by AIDEA, is a different financial instrument from the revenue bonds described in Section 2.4.3, Features Common to All Action Alternatives, under Funding and Costs. See response to letter 25830, comment 26.
28632	27	Geology and minerals	Pg 3-5 Permafrost: Statement that Routes A/B traverse primarily mountainous areas of continuous permafrost this is untrue we have drilled 100 holes at the Sun deposit and have no intersected permafrost once.	The comment refers to text in the Supplemental EIS (Section 3.2.1). The same paragraph includes the statement: "... exploratory work showed discontinuous permafrost throughout southern Brooks Range near Alternatives A and B." Therefore, the mineral exploration drilling program was acknowledged in the Supplemental EIS.

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28632	28	Geology and minerals	Pg 3-14 = yellow box under Mining, Access, Etc. should include a statement that says all of these processes require rigorous studies and permitting to undertake these activities.	Section 1.1, Introduction, of the Supplemental EIS explains the text highlighted in light yellow denotes new or substantially revised text in the Supplemental EIS and should be considered as part of the normal narrative in context of the applicable section. In addition, the paragraph after the yellow text (noted in the comment) states: "The development and operations of the mines would be regulated by multiple laws and authorities, including the Clean Air Act (CAA) and Safe Drinking Water Act; federal agencies with asbestos regulations, including OSHA and MSHA; and state agencies, including ADEC and ADNRR."
28632	29	Mammals	P 3-145 = Alt C has greater percentage of WAH crossings, how come this information wasnt stated? Also where is additional data on RMH?	Data on caribou crossing rates by alternative is discussed in Section 3.3.4 under Impacts Common to All Action Alternatives and in Appendix E, Table 24. A map showing RMH seasonal ranges calculated from recent GPS collar data has been added to the Supplemental EIS.
28632	30	Subsistence	Section 3.4.7 = it should be stated that working with AIDEA there are mitigation measures that could be implemented to help improve the subsistence foods populations	Section 3.4.7 summarizes potential mitigation measures that could be adopted by AIDEA to reduce impacts to subsistence. See sections Resource Availability and User Access.
28632	31	Cumulative and indirect effects analysis	Appendix H Section 2.3.3 Manh Choh, Graphite One, Port of Nome Extension, Port of Alaska Modernization, and Cape Blossom Road all have nothing to do with the Ambler Road and do not overlap. These need to be removed.	The RFAs listed in Section 2.3 of Appendix H were determined to have potential environmental effects on resources either directly or indirectly and are within the geographic and temporal scope of analysis for cumulative effects. Appendix H, Table 3-1, includes a summary of which resources would be potentially affected by the RFAs listed by the commenter.
28632	32	Decision process - general	The new additions in yellow highlighted boxes reference sections that dont exist (i.e., Section 2.5 is referenced many times and does not exist),	References to Section 2.5 have been corrected.
28632	33	Decision process - general	Lots of sections of the FEIS were removed and not flagged which sections were removed! That is unlawful and dishonest!	The Supplemental EIS was prepared in accordance with BLM policies and procedures as well as the CEQ implementing regulations for NEPA (40 CFR 1500-1508).
28632	34	Geology and minerals	Chapter 3 Page 3-5: Statement that Routes A & B traverse primarily mountains areas of continuous permafrost This is not true. Valhalla has 100 drill holes at the Sun deposit and no permafrost has been encountered in any drilling on Valhalla property to date.	The comment refers to text in the Supplemental EIS (Section 3.2.1). The same paragraph includes the statement: "... exploratory work showed discontinuous permafrost throughout southern Brooks Range near Alternatives A and B." Therefore, the mineral exploration drilling program was acknowledged in the Supplemental EIS.
28632	9a	Mammals	Mammals pg C-13: All references to Dalton Highway need to be removed since Dalton is public and the AAP is not going to be a public road. Need more statistics and dialogue on the Red Dog road and the measures in place to protect the caribou i.e., communication, shut down procedures when caribou are within a certain radius, etc. ALL REFERENCES TO AMBLER ROAD BEING MAY BECOME OPEN TO PUBLIC is inaccurate and false and needs to be removed as pointed out that is not what is being permitted in this DSEIS document. What traditional knowledge was put into this report where is the information from the locals? There were lower herd numbers in the 70s as shown on the Western Arctic Caribou Herd Working Group website and we have heard from locals that the caribou populations are generally fluctuating depending on where they decide the most food is present for the winter. Statements like The presence of a road and road noise could affect caribou migration patterns is opinion with no factual data to back it up and needs to be removed. Furthermore, this added language states that Alternative C would affect more moose habitat than A/B and I know for a fact that more people rely on moose meat for subsistence than caribou particularly the villages in the area of Alternative C. For that reason alone, Alt C should be deemed the most impactful from a subsistence perspective.	The assumptions regarding trespass of the road and the potential for the road becoming public in the future are described in Appendix H.
28657	2	ANILCA 810 analysis	Concerning subsistence concerns, the DSEIS has expanded the ANILCA Section 810 analysis from 27-66 communities. This is gross overkill concerning the communities that will be affected by the Ambler Access Project. It should be limited to the 10-20 communities that are proximal to surface access as proposed for the Ambler surface access project from the Dalton Highway.	See response to letter 23196, comment 6.
28699	1	Remand of Final EIS	The original scope of the DSEIS was simply subsistence use and tribal consultation. However, that scope has been vigorously expanded by what looks to be an usurpation of power by BLM. There have been multiple additional topics added to the DSEIS that are outside of the original scope of the remand, but most notably to AGC is the addition of a new phasing option for the proposed road and an additional 39 communities' input, some of which are hundreds of miles away from the proposed road. AGC respectfully requests that the concerns of this DSEIS strictly stay on the original points of the remand.	See responses to letter 58, comment 3 and letter 31764, comment 1.
28756	18	Vegetation	3-68 paragraph 3 Vegetation impacts are in Neitlich et al. 2022, not Neitlich et al. 2017.	The updated NPS study has been added to Section 3.3.1, Environmental Consequences, Impacts Common to All Action Alternatives, Vegetation Impacts, as requested by the commenter.
28756	19	Vegetation	Appendix E 1.1.2 E-8 paragraph 3 A 328 ft buffer for alpine plant communities is insufficient due to presence of heavy metal enriched fugitive dusts. Neitlich et al. (2022) found that depression of lichen species richness along the Red Dog Mine haul road occurred out to 4000 m and lichen and bryophyte cover was depressed out to at least 2000 m. Since this haul road will also disperse Cu (which is more toxic than Zn), buffers should be conceivably larger, perhaps 5000 m.	The Red Dog Mine haul road cannot be directly compared to the proposed Ambler Road. Ore hauling along the Red Dog Mine road occurred for many years in uncovered or tarp covered trucks which released fugitive dust, the extent of which is currently being further delineated. The Red Dog Mine converted to a covered conveyor system and covered trucks to mitigate these impacts. Ore hauling on the Ambler Road would occur using covered and sealed ore hauling containers (Supplemental EIS Section 2.4.3, Features Common to All Action Alternatives, and Figure 2-2 in Appendix A, Figures), eliminating this source of fugitive dust.

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28756	20	Subsistence	Appendix L 2 - Study Area L1 NPS recommends that BLM expand the list of fish subsistence species to include other whitefish species besides sheefish if these fish communities are unable to meet their Chinook and chum salmon needs due to current declines on the Yukon and Koyukuk Rivers. Appendix L 4 - Data Sources L9 paragraph 2 Only 2022 Northwest Arctic and Western Interior Regional Advisory Council (RACs) meeting transcripts were utilized. Both RACs have been discussing the Ambler Road and its impacts from as far back as 2011. Appendix L 4.1 Harvest Data L9 second to the last sentence Specifically, one of the environmental conditions that can affect subsistence harvests is access to the resource when the resource is available. For instance, this past summer, the Kobuk River was high during the period that local people usually put in their fish nets for chum salmon and sheefish. Because of the high water, local people were limited in their ability to catch fish. Appendix L 5.1 Kobuk River L27 paragraph 2 A finalized comprehensive subsistence harvest report for Kiana will be available on the ADFG Division of Subsistence technical reports website. The release timing of this final report is uncertain. It'll most likely be available by the end of December. Appendix L 5.1 Kobuk River L27 last paragraph This paragraph discusses the village of Shungnak and there's a typo, where it says contemporary use areas for Buckland as shown in Watson (2018). It should say Shungnak instead of Buckland. Appendix L 5.1.4 Travel Method L46 paragraph 1 Although river freeze up starts in October, generally the river is not safe for snowmachines until around December nowadays. Appendix L 5.3.1 Subsistence Use Area L69 paragraph 1 NPS requests that BLM include a list of communities that comprise the Koyukuk River Region within this paragraph similar to the Kobuk River Region paragraph. Appendix L 5.3.1 Subsistence Use Area L70 paragraph 1, 3rd sentence Recent studies indicate somewhat disjointed subsistence use areas which may reflect the increased use of planes. This sentence should read "- Previous studies indicate disjointed subsistence use areas due to use of planes to access areas within Gates of the Arctic National Park and Preserve. There hasn't been an increase in the use of planes because airplane access for subsistence activities is not allowed in the Park." Appendix L 5.3.2 Harvest Data L92 paragraph 1, last sentence Other top species in the Kotzebue Sound Region should be corrected and changed to Koyukuk River Region. Appendix L 5.3.3 Timing of Subsistence Activities L93 paragraph 2, last sentence Dall's sheep hunting in the Koyukuk River Region usually occurs in the falltime when there's high enough water levels for hunters to be able to access mountainous areas by boat. Appendix L 5.7 Downstream Subsistence Uses of Fish L143 paragraph 3 For the communities of Tanana and Hughes, chum salmon harvests contribute over half of their subsistence harvests due to a few households still having dog teams that are mainly used for sled dog racing. Appendix L 5.1.3 Timing of Subsistence Activities L44 paragraph 4 Due to later Western Arctic Caribou Herd fall migrations, caribou hunting now peaks around late October/November.	Revisions to text made as appropriate.
28756	21	Subsistence	Appendix M B.2. Evaluation and Findings of Alternative A M9 Caribou paragraph 1, last sentence NPS requests BLM acknowledge that if caribou disappeared from their resource use areas, it could impact the transference of indigenous knowledge from one generation to another and potentially cause displacement within the community.	Text revised as requested.
28756	22	Subsistence	Appendix M B.2.4 Findings M27 footnote 1 There are some hunters in Hughes who go up to Allakaket to travel with Allakaket hunters to sheep hunting areas in the southern Brooks Range. It might be helpful to discuss this with hunters from Hughes.	Dall sheep use areas are documented for Hughes in that area, although Hughes has not reported harvests of sheep during any study year. Will add context to the footnote.
28756	23	Water resources	2.4.4 2-14 paragraph 6 "Project design features that mitigate impacts to permafrost and hydrology would be incorporated based on geologic and hydrologic studies to freely convey surface water across the road surface and minimize impacts on groundwater flows...". This is another reference to non-existent technology that could be applied over large areas to prevent impoundment of water and permafrost degradation. NPS requests that BLM recognize that there is no such technology that would be practical for the length of road involved. Water will be impounded above the road and there will be thermokarst pits lining the road. To keep the road operational will require constant repairs by fill.	Sentence revised to "Project design features that mitigate impacts to permafrost and hydrology would be incorporated based on geologic and hydrologic studies to minimize impacts on surface water and groundwater flows." While there are not technologies to completely avoid impacts from road construction on hydrologic connectivity and permafrost, there are multiple design approaches that can be successful at minimizing impacts and significantly reducing required road maintenance. Such design approaches are listed under Section 2.4.4; Appendix N, Section 3.2.1; Appendix N, Section 3.2.5; and Appendix N, Section 3.5.
28756	24	Geology and minerals	3.2.3 3-19 paragraph 5 In addition to Pb, Zn, Cu, there are likely to be smaller but still significant amounts of other metals such as Cd and potentially As.	The noted sentence states "... <u>including</u> lead, zinc, and copper.." and therefore is not expressly limited to these element.
28756	25	Hazardous waste	2.4.4 2-13 paragraph 2 NPS requests BLM require AIDEA to include material fate in an operation and compliance plan. Roadbed surface materials contaminated with heavy metals from vehicular traffic should not be used for general recontouring as they will continue to disperse heavy metals into the environment. Potentially, these could be hauled to one of the pits for deep burial.	The level of truck traffic on the proposed road would not likely produce the same amount of brake dust and other toxins as compared to other more heavily trafficked, urban roads.
28756	26	Mitigation/monitoring	2.3.1 2-4 paragraph 3 During 34 years of operation, Red Dog Mine had 11 concentrate spills and one large diesel spill along the 23 miles of the Red Dog haul road that traverses NPS lands. All these occurred due to rollovers on AIDEA's very improved double-lane road. NPS requests BLM consider road design standards and mitigation measures that reduce the risk of rollovers and spills on the one-lane road (Phases 1 and 2).	AIDEA has applied for an industrial access road in order to assist with development of the Ambler Mining District. Should the road be approved, it will be built to the appropriate design standards for the proposed used.
28756	27	Geology and minerals	3.2.1 3-5 paragraph 3 In the last sentence: "Volume 4, Map 3-1, indicates related areas of likely continuous and discontinuous permafrost; continuous permafrost is likely to be more stable." This statement is not accurate. All of the permafrost in the proposed area is very thaw-susceptible. Areas with continuous permafrost have more area covered by permafrost than areas with discontinuous permafrost, but there is no advantage at all.	The phrase "continuous permafrost is likely to be more stable" may be interpreted too generally and has been removed from the narrative. The stability of permafrost depends on several location-specific variables as noted earlier in the subject paragraph (e.g., soil type).
28756	28	Hazardous waste	3.2.3 3-18 paragraph 3 This discussion is the appropriate place to mention the deposition of heavy metals into the environment that is likely with vehicle traffic. Paragraph 3 states "Road dust of industrial roads may also become contaminated by the materials hauled on the roadway (EPA 2009)." This understates the case: it is largely unavoidable that traffic from a wide variety of vehicle types will spread heavy metals from the mine site onto the roadway, and into the surrounding environment. Please see Red Dog mine's haul road experience for the closest analogous situation: (Hasselbach et al. 2005, Neitlich et al. 2017, Neitlich et al. 2022, Brumbaugh and May 2008).	Additional discussion has been added to Section 3.2.7 (Air Quality and Climate Change) regarding fugitive dust from mining traffic, which will be cross-referenced in the Hazardous waste chapter.

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28756	29	Hazardous waste	3.2.3 3-19 paragraph 5 The EIS states: “The applicant has committed to requiring mineral concentrates be loaded into specialized (sealed) intermodal bulk shipping containers for transport to port. With this containerized system, metal releases from the transport of ore concentrate would not be expected to be commonplace.” NPS requests BLM revise this language to acknowledge that deposition of heavy metals onto the landscape occurs due to vehicular traffic of any kind. While sealed containers are highly preferred to open or tarped loads, even passenger vehicles are highly contaminated with metals from the mine site and will be spreading these contaminants onto the road surfaces--where they will then be dispersed onto the landscape (Hasselbach et al. 2006, Neitlich et al. 2017, Neitlich et al. 2022, Brumbaugh and May 2008). In addition, as far as concentrate spills, it is most likely that when rollovers occur most of the concentrate will remain in the container, but it is also likely that some will be released.	Text revised as requested.
28756	30	Funding and bonding	2.4.4 2-17 paragraph 3 “A detailed reclamation plan containing sufficient performance standards subject to land manager approval would be developed prior to the issuance of the authorizations. Reclamation measures would include removal of embankments, culverts, and bridges; re-grading the roadway to establish more natural ground contours and drainage patterns; and revegetation of the area through seeding or planting of native vegetation.” According to the SEIS, over half of the road by any of the route alternatives would be thick fill on top of thaw-susceptible permafrost. After 50 years of subsidence and repair by filling, in many places the embankment will consist of much more material than the original 3 to 8 feet of fill. Removal of this embankment would produce huge amounts of material that would need to be disposed of, presumably into the original borrow pits where most of it came from. This would cost roughly as much as construction of the original road, and is likely not realistic. NPS requests BLM complete an honest assessment of removal costs and whether the road embankment will become a permanent feature of our landscape. This closure/reclamation language is also on p. 2-11 and 2-12.	See response to letter 22770, comment 15.
28756	31	Proposed action	3.2.5 page 3-31 paragraphs 2, 3 “...AIDEA proposes engineering design measures for flow beneath/through embankments (see Chapter 2, Section 2.4.4, Design Features Proposed by AIDEA, for design features).” and paragraph 3. “AIDEA’s design features to minimize permafrost impacts are presented in Chapter 2, Section 2.4.4, Design Features Proposed by AIDEA. “ NPS requests that this section should make clear that unintentional impoundment of water on the uphill sides of the embankment is inevitable in sloping areas with permafrost. Formation of thermokarst pits along the road as a result of the thermal characteristics of the embankment and snow accumulation are also inevitable. They have occurred along every road constructed to date in “warm” permafrost in Alaska and will happen here too. The actions listed in section 2.4.4 don’t change this. The use of insulation under the road is not as unrealistic as the other proposed methods in section 2.4.4, but still so expensive that it is unlikely to be used and experience has shown that it is effective only in certain cases.	The Supplemental EIS states clearly that proposed mitigation measures would minimize impacts on permafrost, not completely prevent impacts to permafrost. Additional discussion added to Section 3.2.5 under Impacts Common to All Action Alternatives regarding uphill impoundment of water impacting permafrost.
28756	32	Mitigation/monitoring	3.3.2 3-93 paragraph 2 “AIDEA’s proposed reclamation intends to maintain natural drainage patterns and preclude surface water from ponding along the reclaimed corridor (Davis 2019a).” The embankment in ice-rich permafrost areas will be difficult to remove and there will be a line of thermokarst pits along it. This is evident on all similar roads in Alaska. Maintaining natural drainage patterns is not possible even with the best intent.	Comment noted.
28756	33	Air quality and climate	3.2.7 3-52 paragraph 3 There is no mention that the fugitive dust from the roads is likely to deposit heavy metals onto the landscape.	Heavy metal deposition from fugitive dust is discussed in Sections 3.3.1 and 3.3.2.
28756	34	Subsistence	Appendix M B.3.1 Evaluation of the Effect of Use M29 Subsistence Resource Abundance, last sentence Include the village of Shungnak.	Corrected error in text and table.
28756	35	Mammals	Appendix M Moose M10 paragraph 2, 2nd to the last sentence Clarification is needed as to whether truckers on the Dalton Highway are required to report to the State Troopers whether they’ve had a moose collision and whether there is a report that includes the number of moose collisions on the Dalton Highway on an annual basis.	Text reviewed and no changes needed.
28756	36	Subsistence	Appendix M Other Resources M16 paragraph 3 on sheep, last sentence It’s stated that the operation of the road may have little immediate impact on the availability of the sheep, but it may have impact on hunters’ access to sheep hunting areas, if they are dissuaded from traveling up the Alatna River because of construction activity and disturbances.	Potential impacts to residents’ ability to access sheep hunting areas due to the road and road construction are addressed in Section B.2.1, Subsistence User Access.
28756	37	Mitigation/monitoring	Appendix N There are no specific mentions in this appendix about how to deal with control of heavy metal-enriched fugitive dusts. This is a key oversight. In order to control the spread of heavy metals onto the tundra, controls need to go far beyond what is required to control dust from crustal elements (i.e., typical road dust). Mitigations could include: 1) truck wash stations, 2) negative pressure bag houses at loading and unloading facilities, 3) road watering, 4) dust palliatives, 5) regular road resurfacing with clean fill to cover the metals which will have become worked into the road bed surface, 6) lane segregation into clean and dirty lanes in highly contaminated areas. We need to discuss more than “dust control” here: what we really need is control of heavy metal deposition into the environment. Levels of even 70 mg/kg of Zn are known to cause impacts to vegetation (Neitlich et al. 2022). Cu (which is expected to be present in dust) is an even more potent phytotoxin.	The impacts of mining are analyzed to the extent that information is available to do so. No specific mining application/permit request for the District has been submitted to date. The BLM evaluated reasonably foreseeable mining development as indirect and cumulative impacts, using a hypothetical mining development scenario. When officially proposed, each mine would go through its own project-specific NEPA analysis and permitting process, which would provide further detail and analysis regarding the specific impacts of each mine operation.
28756	38	Vegetation	ES ES 5 Third paragraph. All alternatives would also result in the deposition of heavy metal enriched fugitive dusts onto the landscape. This is separate from spills of pollutants, which will also occur. The effects are likely to be stronger on vegetation than on fish.	Heavy metals ability to persist in the environment and their potential to be taken up by biological organisms is described throughout the Supplemental EIS, including in Section 3.3.1, Wetlands and Vegetation, Section 3.3.2, Fish and Aquatics, and Section 3.4.7, Subsistence Uses and Resources. Anticipated impacts from fugitive dust on vegetation are described in Supplemental EIS Section 3.3.1, Wetlands and Vegetation. Mitigation measures that would minimize fugitive dust are described in Supplemental EIS Appendix N, Potential Mitigation.
28756	39	Alternatives	Alt B No gravel pits or infrastructure, like airstrips, have been allowed within the preserve and BLM should acknowledge these as non-conforming to current management.	AIDEA has submitted an application in part to support exploration and mine development in the Ambler Mining District and that application identifies airstrips, material sites, maintenance and

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				communication facilities as necessary elements to building, operating, and maintaining the road. The BLM is required to respond to AIDEA's application. The BLM has evaluated and disclosed the impacts of these facilities in the Supplemental EIS. The BLM recognizes it does not have the authority to authorize any gravel mines or other infrastructure within the boundaries of Gates of the Arctic Preserve and does not proposed doing so. While camps and other facilities associated with this project may largely be located off BLM-managed lands, as the lead federal agency, The BLM has evaluated the impacts of all of the facilities on all of the lands (regardless of ownership), to support the decision making requirements of other federal agencies and because those portions of the proposed road off BLM-managed lands are connected actions. ANILCA 201(4)(b) provides for surface transportation access across the Preserve. The NPS also recognizes other park purposes (e.g., protecting fish and wildlife habitat, recreational opportunity, and wilderness character) remain in effect. The NPS has sought ways to balance requirements following from the varied directions provided by Congress in ANILCA. While Section 201(4) does not explicitly address the issue of support facilities required to build and operate a surface transportation system in Gates of the Arctic National Preserve, it is assumed that some support features are indeed required along the 200+ mile route and that Congress intended to include such features in its access provision. It would be unreasonable to read the statute as providing for one action (permitting surface transportation) but so severely constraining necessary corollary actions (road support facilities) that the primary action is effectively precluded. The definition of "transportation or utility system" in ANILCA Section 1102(4) is also instructive. Thus, the access afforded by ANILCA Section 201(4) is interpreted to include those related structures and facilities along the road as may be minimally necessary for the construction, operation and maintenance of the system on NPS lands to the extent they are necessary to support construction and use of the road.
28756	40	Mitigation/monitoring	3 3.3.4 While NPS does routinely monitor wildlife, it does so very infrequently within the project area. Funding, hopefully by the proponent, would be needed to adequately monitor wildlife populations in the project area and to determine if additional mitigation measures may be need to minimize impacts related to the road.	Each land manager that issues a ROW or some other right of access is responsible for ensuring compliance with the terms of the grant for access. The BLM will recover its monitoring costs through a cost reimbursable agreement with the ROW holder.
28756	41	Alternatives	Alt C A more direct and efficient route for Alt C should be identified. Also, state work on a road from FAI to Tanana continues and any miles of that road system should not be included as "new" miles for this Alt. References O-52 Watson, A. 2014. This was a white paper, not a PhD dissertation.	Citation revised as suggested.
28756	42	Mammals	2-18 - 2-19 "...in the area" and "several days" are too vague to be useful. Red Dog's "caribou plan" hasn't been effective at preventing delays and deflections in caribou migrations there, so it shouldn't be used as an example. The NPS requests a role in implementing and enforcing the plan for this proposed road, including data sharing caribou locations, crossings, strikes, and closures. NPS further requests BLM define the length of time for a maximum duration closure and why, if caribou were still present, traffic could resume despite the presence of caribou. Winter is not a time of seasonal migration, so clarification is needed on whether closures would be required for caribou during this season.	The text cited refers to design features proposed by AIDEA in their application. See Appendix N Section 3.3.2 Wildlife – General (applicable to Fish and Aquatics, Birds, and Mammals) potential mitigation measures 1 and 2.
28756	43	Mitigation/monitoring	3-126 NPS requests BLM include language about trying to avoid construction in high-quality caribou winter range. The quality of winter range is imperiled by climate change and development, so taking mitigation measures to try to avoid very high-quality range along the route could be helpful to the herd.	Each land manager that issues a ROW or some other right of access is responsible for ensuring compliance with the terms of the grant for access. Should the project be approved, the ROD will determine which mitigation measures will be required.
28756	44	Geology and minerals	the lack of sufficient information, data, modeling, or cost analysis of maintaining a road in an area with widespread "warm" permafrost (i.e., permafrost with temperatures above -1 degC and especially vulnerable to degradation),	See response to letter 32724, comment 156.
28756	45	Proposed action	the lack of current technological understanding and approach to removing infrastructure from a subarctic and arctic landscape,	See response to letter 29489, comment 92.
28756	46	Mitigation/monitoring	the need to disclose the permanent ecological and visual impacts of road and road-related infrastructure on a subarctic and arctic landscape, regardless of any reclamation actions that may be undertaken, and * the need to disclose the deposition of metals onto the road surface and landscape from all vehicles and the associated need for more rigorous mitigations to reduce this occurrence.	The impacts of mining are analyzed to the extent that information is available to do so. No specific mining application/permit request for the District has been submitted to date. The BLM evaluated reasonably foreseeable mining development as indirect and cumulative impacts, using a hypothetical mining development scenario. When officially proposed, each mine would go through its own project-specific NEPA analysis and permitting process, which would provide further detail and analysis regarding the specific impacts of each mine operation.
28756	47	Wetlands	the need to state more clearly the significance of impacts to intact and high-functioning wetlands throughout the project area and acknowledge that the adverse impacts require compensatory mitigation on NPS lands under NPS Director's Order 77 and Procedural Manual 77-1,	The BLM's decision is limited to whether to grant, grant with modifications, or deny the applicant's ROW application to cross BLM-managed lands. Should the project be approved, the ROD would determine which mitigation measures will be required.
28756	48	Air quality and climate	the likely spread of airborne particulates through fugitive dust to distances exceeding 4000 meters from the road. The current buffer should be expanded to account for these impacts,	The current buffer analyzed is sufficient and based on Auerbach et al. 1997, Myers-Smith et al. 2006, McGanahan et al 2017. This is a typical distance found under conditions of the study area. The EIS identified this based on vegetation research in Section 3.3.1. See Appendix O for full citation information. Actual impacts for this project could be similar or more or less depending on specific site conditions along the alignment.

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28756	49	Mitigation/monitoring	the need for clear and specific mitigations regarding dust control and non-native invasive species control, and	Should the project be approved, the ROD will determine which mitigation measures will be required.
28756	50	Mitigation/monitoring	the need for road design features and mitigation measures that reduce the risk of rollovers and spills on and off the single-lane road.	Section 2.4.3, Features Common to All Alternatives, discusses the proposed design and operating speeds. Appendix N Section 3.2.3 includes a potential BLM mitigation measure that would require AIDEA to prepare a Spill Prevention Control and Countermeasure Plan for construction phases, including material site operation, and for operations and maintenance of the road.
28800	2	Alternatives	Alternatives * We question why additional alternatives are included in the DSEIS. In 2020, the National Park Service and Corps of Engineers (USAGE) selected alternative A as the preferred route and those decisions still stand selected in the 2020 JROD was not subject to judicial review and was determined by the U.S. Army Corp alternative with the least environmental impact. * Alternatives must take into account that access to our mineral resources were granted at Statehood and Mining District was expressly provided for in ANILCA.	See responses to letter 58, comment 3 and letter 31764, comment 1.
28800	3	Subsistence	Subsistence Impacts * The DSEIS expands the ANILCA Section 810 analysis from 27 to 66 communities. This is overreach about these communities are hundreds of miles away from the road area being proposed. It also assumes what that subsistence uses for these communities will be “significantly restricted.” This is inappropriate and SEIS should remain on the 10 villages closest to the road, and BLM should take into consideration that coexistence of other private industrial roads in Alaska like the Delong Mountain Transportation System and the road to Pogo Mine. * The DSEIS cites data about caribou population that is not actually definitive and ignores that post-DMT operation, the Western Arctic Herd population actually increased in the region. * The DSEIS failed to acknowledge current successful structures of Subsistence Advisory Committees, to Mine, in which communities have management authority in issues impacting subsistence uses. This is taken into consideration moving forward.	The selection of study communities was broad to capture potential direct and indirect impacts to subsistence resource abundance and availability. If population-level impacts to migratory resources such as caribou and fish occur, then any users of those resources stocks (e.g., WAH, Kobuk River sheefish) could be affected. In several places, Section 3.4.7 of the Supplemental EIS discusses the Ambler Access Road SAC and its role in reducing potential impacts to subsistence.
28800	4	Water resources	Environmental Analysis * In no place does the DSEIS acknowledge that Alaska has a history of roads coexisting with the environmental health. If the agency is going to amplify concerns such as suggesting the road project would damage also outline permitting requirements and mitigation measures required by the Alaska Department of Fish again successfully regulated projects near fish habitat for decades. * The SEIS infers the road will sever hydrology in some areas and ignores that the applicant has proposed bridges and culverts to maintain connectivity. The objective balance of both must be considered.	See response to letter 23508, comment 17. Section 2.4.4 of the Supplemental EIS also discusses multiple design features proposed by AIDEA to mitigate potential impacts on fisheries; this section contains a proposed Design Feature that discusses that crossings of fish-bearing waterways would be crossed to comply with ADF&G fish passage standards and fish passage culverts would be designed using stream simulation/natural channel design principles to ensure structures are designed to maintain fish passage. Potential mitigation measures in Sections 3.3.3 and 3.5 of Appendix N further list measures that would mitigate impacts on fish and aquatic species.
28800	5	Socioeconomics and communities	Economic and Community Benefits * The DSEIS significantly downplays the economic benefits and opportunities if development were to table page document, the term is only mentioned 11 times! * This project holds the potential for the creation of thousands of direct AND indirect, quality jobs, especially to the project through construction and operation phases. Alaska’s mining industry provided for 11,400,000 2022, with an average annual wage of over \$130,000. * The DSEIS does not take into account concerns about production of minerals and oil and gas in the re down. Should this happen, jobs and economic benefits will decrease, elevating the importance of replace projects like Red Dog. According to the Northwest Arctic Borough’s (NWAB) Comprehensive Plan Upon borough’s operating funds came from Red Dog in 2020. That is why the NAWB and North Slope Borough joint resolution in April of 2023 in support of the MP and development of the Ambler Mining District in revenue, and good stewards mining companies can be. * To avoid a gap in local jobs and other economic benefits, new opportunities need to be explored in the a must. * Beyond local jobs, the AAP will also bring immense economic benefits state-wide. Mining license tax revenue with corporate income taxes, production royalties and rent claims are anticipated to reach over \$1 billion mines that will be made accessible by the AAP. An additional \$193 million Is anticipated to be paid out (source).	See response to letter 27727, comment 7.
28814	1	Subsistence	The DSEIS mentions numerous significant unknowns ranging from how much mining activity might eventually result if the project is permitted, to its long term impacts on fish and wildlife, and whether the proposed road might eventually be opened to public access. The many assumptions and unanswered questions surrounding the proposal need to be much better understood before any consideration of permitting the project is warranted.	The scenarios presented in Supplemental EIS Appendix H, Indirect and Cumulative Scenarios, are based on assumptions as described in the appendix in order to analyze the potential effects of reasonably foreseeable actions.
28927	1	Proposed action	The environmental impacts of road construction and maintenance in the far north are not a cost the public should suffer. Who will pay to maintain the bridges, culverts, and other features necessary to sustain a road running east west along the range? The BLM and mining companies already struggle and fail to maintain these features elsewhere.	Supplemental EIS Section 2.4.3, Features Common to All Action Alternatives, discusses how AIDEA intends to finance the project through the issuance of bonds pursuant to its statutory authorities.
29132	3	Air quality and climate	Why is climate change not discussed enough in the SEIS? The Arctic is melting the last thing it can sustain is a massive 20-mile road.	Comment noted. See response to letter 132, comment 2.
29272	2	Alternatives	Alternatives AMA questions why additional alternatives are included in the DSEIS. In 2020, NPS and the U.S. Army Corps of Engineers (USACE) selected alternative A as the preferred route and those decisions still stand today. The alternative selected in the 2020 JROD was not subject to judicial review and was determined by USACE to be the alternative with the least environmental impact. Also, alternatives must take into account that access to our mineral resources were granted at Statehood and access to the Ambler Mining District was expressly provided for in ANILCA.	See responses to letter 58, comment 3 and letter 31764, comment 1.
29272	3a	Subsistence	Subsistence Impacts AMA was dismayed to see that the DSEIS expands the ANILCA Section 810 analysis from 27 to 66 communities. This is overreach at its strongest: some of these communities are hundreds of miles away from the road area	The Section 810 analysis was expanded in order to include other potentially affected communities within the entire range of the WAH and downstream communities along the Yukon River, due to

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			being proposed. It also assumes without scientific evaluation that subsistence uses for these communities will be “significantly restricted” by the road. This is inappropriate and alarming. The focus of the SEIS moving forward should remain on the 10 villages closest to the road, and BLM should take into consideration the decades of successful coexistence of other private industrial roads in Alaska like the Delong Mountain Transportation System (DMTS) at Red Dog Mine and the road to Pogo Mine. The DSEIS cites data about caribou population that is not actually definitive and ignores that post DMTS construction and operation, the Western Arctic Herd population actually increased in the region.	the potential for subsistence users in those communities to experience impacts to subsistence uses and needs based on the factors of reduced abundance and availability of caribou and fish. See Supplemental EIS Section 3.4.7 Subsistence Uses and Resources for an explanation of the relationship between the 66 study communities and the Ambler Road Project. Conclusions regarding the potential impacts of the road on caribou movement are based on biological data associated with other roads across Alaska.
29272	3b	Subsistence	The DSEIS also failed to acknowledge current successful structures of Subsistence Advisory Committees, particularly at the Red Dog Mine, in which communities have management authority in issues impacting subsistence uses. This is irresponsible and must be taken into consideration moving forward.	In several places, Section 3.4.7 of the Supplemental EIS discusses the Ambler Access Road SAC and its role in reducing potential impacts to subsistence.
29272	3c	Subsistence	“The overall Project footprint is less for Alternative A than Alternative B, and significantly less than Alternative C. Of particular relevance to subsistence impacts, Alternative A places a river crossing on the Reed River, seven miles farther from known sheefish spawning habitat than Alternative B, which means less potential for impacts to this important subsistence resource. Alternative A also places the road outside of Ambler's vegetation subsistence harvest area, while Alternative B overlaps it. Alternative A requires fewer disturbed acres (4,524 acres, of which 1,022 acres are on DOI-managed land) than Alternative B (5,138 acres, of which 1,033 are on DOI-managed land) and Alternative C (8,210 acres). Alternative A also avoids placing an airstrip, construction camp, and maintenance facility within GAAR, while Alternative B includes these features within GAAR.” - Direct quote on page 9 from Section 6.2 Bureau of Land Management's Rationale for Adopting Alternative A - Joint Record of Decision 2020. By BLM's own language, and in particular to subsistence impacts, Alternative A is clearly the best route for having overall significantly lower environmental and subsistence impacts. This language needs to be included in the DSEIS.	In May 2022, in two lawsuits challenging the JROD and associated environmental analyses, the U.S. District Court for the District of Alaska (District Court) granted voluntary remand at the request of the Department of Interior (DOI) due to deficiencies in the BLM's analysis of subsistence impacts under ANILCA Section 810 and consultation with Tribes pursuant to Section 106 of the NHPA. In the motion for remand, the DOI committed to address the identified legal deficiencies, consider new information about declines in salmon and caribou populations, reconsider the appropriate scope of the area of potential effects for purposes of the NHPA, and supplement the EIS, as appropriate, to more thoroughly assess the impacts and resources identified as areas of concern in the two lawsuits challenging the now-remanded JROD.
29272	4	Fish and aquatics	Environmental Analysis. In no place does the DSEIS acknowledge that Alaska has a history of roads coexisting with the environment, wildlife, and human health. If the agency is going to amplify concerns such as suggesting the road project would damage fish habitat, then it must also outline permitting requirements and mitigation measures required by the Alaska Department of Fish and Game that has successfully regulated projects near fish habitat for decades. The SEIS infers the road will sever hydrology in some areas and ignores that the applicant has proposed a significant number of bridges and culverts to maintain connectivity. The objective balance of both must be considered. In fact, this entire topic area is lacking an objective balance, particularly in Appendix C Section 1.5. Opinions should not be included in EIS documents.	The purpose of an EIS's analyses is to identify potential project impacts, including ways to minimize impacts. Supplemental EIS Section 3.3.2, Fish and Aquatics, includes descriptions of ADF&G's involvement as a consulting and permitting agency. Note: The Supplemental EIS includes acknowledgement of ADF&G's Fish Passage Inventory Database, which has identified several culverts that limit or preclude fish passage along the Dalton Highway.
29272	5	Public access	Access and Trespass The DSEIS supposes that trespass and authorized use by the public is inevitable. It is important to consider the possibility of trespass, and consider and implement all possible measures to prevent it. This can be done by reviewing the track record of DMTS and the Pogo Mine road, and also by working with the communities in the region. Simply stating “trespass” will happen without including objective evaluation of where mitigation possibilities have been effective, only serves to alarm the region's residents and does a disservice to potential opportunities. Simply put, it is unfair to everyone.	See response to letter 23508, comment 8.
29272	6	Socioeconomics and communities	Economic and Community Benefits The DSEIS significantly downplays the economic benefits and opportunities if development were to take place: in the 1,200+ page document, the term is only mentioned 11 times! The DSEIS does not take into account concerns about production of minerals and oil and gas in the region to begin winding down. Should this happen, jobs and economic benefits will decrease, elevating the importance of replicating the successes of projects like Red Dog. According to the Northwest Arctic Borough's (NWAB) Comprehensive Plan Update for 2030, 83% of the borough's operating funds came from Red Dog in 2020. That is why the NAWB and North Slope Borough assemblies passed a joint resolution in April of 2023 in support of the AAP and development of the Ambler Mining District in recognition of the jobs, revenue, and good stewards mining companies can be. To avoid a gap in local jobs and other economic benefits, new opportunities need to be explored in the region. AAP has the potential for the creation of thousands of direct AND indirect, quality jobs, especially for those living closest to the project through construction and operation phases. Alaska's mining industry provided for 11,400 direct and indirect jobs in 2022, with an average annual wage of over \$130,000. Beyond local jobs, the AAP will also bring immense economic benefits state-wide. Mining license tax revenues to the state, along with corporate income taxes, production royalties and rent claims are anticipated to reach over \$1 billion over the life of all four mines that will be made accessible by the AAP. An additional \$193 million is anticipated to be paid out to local governments (source). Critical minerals and national security In contrast to where the majority of society's needed minerals are currently being sourced, mining in Alaska ensures the highest labor, safety, and environmental standards will be adhered to. Domestic mining also serves to build our mineral independence from the many adversarial nations we import them from. The Ambler Metals Arctic Deposit is one of the highest-grade copper deposits known in the world. We must consider building a road to access the area, to supply our nation with the copper, cobalt, and other minerals we need.	See response to letter 27727, comment 7.
29489	1	Compliance with other laws	The SEIS is fundamentally flawed in that the Bureau of Land Management (BLM) assumes federal authority and control over several areas of traditional state authority and land rights. This includes, but is not limited to, assuming federal authority to: regulate and require federal financial conditions or assurances over a hundred miles of state land right-of-way; impose National Historic and Preservation Act (NHPA) section 106 rules on state land (Alaska has its own statutes on historic preservation that apply); prohibit or unreasonably limit the ability of the state to prospect for, mine, and remove minerals from statehood lands under section 6(i) of the Alaska Statehood Act and sections 201(4) and 1110(b) of the Alaska National Interest Lands Conservation Act (ANILCA) which mandate access across federal lands to state lands and minerals; apply ANILCA section 810 subsistence analysis to state lands managed by the Alaska Department of Fish and Game; and control decisions affecting use of state lands and waters when Congress has clearly said the primary role in those decisions is vested in state authority (Section 1251(b), Clean Water Act). None of these subject matter areas contain the exceedingly clear language from Congress necessary to significantly alter the balance between federal and state power and the power of the Government over private property. Sackett v. EPA, 598 U.S. ____ (2023). Regulation of land and water use lies at the core	The BLM's authority to issue a ROW over BLM-managed lands is found in FLPMA. Section 106 of the NHPA requires the BLM to take into account the effects of issuing a ROW on historic properties impacted by the project. The PA (Appendix J) developed under Section 106 and signed by AIDEA applies throughout the project area.

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			of traditional state authority. Id. An overly broad interpretation of federal authority by BLM in the SEIS intrudes on and destroys state sovereignty and violates the 10th Amendment.	
29489	2	Compliance with other laws	AIDEA agrees with the comment made by NANA Corporation in its December 19, 2023 comment letter on the SEIS on page 11, that BLM has no authority to restrict activities on privately held lands owned by NANA BLM must grant Alaska its rights of access across federal land while at the same time respecting the views, aspirations, and rights of private landowners. A serious flaw in the SEIS is that its wrongfully applies federal statutes, such as Section 810 of ANILCA, to both State owned and privately held land when in fact these federal provisions apply to federal public lands.	See response to letter 29489, comment 28.
29489	5	Compliance with other laws	As a result of this permitting history and the applicable law, Alternative A used in the 2020 Joint Record of Decision (JROD) is the only route that comports with several federal laws that apply to this project. The SEIS, with its discussions of Alternatives B and C, ignores Title II of ANILCA and seeks to supplement the JROD issued by the Secretaries of Interior and Transportation, to which NEPA does not apply. In addition, the existing, permitted Alternative A is the Least Environmentally Damaging Practicable Alternative (LEDPA), but the SEIS only makes a single substantive mention of the LEDPA, buried in an appendix. Alternative A is the only route that is consistent with the Statehood Act and Title II of ANILCA and is identified in the Secretaries JROD based on the National Park Services (NPS) Environmental and Economic Analysis (EEA). AIDEA supports this use of Alternative A. AIDEAs strong preference and priority is to work with Doyon on a long-term access agreement. Only if the unfortunate situation occurred where Doyon refuses to provide access, would AIDEA naturally be forced to find another route using the tools provided by Congress in ANILCA.	NEPA requires the BLM to consider a reasonable range of alternatives.
29489	7	Compliance with other laws	AIDEA is a political subdivision of the State of Alaska. Alaska Stat. Â§ 44.88.020. As such, it seeks access to over 586,600 acres of state-owned mineral claims. See attached map, Exhibit G. As a matter of its statehood compact and contract with the Federal government, Alaska was granted title to surface lands, subsurface minerals, and the “right to prospect for, mine, and remove” the same. The Federal government cannot deny the State of Alaska the ability to feasibly and economically access its minerals across federal lands.	See response to letter 23034, comment 1.
29489	8	Alternatives	. Many of the mineral resources could not be accessed by Alternative C. AIDEA also provides a map that is perhaps easier to read and that identifies the mineralization zones and claims, in addition to the land ownership partner. See Exhibit H-1, AIDEA Mineralization Map. In the SEIS, Appendix H Maps, page H-53 shows Alternative Cs path. See Exhibit H-2, SEIS Map of Alternatives. It is clear from the two maps that the majority of the mineral areas could not be accessed by Alternative C; Alternative A is the only reasonable and economic alternative.	Alternative C was determined to meet the criteria for being reasonable alternative; see Appendix G for detailed screening results.
29489	9	Compliance with other laws	The SEIS wrongly assumes a No Action alternative is available. Alaskas access to the Ambler Mining District (AMD) is statutorily mandated by ANILCA, Pub. L. 96-487. Title II, Section 201(4)(b) provides that: Congress finds that there is a need for access for surface transportation purposes across the Western (Kobuk River) unit of the Gates of the Arctic National Preserve (from the Ambler Mining District to the Alaska Pipeline Haul Road) and the Secretary shall permit such access in accordance with the provisions of this subsection (emphasis added). Shall means access is not discretionary to any of the Federal Agencies. Further, ANILCA section 1110(b), codified as 16 U.S.C. 3170(b), says the State or private owner or occupier shall be given by the Secretary such rights as may be necessary to assure adequate and feasible access for economic and other purposes to the concerned land by such State or private owner or occupier and their successors in interest (emphasis added).4 This Statutory language clearly requires the Secretary to grant access to inholdings for the State or other person with mineral rights.	NEPA requires agencies to consider a No Action Alternative. The BLM's ROD will select an alternative and provide the rationale for doing so.
29489	10	Compliance with other laws	Not only is access required under ANILCA section 1110(b), but conditions set by the agency cannot be unreasonable or make the project uneconomic. [Access] shall be given by the Secretary ... as may be necessary to assure adequate and feasible access (emphasis added). Despite this reasonableness requirement, the SEIS introduces a new phasing alternative that will not be economically feasible (SEIS Section 2.4.8, Combined Phasing Option for All Action Alternatives, page 2-20). AIDEA has proposed building the project in phases but in a manner that allows for efficient use of resources and minimizes environmental impacts. See, Exhibit I, Ambler Road Draft Conceptual Construction Planning. In contrast, the phasing requirement set out in the SEIS will add complexity and expense to the project without creating any environmental mitigation (SEIS Section 2.4.8, Combined Phasing Option for All Action Alternatives, page 2-20.). It will also add construction challenges, delaying access to building sections of the road by staging multiple areas, camps, equipment, supplies and needing to have multiple contractors working concurrently. The Alaska DOT&PF (AKDOT) filed comments with BLM regarding the SEIS and the specific proposal by BLM to implement the Combined Phasing alternatives. This letter is attached here as Exhibit J. The SEIS suggests dictating the method of construction that would eliminate the proposed 3-phase construction by eliminating Phase 1. For any significant new road project, strategically planning the logistics and the construction is the more economical process. As noted by AKDOT, the agency does not typically dictate how a road is to be built, but rather addresses the environmental or permitting restraints to accommodate the conditions and minimize impacts of the construction. As AKDOT conveyed, contractors should control the means and methods to optimize the sequencing of construction activities, minimize costs, and use equipment and materials. Logically, the Ambler Road Project will work at multiple locations at the same time. See Exhibit J. In this case, BLM appears to be making or proposing methods that are not as efficient. The phasing discussion is not well supported and should be removed.	The combined phased option was developed in light of AIDEA’s amended application to the USACE, and subsequent terms and conditions attached to Department of the Army permit file number POA-2013-00396 special condition 13, which requires the road to be built to Phase II standards in thaw-sensitive permafrost soils and emergent wetland without first constructing the Phase I pioneer road.
29489	11	Compliance with other laws	The applicable regulation, 43 CFR 36.10, make clear that the Secretary shall grant such access to inholdings for the State or another person to access and remove minerals. Similarly, the 1976 Federal Land Policy and Management Act (FLPMA) section 302(b), codified as 43 U.S.C. 1732(b), guarantees reasonable and feasible access to federal mining patents. There	See response to letter 29489, comment 5.

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			are over 500 acres of federally patented mining claims in the AMD. The guarantee of reasonable and economically feasible access across federal land to prospect for, mine, and remove minerals limits the Secretary's authority under NEPA. The only alternative providing reasonable and economically feasible access is Alternative A, which was the selected route in the FEIS and the JROD issued in 2020 in conformity with all NEPA requirements. Despite this Congressional mandate, BLM as part of the SEIS process has suspended a right-of-way for the Ambler Road issued to AIDEA. The SEIS further ignores ANILCA because BLM has proposed an alternative route C for the road that does not pass through the National Preserve, which is uneconomic and environmentally unsound.	
29489	12	Compliance with other laws	Alternative C does not cross the GAAR as specified in Title II of ANILCA. Alternative C fails to provide access to numerous state mining claims in violation of ANILCA Section 110(b) (Exhibit H-2) and therefore is not the LEDPA as required under the Clean Water Act, is economically infeasible, and due to its length and topography, is detrimental to hydrology, wildlife and subsistence uses. AIDEA agrees with the view of NANA Corporation in its Comment Letter on the SEIS dated December 19, 2023 on page 13, that: that Alternative C is the least preferred alternative in light of its unreasonably long length which will adversely affect the environment and subsistence resources while making it more difficult to maintain AAP in an Arctic environment and to police it to ensure public safety and prevent trespass.	See responses to letter 23310, comment 1, and letter 31764, comment 2.
29489	13	Compliance with other laws	A serious legal flaw in the SEIS is that it fails to reference, incorporate or comply with significant NEPA reforms that apply to this document that was issued in October of 2023. In June of 2023, the Fiscal Responsibility Act (FRA), Pub. Law 118-5, became law and made significant and pertinent amendments to NEPA, including thresholds and the definition of major federal action. The effective date of the FRA NEPA amendments was June 3, 2023, when the statute was signed into law, as acknowledged by the Council on Environmental Quality's (CEQ) publication in the Federal Register on July 31, 2023. 88 Fed. Reg. 49924. Congress strengthened regulatory requirements in place in 2021 in the FRA by amending the NEPA statute to state that [a]n agency is not required to prepare an environmental document with respect to a proposed agency action if the preparation of such document would clearly and fundamentally conflict with the requirements of another provision of law. FRA 106(a) (codified at 42 U.S.C. 4336(a)(3)). The SEIS should have been issued in compliance with these statutory changes. It was not. There are no references in the SEIS to the FRA or the applicable CEQ regulations. The SEIS clearly has not considered or adhered to these new reforms. The FRA states that an agency is not required to prepare an environmental document when the result of the threshold determination is that the proposed agency action is a nondiscretionary action with respect to which such agency does not have the authority to take environmental factors into consideration in determining whether to take the proposed action. 42 U.S.C. 4336. Under the 2023 FRA, NEPA does not apply to the Ambler Road.	See response to letter 23310, comment 1.
29489	14	Compliance with other laws	It is undisputed that ANILCA Title II Section 201(4)(b) explicitly states that Congress finds that there is a need for access for surface transportation purposes across the Western (Kobuk River) unit of the Gates of the Arctic National Preserve (from the Ambler Mining District to the Alaska Pipeline Haul Road. There is no discretion in the statute. It also provides that the Secretary shall permit such access in accordance with the provisions of this subsection. (emphasis added). This language is mandatory and not discretionary. The rights-of-way issued to AIDEA by BLM and NPS in 2020-21 meet these criteria, but the suggested alternatives in the SEIS do not. It is critical that Alaska be accorded its right of access to its minerals under both ANILCA and the Statehood Act for the benefit of Alaskans and to provide the United States with the strategic minerals it needs.	See response to letter 23310, comment 1.
29489	15	Compliance with other laws	If BLM continues with the SEIS process, AIDEA requests that BLM acknowledges and includes the following insert from page 3 of the narrative for the 1991 ROD for the 1986 Utility Corridor Resource Management Plan EIS, which is still in effect and states: as required by section 201(4)(b) of the ANILCA, the need for access to the Ambler Mining District is hereby recognized and will be provided upon application by the State of Alaska. [emphasis added] The SEIS does not mention the 1991 ROD until page 3-158 and even then, it does not state the above requirement.	See response to letter 23034, comment 1.
29489	16	Compliance with other laws	The Gates of the Arctic, General Management Plan confirms AIDEAs entitlement to the access it seeks, without excessive and unreasonable federal government interference. Specifically, the Plan addresses access to inholdings such as the state and federal mining claims throughout the project area. It provides: Access to Inholdings Access is guaranteed to nonfederal land, subsurface rights, and valid mining claims, but any such access is subject to reasonable regulations to protect the values of the public lands that are crossed (ANILCA sections 1110 and 1111). Existing regulations (43 CFR 36.10) govern access to inholdings. Generally, traditional methods of access such as hiking, dog team, snowmachine, motorboat, and aircraft are compatible with park purposes. Certain methods of access could adversely affect park values, such as ATV trails or roads that destroy permafrost and tundra vegetation and erode soils. If adequate and feasible access is not provided by those methods generally allowed, a permit must be obtained from the superintendent specifying routes and methods. Mining access must also have an approved plan of operation. To prevent incompatible methods of access, acquisition of less-than-fee interests or easements are discussed in the land protection plan. See Exhibit K, Gates of the Arctic General Management Plan. In addition, the Gates of the Arctic General Management Plan states: and one route would travel east, crossing the Kobuk River within the Gates of the Arctic National Park and preserve, and connecting to the Dalton Highway (provision for a right-of-way for this route was reserved by ANILCA section 201(4)(b). Id. p. 40. Further, the Plan states: The access will be given such rights as may be necessary to assure adequate and feasible access for economic and other purposes to the concerned lands, subject to reasonable regulations to protect park values. Id. p. 179. That access was recognized by NPS almost forty years ago. The SEIS, written by BLM, now contradicts that which NPS acknowledged.	See response to letter 27721, comment 1.
29489	17	Compliance with other laws	NEPA and Its Environmental Review Process Are Procedural and not Substantive Law Using a NEPA process for the requested access filed by AIDEA to a mining district and adjacent State mining claims and ANCSA sub-surface claims is improper. The agency has no discretion to deny access, and the roads route from the mining district to the Dalton Highway by crossing the National Preserve is set out in statute, as is the process for granting the needed rights-of-way. Under the terms	See response to letter 23310, comment 1.

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			of the FRA reforms, this is a non-discretionary action by BLM. By not following the express terms of ANILCA and by discussing other alternatives that do not provide for a surface transportation route from the Ambler Mining District through the National Preserve to the Dalton Highway, the SEIS is contrary to the agreement made in ANILCA between the State of Alaska and the federal government. ANILCA is not only a statute; it is in the nature of a final settlement with decisions by Congress intended to be final. 43 CFR 36.10, implementing ANILCA 1110(b) spells out the exact process and type of decision to be used by the Secretary when a request for a right-of-way is made under Section 1110(b) inholding of state to access minerals: (f) All right-of-way permits issued pursuant to this section [applying section 1110(b) of ANILCA] shall be subject to terms and conditions and (g) The decision by the appropriate federal agency under this section is the final administrative decision. The decision document is the right-of-way permit itself.	
29489	18	Compliance with other laws	To ensure that such a road would be built, Congress specified an environmental and economic process which would apply to the road in lieu of an environmental impact statement which would otherwise be required under section 102(2)(C) of the National Environmental Policy Act. ¹⁰ Within 60 days of the completion of this process, Congress mandated that the secretaries shall jointly agree upon a route for issuance of the right-of-way across the preserve, and mandated that [s]uch right-of-way shall be issued in accordance with the provisions of section 1107 of this Act. ¹¹ There is no room within this procedure for the relevant agencies to decline to grant a right-of-way at all, or to grant a right-of-way on terms which do not meet the need for which such access right was created: to facilitate the economic development of the Ambler mining district. As commentators have noted, the [s]pecial access provisions in sections 201(4)(b) through (4)(e) of the Act guarantee that the Secretaries of the Interior and Transportation will approve the needed transportation system. ¹²	See response to letter 23310, comment 1.
29489	19	Compliance with other laws	Though not squarely relevant to AIDEA's right-of-way application, ANILCA also separately provides the owner of parcels surrounded by BLM lands with a mandatory right of access over BLM lands as BLM determines "adequate to secure" the "reasonable use and enjoyment" of the surrounded parcel, subject to BLM's "rules and regulations applicable to access over public lands." (b) Reasonable use and enjoyment of land surrounded by public lands managed by Secretary Notwithstanding any other provision of law, and subject to such terms and conditions as the Secretary of the Interior may prescribe, the Secretary shall provide such access to nonfederally owned land surrounded by public lands managed by the Secretary under the Federal Land Policy and Management Act of 1976 (43 U.S.C. §§ 1701-1732) as the Secretary deems adequate to secure to the owner the reasonable use and enjoyment thereof: Provided, That such owner comply with rules and regulations applicable to access across public lands. AIDEA would expressly note that this mandatory right of access is for federal lands and does not apply to private lands or land owned or selected by an Alaska Native Corporation.	See response to letter 23310, comment 1.
29489	20	Remand of Final EIS	The position taken by the SEIS is that a supplemental NEPA document was needed to correct alleged deficiencies in the FEIS and JROD issued in 2020. See SEIS Abstract Vol. 1, page 1. It is set out that the SEIS responds to a Remand Order issued by the U.S. District Court for Alaska with regard to two cases that were filed challenging these 2020 NEPA Ambler Road documents. Unfortunately, in tension with its legal obligation to facilitate reasonable and economically feasible access to the Ambler Mining District, BLM and the U.S. Department of the Interior (DOI) far exceeded the Remand Order issued by the District Court and in effect used this voluntary remand opportunity to expand the scope of the issues to be addressed by the SEIS beyond any reasonable interpretation of the Courts Order. See Exhibit L, Order Re Motions for Voluntary Remand. Case 3 20-cv-0253-SLG. May 17, 2022 [hereinafter cited as Remand Order]. At its very beginning, in a section entitled Abstract, the SEIS starts out with a misstatement of a critical element of this NEPA document. The statements in the Abstract section state and imply that the SEIS was drafted in response to a court finding, which in turn bears with it the implication that the U.S. District Court in Alaska had ruled on the merits of the FEIS and JROD issued regarding the Ambler Road in 2020. This is not accurate and is not in conformity with the record. The effect of this imprecise language is to suggest the existence of some error in the FEIS which did not exist.	See response to letter 31764, comment 1.
29489	21	Remand of Final EIS	In sum, the remand was granted by the Court on the basis of and in response to a motion for voluntary remand filed by the Department of Justice which asked for the litigation pause to allow an agency review of the impacts to subsistence uses under ANILCA Section 810 and the agency consultation with tribes pursuant to the National Historic Preservation Act (NHPA) Section 106. Id. at 7. Despite the care with which the Court noted that a limited scope of a remand is permissible and that a remand can be granted before there is any decision on the merits, the SEIS throughout many of its pages inaccurately implies that the broad scope of this SEIS to include such issues as whether the Ambler Road might become public is all required by the Courts ordered remand.	See response to letter 31764, comment 1.
29489	22	Remand of Final EIS	In fact, the limited scope of the remand is confirmed by the only affidavit that was used to support the Justices Departments Motions for Voluntary Remand. Both motions included a declaration from Tommy Beaudreau, the then Deputy Secretary of the Interior. See Exhibit M, Declaration of Deputy Secretary of the Department of Interior, Case 3 20-cv-00187-SLG, dated February 22, 2022 [hereinafter cited as Beaudreau Declaration] The Beaudreau Declaration at paragraph 3 at page 3 identifies these two purported deficiencies in the Ambler Road FEIS and JROD, both issued in 2020: The Department has identified substantial concerns regarding (1) the analysis of impacts to subsistence uses under ANILCA Section 810 and (2) the adequacy of government-to-government consultation with Tribes and related consideration of impacts under NHPA to properties of traditional religious and cultural importance to federally recognized Tribes. No other specific deficiencies are identified in the Deputy Secretarys declaration. The declaration only contains a catchall pronouncement at page 4, Paragraph 10 that: In addition to correcting ANILCA Section 810 and NHPA 106 deficiencies, the Department also intends to supplement the applicable environmental impact statement to more thoroughly assess the impacts and resources identified as areas of concern in this litigation.	See response to letter 31764, comment 1.
29489	23	Remand of Final EIS	The scope of topics addressed in the SEIS based on the Remand Order should have been: (1) subsistence impacts under Section 810 of the Alaska National Interest Lands Conservation Act; (2) additional tribal consultation pursuant the National	See response to letter 31764, comment 1.

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			Historic Preservation Act, and (3) areas of concern identified in the underlying NEPA litigation in Case No. 320-cv-00187-SLG and Case No. 320-cv-00253-SLG. Unfortunately, the SEIS prepared by BLM covers many topics that were not or have not been referenced in the Remand Order and which were not identified as areas of concern in the litigation. For example, the SEIS in the Executive Summary at page four raises a concern about the impact of people trespassing on the Ambler Road. The topic of trespass is again discussed as an undesirable impact of the Ambler Road at Volume 1, Chapter 2 at page 23 and then it is referenced 39 more times in the SEIS.	
29489	24	Remand of Final EIS	This matter of trespass was not identified in the Remand Order or in the litigation. It does not appear in the Complaint in Case 320-cv-00187-SLG or in the Second Amended and Supplemental Complaint in Case 3-20-cv-00253-SLG, nor is it raised in Case 340-cv-00187 in the Plaintiffs 69- page Opening Brief for Summary Judgment, nor in the affidavits that support the motion. Therefore, the matter of trespass is not an identified concern raised in the litigation and is beyond the scope of the remand and the information provided to the Court in the Beaudreau Declaration. All references to trespass should be eliminated from the SEIS.	Scoping comments received in conjunction with the Supplemental EIS raised concerns regarding trespass.
29489	25	Remand of Final EIS	Another example is the numerous refences to how AIDEA might fund the Ambler Road. The SEIS makes numerous references to financing the project and the use of revenue bonds, although this is not a topic that affects any environmental concern, and it is not a topic that was raised as an issue of concern in the litigation. Finance methods, bonds, or AIDEAs ability to finance the project are not raised in the pleadings in Case 320-cv-00187-SLG or in Case 320-cv-00253-SLG. Nevertheless, bonds are discussed in the SEIS in Volume 1, Chapter 2 at pages 2-11 through 13 and again in Volume 1, Chapter 3 at page 2-193. It is a topic well beyond the limited scope of the Remand Order or the scope of the Beaudreau Declaration.	Under NEPA, the BLM is required to analyze the socioeconomic impacts of proposed actions.
29489	26	Remand of Final EIS	In sum, the SEIS does not even attempt to follow the scope of the Remand Order or even the information provided in the Beaudreau Declaration. The U.S. District Court for Alaska remanded the matter to the BLM due to alleged deficiencies in, amongst other things, the BLMs analysis of subsistence impacts under ANILCA and tribal consultation pursuant the National Historic Preservation Act. In its remand motion, the DOI also stated its intention to further supplement the EIS analysis to more thoroughly assess the impacts and resources identified as areas of concern in the litigation. Exhibit M, Beaudreau Declaration at Paragraph 10, page 4. Nothing beyond these topics should have been addressed in the SEIS. The SEIS far exceeds the District Courts mandate. It misapplies the jurisdictional reach of Section 810 of ANILCA and raises a myriad of issues that were not raised in the pleadings in the two lawsuits concerning the Ambler Road. As a result, AIDEA urges the BLM to limit the topics addressed by the SEIS to Section 810 of ANILCA as it applied to federal public lands and a review pursuant to Section 106 of the NHPA.	See response to letter 31764, comment 1.
29489	27	ANILCA 810 analysis	What the DOI stated in its application for voluntary remand was that in order to correct alleged deficiencies in the 2020 FEIS and JROD, it would conduct a further analysis of possible subsistence impacts of the Ambler Road project under the aegis of Section 810 of ANILCA. Unfortunately, the SEIS applies Section 810 to private land and State of Alaska-owned land, over which neither it nor BLM have jurisdiction. It is a classic example of federal overreach.	See response to letter 29489, comment 28.
29489	28	ANILCA 810 analysis	Because Section 810 is a section in ANILCA, its use is limited to an analysis of federal public lands. As the U.S. Supreme Court noted in Amoco Production, supra, at page 546-547: By its plain language, that provision imposes obligations on federal agencies with respect to decisions affecting use of federal lands within the boundaries of the State of Alaska. Section 810 applies to "public lands." Section 102 of ANILCA, 16 U.S.C. 3102, defines "public lands," and included terms, for purposes of the Act, as follows: (1) The term 'land' means lands, waters, and interests therein. (2) The term 'Federal land' means lands the title to which is in the United States after December 2, 1980. (3) The term 'public lands' means land situated in Alaska which, after December 2, 1980, are Federal lands, except [land selected by the State of Alaska or granted to the State under the Alaska Statehood Act, 72 Stat. 339, or any other provision of federal law, land selected by a Native Corporation under ANCSA, and lands referred to in ANCSA 19(b), 48 U.S.C. 1618(b)]. [emphasis in the original]. This means that, by the terms of the statute, a federal agency conducting a Section 810 subsistence analysis is to carry out that study for potential impacts occurring on federal land and not on land: (1) held or selected by the State of Alaska; (2) land owned by Native corporations; or (3) on private land. As a federal agency, BLM lacks jurisdiction to conduct an ANILCA 810 analysis on land for any identified route for the Ambler Road that belongs to a Native Corporation, the State of Alaska, or any private landowner.	Amoco addressed a proposed action on the outer continental shelf. In order for a subsistence evaluation to be required under Section 810 of ANILCA, there must be a proposed use of federal "public lands" as the term is defined in Section 102 of ANILCA, such as the BLM- and NPS- managed lands within the proposed and alternative routes. Once an evaluation is triggered by a proposed action on federal "public lands," Section 810(a) of ANILCA requires that the evaluation consider the effect of such use (of the federal public lands) on subsistence uses and needs, wherever they may occur (i.e., both direct effects on, and indirect and cumulative effects off, the "public lands"). For example, impacts to caribou occurring on federal public lands can extend to the herd throughout its range and thereby affect subsistence harvest beyond the public lands. The definition of "subsistence uses" in Section 813 of ANILCA is not limited to uses on federal public lands.
29489	29	ANILCA 810 analysis	Despite the clarity in the ANILCA statute and the applicable caselaw, BLM in the SEIS has conducted an ANILCA 810 analysis on the entire route of each alternative, A, B, and C, considered in the SEIS. This has been done even though BLM acknowledges that for Alternative A, for example, the only federal public lands along the route are those belonging to the NPS in the Gates of the Artic National Park and Preserve (GAAR) and approximately 30 miles of BLM-managed land where the route begins at the Dalton Highway that is on land which has been selected by the State of Alaska. There is no dispute that for Route A, 61% of the route is on land belonging to the State of Alaska and 10 miles are on land owned by Doyon Limited, an ANCSA corporation. About 21 miles are on land owned by Native Corporation NANA with 3.11 miles of land selected by NANA and managed by BLM. Despite this clear land title situation, BLM has conducted an 810 review on these private and state-owned land in contravention of the statutory jurisdiction reach of Section 810 of ANILCA and the applicable caselaw.	See response to letter 29489, comment 28.
29489	30	Compliance with other laws	Finally, it should be noted that the BLM-managed land along route A has been selected by the State of Alaska. It is what is known as a top-filed selection. As explained on the State of Alaskas Department of Natural Resources web site: ANILCA gave the state of Alaska the right to make contingent selections, or top-filing, where land is subject to a federal restriction or withdrawal that prevents the lands adjudication as an entitlement selection. In the event the restriction is lifted, a state selection is automatically attached to the land. It is thus a future interest in a selection for the State, but not considered an	Top-filed selections are not yet valid selections and thus remain public lands under Section 102 of ANILCA. Regardless, selected lands are owned by the federal government and managed by the BLM, and are subject to the requirement for a BLM ROW grant.

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			actual selection until the relevant withdrawal is lifted. See https://gis.data.alaska.gov/datasets/SOA-DNR::anilca-topfiled-all/about . As a result, there is no dispute that the lands at the beginning of route A have the status of BLM Managed lands, because they are not owned by BLM or another federal agency. In fact, they are land that has been selected by the State of Alaska under the selection procedures established in ANILCA. The term selected as used in 16 U.S.C. 3102(3)(A) is defined as follows: (3)The term public lands means land situated in Alaska which, after December 2, 1980, are Federal lands,except (A) land selections of the State of Alaska which have been tentatively approved or validly selected under the Alaska Statehood Act and lands which have been confirmed to, validly selected by, or granted to the Territory of Alaska or the State under any other provision of Federal law;[emphasis added]	
29489	31	Compliance with other laws	The term selected as used in ANILCA is not limited to, as the BLM asserts, lands properly selected; instead, the statute uses the term selected and the term tentatively approved; these top-filed lands are tentatively selected because when restrictions are lifted, title will pass to the State of Alaska without any further action. Moreover, the fact that the lands at the beginning of route A are identified in the SEIS as being managed by BLM, rather than owned by BLM, demonstrates that BLM acknowledges these lands have been selected by the State of Alaska (SEIS Volume 4, Map 3-25 (page 37) and Map 3-26 (page 38)); that is why they are being managed by BLM and are not owned by BLM.	See response to letter 29489, comment 31.
29489	32	ANILCA 810 analysis	BLMs 810 Analysis Is Not Only Jurisdictionally Overly Broad, but Also Procedurally Deficient An ANILCA 810 Subsistence Analysis requires three steps: 1. Evaluation, 2. Finding, and 3. Notice and Hearings. Step 1 consists of evaluating three specific factors. These three factors must be analyzed and separately described for each alternative in an EIS, including the cumulative effects analysis. It includes the consideration of the following factors: A. Factor 1. Evaluate the effect of each of the EISs proposed action(s) and alternatives on subsistence uses and needs. B. Factor 2. Evaluate the availability of other lands for the purposes sought to be achieved. C. Factor 3. Evaluate other alternatives that would reduce or eliminate the proposed action(s) from lands needed for subsistence purposes. As the U.S. Supreme Court held in Amoco Productions, supra: Section 810 does not prohibit all federal land use actions which would adversely affect subsistence resources but sets forth a procedure through which such effects must be considered and provides that actions which would significantly restrict subsistence uses can only be undertaken if they are necessary and if the adverse effects are minimized.	Each of these factors was evaluated in the ANILCA 810 analysis prepared for the Supplemental EIS.
29489	33	Government to government consultation	However, the SEIS is almost bereft of any references to tribal consultation. AIDEA, through a construction reimbursement agreement with BLM, is paying for some of the cost associated with tribal consultation, but there is almost no information about this consultation in the SEIS. This was one of the issues sought for the voluntary remand. BLM should correct the SEIS to include all of the consultation they have done to date from June 2016 to the present (the October 2023 issuance of the SEIS) and planned consultation related to the NHPA. Since the planning and start of the SEIS process, BLM has engaged in consultations in addition to those done with the original FEIS. The SEIS should identify steps taken to achieve meaningful tribal consultation with respect to the PA. The SEIS does not adequately provide detailed information as to where and when those consultations occurred, although AIDEA has requested that information. As the Permittee, AIDEA knows from BLM invoices that it is paying for some consultation that has taken place, but the SEIS offers almost zero information about this topic even though it was a topic addressed in the Remand Order, Exhibit L.	Text added as suggested.
29489	34	Remand of Final EIS	As noted above, the scope of the SEIS for the Ambler Road should have been limited to the scope of topics addressed in the Remand Order: 1) subsistence impacts under Section 810 of the Alaska National Interest Lands Conservation Act; 2) (2) additional tribal consultation pursuant the National Historic Preservation Act, and 3) areas of concern identified in the underlying NEPA litigation in Case No. 320-cv-00187-SLG and Case No. 320-cv-00253-SLG. Unfortunately, the SEIS has no internal structure or rationale for the topics covered therein. The SEIS covers topics such as impacts from trespass or public uses of the road even though these topics were not connected to a Section 810 subsistence uses analysis, to tribal consultation under Section 106 of the NHPA, or to the areas of concern in the NEPA related litigation. Instead, the SEIS verses off into how the road might be financed, potential trespass by non-authorized users, asbestos, fire management and wood frogs. This resulted from the failure of the SEIS to adhere to the scope of the remand and to lay out a plan at the outset to address the issues raised by that remand instead of essentially looking at any topic that might to connected to the project.	See response to letter 31764, comment 1. Trespass and public use of the road affects subsistence uses and resources.
29489	35	Remand of Final EIS	The result is a meandering document which in 1200 pages mentions the issue of the LEDPA under the Clean Water Act only once, even though water issues are referenced at Paragraph 6 of the Beaudreau Declaration filed in support of the Motions for Voluntary Remand submitted by the U.S. Department of Justice. See Exhibit M. The Ambler Road SEIS never even mentions the Programmatic Agreement even though that document was a central issue in the remand requested by the Department of Interior. See Exhibit M, Beaudreau Declaration at Paragraph 8 page 4: The administrative record shows that the priority of achieving a programmatic agreement within the timeframe established by the Department constrained the options for Tribal consultation, and that Tribes were afforded only a secondary role in the ultimate adoption of the programmatic agreement. Such limited consultation with Tribes is a deficiency necessitating remand of the decisions for a renewed Section 106 process, to include revisiting whether Tribes should be included as invited signatories to a programmatic agreement. (emphasis added) AIDEA would recommend that the BLM re-edit the draft SEIS and eliminate those issues that do not respond to or are not within the scope of the Remand Order.	See responses to letter 29489, comment 52 and letter 31764, comment 1. The Supplemental EIS substantially revises Section 3.4.8, Cultural Resources.
29489	36	Decision process - general	XIII. The Ambler Road Project Is Not a Major Federal Action Subject To NEPA In the SEIS, BLM failed to apply the appropriate NEPA threshold to the Ambler Road Project. BLM failed to apply the CEQ regulations in place at the time the supplemental NEPA process was initiated in 2021. It also failed to apply the FRA amendments to NEPA that went into effect in June 2023, before BLM published the SEIS. Effective June 3, 2023, the FRA, Pub. Law 118-5, made significant and pertinent amendments to NEPA, including thresholds and the definition of major federal action. The CEQ regulations in place in 2021 when BLM issued its NOI for the SEIS also include this definition. Under the 2020 CEQ Regulations, a major federal action requiring environmental review does not include, [a]ctivities or decisions that are non-discretionary and made	ANILCA Section 201(4) does not address a ROW on BLM-managed lands, and thus does not exempt such a ROW from NEPA. The proposed BLM ROW is a major federal action subject to NEPA.

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			in accordance with the agency's statutory authority. 40 CFR 1508.1(q)(1)(ii); see 42 U.S.C. 4332 for the agency's statutory authority. Through ANILCA, Congress imposed a non-discretionary mandate on DOI to permit the Ambler Road across the boot of the GAAR. This non-discretionary activity does not, as a matter of law, constitute major federal action. Effective June 2023, the FRA reconfirmed this point by providing that the definition of a major federal action does not include activities or decisions that are non-discretionary and made in accordance with the agency's statutory authority. 111(10)(B)(vii) (codified at 42 U.S.C. 4336e(10)(B)(vii)). Further, the FRA states that an agency is not required to prepare an environmental document when the result of the threshold determination is that the proposed agency action is a nondiscretionary action with respect to which such agency does not have authority to take environmental factors into consideration in determining whether to take the proposed action. 106(a)(4) (codified at 42 U.S.C. 4336(a)(4)). The regulations that implement NEPA, which were revised in 2020 and 2022, state that in assessing whether NEPA applies, Federal agencies should determine whether compliance with NEPA would clearly and fundamentally conflict with the requirements of another statute. 40 CFR 1501.1.	
29489	37a	Decision process - general	The SEIS fails to take into account the significant reforms implemented by the FRA. Any final EIS must conclude that the approval of AIDEA's right-of-way across Alternative A would not constitute "major federal action." The FRA NEPA reforms became law on June 3, 2023, months before the publication of the SEIS. Under these reforms the Ambler Road is not a "major federal action." The FRA made these changes to NEPA that are not used or discussed in the SEIS: Amending NEPA to clarify and narrow agency considerations to "reasonably foreseeable environmental impacts of the proposed agency action." Analysis limited to reasonably foreseeable environmental impacts: Clauses (C)(i) and (ii) limit a NEPA analysis to the "reasonably foreseeable environmental impacts of the proposed agency action," rather than the universe of environmental impacts. The revision tracks the current definitions of "effects or impacts" and "reasonably foreseeable" in the CEQ regulations. 40 C.F.R. Section 1508.1(g), (aa). Alternatives must be reasonable: Rather than simply stating that a NEPA analysis must consider "alternatives to the proposed action," new clause (C)(iii) requires agencies to consider "a reasonable range of alternatives to the proposed agency action." The clause further specifies the alternatives considered must be "technically and economically feasible" and "meet the purpose and need of the proposal." This change aligns with the 2020 revision to the definition of "reasonable alternatives" in the CEQ regulations implementing NEPA, 40 C.F.R. Â§ 1508.1(z), and previous court decisions, which generally held that agencies do not need to consider alternatives that could not realistically be implemented. New Section 111 redefines "major federal action." The new statutory definition largely tracks the definition in the CEQ regulations, 40 C.F.R. Section 1508.1(q), but is more constrained than the current definition. At the outset, Section 111 states a "major federal action" is one "subject to substantial Federal control and responsibility," and excludes the following actions or activities from the definition, among others (Sec. 111; 42 U.S.C. § 4336e; emphasis added): (i) a non-Federal action "(I) with no or minimal Federal funding; or (II) with no or minimal Federal involvement where a Federal agency cannot control the outcome of the project." The traditional trigger for NEPA review has been whether a proposed activity is a "major federal action," defined as "effects that may be major and which are potentially subject to Federal control and responsibility." After June of 2023, under the FRA, the new definition is "an action that the agency carrying out such action determines is subject to substantial Federal control and responsibility" which new definition does not even contain the term "major" (Sec. 111(10)(A); 42 U.S.C. § 4336e). Now excluded from NEPA review are projects that receive "no or minimal Federal funding" or for those "with no or minimal Federal involvement where a Federal agency cannot control the outcome of the project" (Sec. 111(10)(B)(i); 42 U.S.C. § 4336e). (ii) funding assistance when the Federal agency lacks "compliance or enforcement responsibility" over the subsequent use of such funds; (Sec. 111(10)(B)(ii); 42 U.S.C. § 4336e) The Ambler Road, based on these reforms, is not a major federal action because it is not a project subject to a major federal role and responsibility. BLM owns one mile out of the 211-mile corridor. BLM only manages about 30 miles of the route and that will change when these lands that are selected are transferred to the State of Alaska. BLM has no responsibility with respect to the majority of the route that is on private or State land, none of which are federal public land as that term is defined in ANILCA. Additionally, the USACE after the 2023 U.S. Supreme Court decision in Sackett v. EPA, 598 U.S. ____ (2023) no longer has federal wetlands jurisdiction along most of the road because the lands it crosses are permafrost. As is explained later in this letter and in an expert report (See Exhibit P, Three-Tier Alaska Report) permafrost lacks a continual surface connection to any federal waters. The entire area is made up of permafrost (See Exhibit Q, DOWL Permafrost map of road route).	See response to letter 29489, comment 36.
29489	37b	Decision process - general	The traditional trigger for NEPA review has been whether a proposed activity is a major federal action, defined as effects that may be major and which are potentially subject to Federal control and responsibility. After June of 2023, under the FRA, the new definition is "an action that the agency carrying out such action determines is subject to substantial Federal control and responsibility which new definition does not even contain the term major (Sec. 111(10)(A); 42 U.S.C. 4336e). Now excluded from NEPA review are projects that receive "no or minimal Federal funding" or for those "with no or minimal Federal involvement where a Federal agency cannot control the outcome of the project" (Sec. 111(10)(B)(i); 42 U.S.C. 4336e). (ii) funding assistance when the Federal agency lacks compliance or enforcement responsibility over the subsequent use of such funds; (Sec. 111(10)(B)(ii); 42 U.S.C. 4336e) The Ambler Road, based on these reforms, is not a major federal action because it is not a project subject to a major federal role and responsibility.	See response to letter 29489, comment 36.

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29489	38b	Decision process - general	New Section 106 of NEPA further provides that the agency is not required to undertake new scientific or technical research unless it is essential to a reasoned choice among alternatives, and the overall costs and time frame of obtaining it are not unreasonable. Congress strengthened this regulatory requirement by amending the NEPA statute to state that [a]n agency is not required to prepare an environmental document with respect to a proposed agency action if the preparation of such document would clearly and fundamentally conflict with the requirements of another provision of law. FRA 106(a) (codified at 42 U.S.C. 4336(a)(3)). This statutory reform was effective in June of 2023, before this SEIS was issued, so the SEIS should have been issued in compliance with these statutory changes. The SEIS clearly appears not to have considered the new reforms. Therefore, BLM, by misguided attempts to comply with NEPA, has created a conflict with ANILCA. The Department is without discretion in creating access for the Ambler Road Project. The Secretarys decision to sua sponte direct further environmental review violated current regulation in 2021 and now violates the basic parameters of NEPA as amended by the FRA; it also exceeds the Courts Remand Order, which was narrower in scope.	See response to letter 29489, comment 36.
29489	39	Decision process - general	The SEIS states that the decision to be made is the following: The BLM and other authorizing cooperating agencies will decide whether to reissue, amend, or deny, in whole or in part, authorizations for the project, based on the analysis contained in the Final Supplemental EIS, as well as other state and federal review processes. (SEIS page ES-2) Consequently, the SEIS should have been focused on and be limited to those areas defined in ANILCA that have the highest potential for the facilitating economic development in Alaska including diverse mineral deposit discovers, mineral development, and facilitating economic development in rural and western Alaska. The purpose of the Ambler Road Project is only to allow for economic development and to determine if further development should occur. Moreover, the terms and conditions should focus on and be limited to activities that do not involve the impacts of mineral production and should address the environmental impacts of the Ambler Road Project.	NEPA requires the BLM to consider more than just economic impacts. NEPA also requires the BLM to consider the cumulative effects of past, present, and reasonably foreseeable actions, such as mining exploration and development.
29489	40	Air quality and climate	The SEIS makes statements about road operation that are not factually accurate and should be corrected. For example, at p. J-49, the document refers to contamination to the surrounding environment due to fugitive dust from trucks hauling ore. However, BLM specifically asked both AIDEA and Trilogy Metals how the ore would be transported and was told it would be moved in sealed welded containers that are loaded at a mine and put on a truck via a forklift. These sealed containers eliminate the need to tarp loads and prevent fugitive dust. This differs from both the original trucks at Red Dog Mine and the new hydraulically sealed trucks. AIDEA trusts this erroneous reference to fugitive dust will be corrected in the final SEIS.	A clarifying statement has been made in Section 3.2.7 regarding the transport of ore in sealed containers.
29489	41	Funding and bonding	At page 3-81, BLM continues with speculation on how road operations could impact the environment without analysis or citation to the record. Cumulatively, the road and reasonably foreseeable future development has the potential if not properly constructed or maintained to have very substantial, long-term impacts of fish and aquatic life at the population level It is entirely improper for the SEIS to assert that the road could be improperly constructed. The road construction will have to be in conformity with a myriad of permits and requirements. AIDEA has deep experience building roads in the Arctic e.g., the Delong Mountain Transportation System (DMTS) and the Mustang Road. While BLMs distrust of AIDEAs professional capabilities is unfortunate, there is no basis to state that AIDEA would improperly construct the road. More pertinently, AIDEAs SF299 Application provides a detailed explanation of its annual maintenance cost and how those costs would be met. Indeed, in a project financed by revenue bonds, it is likely the bond covenants will require the creation of an annual maintenance program and a report to the bond trustee annually of the satisfaction of that requirement.	The analysis in the Supplemental EIS in Sections 3.2.5, Water Resources, and Section 3.3.2, Fish and Aquatics, describes the effects of properly installed road features (such as culverts and bridges), including the effects should the road features fail after installation. Maintenance is addressed in Supplemental EIS Section 2.4.3, Features Common to All Action Alternatives.
29489	42	Public access	At several sections, the SEIS presumes that contractors working on the Ambler Road and subsequent users of the road will not adhere to the law, applicable regulations, or road specific protocols. This assumption expressed in the SEIS is factually wrong and is contrary to a presumption in the law that both officials and citizens will adhere to norms of lawful, responsible conduct.	See response to letter 19418, comment 3.
29489	43	Public access	Again, the SEIS does not address the reality that the road would be operated as a restricted and controlled roadway by an operator that is collecting user fees and working to maintain and operate the road as a long-term investment. In this situation, maintenance of the road will not come from public funds, but rather from fees, just as part of rent payments are used by a building owner to maintain a long-term property. It is possible that BLMs confusion on this point may come from a lack of familiarity with AIDEAs structure as a public corporation and body corporate financed in large part by the proceeds of its own investments, rather than a conventional public agency reliant on legislative appropriations.	See response to letter 19418, comment 3.
29489	44	Public access	The project is designed as a controlled access private industrial road providing responsible access to the Ambler Mining District. Additionally, AIDEA had reviewed comments by communities during the DOT and AIDEA scoping process which indicated a preference by some communities for a restricted-access corridor. BLM has accepted the right-of-way application as filed and is considering granting an access corridor across the BLM-managed lands which is restricted to mining related activities. Nevertheless, there appears to be public concern that in the future AIDEA or the State of Alaska could open the proposed road to the public or seek to lessen restrictions on how the road is used, increasing traffic. There are concerns about how the Access Corridor might be used in the future. AIDEA, as an economic development authority, is proposing the development of the Ambler Access corridor as a financial project upon which the authority will make a rate of return. In its application to BLM, AIDEA has indicated that it would hold the right-of-way granted by the federal government. This means the right-of-way across BLM lands would be issued to AIDEA and only AIDEA would be able to make use of the right-of-way. Further, because the right-of-way is granted by a federal agency, any change to the right-of-way conditions would first need to be approved by the AIDEA Board and then approved by BLM through a public process. This means, unlike the Dalton Highway, no single state official or AIDEA officer could change the status of the road. While AIDEA would be granted a right-of-way, it may of course procure road design, construction, maintenance and operation services through third party contractors. This is a proven AIDEA business model and was successfully used to construct and manage the DMTS, which	Comment noted. This information is generally included in the Supplemental EIS.

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			provides access to the Red Dog Mine in Northwest Alaska. AIDEA owns the DMTS, but it was constructed and is operated and maintained by private parties under contract to AIDEA. AIDEA would recoup the Ambler Road financing by charging those using the road for exploration and mine development activities or hauling ore to market. This user fee model means AIDEA has no interest in developing a public road or letting persons use a road who are not in a position to pay a user fee.	
29489	45	Public access	Another factor which ensures the road could not be opened by a single official or by decision of AIDEAs board, in and of itself, is the terms of the project financing. AIDEA intends to issue bonds as a principal means of financing the project. The bondholders will be informed that the road is based, in part, on a BLM right-of-way for a controlled-access corridor. This model will become a condition of the financing and a change to the use or character of the road would mean that the bonds would be in breach. That is, they would become due and owing immediately. So, changing the way in which the road is used could require the payment of millions of dollars. Such a change is not economically feasible or practical.	See response to letter 19418, comment 3.
29489	46	Public access	Another factor affecting how the road is used depends on the type of land ownership the route will cross. Most of the proposed corridor will be built on land owned by ANCSA land, or the Alaska Department of Natural Resources (DNR). Only a limited portion of the proposed route crosses federal land. In order to cross land owned by a corporation such as NANA, AIDEA will be negotiating an easement. The easement will specify the conditions upon which AIDEA can use the land for the proposed road. It is anticipated that each landowner, whether it be Doyon, NANA, or DNR, will impose restrictions on how the road is used in order to protect their particular land interests. If an effort was made by AIDEA to open the road to the public, it would have to renegotiate each of these easements with each of the landowners. Again, therefore, no single state or AIDEA official could simply open the road as happened with the Dalton Highway.	See response to letter 19418, comment 3.
29489	48	Public access	Another type of comment found in the SEIS expresses a concern that, AIDEA could lose control over the road (SEIS Section 2.3.1, Modes and Concepts Eliminated, Public Access Road Versus Industrial Access Road, page 2-3). There is concern, for example, that the road could be transferred to AKDOT, which might then choose to make the road public in a fashion similar to what occurred with the Dalton Highway. For example, AIDEA has stated that it intends to operate the Ambler Road in a manner consistent with current practices on the Red Dog Mines DMTS. On the DMTS, truck drivers are required to stop and halt operation when caribou are visible and at times this has meant closing the DMTS for hours or even days. If the road were to become public in the future, these strict protocols could not apply to a public highway. As a result, it is important for the SEIS to explain why the project over its useful life would remain a restricted roadway that will be operated to minimize impacts on wildlife and subsistence resources. Under its statutes, AIDEA is required to make a rate of return and essentially earn profits on its economic development projects. This is the reason AIDEA would charge a usage fee for the use of the proposed Ambler Access corridor. AIDEA would probably use its bonding authority to finance all or part of the road construction. The debt would be paid back by the user fees charged by AIDEA to those utilizing the road.	See response to letter 19418, comment 3.
29489	49	Proposed action	As is readily apparent, the scope of the POD for the Ambler Road as described in the SEIS is much more detailed than a single paragraph, as used in the Oberton Renewable Energy Project Plan of Development; the SEIS specifies that the POD for Ambler Road submitted by AIDEA shall contain a detailed summary of AIDEAs financial ability to fund the project by being able to, for example, issue sufficient revenue bonds, agreements with mining companies, arrangements with project investors, an indication of the ability to issue sufficient revenue bonds, and an indication of acceptable financial instruments to ensure road closure and reclamation Id. In contrast, the much more typical POD for the Oberton project is a description of the proponents past projects, a summary of the experience of the project team, and the expertise areas of that team. This approach for the description of the proponents financial capability is used for a large-scale project in a conservation area. The Oberton Renewable Energy Project impacts 5,000 acres of BLM administered land for the proposed solar facility that has a development footprint of approximately 2,600 acres. Additionally, all the land in the project application lies within the California Desert Conservation Area Planning Area. This is a 25-million-acre area in Southern California designated by Congress in FLPMA as a conservation area that has special values. This Oberton POA is an example of a POA that meets BLMs requirements with a short exposition of the proponents financial background. This is the type of POA that will be needed at some point in the future for the Ambler Road. As a result, AIDEA would request that the SEIS delete all references to the use of a Plan of Development and eliminate references to speculative methods of developing the road from both a planning and financial perspective. References in the SEIS to such matters as financing plan including a surety of the funding needed to build and operate the road should be deleted. The SEIS is an environmental permitting document. At this stage of permitting, no POD is needed and reference to a POD in the SEIS is premature.	The Supplemental EIS references the POD submitted by AIDEA in its SF299 application. A statement demonstrating the financial and technical ability to construct, operate, maintain, and terminate a project is required pursuant to 43 CFR 2804.26(a)(5)(i) prior to approving a ROW application.
29489	50	Proposed action	References to AIDEAs financial ability to fund the project when the when the road is being environmentally permitted are not needed. At some point in the future, AIDEA will submit a POD to BLM for those acres of the Ambler Road project that are owned or administered by BLM, just as was done in the Oberton Project. A BLM POD is not needed for the sections of the road that make use of private land, State of Alaska-owned or -selected land, or land belonging to ANCs or to the Northwest Artic Borough. Planning and any required financial assurances on non-federal State-owned land will be a matter, for example, for the Alaska Department of Natural Resources to require under its own procedures under Title 38 of the Alaska Code, which has its own set of requirements for a road, easement, or land transfer. AIDEA will also need to comply with specifications needed to reach agreements for route usage with ANCSA corporations and the Borough government, which has its own planning department.	A statement demonstrating the financial and technical ability to construct, operate, maintain, and terminate a project is required pursuant to 43 CFR 2804.26(a)(5)(i) prior to approving a ROW application.
29489	51	Wetlands	BLMs SEIS attempts to burden AIDEA by identifying areas of wetlands which are inconsistent with recent United States Supreme Court precedent. Many areas within the scope of the AIDEA Ambler Road Project are located on permafrost. As such, under the new definition of wetlands mandated by the U.S. Supreme Court decision in Sackett v. EPA, 598 U.S. (2023), many of the areas impacted by the project would not be subject to USACE jurisdiction under section 404 of the CWA. See Exhibit P, Three-Tier Alaska Report.	The Supplemental EIS analyzes wetlands defined in a broad ecological context as areas subject to prolonged soil saturation or flooding (as in the case of permafrost wetlands) but does not provide an analysis of wetland jurisdiction per the most current CWA regulatory requirements. Jurisdiction over wetlands in the project area are under the purview of the USACE and would be

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				evaluated (or reevaluated) with permit application submission, which is not evaluated in the Supplemental EIS. Even if permafrost wetlands are ultimately not considered jurisdictional in the 404 process, impacts to those specific landcover types may have extensive direct and indirect effects to many other resources.
29489	52	Compliance with other laws	The SEIS acknowledges that route A is the LEDPA. Appendix C (Sec 1.5.2/pg C-6) references that Alternative A is the LEDPA in the USACE permit. However, the SEIS does not discuss what is meant by the selection of the LEDPA anywhere else in the document. The SEIS essentially is silent regarding the LEDPA in the Alternatives section of the main document (Section 2). This section should have included a discussion of the CWA and the LEDPA requirement relative to Alternative A, as it is an important point of consideration for that alternative relative to the other alternatives. At a minimum, it should have been mentioned in 2.4.5 (pg 2-19). Despite this, the SEIS contains an alternative analysis of both routes B and C as they were referenced in the FEIS issued in early 2020. The SEIS ignores that the EEA chose route A and that route was then selected by the Secretaries of Interior and Transportation in a secretarial order (Exhibit B). That order cannot be disturbed or reviewed.	Text has been revised in Section 1.1, Introduction.
29489	53	Alternatives	The proposed Alternative C does not meet AIDEAs purpose and need to access all of the States mineral rights. As illustrated in Exhibit H-2, Alternative C will impose a need to traverse over 450 miles (over 900 miles, round trip) to access South32s 263,680 acres of state mining claims. If BLM does not agree with AIDEAs prior points related to Alternative A, then BLM needs to re-analyze Alternative C to include access to all of the states mining claims and not just to the terminus of the road as currently described. The objective of the project is to not get to a single destination (Ambler River), as the Ambler River does not make up the entire mining district and all of the states legal right to access mineral deposits.	See response to letter 29489, comment 8.
29489	54	Compliance with other laws	As is an oft repeated pattern in the legally flawed document, the SEIS also ignores the procedural history of the NEPA process to date for the Ambler Road and the requirements of critical federal statues, such as the Clean Water Act. In the analysis of alternatives and in the wetland analyses, the SEIS should discuss the regulatory Clean Water Acts Section 404 requirements regarding the selection of the LEDPA. In accordance with the Guidelines at 40 CFR 230.10(a), USACE cannot issue a permit to fill wetlands if a practicable alternative exists that would have less adverse impact on the aquatic ecosystem, known as the LEDPA, provided that the LEDPA does not have other significant adverse environmental consequences to other natural ecosystem components.	See response to letter 29489, comment 52. Also see Appendix B, Section 1.5, Collaboration and Coordination.
29489	55	Compliance with other laws	The SEIS prepared by BLM ignores the LEDPA determination made by USACE in 2020 Alternative A - and only mentions LEDPA once, where BLM states that USACE material is from preliminary considerations regarding a required USACE finding of which alternative may be the least environmentally damaging practicable alternative (LEDPA) (SEIS Appendix C, Section 1.5, Summary of Impacts, page C-6). USACE has regulatory jurisdiction over wetlands and was involved in the 2014 delineation and the methodology for analyzing wetlands in the SEIS. In Alaska, USACE has developed nuanced approaches to characterizing wetlands on long linear projects like the pipeline for AK LNG. Those approaches are applied across the entire length of the project rather than adjusted at certain spots. NPS did not consult with USACE on their alternative approach, nor is any explanation given for the SEISs disregard of USACEs expertise. Therefore, despite the verbosity of the SEIS, in part because of the designation by the NPS of the route across the GAAR, Alternative A is the LEDPA and described in the original FEIS and the original JROD. As a result, Alternative A used in the JROD is the only route that can be used because it crosses the National Preserve in conformity with the EEA required by ANILCA and is the LEDPA for the project under the Clean Water Act. All the references to alternatives B and C in the context of the procedural history of this project are surplusage.	See response to letter 29489, comment 52. The USACE identification of a LEDPA does not constrain the selection of a route by the BLM or NPS.
29489	56	Compliance with other laws	Section 1110(B) of ANILCA creates access rights that are separate from but compatible with the route across the GAAR specified in Title II of ANILCA. These rights under Section 1110(b) are ignored in the SEIS.	See response to letter 31764, comment 2.
29489	57	Cumulative and indirect effects analysis	The SEIS also ignores the pertinent 9th Circuit case law. The Thomas v. Peterson decisions discussion regarding connected action is still good law. 753 F.2d 754 (9th Cir. 1985). As recently as 2020, the Ninth Circuit has cited Thomas for the proposition that an action is connected when the record reveals that it is at an advanced stage of planning. See Chilkat Indian Village of Klukwan v. Bureau of Land Management, 825 Fed.Appx. 425, 429 (9th Cir. 2020) (citing Thomas, 753 F.2d at 760-61; Sierra Club v. Bureau of Land Mgmt., 786 F.3d 1219, 1225 (9th Cir. 2015), and observing that Because Appellants fail to demonstrate that the exploration plans would [not] have taken place ... without the future development of a mine, at 1226, BLM did not act arbitrarily by failing to consider those future impacts within a single EA.). Exploration does not necessarily lead to mineral production, although AIDEA anticipates based on the available science that there is a very reasonable likelihood that mineral production may occur. Thus, development of an industrial road, exploration, and production may not be connected actions, meaning NEPA reviews relative to mineral production must be deferred until later. Nevertheless, the SEIS incorrectly assumes that four mines will be developed simultaneously, which is highly unlikely (SEIS Executive Summary, page ES-3, and SEIS Appendix H, Indirect and Cumulative Scenarios). It also makes this assumption without any basis in the record or citation to any pertinent information. As such, the SEIS ignores the pertinent legal standard that the development of one or more mines is speculative. It is only the impacts of the roads construction and operation that should be considered in the SEIS.	The applicant's goal for the project is to support mineral resource exploration and development in the Ambler Mining District. The application notes that funding for construction, operation, maintenance, and ongoing mitigation would be pass-through charges to the mining companies using the road. The impacts of mining are analyzed to the extent that information is available to do so. No specific mining application/permit request for the District has been submitted to date. The BLM evaluated reasonably foreseeable mining development as indirect and cumulative impacts, using a hypothetical mining development scenario. When officially proposed, each mine would go through its own project-specific NEPA analysis and permitting process, which would provide further detail and analysis regarding the specific impacts of each mine operation.
29489	58	Cumulative and indirect effects analysis	The Court cited the Thomas case to contrast that where there was a definitive future action, the project must be considered as a connected action. But, [h]ere, no such definite plans exist regarding potential future mining. Id. at 918. This is also the case with the analysis and consideration of mitigation of the various alternatives for the Ambler Road Project. Building a private restricted use industrial road does not convey that mineral development is assured in the future.	See response to letter 29489, comment 57.

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29489	59	Remand of Final EIS	AIDEA contends that BLM, in developing the mitigation options and the proposed alternatives in the SEIS, overreaches the issues that need to be addressed to consider the industrial, limited access and non-public as required by ANILCA. The purpose of the Ambler Road Project program is to allow for exploration of the Ambler Mineral District and possible economic development in Northern and Western Alaska to determine if further development should occur. Should further development be determined to be appropriate, that development will be subject to a new and different Environmental Impact Statement. In effect, there is, as recognized by the Ninth Circuit, an independent utility for just the exploration allowed under the initial leasing program. AIDEA asserts that the Ambler Road Project SEIS unnecessarily and perhaps with purpose complicates the purpose and need for the proposed action in conflict with the standards of the Ninth Circuit Court of Appeals.	See response to letter 31764, comment 1.
29489	60	Alternatives	Again, the decisions evaluated in the Ambler Road Project FEIS and its JROD would not authorize on-the-ground activity associated with the exploration or development of minerals, and therefore BLM should not have developed alternative routes based on flawed analyses and unfounded assumptions on access and possible exploration and development. It is unclear to us how BLM developed the alternative routes or calculated acres of surface disturbance, a critical factor in differentiating the inappropriately constructed alternatives. BLMs failure to explain its methodologies serves to call its ultimate conclusions into question.	In accordance with the CEQ NEPA implementing regulations at 40 CFR 1502.14, the BLM has explored and evaluated all reasonable alternatives for this project and discussed reasons why other alternatives were determined not to be reasonable. To determine whether an alternative was reasonable, the BLM considered an alternative's effectiveness at satisfying the purpose and need, technical and economic feasibility, the practicality of the alternative, and whether the alternative duplicated others evaluated. Western routes, both road and rail were specifically considered and were eliminated from further consideration due to economic feasibility and practicality. For details on the alternatives examined and the reasons some were not carried forward for detailed analysis, see Supplemental EIS Appendix G. The magnitude of impacts and amount of surface disturbance is based on context for each resource described in the Affected Environment and Environmental Consequences sections of Chapter 3. Where impacts are quantified, magnitude is indicated in part by the quantities presented in Appendix C, Table 2 and in multiple tables associated with Chapter 3.
29489	62	Wetlands	Based on the SEIS, Alternative A is the LEDPA. The greatest impact to wetlands under Alternative A would be to PSS, followed by PFO wetlands, which are the most common wetland types in the project area. The impacts to PSS wetlands would be roughly twice the impacts to PFO wetlands encompassing 1,341.0 and 601.4 acres in the footprint, respectively (see Appendix E, Table 11). PEM wetlands encompass 116.3 acres, or 2.6 percent, of the footprint area but likely include some higher value flooded wetlands that provide valuable fish and wildlife habitat. 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. The SEIS includes an assertion that the construction of the road will alter the groundwater recharge in the alluvial fan above the Nutuvukti Fen and may create impacts. As noted in the SEIS, permeable road beds and the provision of culverts will prevent this from occurring. The project proponent has committed to avoid the fen and the upgradient moraine through road rerouting, or if impacts to the upgradient moraine are unavoidable, to minimize the disruption of shallow subsurface flow through the moraine as much as possible though the use of appropriate construction techniques (such as a porous road prism). Based on the SEIS, Alternative B impacts more wetland acreage than Alternative A.	The Supplemental EIS does not include a Section 404(b)(1) analysis sufficient to determine the LEDPA. The Section 404 CWA permit process is done separately from the NEPA analysis and may include a different subset of jurisdictional wetlands. AIDEA's commitments to minimize impacts to the Nutuvukti Fen are described in Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA.
29489	63	Alternatives	SEIS Chapter 2, Alternatives is seriously deficient due to its failure to comply with CEQs 40 CFR 1502.14. This section requires that the alternatives section of an EIS present the environmental impacts of the proposed action and the alternatives in comparative form based on the information and analysis presented in the sections on the affected environment and the environmental consequences. The SEIS does not provide this comparison in Chapter 2. As CEQ has frequently stated, the alternatives section is the heart of the EIS. The section needs to include this comparative analysis so that it meets the test of sharply defining the issues for the decision maker and the public and providing a clear basis for the subsequent choice among alternatives. There is a vast amount of information presented within the body of the document; at times the information seems to be extraneous and confusing, especially when considering the analysis is based on a hypothetical impact scenario rather than what is allowed under the express terms of the right-of-way application. This ultimately makes it confusing to understand the difference in impacts when comparing alternatives. The alternatives are described as having different amounts of direct land impacts. However, when factoring in the various ROPs and stipulations, the direct impacts among the alternatives become more difficult to distinguish. Throughout the SEISs various resource impact analyses, particularly biological resources, there is little to no comparison of impacts between the alternatives. Analyses are often loaded with various assumptions and models to attempt to achieve a reasonable analysis of impacts for a hypothetical project which ends up resulting in numerous data outputs (acres available, species numbers, percent of populations, etc.) that are extremely onerous for the reader to comprehend. Once all of this information and data is presented, there is no clear comparison (in one location of the document) that gives the reader (or decisionmaker) an idea of what it all means. For example, the impact methodology and analyses to caribou are extremely complicated and detailed, but there is no ultimate conclusion for each alternative on what the impacts actually mean and how they compare between alternatives. There is no discussion on the caribou impacts in the context of the overall populations, except one area where a few models indicate the potential percent reduction in population. But again, there is no statement on what that actually means in the context of the ever-changing populations that have been observed over the years. Overall, perhaps the impacts have no notable implications on the species, and the differences between alternatives is not notable, either, but this conclusion is not specified. In addition, the caribou is not a special status species by any state or federal agency or regulation. It is simply important for subsistence a fact which AIDEA does not dispute.	See Supplemental EIS Appendix C, Chapter 2, Alternatives Tables and Supplemental Information, Section 1.5, Summary of Impacts
29489	64	Mammals	In the SEIS, omission of information and citations (e.g., Noel et al. 2004, 2006) and uncritical use of others (e.g., Johnson et al. 2020) on caribou impacts as described below under the Displacement and Disturbance comment section appear to deviate from the robust science practices required by the DOI policy. AIDEA acknowledges the literature on caribou and other	Discussion of Noel et al. (2004) was added. Noel et al. (2004) reported a substantial decline in use of the area around Milne Point Road for calving even as the Central Arctic Herd increased in size (Joly et al. 2006, Noel et al. 2006), this supported conclusions of other research that the calving distribution gradually shifted south of the oilfields as road density increased in the oilfields

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			wildlife impact issues is voluminous, but the DOI policy (and general scientific practice) requires thorough consideration of relevant science, and the information and analysis in the EIS should reflect this policy.	(Prichard et al. 2020) although small numbers of caribou that remained in the area did not show avoidance of the Milne Point Road.
29489	65	Mammals	The SEIS indicates that the projects potential effect of blocking or delaying caribou migration is important (SEIS page 3-137 text). In addition, the SEIS states that subsistence users have noticed changes to caribou habitats and migrations following roads and pipelines (SEIS page 3-211 and 3-215). However, the SEIS does not note if the claims on pages 3-211 and 3-215 are substantiated by other data such as herd censuses and locations. The SEIS points out that the Western Arctic Caribou Herd (WAH) and Ray Mountains Caribou Herd (RMH) could have impacts because they have had less exposure to development than the Central Arctic Herd (CAH) and Teshekpuk (TCH) herds (SEIS page 3-215), which indicates the CAH and TCH have habituated to development (in contrast to the subsistence users quote from SEIS page 3-211). This inconsistency should be rectified in the Final SEIS, and the Final SEIS should acknowledge that caribou can habituate to development (Haskell and Ballard 2008).	Numerous studies document changes in caribou distribution as a result of roads or pipelines (e.g., Wilson et al. 2016; Lawhead et al. 2006; Smith and Johnson 2023; Prichard et al. 2020, 2022). Changes in caribou migration near the DMTS were reported in Wilson et al. (2016), changes in movements after construction of TAPS are difficult to access due to limited preconstruction data and uncertain herd identity of preconstruction observations. Text on habituation was added. There is strong evidence from Alaska herds that caribou do not habituate to roads and traffic during calving but there is little scientific consensus for whether or not habituation to development occurs during other seasons.
29489	66	Mammals	The WAH is the primary caribou population of concern regarding potential impedance of movements and migration by the Ambler Road. It is important to note that the project will impact only a portion of the WAH migratory range (see cited text on SEIS page 3-128). This indicates that the number of road miles of migratory range impacted would be approximately: Alternative A which is 211 miles x 0.5 = 105.5 miles (170 km); Alternative B which is 228 miles x 0.5 = 114.0 miles (184 km); and Alternative C which is 332 miles x 0.333 = 110.7 miles (179 km). These distances are approximately twice as long as the length of the Red Dog Mine Road (49.6 miles) for which Wilson et al. (2016) quantified WAH caribou crossing during the fall migration. Wilson et al. (2016) found that 12.5% (4/32) caribou never crossed the road, and 29% (8/28) of the caribou that crossed were delayed and took approximately ten times as long (33 days) to cross the road as 71% (20/28) of the caribou that crossed normally (3 days). Wilson et al. (2016) extrapolated this rate of delayed crossing to the entire WAH and estimated 70,000 caribou could be delayed crossing a road. The Red Dog Mine Road has generally similar traffic rates (98 vehicles/day, 4/hour) as the proposed Ambler Road (80 to 168 vehicles/day), and similar width (36 feet Red Dog Road; 32 feet Ambler Road) without vertical structures (e.g., fences, power lines, pipelines) as the proposed Ambler Road. Therefore, some delay of caribou crossing the proposed Ambler Road can be expected, although other factors influence road crossing (e.g., snow depth, insect harassment, habituation; Wilson et al. 2016). However, the SEIS and other sources note that other caribou herds regularly cross roads (including public-access roads and roads with elevated above-ground pipelines) during migrations including the Dalton highway, the Trans-Alaska Pipeline (TAPS 2001), several roads in the range of the Nelchina and Forty-mile caribou herds, and the Dempster Highway in the Yukon Territory, Canada, over which the Porcupine Caribou Herd crosses (and are hunted) in some years (Deuling 2015, Scott 2019). Caribou also regularly cross roads with adjacent elevated pipelines in the North Slope Alaska oil fields during the summer (i.e., not during migrations, Cronin et al. 1994, Lawhead et al. 2006). See Exhibit T for examples of caribou on existing infrastructure.	The Red Dog Road (DMTS) is indeed a good case study for the potential impacts of the Ambler Road although there are differences such as the time of year when caribou are expected to be present. Because of this, lessons from the DMTS inform the analysis of potential impacts from the proposed Ambler Road described in Section 3.3.4, but the results of studies of other roads and development on the ranges of other herds are also considered.
29489	67	Mammals	The TAPS has a little-known data set documenting occurrences of wildlife, including caribou, in the pipeline and service road right of way (TAPS 2001 pages 3.2-36 to 3.2-38). Also, Lenora (2020) provides data obtained from ground surveys of caribou occurrence close to the Dalton Highway on Alaskas North Slope. The data cited in this comment provide insights into wildlife/caribou use of transportation corridors that should be considered in the SEIS.	Numerous studies show that caribou occur near roads (Roby 1978, Burson et al. 2000, Haskell and Ballard 2008, Prichard et al. 2022), this does not necessarily mean that there are no effects of the road on distribution or movements of caribou. Caribou are frequently observed close to roads indicating that individual caribou are tolerant of roads under some conditions (e.g., Roby 1978; Burson et al. 2000; Haskell and Ballard 2008; Prichard et al. 2022). Use of oilfield roads and pads for oestrid fly relief is a very clear example (e.g., Prichard et al. 2020). Regional scale data is necessary to assess whether or not caribou are using the road corridor proportional to the area nearby (Vistnes and Nellemann 2008).
29489	68	Mammals	As stated in the SEIS on Page 3-128, the proposed project could impact the northernmost portion of a limited area of the caribou winter ranges and peripheral ranges. The SEIS also describes displacement of caribou from roads, development, and human activity where it has been studied extensively in the North Slope Alaska oilfields and TAPS (SEIS Page 3-136). This description of displacement is inadequate and does not cite relevant literature. Although the literature on caribou and oil fields and road disturbance is very large, additional important papers should be cited and described in the Final SEIS. Most important are the claims of displacement from roads during calving (Dau and Cameron 1986, Cameron et al. 1992, Johnson et al. 2020) and post-calving (Johnson et al. 2020). These papers show displacement of calving caribou as described in the SEIS, but a paper showing different results is not cited in the SEIS (Noel et al. 2004), as well as responses to it (Joly et al. 2006, Noel et al. 2006).	See response to letter 29489, comment 64.
29489	69	Mammals	Noel et al. (2004) replicated a study in the Alaska North Slope Milne Point oil field (Dau and Cameron 1986, Cameron et al. 1992) and showed that displacement of calving caribou was only significant (p < 0.05) 1 km (0.62 miles) from the road and not significant > 1 km from the road for six years; and was not significant in the following 11 years. This supports a hypothesis of caribou habituation to an oil field road. This is in contrast to the findings of displacement during calving as far as 5 km from roads (Johnson et al. 2020, Dau and Cameron 1986, Cameron et al. 1992). There are several considerations of these data and the Final SEIS should incorporate information from Joly et al. (2006) and Noel et al. (2004, 2006) for a full understanding. Regardless, the claim in the SEIS that displacement during calving is several kilometers needs to be reassessed with this additional literature. Johnson et al.s (2020) claim of displacement during post-calving periods also needs reassessment. Other studies (Cronin et al. 1998, Noel et al. 1998, Pollard et al. 1996, Prichard et al. 2020a, 2022) did not find displacement during the post-calving period in contrast to Johnson et al. (2020). Cronin (2020) describes deficiencies with Johnson et al.s (2020) analysis and their inappropriate criticism of Noel et al. (2004) and Cronin et al. (1998).	See response to letter 29489, comment 64.
29489	70	Mammals	As indicated in the SEIS (page 3-137 and 3-126), caribou herd numbers can increase and decrease over time and for different reasons. The SEIS discusses other caribou herds in Alaska, including the CAH and TCH, and BLM should include	Text stating that the Central Arctic Herd increased in size after oil development occurred was added although this occurred on the summer range not the winter range and does not mean that

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			information on the fluctuations in these herds populations for additional context on fluctuations in caribou numbers in Alaska. For example, the CAH and TCH have had variable numbers since the North Slope oil fields were established (see attached Figure 1 and Figure 2 after table). Note that the small decline in CAH in the early 1990s was attributed partially to oil field impacts on calf production (National Academies of Science, Engineering, and Medicine 2003, but see Cronin et al. 1997, 2000) but the TCH, without oil fields in its range, had a similar decline in the same time period, and the CAH subsequently grew substantially (see attached Figures 1 and 2). Immigration and emigration, now known to affect the Arctic Alaska caribou herd numbers considerably (Cronin et al. 1997, Prichard et al. 2020b), is a more likely explanation for changes in caribou numbers. Multiple hypotheses should be considered (Betini et al. 2017) when considering the causes of changes in caribou population numbers, and this should be acknowledged in the Final SEIS. The speculation or hypothesis by the National Academies of Science, Engineering, and Medicine (2003) that the oil fields impacted the CAH herd numbers is not supported by all of the available data.	there were not negative impacts from development. This high level of detail on herd size fluctuations for other herds is not relevant to the assessment of impacts among project alternatives.
29489	71	Public and stakeholder involvement	AIDEA is disappointed that none of the substantive comments and information included in the November 2, 2022 letter was considered for the SEIS. In fact, the record of comments from the Scoping Period (Appendix K) indicates that BLM may not have received these comments. The record of submittal of these comments (and the November 2, 2022 letter) is provided as an attachment to this letter (Exhibit U). That submittal documented several considerations related to the fish and caribou populations that should be considered for this SEIS. We note that updated graphs, with 2023 released/available information, that were included in that 2022 letter are attached to this submittal (Exhibit V).	The exhibits provided have been reviewed and substantive comments are addressed in the response-to-comment table (Appendix Q) of the Supplemental EIS.
29489	72	Mitigation/monitoring	Indigenous culture in Northern and Central Alaska values collaboration as a means of problem-solving. Any Final Record of Decision (FROD) and Final SEIS should similarly reflect this value, developing mitigation measures and future project activities with consensus between the landowners, the Subsistence Advisory Committee (SAC), and AIDEA. Many mitigation measures contained within the JROD and carried forward to this SEIS (Appendix N) do not include review or input by the SAC, other landowners, or other representatives from the local communities. It is recommended that the monitoring and management plans described through the SEIS and eventually through the Final SEIS should each include opportunities for review and input by the SAC. This will improve local buy-in and ultimately the effectiveness of these plans.	Several of potential mitigation measures in Appendix N describe developing plans in consultation with the relevant State and federal agencies, Tribes, ANCs, and the Subsistence Advisory Committee. These agencies and entities have specific requirements intended to protect the resources under their jurisdiction and are well suited to incorporate detail into achieving the mitigation objectives.
29489	73	Proposed action	AIDEA acknowledges that minimal design has occurred for the road to-date. The final right-of-way and any potential mitigation measures (as proposed in Appendix N) should reflect this low stage of development, providing opportunity for flexibility and design development. Reviews of the design by the SAC and other groups may also suggest refinements that further justify the need for overall flexibility in right-of-way conditions.	Certain mitigation measures in Appendix N respond to this lack of project detail. Should the project be approved, the ROD would determine which mitigation measures would be required.
29489	74	Alternatives	As stated above, only Alternative A should be used in the SEIS. If alternatives assuming arguendo needed to be examined, this SEIS is flawed in its alternatives analyses. The SEIS provides an analysis of 5 alternatives: Alternatives A, B, C, the No Action Alternative, and a variation on the 3 action alternatives that reduces the construction phases. The 2020 FEIS clearly described the reasons the BLM previously preferred Alternative A. The rationale provided in this SEIS for re-evaluating options outside of the previously preferred alternative are not adequately described in the document or Appendix G.	See responses to letter 58, comment 3 and letter 31764, comment 1.
29489	75	Alternatives	Importantly, the inclusion of a new Communities Route (Alternative C) does not meet the objective for providing access to potential deposits located near the eastern end of the proposed corridor such as those contained within the Roosevelt block of claims on state lands; this prospect is not reflected in the information provided in Section 3.4.1. Lack of access to the Roosevelt block significantly minimizes the economic development opportunities for Doyon and the communities located near the eastern end of the corridor. This lack of access by Alternative C is shown in the attached route map, Exhibit H-2. Alternative C requires several large bridges that will add to the project costs and to the construction schedule and complexity. Impacts from these large bridges are not adequately described or are minimized in comparison to the impacts described for Alternatives A and B. If Alternative C is retained for the Final SEIS, then the large bridges and other impacts should be described in greater detail.	See response to letter 29489, comment 8.
29489	76	Public access	The SEIS states The road would not be open to the general public by design, but public use and trespass are expected and will be analyzed. (Section 2.4.3, pg 2-7; Appendix H, Section 2.2.2). AIDEA has checked with operators of other private roads in Alaska, including examples such as the oil companies on the North Slope and the Pogo Road. These operators (Hilcorp and Northern Star Pogo) have confirmed that they have no known instances of unauthorized access in recent history. For example, on the North Slope, a gate exists just outside of Deadhorse to limit access to the Spine Rd. and connected roadways that extend over 60 miles to the west. More than 100 miles of road exist beyond the Spine Rd. gatehouse. Hilcorp does not have record of any trespassers traveling significantly past the gate and to the west (or vice versa). Additionally, both operators (Hilcorp and Northern Star Pogo) indicate that standard operation procedures (SOPs) would quickly identify any unauthorized users and such traffic could be quickly stopped without any potential incidents.	See response to letter 23508, comment 8.
29489	77	Public access	AIDEA believes it is also disingenuous to suggest that the road may somehow be open/public access (in the future; Section 2.3.1, pg 2-3) when strict access measures will be required based on the stipulations from private landowners (primarily Doyon and NANA). The State of Alaska has also indicated that it will limit access, similar to its requirements for the Pogo Road and North Slope roads. For the North Slope road system, local area residents may use the road system with appropriate prior approval (BLM 2019). AIDEA anticipates implementing an access-control system (similar to the system used on the North Slope) for local residents around the Ambler Access corridor. This access control will require users to follow the proposed Wildlife Management Plan and all other road operating procedures. Users will be provided training to further minimize potential safety or wildlife incidents.	See response to letter 23508, comment 8.

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29489	78	Hazardous waste	The SEIS does not contain an analysis of either the potential risk or degree of impact from potential spill incidents (Section 3.2.3, pgs 3-18 3-21). Table 5 (Appendix D) identifies the potential characteristics of spills but does not relate this table to the likelihood (frequency) of occurrence or how the seasonality of the spill incidents may affect the overall risk from the spills. Numerous mining or industrial access roads exist in Alaska that can provide data for understanding the potential frequency, sizes, and overall characteristics of spill incidents. An analysis of the ADECs spill database for spills along the Red Dog Mine Road (i.e., the DMTS) and the Pogo Road is provided in the table below (ADEC 2023) An analysis of the ADECs spill database for spills along the Red Dog Mine Road (i.e., the DMTS) and the Pogo Road between January 2011 and November 2023 (ADEC 2023 found here https://dec.alaska.gov/applications/spar/publicmvc/perp/spillsearch) found the total number of spills for DMTV was 9 over the 12 year period and 14 for Pogo Road over the 12 year period. This is based on actual data collected along mine roads in Alaska and the spill totals are substantially less that what the SEIS predicts for the proposed road. While the DMTS and Pogo Road distances are about the distance of the proposed road, applying a multiplication factor to the proposed road would still result in substantially fewer spills than what the SEIS estimates. For both roads, non-petroleum liquids such as hydraulic fluid or ethylene glycol are the most common spilled substances; these substances are significantly less toxic than petroleum compounds. Additionally as noted, many of the spills occurred in the winter months, where cleanup can be more effective and the risk of runoff into nearby waterbodies is significantly minimized.	Lubetkin (2022) provides potential frequency and size of spills associated with mining in Alaska. However, it does not provide the overall characteristics of the spill incidents. Spill record is from 1995 to 2020 for Pogo, Kensington, Greens Creek, Red Dog, and Fort Knox/True North.
29489	78	Hazardous waste	The SEIS does not contain an analysis of either the potential risk or degree of impact from potential spill incidents (Section 3.2.3, pgs 3-18 3-21). Table 5 (Appendix D) identifies the potential characteristics of spills but does not relate this table to the likelihood (frequency) of occurrence or how the seasonality of the spill incidents may affect the overall risk from the spills. Numerous mining or industrial access roads exist in Alaska that can provide data for understanding the potential frequency, sizes, and overall characteristics of spill incidents. An analysis of the ADECs spill database for spills along the Red Dog Mine Road (i.e., the DMTS) and the Pogo Road is provided in the table below (ADEC 2023) An analysis of the ADECs spill database for spills along the Red Dog Mine Road (i.e., the DMTS) and the Pogo Road between January 2011 and November 2023 (ADEC 2023 found here https://dec.alaska.gov/applications/spar/publicmvc/perp/spillsearch) found the total number of spills for DMTV was 9 over the 12 year period and 14 for Pogo Road over the 12 year period. This is based on actual data collected along mine roads in Alaska and the spill totals are substantially less that what the SEIS predicts for the proposed road. While the DMTS and Pogo Road distances are about the distance of the proposed road, applying a multiplication factor to the proposed road would still result in substantially fewer spills than what the SEIS estimates. For both roads, non-petroleum liquids such as hydraulic fluid or ethylene glycol are the most common spilled substances; these substances are significantly less toxic than petroleum compounds. Additionally as noted, many of the spills occurred in the winter months, where cleanup can be more effective and the risk of runoff into nearby waterbodies is significantly minimized.	Lubetkin (2022) provides potential frequency and size of spills associated with mining in Alaska. However, it does not provide the overall characteristics of the spill incidents. Spill record is from 1995 to 2020 for Pogo, Kensington, Greens Creek, Red Dog, and Fort Knox/True North.
29489	79	Hazardous waste	The SEIS document also incorrectly analyzes the potential for concentrate spills and provides an inaccurate calculation of the R value for the Harwood and Russell equation (Section 3.2.3, pg 3-19). It appears as though the calculation of the accident rate (R value) is based on an assumption that all of the spills that have occurred at locations such as Red Dog, Pogo and other active mines in Alaska are concentrate materials. This is not the case, as identified in Table 2 above. For example, the ADEC database documents that 5 zinc concentrate spills have occurred along the RDM Port Road (DMTS) from January 2011 to November 2023 (and no lead concentrate spills). It is conservatively estimated that Red Dog has shipped roughly 1.2 million tons of concentrate each year with each truck carrying roughly 180 tons (in 2 trailers). This results in nearly 6,700 one-way trips from the mine to the port, or a total of 348,000 miles traveled. For the 12-year period (2011-2023), this would be roughly 4.1 million miles travelled. With the 5 concentrate accidents documented above, the calculated R value is therefore roughly 1.2x10-6 nearly 5 times less than the value stated in the SEIS (pg 3-20). It is important to note that the potential Arctic Mine anticipates using connex-type shipping containers to transport produced ore concentrate. These containers have a significantly lower risk of release than the trailers that Red Dog utilizes. It is also important to note that no other active metal mines in Alaska have significant concentrate haul operations; the last sentence in first paragraph, pg 3-20 should be corrected. AIDEA requests that the calculations provided on pg 3-20 for potential incidents of concentrate spills for each alternative should be recalculated using the lower R value provided above. The track record of mines such as Pogo and Red Dog provides evidence that it is highly unlikely that a large volume of toxic materials may be spilled and subsequently impact nearby waterbodies. This is in direct contrast to the statement provided in the final sentence of the 5 th paragraph of pg 3-21. The revised potential spill/accident calculations should also be carried forward to SEIS Appendix C, Section 1.5.5 and Table 2.	Text has been reviewed and revised based on the comment.
29489	80	Air quality and climate	The document attributes numerous potential impacts to fugitive dust that may be generated from the traffic along the road, including impacts to vegetation (Sections 3.2.1/3.3.1), waterways (3.2.5), fish (3.3.2), and animals/mammals (3.3.4). The document calculates potential dust emissions of roughly 6,000 tons per year (Alternative A, PM10; Appendix D, Table 22). These emissions are assumed to be spread equally across the 211-mile corridor. To provide context to these emissions and their potential impacts, a deposition rate should be calculated for the affected area around the road and this rate should be compared against rates that may cause potential impacts. These details are described below: The document notes that the majority of the dust settles within 328 feet of the road (Section 3.2.1, pg 3-9). If this 328-foot width corridor is used along the length of the road, the total accumulation rate is roughly 0.03 lb/sq ft/year (based on 211-mile length and 6,000-ton/yr dust emissions). This deposition rate is reduced by nearly 50% with the use of dust control (see Table 22, Appendix D). The fugitive dust emissions when dust control is applied is 3,020 tons/year versus the nearly 6,000 tons without control. Precipitation would result in the dust washing off any vegetation and snow-containing dust would easily melt off (the vegetation) or be blown off with wind events. These natural processes would limit the impacts of the dust to vegetation. Specific chemical concentrations within the dust are currently unknown given the inability to perform geotechnical and material testing of the potential gravel sites along the road over the past two field seasons.	Comment noted. Appendix D summarizes the estimates of emissions generated by the construction and operation of the project. There are no direct deposition rate thresholds of significance to compared the potential air impacts. Dust deposition impacts are more likely to occur on other environmental resources rather than air quality. Discussions of dust deposition impacts can be found in Sections 3.2.5, Water Resources; 3.3.1, Vegetation and Wetlands; 3.3.2, Fish and Aquatics; 3.3.3, Birds; and 3.3.4, Mammals.

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29489	81	Air quality and climate	Additionally, the document speculates about potential impacts from dust and heavy metals based upon data from the DMTS (Section 3.3.2, pg 3-94). It is important to note that the referenced papers (Hasselbach et al, 2005 and Neitlich et al, 2017) have been superseded by more recent publications (Melbi 2020 and Neitlich 2022). Further, Red Dog Mine has upgraded their concentrate transportation fleet and operations since the data analyzed in the referenced publications. Red Dog Mine is now using hard, pneumatically closed trailers and the trucks and trailers are also now being washed. Both actions greatly minimize the potential for dust generation, cross-contamination, and transport of lead/zinc between the mine and port. The noted metals concentrations in the vegetation and soils surrounding the DMTS have responded as a result of these improvements. The Final SEIS should reflect the newer publications and improvements implemented. Importantly, the proposed Arctic mine anticipates using completely enclosed connexes for transport of the concentrates, a further reduction of potential dust and spills (as noted above).	Comment noted. Section 3.2.3 contains text discussing the trace metals in dust and runoff from vehicle brakes and tires. Language has been added to Section 3.2.7 discussing the reduction of fugitive dust due to transport in sealed welded containers.
29489	82	Air quality and climate	The potential generation rates of fugitive dust containing naturally occurring asbestos (NOA) can be calculated according to the methodology described above, since the NOA is a potential constituent of the road gravel and fugitive dust. If the fugitive dust is assumed to contain 0.1% asbestos (i.e., 1,000 mg/kg), then the maximum amount of potential asbestos emissions is 6 tons per year. We encourage BLM to apply this emission rate to the dispersion model developed for the project to assess the potential NOA concentrations in the air around the road. Importantly, the application of dust controls should also be included.	Comment noted and appreciated. Dust control measures are proposed and NOA specific calculations will not be completed without the detailed model information needed. NOA potential impacts are discussed in more detail in Sections 3.2.1, Geology and Soils; 3.2.2, Sand and Gravel; and 3.4.5, Socioeconomics and Communities (see also NewFields 2019).
29489	83	Mitigation/monitoring	Regardless of the potential impacts from fugitive dust, additional mitigation measures, beyond those described in the D-SEIS, can be developed and implemented to monitor potential dust emissions and their impacts. As previously indicated, AIDEA intends to follow many of the proven dust mitigation strategies developed for the DMTS.	Comment noted.
29489	84	Geology and minerals	In general, the NOA risks discussed throughout the document (primarily Section 3.2.1) are over-stated and can be easily mitigated. While NOA is potentially present in the bedrock around northwest Alaska, including in the area around Ambler, mitigation measures can be implemented to limit the potential use of these materials as gravel sources for the road. As described in the prior comment about potential dust issues, the inability to perform geotechnical work over the past three years has prevented AIDEA from assessing the potential material sites/sources and determining their NOA content. AIDEA is confident that material sources can be identified that will be far lower than the 0.1% NOA limit. Additionally, we are confident that the 0.1% limit is protective of human/animal health. The BLM is encouraged to run standard risk assessment calculations to confirm the potential risks at the noted NOA concentrations.	The comment has two parts: 1) Section 3.2.1 has been revised to address NOA in the natural affected environment. 2) Regarding AIDEA's confidence in material source availability: Comment noted.
29489	85	Socioeconomics and communities	The draft document identifies that unemployment rates in both the NAB and the Yukon-Koyukuk Census Area are 9% (2022) (Section 3.4.5/Appendix F, Table 12). These unemployment rates are gross understatements of the number of individuals that would like to work and the under-employment rate for the communities near the corridor. This should be corrected and the benefits of employment should be adequately emphasized throughout the document (see subsequent comments). For small communities such as Kobuk and Allakaket (population 191 and 177 respectively; Appendix F, Table 21), employment opportunities for even a handful of individuals can result in significant impacts, both personally and for the community as a whole. Elders in communities such as Allakaket and Kobuk have indicated that over 50% of the working age residents are unemployed and would be interested in jobs with the road and potential mines, should jobs be available.	See response to letter 27727, comment 8.
29489	86	Socioeconomics and communities	Just as important to note, the document does not mention the impact from individuals moving away from the communities to find employment opportunities (out-migration). While Table 21 (Appendix F) of the document provides current populations for the communities in the corridor, it does not provide the population changes for the communities in the region. A comparison of the SEIS with the FEIS shows how many of the communities closest to Alternative A have lost population; see the comparison table below. The best opportunity to reverse this outmigration is through providing job opportunities, such as those available from the road and potential future mines. This should be addressed and emphasized in the document.	Outmigration is discussed in Section 3.4.5 of the Supplemental EIS under State and Local Government Effects. The Supplemental EIS notes, "the jobs and economic stability that the mining projects would create could ease population reductions in NAB/YKCA communities by stemming outmigration. Stemming outward migration would help ensure that an adequate level of public facilities, such as utilities, schools, and health clinics, is maintained in the communities." See response to letter 29489, comment 86.
29489	87	Socioeconomics and communities	The stated poverty rates in Table 21 (Appendix F) reflect how communities such as Allakaket and Kobuk (59.2% and 35.9% poverty rates) lack sufficient job opportunities. As a comparison, Noatak, a community with significant mine related job opportunities (Red Dog) has a dramatically lower poverty rate (5.7%). A comparison of the median income for communities such as Kobuk and Allakaket (\$29,688 and \$22,000 respectively) with Noatak (\$56,667) further demonstrates the impact that mining opportunities have upon these communities. Construction of the road and the potential ensuing mines will provide opportunities to significantly reduce poverty rates and provide important income similar to the effect that Red Dog has upon Noatak. This should be emphasized in the document.	See response to letter 58, comment 2.
29489	88	Socioeconomics and communities	The document identifies numerous potential social risks to the communities from road construction and operation, including potential increases to crime and drug/alcohol sale to the communities (Section 3.4.5 and 3.4.6). However, the document does not adequately emphasize the positive impacts that may be realized from the road's construction, including the jobs and related economic impacts that it will provide. Several studies have identified the relationship between jobs, health, crime, and alcohol/drug use in rural Alaska (I. Popovici and M. French, 2013; Narconon, 2020).	See response to letter 27727, comment 7.
29489	89	Socioeconomics and communities	The document speculates that potential revenues for both the State and local communities from the road (Section 3.4.5, pg 3-188) are not able to be determined. However, the Red Dog Mine provides a model that may be applied for the Ambler Road and potential mines. As described in the document, the Red Dog Mine provides a payment in-lieu of taxes (PLT) to the Northwest Arctic Borough (NAB) and a contribution to the Village Improvement Fund (VIF). These two funding sources are significant, providing over \$28 million in revenue that represents more than 90% of the boroughs expenditures (NAB 2022). Such an agreement would provide valuable funds for improving and supporting essential community services. Red Dog Mine	The Supplemental EIS states that "Once mining projects are operational, local governments may receive additional revenue from Payment in Lieu of Taxes (paid to the NAB) and the Village Improvement Fund." Also see Appendix F, Tables 19 and 20.

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			is anticipated for closure in 2031. Following closure, funds from the VIF and PILT will no longer be received, resulting in a sizeable budget impact for the NAB and its communities. The SEIS should address this more definitively.	
29489	90	Subsistence	Even assuming, arguendo, that Section 810 applies to areas other than public lands (as discussed above) the analysis of subsistence impacts in the SEIS is seriously flawed in methodology. The SEIS extends the analysis of potential subsistence impacts to 66 communities, including more than 30 communities that are more than 50 miles, many that are more than 200 miles, and some that are over 400 miles from the proposed road (including Alternative C). Exhibit W provides a table that indicates the distance of each community from Alternatives A and C. The extended subsistence analysis is unwarranted. We encourage BLM to include the distances for these communities from the road. Potential road-related impacts to communities at significant distances away from the road cannot be quantified with any degree of certainty. Additionally, any impacts to these distant communities would be indistinguishable from any non-road related impacts (such as a large wildfire). For example, as noted above, the average petroleum spill for the Pogo Road is <10 gal, producing a very limited impact area that is easily remediated. Even if a large spill were to occur directly into a waterbody, downstream concentrations of any petroleum constituents would be impossible to detect. We are not aware of any instances of extensive fish kills as a result of large petroleum or mine concentrate spills from trucking in Alaska. As a precedent, other large EIS projects did not extend their primary subsistence analysis to distant communities. For example, the Pebble Project subsistence analysis focused on the 6 communities closest to the proposed activity and the recent Willow Master Plan SEIS only included the 2 primary North Slope communities nearest the proposed development (Utqiagvik and Nuiqsut). In neither case (Pebble or Willow) did the NEPA analysis extend to communities located more than a hundred miles from the area of potential impacts (BLM 2023).	The selection of study communities was broad to capture potential direct and indirect impacts to subsistence resource abundance and availability. If population-level impacts to migratory resources such as caribou and fish occur, then any users of those resources stocks (e.g., WAH, Kobuk River sheefish) could be affected. The Ambler Road project differs in scale to the Willow Master Plan Supplemental EIS and the Pebble Project, as it is a large linear feature spanning hundreds of miles and therefore potentially affecting a much greater number of communities.
29489	91	Cumulative and indirect effects analysis	The SEIS does not provide accurate references or proper information on the potential mining projects that may utilize the AAP. Updated information on these projects is publicly available and the references mentioned below are identified in the references section of this letter. These include the following: Arctic Deposit This deposit is being explored by Ambler Metals LLC. A Feasibility Study (FS) on this proposed development was published on January 20, 2023 (Trilogy 2023a). This PFS should be referenced in lieu of the 2018 study used throughout the document. If the Arctic deposit moves forward to potential development, at least 3 years of permitting and further design would be required ahead of construction. Bornite Deposit This deposit is being explored by Ambler Metals LLC. An updated NI 43-101 report is available for this deposit that should be referenced in lieu of the prior 2012 report used in the document (Trilogy 2023b). Further exploration is necessary prior to the potential permitting and design of any potential Bornite mine. Sun Deposit This deposit is being explored by Valhalla Metals LLC. Valhalla recently completed a short summer (2023) exploration program; the last exploration completed for the project occurred in 2012 (SolidusGold 2022; North of 60 Mining News 2023). The Sun deposit will still require many more years of exploration and background data collection before it could potentially be moved forward to permitting and design, let alone potential future construction. Smucker Deposit This deposit has not been the subject of any active exploration for many years. The inactivity led to recent supplemental filings from other companies for ownership of these state mining claims. A recent (2023) State Supreme court decision (reference) confirmed the claims are owned by Teck American Inc. Teck American has not announced any plans for future exploration or development. Roosevelt Block Exploration of this large area (>400,000 acres of State of Alaska lands) began in 2023 by South32 (South32, 2023). Results of the exploration program have not been released. Pending positive results, numerous more years of exploration and background data collection will be required prior to permitting and design. Timeframes provided in Table 2-2 of Appendix H are generally accurate, however most of these timeframes are not consistent with the current status of each project as described above. Importantly, given the current status of each of these projects/deposits, the maximum traffic estimated in Table 2-5 (Appendix H) should be revised. Potential start and end dates should also be assigned for each project. This would result in a significantly lower daily traffic count over the analysis period (50 years), as many of the projects would no longer be occurring concurrently.	Relevant information from the updated mining feasibility studies and technical reports for Arctic, Bornite, and Sun have been incorporated into Appendix H. Table 2-1 of Appendix H has been revised to include updated mineral resource estimates for Arctic and Bornite. The trip estimates included in Table 2-5 of Appendix H remain consistent with the estimates provided in the Arctic Feasibility Study, which have been extrapolated to the other three projects. Based on review of the updated feasibility studies and technical reports for Arctic, Bornite, and Sun, no new information is available on the anticipated time frames for exploration and development (e.g., exact start/end dates and durations for these phases remain unknown). Therefore, the theoretical time frames listed in Table 2-2 remain the BLM's best estimate of typical time frames for mine exploration and development. As shown in Table 2-9 of Appendix H, the reasonably foreseeable mining development scenario assumes that the start and end dates for development of each mine would be staggered, and production periods would not entirely overlap; the AADT estimates shown in Table 2-6 of Appendix H take this staggered development into account.
29489	92	Funding and bonding	The SEIS acknowledges that AIDEA has indicated that at the end of the road life (50 years) the road features will be demolished and removed (Section 2.4.4, pg 2-13). However, potential future mines will likely require continued access to facilitate long-term environmental monitoring and management, assuring the protection of the environment even after any mines are closed. Additionally, some communities near the road may desire to maintain continued accessibility. Reclamation requirements should be continually evaluated to ensure that the latest reclamation methods and requirements are used. This approach is consistent with the requirements of the Willow Master Development Plan ROD (BLM 2023; Appendix A, Mitigation #43). Additionally, the financial commitment for reclamation should be based on the approved Reclamation Plan. This commitment will be specific for each landowner, therefore discussion regarding financial commitments for this document should only apply to the BLM lands.	Supplemental EIS Appendix N, Potential Mitigation, Section 1.4, General Completion of Use (Restoration/Reclamation), Potential Mitigation Measure 4 would require AIDEA to submit a closure and reclamation plan for approval prior to receiving an NTP for construction on BLM-managed lands and would require the plan to be updated at 5-year intervals. Additionally, see response to letter 25830, comment 26.
29489	92	Proposed action	The SEIS acknowledges that AIDEA has indicated that at the end of the road life (50 years) the road features will be demolished and removed (Section 2.4.4, pg 2-13). However, potential future mines will likely require continued access to facilitate long-term environmental monitoring and management, assuring the protection of the environment even after any mines are closed. Additionally, some communities near the road may desire to maintain continued accessibility. Reclamation requirements should be continually evaluated to ensure that the latest reclamation methods and requirements are used. This approach is consistent with the requirements of the Willow Master Development Plan ROD (BLM 2023; Appendix A, Mitigation #43). Additionally, the financial commitment for reclamation should be based on the approved Reclamation Plan. This commitment will be specific for each landowner, therefore discussion regarding financial commitments for this document should only apply to the BLM lands.	Supplemental EIS Appendix N Potential Mitigation, Section 1.4 General Completion of Use (Restoration/Reclamation), Potential Mitigation Measure 4 would require AIDEA to submit a closure and reclamation plan for approval prior to receiving a Notice to Proceed for construction on BLM-managed lands, and would require the plan to be updated at 5 year intervals. Additionally, see response to letter 25830, comment 26.
29489	93	Geology and minerals	It is important to provide context to the potential impacts from the potential permafrost thawing. As stated in the document (Appendix C, Table 1), the total footprint of the road ranges from 2,318 acres (Alternative A) to 5,262 acres (Alternative C). This is an extremely small fraction of the total areas surrounding the road, including millions of acres with underlying permafrost that is currently thawing (see Map 3-01). The impact of potentially expedited thaw from the proposed road upon	The Supplemental EIS describes impacts on permafrost within the context of the alternatives.

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			these millions of acres would be impossible to discern. This includes the potential impacts of thawing permafrost underlying the road upon water quality and wetlands.	
29489	94	Public and stakeholder involvement	The document should be updated to reflect the current status of the on-going activities that AIDEA has undertaken relative to the JROD commitments. These include the following: Since 2021, AIDEA has held or participated in more than 40 public meetings in the region providing input on current project activities, plans, and answering questions related to the proposed road. A list of the meetings held is provided in Attachment 2. AIDEA has supported the formation of the Subsistence Advisory Committee (SAC) in accordance with PA Section IV.G. The SAC includes members from each community closest to the proposed road and additional members from affiliated groups (Doyon, NANA, TCC, etc.). Membership and bylaws of the SAC meet the proposed requirements from Appendix N (Section 3.4.7). The SAC includes a total of 10 members. SAC meeting topics, agendas, and actions are completely determined by the members. Importantly, AIDEA has spent more than \$800,000 in support of SAC meetings and member stipends/travel since 2021. The SAC has met 7 times since 2022 including meetings within the region, such as this past Augusts (2023) meeting in Allakaket. Following input from residents of the region and the SAC members, in 2022 AIDEA formed the Workforce Development Working Group (WDWG) to receive input and develop plans and policies surrounding the potential employment opportunities and associated economic development that may result from the road and potential mines. In accordance with the PA, Section IV.G, AIDEA has employed 12 local tribal members/shareholders in the Tribal Liaison Program (TLP) to support the archaeology surveys. TLP representatives have provided valuable input to the development of the survey strategy and the field activities. Importantly, the TLP has also provided valuable employment opportunities for residents in the region.	The public involvement section in the Supplemental EIS describes the BLM's compliance with requirements found in NEPA, ANILCA, and NHPA. AIDEA's outreach is explained in their comment letter which is available online for public review.
29489	95	Air quality and climate	AIDEA recognizes that the GHG emission calculations are based upon the truck/trailer configurations and traffic values as provided in the Arctic Mine Pre-Feasibility Study (PFS) [Trilogy 2018]. The newer PFS (Trilogy 2023) also uses a similar truck/trailer configuration for the transport of the concentrate to Fairbanks. However, it is realistic to believe that a double-trailer combination may be permissible for the traffic on the Dalton Highway from its intersection with Alternative A and to Fairbanks. A significant portion of the supplies and fuel transported to the North Slope (via the Dalton Highway) are currently performed with double trailers (ADOT&PF 2023). Implementing these changes to the GHG calculations for Alternatives A and B should result in both of those options having lower GHG emissions than Alternative C.	Comment noted. No changes to calculations are warranted at this time.
29489	96	Air quality and climate	GHG emissions over the life of the project should also recognize the continued improvement in truck fuel efficiency. It is noted that while fuel efficiency is currently averaging around 6.3 miles per gallon (mpg); this efficiency has increased from 5.8 mpg in 2011, an over 8% increase over the period. Continued improvements are anticipated as newer trucks are placed on the road that implement newer engine technology, such as turbochargers, cylinder management, etc. (NAFCE 2022). Similar fuel economy improvements are noted for construction equipment such as loaders, dozers, and large trucks. These efficiency improvements should be reflected in the GHG calculations in the SEIS.	Current GHG life of project projections are conservative as they will not be able to reasonably foresee the potential reduction of GHG emissions due to increased equipment and truck fuel efficiency. However, language has been added to Section 3.2.7 discussing the potential for these improved efficiencies in technology.
29489	97	Decision process - general	The responses to comments in the Final EIS were often only one sentence to several sentences long and left out important details. AIDEA requests that BLM provide verbatim comments and responses with coding that allows the reader to cross reference to the commenter's name. Especially where the commenter is a forprofit or not-for-profit business entity or association, or a tribal or non-tribal government, rather than an individual person, there is no valid privacy reason to suppress the name of the commenter in the agency's responses to that commenter's comments. It is difficult to interpret responses to comments when the commenting party is not identified. A review of the text of the comments being responded to is often necessary to understand the agency's responses to comments.	The Supplemental EIS was prepared in accordance with BLM policies and procedures as well as the CEQ implementing regulations for NEPA (40 CFR 1500-1508). 40 CFR 1503.4 (2019) Response to comments (a) "An agency preparing a final environmental impact statement shall assess and consider comments both individually and collectively, and shall respond by one or more of the means listed below, stating its response in the final statement." Similar comments are presented and responded to once. Comment letters are made available to the public.
29489	98	Decision process - general	BLM should terminate the SEIS process. Under the 2020 CEQ Regulations, a major federal action requiring environmental review does not include activities or decisions that are non-discretionary and made in accordance with the agency's statutory authority. 40 CFR 1508.1(q)(1)(ii); see 42 U.S.C. 4332 for the agencies statutory authority. Effective June 2023, the Fiscal Responsibility Act (FRA) reconfirmed this point by providing that the definition of a major federal action does not include activities or decisions that are nondiscretionary and made in accordance with the agency's statutory authority. 111(10)(B)(vii)(codified at 42 U.S.C. 4336e(10)(B)(vii)). Further, the FRA states that an agency is not required to prepare an environmental document when the result of the threshold determination is that the proposed agency action is a nondiscretionary action with respect to which such agency Under the 2023 Fiscal Responsibility Act (FRA), NEPA does not apply.	See response to letter 29489, comment 36.
29489	99	Decision process - general	If the SEIS process continues, include this information. The first page of narrative for the 1991 ROD for the 1986 Utility Corridor Range Management Plan EIS, which is still in effect, states: as required by section 201(4)(b) of the ANILCA, the need for access to the Ambler Mining District is hereby recognized and will be provided upon application by the State of Alaska, and that Subsistence hearings under section 810 of the ANILCA may be required during the processing of the application. Additionally, the need for access to other State-owned lands to the west of the Prospect unit, is recognized and the BLM Alaska State Director will entertain an application for a right-of-way for access to these lands. As above, Subsistence hearings may be required during the processing of this application. (emphasis added). The SEIS does not mention the ROD until page 3-158 and even then it does not indicate what the ROD says.	Appendix B (Chapter 1 Introduction Tables and Supplemental Information), Table 1, summarizes key anticipated authorizing laws, regulations, and permits for the project. In addition, Section 1.2.2 of the Supplemental EIS (Project Development Background and History) explains how the provisions of ANILCA relate to the project.
29489	100	Compliance with other laws	BLM should terminate the SEIS process. Using a NEPA process for the requested access is improper. The agency has no discretion to deny AIDEA's access. No Build or other options such as alternative C that is uneconomic and does not comply with ANILCA provisions like 201(4)(b) and 1110(b) and access route from Ambler to Dalton Highway. ANILCA is not only a statute, it is in the nature of a final settlement with decisions by Congress intended to be final. 43 CFR section 36.10, implementing ANILCA 1110(b) spells out the exact process and type of decision to be used by the Secretary when a request for a right-of-way is made under Section 1110(b) - inholding of state to access minerals. The decision document is the right of	See response to letter 23310, comment 1.

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			way permit itself. (f) All right-of-way permits issued pursuant to this section [applying section 1110(b) of ANILCA] shall be subject to terms and conditions... and (g) The decision by the appropriate federal agency under this section is the final administrative decision. BLM does not have the discretion to deny AIDEA - as part of the state with mineral claims - access. This is because both section 201(4) and 1110(b) of ANILCA, and the statehood act 6(i), grant a mandatory right to state mineral claims. And here, Congress has gone further and mandated that the route "shall" be from the Dalton Highway to the Ambler mining district and shall go through the boot of the GAAR. And that the route shall be "economically feasible".	
29489	101	Compliance with other laws	BLM should terminate the SEIS process. BLM should find that a statutory right of access across federal lands exists and applies to all applicable categories of federal lands. ANILCA Sections 1110 and 1323 and long-recognized rights to access mining claims support a right of access. Separately, these authorities support a decision that NEPA does not apply. NPS's General Management Plan Amendment/Wilderness Stewardship Plan/Environmental Assessment for the GAAR in 2014 repeatedly and thoroughly supports AIDEA's position: 1. Access to the Ambler Mining District is not discretionary and subject to NEPA. Congress designated access as required. The Secretary "shall" grant access from the Dalton to the mining district. The route was to go through the boot of the GAAR. The decision of where to locate that route was to be final, made by Secretary of DOT and DOI, and not subject to judicial review -- or arbitrary decisions by a subsequent administration to indefinitely suspend the decision. It was a one-time final decision. [Note: Jeff to provide copies of the DOT decision that says it is final agency action and the DOI decision if it says the same.] 2. NPS admits AIDEA's position in the following pages from the 2014 plan amendment and in the original plan that Congress has mandated access and limited agency discretion and prohibited application of NEPA or judicial review. "Ambler Right-of-Way. When Gates of the Arctic National Park and Preserve was established, a provision was made for a right-of-way to link the Alaska pipeline haul road to the Ambler mining district across the western Kobuk River preserve unit (ANILCA section 201(4)). Any other developed right-of-way requests must be pursued under title XI of ANILCA." Page 177 Access and circulation within the Gates of the Arctic is critical for... private landowners within the unit, and other valid existing rights. Page iv. [Such as access rights to statehood lands for state minerals under Section 6(i) of Statehood Act] The Ambler mining district contains rich deposits of copper, gold, silver, lead, zinc, and other minerals. Several major mining companies hold claims. â€ one route would travel east, crossing the Kobuk River within Gates of the Arctic National Park and Preserve and connecting to Dalton Highway (provision for a right-of-way for this route was reserved by ANILCA section 201(4)(b) ..." Page 40. "ANILCA contains numerous provisions for access to Gates of the Arctic for... a future right-of-way to the Ambler mining district, other valid existing rights, and future transportation corridors..." Page 70. "Ambler Right-of-Way ANILCA provided for a right-of-way across the "boot" area of the unit to the Ambler mining district: Congress finds that there is a need for access for surface transportation purposes across the Western (Kobuk River) unit of the Gates of the Arctic National Preserve (from the Ambler Mining District to the Alaska Pipeline Haul Road) and the Secretary shall permit such access in accordance with the provisions of this subsection (ANILCA 201(4)(b)) Page 77. "Valid existing rights and ANILCA provisions for access will be recognized" P.116. "Access to Inholdings Access is guaranteed to nonfederal land, subsurface rights and valid mining claims [i.e, section 6(i) of the statehood act] P.117. "Gates of the Arctic National Park and Preserve is subject to valid existing rights, including rights-of-way established under RS 2477." P.118. "Section 1110(b) guarantees the right of access to inholdings within park areas, subject to reasonable regulations to protect natural and other values of park lands. Access to inholdings is covered in existing regulations (43 CFR 36.10)" P. 141. "Ambler Right-of-Way . When Gates of the Arctic National Park and Preserve was established, a provision was made for a right-of-way to link the Alaska pipeline haul road to the Ambler mining district across the Western Kobuk River preserve unit (ANILCA SECTION 201(4)). ..." P.177. "The access provision of section 1110 of ANILCA assures private landowners that they will be given "such rights as may be necessary to assure adequate and feasible access for economic and other purposes to the concerned lands" subject to reasonable regulations to protect park values." P.179. "Based on its existing character, the entire southwest preserve is suitable for wilderness except lands conveyed or under application. ANILCA section 201(4)(b, c, d, and e) permits surface access across the southwest preserve. The wilderness recommendation will have to consider the existing authority for that right-of-way. All future wilderness recommendations will recognize valid existing rights, including rights-of-way under RS 2477." P.217. "Recognize the rights of valid mining claims; work closely with all operators to ensure valid mining activities have the least possible adverse impact on park resources." P.235. "Section 1110 ... (b) assurance of access to private property rights." P.238. "Access to Inholdings Applies to holders of valid property or occupancy interest including mining claims ANILCA 1110; 43 C.F.R. 36.10 Ensures adequate and feasible access, subject to reasonable regulations to protect the natural and other values" P.264. "Surface Transportation Route across Western (Kobuk River Unit) of Preserve Access for a surface transportation route is to be permitted in accordance with the provision of section 201(4) of ANILCA." P.265. ANILCA Sec. 1323 confirms that the right to access across federal lands applies to both the less-protected BLM lands while ANILCA Sec. 1110 confirms a right of access applies across more-protected NPS and FWS lands. Sections 1110 and 1323 work together to provide a right of access across all federal lands. These rights apply here as the Ambler Mining District is entirely surrounded and/or effectively surrounded by federal land. In addition, Department of Interior decisions interpreting the original statutes governing mining on federal public lands support a right of access to reach mining claims. Alfred E. Koenig, 4 IBLA 18, 19-20, 1971 WL 12347 (IBLA, 1971); Rights of Mining	See response to letter 23310, comment 1.

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			Claimants to Access Over Public Lands to Their Claims, 66 I.D. 361 (Solicitor’s Opinion, Oct. 20, 1959). These decisions continue to apply, either of their own force (without need to evaluate pre-existing rights) or through the preservation of pre-existing rights in statutes such as ANILCA and FLPMA. The mining claims are longstanding,	
29489	102	Decision process - general	BLM should terminate the SEIS process. Under the FRA the term major Federal action means an action that the agency carrying out such action determines is subject to substantial Federal control and responsibility. BLM is only deciding whether to grant a ROW permit for 25 miles of BLM managed lands, which are only 11 percent of the 211 miles. Therefore, BLM lacks substantial Federal control and responsibility over the road. On the other hand, the U.S. Army Corps of Engineers (Army Corps) has jurisdiction over the entire project, but DOI relegated them to cooperating agency status. The Army Corps did not drive this 8-year NEPA process.	NEPA requires federal agencies to analyze the entirety of proposed actions, not just where an agency has regulatory jurisdiction. Additionally, USACE has regulatory jurisdiction over the entire project, and must also comply with NEPA.
29489	103	Decision process - general	BLM should terminate the SEIS process. BLM should find that a statutory right of access across federal lands exists and applies to all applicable categories of federal lands. The GAAR easement is valid and was a final agency decision not subject to arbitrary suspension by agencies, or else the intent of Congress to avoid lengthy delays, not subject to judicial review, etc., would mean nothing as the agencies could accomplish what Congress prohibited. Also note that AIDEA is entitled to access across federal lands and to conduct pre-construction activities under ANILCA section 1111. Even though the BLM and the Court said that AIDEA agreed to give up the right to conduct pre-construction activities in the Programmatic Agreement (PA), the PA does not override this statutory right. AIDEA also notes the right to use the Hickel Highway to get through Doyon land. AIDEA would ask the State (as owner of the RS 2477) to limit access to industrial use. Not asserting this as an alternative now.	BLM’s authority to issue a ROW over BLM-managed lands is found in FLPMA. Section 201(4)(b) of ANILCA only addresses a ROW through the Western Kobuk River Unit of the Gates of the Arctic National Preserve.
29489	106	Compliance with other laws	If the SEIS process continues, include the following information. AIDEA has a designated route for the Ambler road from the district to the haul road, across the boot (final decision “not subject to further agency discretion to suspend or judicial review) in section 201(4) (Maybe the only congressionally designated and mandated route in ANILCA). In addition to that or supplementing 201(4), AIDEA has ANILCA section 1110(b) access to inholdings for mineral development. This access right is a type of “super” access right inside Title 11 of ANILCA. An ANILCA section 1110(b) easement is not subject to all the rules and regulations of normal US access easements where access is sought to property that is surrounded by federal land. Note from the Federal register explanation when Interior adopted regs implementing section 1110(b): 43 CFR Part 36 (51 FR 31619-01, September 4, 1986) it expressly said as much: “The definition section [for general TUS access requests] has been supplemented so the principal terms regarding or applying only to access to inholdings are found in this section [43 CFR 36.10] rather in the [general] definitions [set out] in section 36.2.” “[t]he statute [ANILCA 1110(b)] clearly states that the access right is for “economic and other purposes” not merely for ingress and egress. Third, the legislative history [of ANILCA] clearly states that the grant of access must be broadly construed.”	See responses to letter 23310, comment 1 and letter 31764, comment 2.
29489	107	Compliance with other laws	If the SEIS process continues, include the following information. LEGISLATIVE HISTORY CITED BY DOI ON ANILCA 1110(B) ACCESS RIGHTS : “The Committee understands that the common law guarantees owners of inholdings access to their land, and that rights of access might also be derived from other statutory provisions, [i.e., section 6(i) of the Statehood Act] including other provisions of this Title [i.e., section 201(4) of ANILCA] or from constitutional grants [i.e., Constitutional Authority to admit new states and use of Federal Property clause to grant interest in statehood mineral lands to Alaska if it choose to enter into a statehood compact and include 6(l) terms] This provision is intended to be an independent grant supplementary to all other rights of access, and shall not be construed to limit or be limited by any right of access granted by the common law, other statutory provisions, or the Constitution. H.Rept. No. 97, Part 1, 96th Congress, 1st Sess. 1979, 240; also S.Rept. No. 413, 96th Congress, 1st Sess. 1979, 249. Note that DOI in the 2020 ROD “out of an abundance of caution” determined that the Ambler Road proposal complied with the general TUS rules. ROD, p. 15.	See responses to letter 23310, comment 1 and letter 31764, comment 2.
29489	108	Compliance with other laws	If the SEIS process continues, include the following information. ANILCA SECTION 1110(B) ACCESS RIGHTS ARE SEPARATE FROM GENERAL TUS RIGHTS IN TITLE 11 “The Committee adopted a specific standard regarding access which is designed to include inholders and other landowners where lands are effectively surrounded by a unit or units established by this Act. [ANILCA]” JUST SUBMITTED A REQUEST FOR 1110(B) ACCESS USING THE GENERAL TUS APPLICATION is not an admission that all requirements for a general TUS apply. “Agencies will continue to use SF 299 [form for general TUS for ANILCA 1110(b) access] because it is adaptable to a variety of situations” THE SECRETARY MUST ENSURE ADEQUATE AND FEASIBLE ACCESS FOR ECONOMIC AND OTHER PURPOSES CAN BE REALIZED “The Committee expects the Secretary “to work with the inholder to come to a reasonable solution which will assure that adequate and feasible access for economic and other purposes can be realized.”	See responses to letter 23310, comment 1 and letter 31764, comment 2.

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29489	109	Compliance with other laws	If the SEIS process continues, include the following information. DOI admits in the Federal Register notice that "access cannot be denied". This means the No-Build alternative is not allowed in the SEIS under federal law to be part of the NEPA. Nor is an alternative such as C which is not economically viable or feasible allowed under section 1110(b) of ANILCA. And when alternative C would not meet the purpose and need of access to other statehood lands and claims at Roosevelt, etc., And Alternative C fails to meet the other constitutional and statutory mandates on DOI of providing reasonable access to statehood lands and minerals such as Roosevelt.	See responses to letter 23310, comment 1, and letter 31764, comment 2.
29489	110	Remand of Final EIS	If the SEIS process continues, the SEIS should be revised to focus on what needs supplementing. The Draft SEIS increased the size of the FEIS by 54 percent, which exemplifies BLM's efforts to reopen as much of the FEIS as possible even though the voluntary remand only focused on three issues. However, as demonstrated by AIDEA's comments, much of the material that BLM added does not support the new conclusions in the Draft EIS and makes it hard for the decisionmaker and the public to understand what is important and relevant when comparing the alternatives. Moreover, the table below illustrates the extensive additions to the Draft SEIS. The additional bulk is contrary to the CEQ regulations on reducing paperwork. § 1500.4 Reducing paperwork. Agencies shall reduce excessive paperwork by: (c) Reducing the length of environmental documents by means such as meeting appropriate page limits (§§ 1501.5(f) and 1502.7 of this chapter). (d) Preparing analytic and concise environmental impact statements (§ 1502.2 of this chapter). (e) Discussing only briefly issues other than significant ones (§ 1502.2(b) of this chapter). (f) Writing environmental impact statements in plain language (§ 1502.8 of this chapter). (g) Following a clear format for environmental impact statements (§ 1502.10 of this chapter). (h) Emphasizing the portions of the environmental impact statement that are useful to decision makers and the public (e.g., §§ 1502.14 and 1502.15 of this chapter) and reducing emphasis on background material (§ 1502.1 of this chapter). (emphasis added)	See response to letter 31764, comment 1.
29489	111	Remand of Final EIS	If the SEIS process continues, the SEIS should be revised to focus on what needs supplementing. There was no reason to revisit the development of alternatives. BLM's voluntary remand did not indicate that the EIS's alternatives development process was flawed. In addition, the CEQ regulations do not require scoping for a supplemental EIS, yet BLM conducted scoping and revisited numerous issues that were not part of the voluntary remand.	See response to letter 31764, comment 1.
29489	112	Alternatives	If the SEIS process continues, the SEIS should be revised to dismiss Alternative C. AIDEA supports the current Alternative A for all the reasons in the original EIS that led BLM and the Army Corps to approve it. For example, the Army Corps determined that it was the Least Environmentally Damaging Practicable Alternative (LEPDA). Given that Alternative C has substantially more impacts than Alternative A, as demonstrated in AIDEA's comments on the Draft EIS, e.g., substantially more wetland impacts and tribal holdings that render Alternative C infeasible, to think that Alternative C could become the LEDPA if the 404 permit were reopened is unrealistic on its face. Alternative C is neither feasible or economic as required by ANILCA and the statehood act and renders null and void the congressionally granted easement through the GAAR. In addition, AIDEA has spent tens of millions of dollars studying this alternative and seeking permits for it. BLM should not have included Alternative C in the Draft SEIS and should not carry it into the Final SEIS if NEPA does apply.	See response to letter 29556, comment 21.
29489	113	Compliance with other laws	Again, the SEIS fails to recognize that the GAAR easement is valid, was never appealed, was a final agency decision not subject to arbitrary suspension by agencies, or else intent of Congress to avoid lengthy delays, not subject to judicial review, etc., would mean nothing as the agencies could accomplish what Congress prohibited.	See response to letter 23310, comment 1.
29489	114	Compliance with other laws	If the SEIS process continues, include the following information. The description of the No Action alternative should indicate that implementation of the No Action alternative would conflict with ANILCA and the statehood act for the aforementioned reasons. It is common for EISs to disclose that selection of the No Action alternative would conflict with a statute or some other directive.	See responses to letter 23310, comment 1 and letter 31764, comment 2.
29489	115	Decision process - general	If the SEIS process continues, include the following information required under CEQ regulations. SEIS Chapter 2, Alternatives, is seriously deficient due to its failure to comply with CEQ's 40 CFR 1502.14. This section requires that the alternatives section of an EIS present the environmental impacts of the proposed action and the alternatives in comparative form based on the information and analysis presented in the sections on the affected environment and the environmental consequences. The SEIS does not provide this comparison in Chapter 2. As CEQ has frequently stated, the alternatives section is the heart of the EIS. The section needs to include this comparative analysis so that it meets the test of sharply defining the issues for the decision maker and the public and providing a clear basis for the subsequent choice among alternatives.	The Supplemental EIS was prepared in accordance with BLM policies and procedures as well as the CEQ implementing regulations for NEPA (40 CFR 1500-1508). The BLM has considered and evaluated a range of alternatives; see Appendix G, Alternatives Development Memo which details the alternatives considered and the rationale for which alternatives were considered reasonable alternatives to be studied in detail.
29489	116	Alternatives	If the SEIS process continues, the SEIS should be revised to focus on what needs supplementing, and the BLM must account for the Army Corps of Engineers' approval of Alternative A as the least environmentally damaging practicable alternative (LEDPA) under Clean Water Act Section 404(b)(1). Again, there was no reason to revisit the development of alternatives. BLM's motion for voluntary remand did not indicate that	See responses to letter 58, comment 3 and letter 31764, comment 1.

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			the EIS’s alternatives development process was flawed. As a result of revisiting them, the comparison of alternatives between the FEIS and SEIS has become very confused. Both EISs have the three action alternatives but differ on how they implement the condensing of the three construction phases. It appears that the SEIS has changed the condensing approach from a mitigation measure in the FEIS to a possible requirement in the ROD for the SEIS. The decision on the latter approach cannot be deferred to the ROD. Because such a requirement would affect and alter the potential impacts of each of the original three action alternatives, it would expand the action alternatives from three to six. Otherwise, it is not possible for the public to understand the impact differences between them and more importantly for the decision-maker to consider and weigh these differences. Consequently, it is either too late in the EIS process to now insert such a requirement or the DSEIS needs to be reissued to fully assess and describe the impacts resulting from amending the original three action alternatives. Adding to the confusion regarding the action alternatives is the non-disclosure by the SEIS that the Army Corps has approved a permit for Alternative A to include phase 1 and 2. This is clearly the Army Corps preferred alternative and needs to be reflected in the SEIS. Additionally, how the Army Corps permit approval affects the feasibility of the other two action alternatives, including the three phases, is not explained leaving the public with no understanding of the decision before the BLM decisionmaker.	
29489	117	Alternatives	If the SEIS process continues, the SEIS should be revised to correct the following discrepancy. The FEIS stated that The BLM determined that condensing Phases 1 and 2 would be reasonable as a potential mitigation measure that would apply to any of the 3 action alternatives (i.e., not a separate alternative), but condensing all 3 phases would not. By making the phasing option a possible requirement for each of the DSEIS three action alternatives, BLM has expanded the action alternatives from three to six. Consequently, each action alternative should be fully and equally analyzed, and they are not. Consequently, the decision making cannot consider in the ROD the detailed impacts associated with 50% of the action alternatives.	The Supplemental EIS analyzes impacts from the 3-phase construction approach as well as impacts from the combined phasing approach for all resources in the Supplemental EIS.
29489	118	Alternatives	If the SEIS process continues, the BLM needs to explain how they can select an alternative other than the Army Corps LEDPA (Alternative A) and the SEIS should include a section on the LEDPA and the Army Corps issuance of the Department of Army permit in August 2020. The Army Corps issued the Department of Army permit for the project in August 2020. After evaluating a reasonable range of alternatives under NEPA and practicable alternatives under Clean Water Act Section 404(b)(1) Guidelines, the Army Corps determined the Least Environmentally Damaging Practicable Alternative (LEDPA) to be Alternative A. Under Section 404(b)(1), the Army Corps is required to issue the permit for the alternative that is the LEDPA, which not only accounts for impacts to waters of the United States, but for impacts to all non-aquatic resources. BLM retained Alternative A in the SEIS, and nowhere in the SEIS is it stated that the Corps determined the LEDPA to be Alternative A and that the Army Corps issued a Department of Army permit for Alternative A in August 2020 (even though the SEIS cites the permit conditions throughout the SEIS). The Department of Army permit issued for the project is still valid and in place to this day, and nowhere in the SEIS is it explained that the LEDPA would change with the supplemental information in the SEIS. The BLM needs to explain how they can select an alternative other than the Army Corps LEDPA (Alternative A). In addition, the SEIS should have stated that as a cooperating agency, the Army Corps has identified its preferred alternative.	See responses to letter 58, comment 3 and letter 31764, comment 1.
29489	119	Alternatives	If the SEIS process continues, the SEIS should include a standalone Alternative A variant that matches the Army Corps preferred alternative in the Department of Army permit that they issued in August 2020, as this would be considered a reasonable alternative to evaluate. The permit authorized Alternative A (under Phase I and Phase II construction only). In addition, the permit requires that the road be built straight to Phase II in sensitive permafrost and emergent wetland areas, which is estimated to be over half of the road length.	See responses to letter 32724, comments 214 and 254. The Supplemental EIS analyzes all 3 phases of the proposed road and all identified associated facilities.
29489	120	Compliance with other laws	If the SEIS process continues, include the following information required under CEQ regulations. The comparison of alternatives should be the alternatives chapter - SEIS Chapter 2. Section 1502.14 of the CEQ Regulations states that, The alternatives section is the heart of the environmental impact statement” Accordingly, CEQ further states that The alternatives section should present the reasonably foreseeable environmental impacts of the proposed action and the alternatives in comparative form based on the information and analysis presented in the sections on the affected environment (§ 1502.15) and environmental consequences (§ 1502.16).	In accordance with the CEQ NEPA implementing regulations at 40 CFR 1502.14, the BLM has explored and evaluated all reasonable alternatives for this project and discussed reasons why other alternatives were determined not reasonable. Based on the purpose and need for the project, the BLM identified potential alternatives from a number of sources and evaluated alternatives through an iterative process. For details on the alternatives examined and the reasons some were not carried forward for detailed analysis, see Supplemental EIS Appendix G.
29489	121	Decision process - general	Climate Change-related Challenges. 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 affect the reliability and practicability of a winter construction access trail, which is common to all features of the action alternatives. If the SEIS process continues, BLM should remove this language from the SEIS because projects have been designed for decades in Alaska by taking into account the changing nature of permafrost. Design solutions exist that address this. The SEIS is inappropriately trying to call into question the constructability and feasibility of the proposed action.	Climate change effects and how they affect underlying conditions in the project area are discussed throughout the Supplemental EIS (see for example Section 3.2.7, Affected Environment and Climate). The text has been reviewed and is accurate as written.
29489	122	Proposed action	Uncertain Project Features. 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 squarefoot costs with contingencies can cover many situations, if ground or river conditions don’t follow forecasted path, there could be a greater need for engineering solutions and more frequent maintenance. Permafrost is a very unstable and challenging environment that presents constructability and decommissioning issues. If the SEIS process continues, BLM should remove this language from the SEIS because most EISs are based on conceptual plans. Naturally, an action proponent does not develop detailed engineering design until after	According to 40 CFR 1502.22, when an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an EIS and there is incomplete or unavailable information, the agency will make clear that such information is lacking. A number of topics are called out within Chapter 3 of the Supplemental EIS where information is incomplete or unavailable. The BLM evaluated the data to determine if any missing information would be relevant to determining reasonably foreseeable significant adverse impacts or essential to making a reasoned choice among alternatives and, if it was, whether the overall costs of obtaining it would not be exorbitant (see Appendix R). Where information was relevant and essential, and the costs were not exorbitant, that information was collected (e.g., wetland delineation, updated

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			project approval. Therefore, this type of uncertainty is normal. The SEIS is inappropriately trying to call into question the constructability and feasibility of the proposed action. Note that BLM only has authority to require financial assurance and specific type (if it does have this authority) on one type of land - Federal. BLM has no authority to speak for the State of Alaska (owns 61% of land) private landowners, or the Borough, etc.	engineering for Alternative C, economic analysis). As required by 40 CFR 1502.22, the Supplemental 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. The BLM has evaluated the impacts in the Supplemental EIS based upon research methods and theoretical approaches that are accepted in the scientific community. Based on a review of the data that are available, summarized, and cited in the Supplemental EIS and in accompanying appendices, sufficient data exists to allow the BLM to make a reasoned choice among the alternatives. If the project moves forward, additional studies and information would be generated during permitting. Some potential mitigation measures identified in Appendix N have provisions for data collection and monitoring.
29489	123	Fish and aquatics	If the SEIS process continues, the SEIS should be revised to provide the full context on Yukon salmon populations. The SEIS fails to provide the full context of salmon returns in the Salmon Declines section (SEIS pg. 3-87 to 3-88): a. Jallen et al. (2022) Report (Yukon River Salmon Stock Status and Salmon Fisheries, 2022: A Report to the Alaska Board of Fisheries, January 2023) -- This report cited on SEIS page 3-87 is the most recent Alaska State status report on salmon stocks in the Yukon that is referenced in the SEIS. While the report documents very recent declines (2020/2021) to Yukon summer chum, fall chum, and coho, the SEIS fails to state that the status report shows that these declines stopped in 2022 and that there was an uptick in the numbers of these three stocks in 2022 (see Tables 6, 7, and 9, and Figures 11, 16, and 20 in Jallen et al. 2022), and that the Outlook sections of the report for these species indicate that there is potential to have surplus for subsistence harvest if the trend continues based on the age-4 fish returns. For coho specifically, the report states that the species “are currently in a cycle of low abundance” and that they are “expected to be below average.” Overall, there was no recommendation for a Stock of Concern designation for Yukon chum or coho salmon (see Stock of Concern Recommendation section on page 3 of Jallen et al. 2022). The Final SEIS needs to include this additional information to provide a more comprehensive look at the salmon return numbers. AIDEA also notes that after publication of the SEIS the Alaska Department of Fish and Game released an Advisory Announcement (https://adfg.alaska.gov/static/applications/dcfnewsrelease/1548184795.pdf) on preliminary 2023 Yukon River salmon counts which shows that chum salmon numbers continue to increase on top of the 2022 gains (see Figure 4 in the Advisory Announcement) and chinook numbers have begun an increase over the 2022 low (see Figure 3 in the Advisory Announcement). Some subsistence closures for chum salmon were opened. Please update the Final SEIS to reflect this most current information on Yukon salmon counts and their increase in numbers over previous years. In addition, any new Yukon salmon count information that is released between the close of the SEIS comment period and issuance of the Final SEIS should be included in the Final SEIS.	While it might be acceptable to add a sentence noting the results of 2022 escapement numbers represent an uptick over the previous year, the overall results are dramatically lower than previous 5-, 10-, and 20-year average returns. The commentor is discussing only 1 year (2022) as evidence that a stock has recovered. Any given year-class may show recovery or decline. The full breadth of evidence in recent years suggests that salmon stocks are down overall, across many interior drainages, at least for chum and Chinook salmon. It would require more than 1 year of data to suggest that the storyline is reversed. The commentor noted a statement about the potential for increased subsistence take “should the trend continue”, meaning that increased returns of chum and coho are observed. It is important to note that 1 year of data does not represent a trend. It would not be appropriate to speculate on the potential for increased subsistence take in subsequent years as a result of the 2022 (or 2023) returns.
29489	124	Fish and aquatics	b. AIDEA disagrees with the use of the term “dwindle” in the third paragraph of the section (SEIS page 3-87) regarding salmon populations. First, the term is not used in the Oke et al. 2020 study that is cited for the sentence; the study also looked at Pacific salmon across Alaska (not just Yukon salmon). Second, despite the documented decline of chinook in the Yukon, and more recently, chum and coho salmon in 2020/2021, the SEIS fails to note that none of these species are federally listed as threatened, endangered, candidate, or proposed, and none are currently petitioned to be listed as threatened or endangered (https://www.fisheries.noaa.gov/species-directory/threatened-endangered). Further, the State of Alaska has not listed any of these species as State Endangered (note that Alaska does not have a Threatened designation) (https://www.adfg.alaska.gov/index.cfm?adfg=specialstatus.akendangered); and chinook, chum, and coho are not listed as “at-risk” species in Alaska’s most recent Wildlife Action Plan (https://www.adfg.alaska.gov/static/species/wildlife_action_plan/2015_alaska_wildlife_action_plan.pdf). In addition, the only Alaska designated Stock of Concern in the Yukon is the chinook, designated as “Yield of Concern”, as correctly stated in the SEIS. However, the SEIS fails to note that this is the lowest category of concern for managing fisheries in Alaska (Management Concern and Conservation Concern are more severe designations). Neither chum or coho in the Yukon River are designated as a Stock of Concern by the State and nor were they recommended to be designated in the most recent report to the Alaska Board of Fisheries, despite the recent declines in 2020/2021 (Jaffe et al. 2022). The lack of designation of these species under federal and state endangered species statutes and regulations, as well as under fisheries management regulations, should be clearly stated (in the EIS) at the end of the section where BLM sensitive and BLM watchlist fish are mentioned. Without this additional regulatory information and context for these salmon, a reader may incorrectly conclude that the Yukon salmon declines described are equivalent to species that are in peril.	“Dwindle” has been replaced in the text as requested by the commenter. Text has been added explaining the hierarchy of stock of concern classes. A section has been added for the Supplemental EIS (Section 3.3.2, Fish and Aquatics - Special Status Species) which includes discussion on BLM Watchlist species and Alaska Stocks of Concern. This new section also includes a discussion on the recently submitted petition from the Wild Fish Conservancy to NOAA seeking a listing for Alaska Chinook salmon as threatened or endangered under the ESA.
29489	125	Fish and aquatics	c. AIDEA suggests retitling the section Current Status of Yukon Salmon instead of Salmon Declines. Again, in light of comments above on this section, a reader may incorrectly conclude that Yukon salmon are in peril.	Yukon salmon (Chinook and chum) have been experiencing a trending decline for many years and the Supplemental EIS discussion reflects this. Further declines in this salmon population will likely have substantial effects on the regional human population and resulting impacts to other fish species (e.g., sheefish). As such, the subsection title has not been changed for the Supplemental EIS.
29489	126	Fish and aquatics	If the SEIS process continues, the SEIS should be revised to include relevant information that was in the FEIS regarding fish bearing stream crossings. The Final EIS stated “Alternative C would cross approximately 6 times more streams known or assumed to be habitat for anadromous fish, such as salmon, than would Alternatives A or B (270, versus 40 and 43 for Alternatives A and B) and would therefore have more potential for impact.” (FEIS page 2-22). The Fish impact summary in SEIS Appendix C, Section 1.5.11, Aquatics and Fish, does not compare the number of	The suggested statement of impacts has been reinserted for the Supplemental EIS in Appendix C, Section 1.5.11. Appendix C, Section 1.5.1, Approach to Summarizing Impacts to the Alternatives, includes a description and definition of how likelihood, magnitude, duration, and extent are used in the summary of impacts. As with other resource impact summaries, the likelihood, magnitude,

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			anadromous fish bearing stream crossings between the Alternatives; the following text was in the FEIS (Section 2.5.10, Fish and Amphibians) but removed in the SEIS. “Alternative C would cross approximately 6 times more streams known or assumed to be habitat for anadromous fish, such as salmon, than would Alternatives A or B (270, versus 40 and 43 for Alternatives A and B) and would therefore have more potential for impact.” (FEIS page 2-22). As one of the most important metrics in assessing the impacts to fish and their habitats due to the direct nature of the impacts, the number of fish-bearing stream crossings for each alternative needs to be added back into the EIS impact summary section to give the reader a clear indication that Alternative C would have substantially more impact on fish resources than Alternatives A or B. While one could ascertain this information from SEIS Appendix E, Table 16, it is important to clearly disclose the actual number of fishbearing stream crossings for each alternative in the resource section (SEIS 3.3.2, Fish and Aquatics, does not include this data) and the impact summary section (which the SEIS does not, but FEIS did). Further, the Fish impact summary in SEIS Appendix C, Section 1.5.11, Aquatics and Fish, provides single conclusions of the anticipated impacts likelihood of occurrence, magnitude, duration, and geographic extent, which presumably means that it applies to all three action alternatives (i.e., Large Magnitude for all). However, given Alternative C’s substantially higher potential for impact on fish and fish habitat, is there no possible difference in the magnitude of impact on fish populations compared to Alternatives A and B? Why isn’t there a different impact statement on the likelihood of occurrence, magnitude, duration, and geographic extent stated for each alternative so the reader can easily understand the difference between the alternatives? If these impacts are exactly the same across all alternatives, then that needs to be clearly stated and explained. In addition, any changes that are made to the fish impact assessment in SEIS 3.3.2, Aquatics and Fish, needs to be reflected in the Final SEIS Subsistence section.	duration, and extent are used to describe impacts to the resource across all action alternatives. Supplemental EIS Appendix C, Chapter 2, Alternatives Tables and Supplemental Information, Section 1.5.11, Fish and Aquatics, summarizes the anticipated impacts the alternatives would have on fish and aquatics; other sections in this appendix summarize the impacts to other resources (e.g., wildlife habitat, wetlands, subsistence). Section 1.5.11 includes metrics comparing the action alternatives.
29489	127	Transportation and access	If the SEIS process continues, the SEIS should be revised to clarify the following. BLM concludes that “some trespass may occur” but that “Potential for trespass by unauthorized users would be low beyond the staffed gate near the Dalton Highway”. (Page 3-171) However, under the Public and Non-Industrial Access section, BLM states that assuming public access is obtained after closure of mines or significant reductions in mining activity, the road would provide direct access to GAAR, which is currently not accessible by road, and public access could result in “significant traffic increases due to tourists who wish to visit GAAR via the road. Commercial vehicle use bringing tourists to GAAR is a reasonable foreseeable use of the road.” (page 3-172) Whether or not significant traffic increases would occur would not be an impact or a result of AIDEA’s operation of the road but would be totally within the control of BLM and NPS. On page 3-165, BLM states, “Federal statute and regulations provide that BLM and NPS determine the scope of allowable access through the terms and conditions of any ROW authorizations they may issue; AIDEA would have no independent discretion or permit authority if issued a ROW.”	Supplemental EIS Section 2.4.3, Features Common to All Action Alternatives-Operations, describes the actions proposed by AIDEA to restrict access to the road. Appendix H, Section 2.2, Road Access Scenarios, discusses commercial access for communities, non-industrial access, and trespass. The access scenarios presented in Supplemental EIS, Appendix H Indirect and Cumulative Scenarios are based on assumptions as described in the appendix in order to analyze the potential effects of reasonably foreseeable actions. Should the project be approved, the ROW issued by the BLM would be for industrial use only.
29489	128	Mammals	and there has been increased use of northern wintering areas in the years since the Final EIS was published in 2020. If the SEIS process continues, the SEIS should be revised to substantiate the claim and provide citation, as this is new information on caribou seasonal distribution that was not in Final EIS (new to SEIS).	The change in wintering areas in recent years is described in the Supplemental EIS.
29489	129	Mammals	If the SEIS process continues, the SEIS should be revised to include the following information on caribou collar data. CEQ’s § 1502.23 Methodology and scientific accuracy requires that agencies ensure the professional integrity, including scientific integrity, of the discussions and analyses in environmental documents. Agencies need to use reliable existing data and resources. For example, this section should include recent WAH caribou collar data found here (https://www.adfg.alaska.gov/static/home/library/pdfs/wildlife/caribou_trails/caribou_trails_2023.pdf) on page 5. As shown, recent winter collar data (2018-2022) indicates that the bulk of the WAH herd stays in or north of the Brooks Range and does not cross the range into the area of the proposed project. This is certainly one reason why subsistence communities south of the Brooks Range in the project area are not encountering as many caribou than in years past.	The change in wintering areas in recent years is described in Section 3.3.4 of the Supplemental EIS and mapped (Maps 3.23 and 3-23b).
29489	130	Mammals	If the SEIS process continues, the following inconsistency should be rectified. Blocking or Delaying Caribou Movement Across the Road: The SEIS indicates that the project’s potential effect of blocking or delaying caribou migration is important (SEIS page 3-137 text). In addition, the SEIS states that subsistence users have noticed changes to caribou habitats and migrations following roads and pipelines (SEIS page 3-211 and 3-215). However, the SEIS does not note if the claims on SEIS pages 3-211 and 3-215 are substantiated by other data such as herd censuses and locations. The SEIS point that the WAH and RMH could have impacts because they have had less exposure to development than the Central Arctic Herd (CA H) and Teshekpuk (TCH) herds (SEIS page 3-215) indicates the CAH and TCH have habituated to development (in contrast to the subsistence users quote from SEIS page 3-211). This inconsistency should be rectified in the EIS, and the EIS should acknowledge that caribou can habituate to development (Haskell and Ballard 2008).	Section 3.3.4 of the Supplemental EIS includes a discussion of relevant literature on the impact of roads on caribou movements. It is difficult to corroborate claims on specific changes in caribou movements, especially ones that occurred prior to the use of large numbers of radio-collar collars. Text on habituation was added. There is strong evidence from Alaska herds that caribou do not habituate to roads and traffic during calving but there is little scientific consensus for whether or not habituation to development occurs during other seasons.
29489	131	Mammals	If the SEIS process continues, include the following information. Blocking or Delaying Caribou Movement Across the Road: The Western Arctic Caribou Herd (WAH) is the primary caribou population of concern regarding potential impedance of movements and migration by the Ambler Road. It is important to note that the project will impact only a portion of the WAH migratory range (see cited text on SEIS page 3-128). This indicates that the number of road miles of migratory range impacted would be approximately: Alternative A which is 211 miles x 0.5 = 105.5 miles (170 km); Alternative B which is 228 miles x 0.5 = 114.0 miles (184 km); and Alternative C which is 332 miles x 0.333 = 110.7 miles (179 km). These distances are approximately twice as long as the length of the Red Dog Mine Road (49.6 miles) for which Wilson et al. (2016) quantified WAH caribou crossing during the fall migration. Wilson et al. (2016) found that 12.5% (4/32) caribou never crossed the road, and 29% (8/28) of the caribou that crossed were delayed and took approximately ten times as long (33 days) to cross the road as 71% (20/28) of the caribou that crossed normally (3 days). Wilson et al. (2016) extrapolated this rate of delayed crossing to the entire WAH and estimated 70,000 caribou could be delayed crossing a road.	The fact that other herds successfully cross roads annually to reach seasonal ranges is discussed in Section 3.3.4 of the Supplemental EIS.

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			The Red Dog Mine Road has generally similar traffic rates (98 vehicles/day, 4/hour) as the proposed Ambler Road (80 to 168 vehicles/day), and similar width (36 feet Red Dog Road; 32 feet Ambler Road) without vertical structures (e.g., fences, power lines, pipelines) as the proposed Ambler Road. Therefore, some delay of caribou crossing the proposed Ambler Road can be expected, although other factors influence road crossing (e.g., snow depth, insect harassment, habituation, Wilson et al. 2016). However, the SEIS and other sources note that other caribou herds regularly cross roads (including public access roads and roads with elevated above-ground pipelines) during migrations including the Dalton highway, the Trans-Alaska Pipeline (TAPS 2001), several roads in the range of the Nelchina and Forty-mile caribou herds, and the Dempster Highway in the Yukon Territory, Canada over which the Porcupine Caribou Herd crosses (and are hunted) in some years (Deuling 2015, Scott 2019). Caribou also regularly cross roads with adjacent elevated pipelines in the North Slope Alaska oil fields during the summer (i.e., not during migrations, Cronin et al. 1994, Lawhead et al. 2006). The TAPS has a little-known data set documenting occurrences of wildlife, including caribou, in the pipeline and service road right of way (TAPS 2001 pages 3.2-36 to 3.2-38). Also, Lenora (2020) provides data obtained from ground surveys of caribou occurrence close to the Dalton Highway on Alaska’s North Slope. The data cited in this comment provide insights into wildlife/caribou use of transportation corridors that should be considered in the SEIS.	
29489	132	Mammals	If the SEIS process continues, include the following information. Displacement and Disturbance: Caribou can be disturbed and displaced from habitats near roads and facilities. As stated in the SEIS on Page 3-128, the proposed project would impact winter ranges and peripheral ranges. The SEIS also describes displacement of caribou from roads, development, and human activity where it has been studied extensively in the North Slope Alaska oilfields and TAPS (SEIS Page 3-136). This description of displacement is inadequate and does not cite relevant literature. Although the literature on caribou and oil fields and road disturbance is very large, additional important papers should be cited and described in the SEIS. Most important are the claims of displacement from roads during calving (Dau and Cameron 1986, Cameron et al. 1992, Johnson et al. 2020) and post-calving (Johnson et al. 2020). These papers show displacement of calving caribou as described in the SEIS, but a paper showing different results is not cited in the SEIS (Noel et al. 2004), as well as responses to it (Joly et al. 2006, Noel et al. 2006). Noel et al. (2004) replicated a study in the Alaska North Slope Milne Point oil field (Dau and Cameron 1986, Cameron et al. 1992) and showed that displacement of calving caribou was only significant (p < 0.05) 1 km (0.62 miles) from the road and not significant > 1 km from the road for six years; and was not significant in the following 11 years. This supports a hypothesis of caribou habituation to an oil field road. This is in contrast to the findings of displacement during calving as far as 5 km from roads (Johnson et al. 2020, Dau and Cameron 1986, Cameron et al. 1992). There are several considerations of these data and the Final SEIS should incorporate information from Joly et al. (2006) and Noel et al. (2004, 2006) for a full understanding. Regardless, the claim in the SEIS that displacement during calving is several kilometers needs to be reassessed with this additional literature. Johnson et al.’s (2020) claim of displacement during post-calving periods also needs reassessment in the SEIS. Other studies (Cronin et al. 1998, Noel et al. 1998, Pollard et al. 1996, Prichard et al. 2020a, 2022) did not find displacement during the post-calving period in contrast to Johnson et al. (2020). Cronin (2020) describes deficiencies with Johnson et al.’s (2020) analysis and their inappropriate criticism of Noel et al. (2004) and Cronin et al. (1998). This is an important issue with regard to accurately reporting scientific information in the EIS so ALDEA is attaching a lengthy excerpt from Cronin (2020).	See response to letter 29489, comment 64.
29489	133	Mammals	If the SEIS process continues, include the following information regarding changes in caribou population numbers. Caribou Population/Herd Numbers: As indicated in the SEIS (page 3-137 and 3-126), caribou herd numbers can increase and decrease over time and for different reasons. The SEIS discusses other caribou herds in Alaska, including the CAH and TCH, and BLM should include information on the fluctuations in these herds’ populations for additional context on fluctuations in caribou numbers in Alaska. For example, the CAH and TCH have had variable numbers since the North Slope oil fields were established (see attached Figure 1 and Figure 2 after table). Note that the small decline in CAH in the early 1990s was attributed partially to oil field impacts on calf production (National Academies of Science, Engineering, and Medicine 2003, but see Cronin et al. 1997, 2000) but the TCH, without oil fields in its range, had a similar decline in the same time period, and the CAH subsequently grew substantially (see attached Figures 1 and 2). Immigration and emigration, now known to affect the Arctic Alaska caribou herd numbers considerably (Cronin et al. 1997, Prichard et al. 2020b), is a more likely explanation for changes in caribou numbers. Multiple hypotheses should be considered (Betini et al. 2017) when considering the causes of changes in caribou population numbers, and this should be acknowledged in the EIS. The speculation or hypothesis by the National Academies of Science, Engineering, and Medicine (2003) that the oil fields impacted the CAH herd numbers is not supported by all of the available data.	Text stating that the Central Arctic Herd increased in size after oil development occurred was added although this occurred on the summer range not the winter range and does not mean that there were not negative impacts from development. A comparison of the population growth between the Central Arctic Herd and the TH has limited use for comparisons between alternatives because many different factors varied between these herds.
29489	134	Mammals	If the SEIS process continues, the SEIS should be revised to meet Department of Interiors policy on information use and analysis. Integrity of Scientific and Scholarly Activities: The Department of the Interior (DOI) has a policy on integrity of science (DOI 2023): “Science and scholarship play a vital role in the Department’s mission, providing one of several critical inputs to decision-making on conservation and responsible development of natural resources, preservation of cultural resources, and responsibilities to tribal communities. Scientific information considered in Departmental decision-making must be robust, of the highest quality, and the result of as rigorous a set of scientific processes as can be achieved. Most importantly, the information must be trustworthy. The purpose of the policy is to establish the expectations for how scientific and scholarly information considered in Departmental decision making is handled and used. Scholarly information considered in Departmental decision making must be robust, of the highest quality, and the result of as rigorous scientific and scholarly processes as can be achieved. Most importantly, it must be trustworthy. This policy helps us to achieve that standard. The goals of the policy are to ensure that DOI: Decisions are based on science and scholarship are respected as credible; Science is conducted with integrity and excellence; Has a culture of scientific and scholarly integrity that is enduring; Scientists and scholars are widely recognized for excellence; and Employees are proud to uphold the high standards & lead by example.” In the SEIS, omission of	See response to letter 29489, comment 64.

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			information and citations (e.g., Noel et al. 2004, 2006) and uncritical use of others (e.g., Johnson et al. 2020) on caribou impacts as described above under the Displacement and Disturbance (Comment #34) comment appear to deviate from the robust science practices required by the DOI policy. AIDEA acknowledges the literature on caribou and other wildlife impact issues is voluminous, but the DOI policy (and general scientific practice) requires thorough consideration of relevant science, and the information and analysis in the EIS should reflect this policy.	
29489	135	Mammals	If the SEIS process continues, the SEIS should be revised to include a clear conclusion regarding WAH caribou impacts, and show if there is a sufficient difference in impact among the action alternatives.	The three alternatives will have similar types of potential impacts on caribou but differ in the location where these potential impacts will occur based on the different proposed road routes. Multiple metrics for comparing these potential impacts among alternatives are given in the tables and include the crossing rate of collared caribou (Appendix E, Table 24), the miles within areas sued for winter range in different years (Appendix E, Table 23), and the proportion of the winter range within different distances of the road corridors (Appendix E, Table 22).
29489	136	Mammals	The summary of caribou impacts across alternatives does not capture all of the information and data provided in the detailed analysis in SEIS Chapter 3.3.4. First, the summary of WAH caribou habitat impact does not include the acres of impact to wintering habitat for the three action alternatives. This is a key piece of information to include in the summary since SEIS Chapter 3.3.4 (page 3-133) states that loss of winter habitat would be more detrimental than loss of migratory and peripheral habitat. This is reiterated in the SEIS Subsistence section on page 3-219 and 3-232 to 3-233, with the added information that it is primarily due to the presence of lichens in wintering habitat. Alternative C has 487 acres more wintering habitat compared to Alternatives A and B, an important point to highlight given that the reduction of lichen-dominated vegetation types would result in disproportionately greater impacts on WAH than the reduction of other vegetation types because of the importance of lichen as a food source in wintering habitat (as stated in SEIS Appendix L, Section 6.4.1, page L-176).	Results of tables for Section 3.3.4 will be referenced in the text. The direct habitat loss due to gravel placement is not a primary determinant of impacts to caribou because the number of acres lost to gravel placement is small relative to the winter range of the WAH and the amount of area where indirect impacts may occur. The Supplemental EIS quantifies the amount of WAH winter range within different distances of the alternatives (Appendix E, Table 22) and the length of proposed roads within area that were used for winter range in different number of years (Appendix E, Table 23).
29489	137	Mammals	Second, beyond WAH habitat impacts, there are several other quantified WAH caribou impacts or data points added to the SEIS across the action alternatives, including snow depth and lichen cover (SEIS Appendix E, Table 21), percent of winter distribution of WAH herd within 3.1 miles and 30 miles for road alignment (SEIS Appendix E, Table 22), miles of road in areas used for winter range (SEIS Appendix E, Table 23), and percent of collared caribou crossing the action alternatives (SEIS Appendix E, Table 24). While this information provides additional metrics related to caribou, it is difficult for a decisionmaker or member of the public to understand, and there is no conclusion on what it all means across the action alternatives and if this information is providing the decisionmaker with a clear comparison between all action alternatives. In addition, the SEIS states that displacement and road crossing issues are unknown. In the absence of summarizing what all of this data means holistically across the action alternatives, the decisionmaker cannot make a reasoned choice among the action alternatives. What is clear in the SEIS is that from a habitat perspective, Alternative C is the most detrimental to WAH caribou due to the greater loss of wintering habitat compared to Alternative A and B. If that is the single most important and determining impact to compare across the action alternatives, that needs to be clearly stated in the EIS. Overall, a clear conclusion regarding WAH caribou needs to be included in the EIS, and if there is a sufficient difference in impact among the action alternatives, there needs to be a clear statement of the likelihood, magnitude, duration, and extent of impacts for each action alternative.	A map of lichen top cover based on remote sensing data (Macander et al. 2022) has been added to the Supplemental EIS. Additional text on comparisons among alternatives was added.
29489	138	Mammals	Population-level effects to caribou are less likely but could be large-magnitude effects and impact all subsistence harvesters throughout the annual range of the herd. If the SEIS process continues, the SEIS should be revised to clarify this statement. If population-level effects to caribou are unlikely, then how could the effects be large-magnitude? What would make the effects to caribou large-magnitude as a biological resource (not as a subsistence resource)?	This statement is saying that the magnitude, or severity, of impacts on subsistence users could be large, even though population-level impacts to caribou may not occur. Appendix L provides additional details on how changes in caribou access, availability, and abundance can affect subsistence users.
29489	139	Subsistence	If the SEIS process continues, the SEIS should be revised to include the following. In the SEIS Downstream Subsistence Uses of Fish section where the discussion of salmon population declines is discussed (beginning in the last paragraph on page 3-212 and ending on page 3-213), AIDEA submits the same comment submitted on the Salmon Declines section (SEIS pg. 3-87 to 3-88) (see comment #27) to ensure any changes are consistence between the two sections. In addition, please provide a citation for the following sentence regarding Yukon chinook on SEIS page 3-213. This listing is likely to change to a stock of management concern or stock of conservation concern as the Chinook populations have continued to decline since publication of the Final EIS. It is not clear where this statement came from.	Deleted this sentence, as the most recent recommendation from ADF&G in 2023 was to maintain status of Yukon River Chinook as a stock of yield concern.
29489	140	Subsistence	If the SEIS process continues, the SEIS should be revised to correct the following error on crossing structures and to clearly state Alternative C's impact on fish compared to the other action alternatives. SEIS Section 3.4.7, Subsistence Uses and Resources (page 3-233) and SEIS Appendix L Section 6.4.4 (page L-196) states the following -In addition, while Alternative C would cross more fish streams than Alternatives A and B, it would construct more bridges and fewer minor culverts, which are more likely to obstruct fish passage. This sentence is misleading and factually incorrect regarding crossing structures, and makes Alternative C seem less impactful on fish resources compared to Alternatives A and B. Perhaps it is simply a mistake. But based on the information presented in SEIS Appendix C, Table 1, there are substantially more minor culverts proposed under Alternative C (4,076) compared to Alternative A (2,864) and B (3,150). Further, when accounting for the total number of all culvert types (i.e., including those identified as moderate and major culverts), there are substantially more culverts under Alternative C (4,348) compared to Alternative A (2,883) and B (3,164). The reason there are more culverts under Alternative C is simply due to the fact that it is a much longer route compared to Alternative A and B, and therefore, greater incidence of stream crossings. This is also the reason Alternative C has more proposed bridges than Alternatives A and B. While bridges are typically significantly less impactful on surface waters and fish compared to culverts, they can still have impacts on the	Revised discussion of Alternative C to note the larger number of minor culverts compared to the other alternatives in addition to other differences which may increase the likelihood of impacts to waterways.

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			hydrology of the system and aquatic organisms (e.g., shading impacts, loss of riparian vegetation). So the total number of stream crossings, regardless of crossing structure type, is the most important metric, and given that Alternative C has substantially more culverts than Alternative A and B, it would generally have a commensurate increased impact on fish, fish habitat, and fish populations compared to Alternative A and B. AIDEA requests that the sentence be corrected for the factual error regarding culvert number and revised to clearly state that due to the number of stream crossings, Alternative C would have the greatest potential overall to affect fish resources, and therefore, subsistence use.	
29489	141	ANILCA 810 analysis	If the SEIS process continues, the 810 Evaluation should be revised to be consistent with the SEIS on the following. The requirement to use fish passage culverts is not clearly stated in the Section 810 Evaluation as it is in the SEIS. In fact, the term fish passage culvert is not mentioned anywhere in the Section 810 Evaluation. The SEIS clearly states that AIDEA has committed to installing fish passage culverts using stream simulation design in all fish-bearing streams crossed by the road (SEIS page 3-90), and that the Army Corps of Engineers permit requires AIDEA to install culverts that shall maintain fish passage by retaining the natural stream slope, meander, and water velocity and depth patterns similar to natural (undisturbed) stream reaches upstream and downstream of the culvert location (See SEIS Appendix N, Potential Mitigation, Section 3.5.3, measure #5 on page N-51). The State of Alaska also requires a permit for installing culverts to ensure that fish habitat is protected and provides free passage for all fish per the Anadromous Fish Act (16.05.871-.901) and Fish Passage Act (per AS 16.05.841). AIDEA's voluntary mitigation to install fish passage culverts and the federal and state permit requirements to install fish passable culverts significantly reduce the project's primary long-term impact on fish and their movement in the stream system, and thus, maintain the distribution and habitat available to fish throughout the system. The installation of culverts not designed for fish passage would have significant permanent and long-term impacts on fish distribution and abundance in the stream system, and therefore, significant impacts on fish abundance and availability for subsistence users. However, AIDEA installing fish passable culverts would maintain fish abundance and availability throughout the stream systems; this is not discussed anywhere in the Section 810 Evaluation. The Section 810 Evaluation only states that [t]he project proponent proposes to use stream simulation design principles that more replicate natural stream conditions, which will minimize but not eliminate impacts to waterways (SEIS Appendix M, page M-13), which completely omits the requirement for AIDEA to install fish passable culverts to ensure fish distribution and abundance is maintained, which in turn, avoids and significantly minimizes fish abundance and availability for subsistence users.	Appendix M, Section 810 Analysis, has been revised to reference relevant potential mitigation measures from Appendix N, including culvert design requirements to allow fish passage.
29489	142	ANILCA 810 analysis	If the SEIS process continues, the 810 Evaluation should be revised to correct the following error. The following sentence in Section B.2.2, Evaluation of the Availability of Other Lands, appears to be incorrect: Alternative A is the most economically feasible route and while it crosses more waterbodies requiring culverts or bridges, it has a smaller overall footprint than the other proposed routes [italics added]. Based on SEIS Appendix D, Table 17 (page D-12), Alternative A has the least number of culverts compared to Alternatives B and C. Alternative A also has less bridges than Alternative C and the same number of bridges as Alternative B. Overall, Alternative A has the least number of crossing structures compared to Alternatives B and C. AIDEA requests that this sentence be corrected.	Edited to correct inaccuracy regarding the number of culverts and bridges under Alternative A.
29489	143	Subsistence	If the SEIS process continues, the SEIS should be revised to ensure compliance with CEQ regulations. The SEIS impact analysis of the potential impacts of the road are contradictory, uncertain, and fail the CEQ's standard for scientific integrity. CEQ's regulations at 40 CFR Â§ 1502.23, Methodology and scientific accuracy, requires that agencies ensure the professional integrity, including scientific integrity, of the discussions and analyses in environmental documents. In terms of contradictions, the quoted SEIS text from Appendix M references major impacts while Section 2.5.13 states that The magnitude of resource availability and abundance impacts to fish, caribou, and other food sources is not as clear because of uncertainties about the populations in the area and whether and how they would react to a road and whether or not substantial spills ever occurred; magnitude of impact to wildlife could be small, medium, or large;	Unclear what sections the commenter is referring to. There is no Section 2.5.13 in the Supplemental EIS.
29489	144	Subsistence	Regarding scientific integrity, on page N-49 of the SEIS it states that However, some impacts are unknown. If major changes to caribou wintering grounds or migration patterns resulted after the road had been in place for several years, the impacts to subsistence communities avoided by the caribou could be substantial despite the mitigation measures. BLM cannot surmise a substantial impact based on unknown impacts.	While it is impossible to predict every impact that will occur as a result of the road, the BLM uses the best available information regarding the impacts of roads and mines on resource availability, abundance, and subsistence access to make reasonable determinations regarding the likelihood and magnitude of impacts.
29489	146	Mammals	In terms of the uncertainty of the road's impacts, the SEIS fails to apply and address the CEQ Regulations Section 1502.21 Incomplete or Unavailable Information. When there is relevant but incomplete information, the agency needs to obtain the missing information/analysis or explain why it cannot be obtained because the overall costs of obtaining it are unreasonable or the means to obtain it are not known. (1) A statement that such information is incomplete or unavailable; (2) A statement of the relevance of the incomplete or unavailable information to evaluating reasonably foreseeable significant adverse impacts on the human environment; (3) A summary of existing credible scientific evidence that is relevant to evaluating the reasonably foreseeable significant adverse impacts based upon theoretical approaches or research methods generally accepted in the scientific community. In the alternative, should BLM decide that it is able to remove the uncertainty and complete an analysis of the road's impacts, given the decision-making importance of these impacts, the SEIS should first be accordingly supplemented and made available for public review and comment.	There is an extensive literature review on caribou responses to infrastructure and the Supplemental EIS cites a large number of relevant studies. This literature points to a wide range in the magnitude of potential impacts from development because there are many factors influencing how caribou react to development and how those reactions translate to demographic impacts on the population.
29489	148	Cultural resources	If the SEIS process continues, the SEIS should be revised to address the following discrepancy. The Final EIS stated The APE for this project consists of a 1-mile buffer on each side of the project corridor and around all project components (See Appendix J, Attachment A). The corridor consists of a 250-foot wide, and, in some cases (e.g., water crossings, steep terrain), 400-foot-wide footprint. The 1-mile APE will encompass reasonably foreseeable direct,	See response to letter 29556, comment 35.

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			indirect, or cumulative adverse effects from the project. While some effects may be present beyond the APE in certain areas (e.g., the road may be visible for more than 1 mile away when viewed from higher ground), it is unlikely that the eligibility or significance of any historic properties would be changed; therefore, the effect would not be considered adverse. The major discrepancy between the SEIS and FEIS regards the size of the study area. The PA completed at the time of the FEIS ROD had a study area of 5 miles and an APE of a 1-mile buffer around the ROW. The SEIS now has a 10-mile study area, but from our reading does not state the APE. BLM states on page 3-161 that it is expanding the previous APE due to presumably more extensive impacts relating to visual, auditory, and olfactory but provides no explanation or cross references to where in the SEIS these more expansive or intensive impacts are described. The FEIS simply said that the road could be visible for more than a mile. The Cultural Resources section of the SEIS was also updated to include new and updated data sources and new field survey reports.	
29489	37a	Decision process - general	The SEIS fails to take into account the significant reforms implemented by the FRA. Any final EIS must conclude that the approval of AIDEA’s right-of-way across Alternative A would not constitute “major federal action.” The FRA NEPA reforms became law on June 3, 2023, months before the publication of the SEIS. Under these reforms the Ambler Road is not a “major federal action.” The FRA made these changes to NEPA that are not used or discussed in the SEIS: Amending NEPA to clarify and narrow agency considerations to “reasonably foreseeable environmental impacts of the proposed agency action.” Analysis limited to reasonably foreseeable environmental impacts: Clauses (C)(i) and (ii) limit a NEPA analysis to the “reasonably foreseeable environmental impacts of the proposed agency action,” rather than the universe of environmental impacts. The revision tracks the current definitions of “effects or impacts” and “reasonably foreseeable” in the CEQ regulations. 40 C.F.R. Section 1508.1(g), (aa). Alternatives must be reasonable: Rather than simply stating that a NEPA analysis must consider “alternatives to the proposed action,” new clause (C)(iii) requires agencies to consider “a reasonable range of alternatives to the proposed agency action.” The clause further specifies the alternatives considered must be “technically and economically feasible” and “meet the purpose and need of the proposal.” This change aligns with the 2020 revision to the definition of “reasonable alternatives” in the CEQ regulations implementing NEPA, 40 C.F.R. Â§ 1508.1(z), and previous court decisions, which generally held that agencies do not need to consider alternatives that could not realistically be implemented. New Section 111 redefines “major federal action.” The new statutory definition largely tracks the definition in the CEQ regulations, 40 C.F.R. Section 1508.1(q), but is more constrained than the current definition. At the outset, Section 111 states a “major federal action” is one “subject to substantial Federal control and responsibility,” and excludes the following actions or activities from the definition, among others (Sec. 111; 42 U.S.C. § 4336e; emphasis added): (i) a non-Federal action “(I) with no or minimal Federal funding; or (II) with no or minimal Federal involvement where a Federal agency cannot control the outcome of the project.” The traditional trigger for NEPA review has been whether a proposed activity is a “major federal action,” defined as “effects that may be major and which are potentially subject to Federal control and responsibility.” After June of 2023, under the FRA, the new definition is “an action that the agency carrying out such action determines is subject to substantial Federal control and responsibility” which new definition does not even contain the term “major” (Sec. 111(10)(A); 42 U.S.C. § 4336e). Now excluded from NEPA review are projects that receive “no or minimal Federal funding” or for those “with no or minimal Federal involvement where a Federal agency cannot control the outcome of the project” (Sec. 111(10)(B)(i); 42 U.S.C. § 4336e). (ii) funding assistance when the Federal agency lacks “compliance or enforcement responsibility” over the subsequent use of such funds; (Sec. 111(10)(B)(ii); 42 U.S.C. § 4336e) The Ambler Road, based on these reforms, is not a major federal action because it is not a project subject to a major federal role and responsibility. BLM owns one mile out of the 211-mile corridor. BLM only manages about 30 miles of the route and that will change when these lands that are selected are transferred to the State of Alaska. BLM has no responsibility with respect to the majority of the route that is on private or State land, none of which are federal public land as that term is defined in ANILCA. Additionally, the USACE after the 2023 U.S. Supreme Court decision in Sackett v. EPA, 598 U.S. __ (2023) no longer has federal wetlands jurisdiction along most of the road because the lands it crosses are permafrost. As is explained later in this letter and in an expert report (See Exhibit P, Three-Tier Alaska Report) permafrost lacks a continual surface connection to any federal waters. The entire area is made up of permafrost (See Exhibit Q, DOWL Permafrost map of road route).	See response to letter 29489, comment 36.
29489	37b	Decision process - general	The traditional trigger for NEPA review has been whether a proposed activity is a major federal action, defined as effects that may be major and which are potentially subject to Federal control and responsibility. After June of 2023, under the FRA, the new definition is “an action that the agency carrying out such action determines is subject to substantial Federal control and responsibility which new definition does not even contain the term major (Sec. 111(10)(A); 42 U.S.C. 4336e). Now excluded from NEPA review are projects that receive “no or minimal Federal funding” or for those “with no or minimal Federal involvement where a Federal agency cannot control the outcome of the project” (Sec. 111(10)(B)(i); 42 U.S.C. 4336e). (ii) funding assistance when the Federal agency lacks compliance or enforcement responsibility over the subsequent use of such	See response to letter 29489, comment 36.

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			funds; (Sec. 111(10)(B)(ii); 42 U.S.C. 4336e) The Ambler Road, based on these reforms, is not a major federal action because it is not a project subject to a major federal role and responsibility.	
29489	38b	Decision process - general	New Section 106 of NEPA further provides that the agency is not required to undertake new scientific or technical research unless it is essential to a reasoned choice among alternatives, and the overall costs and time frame of obtaining it are not unreasonable. Congress strengthened this regulatory requirement by amending the NEPA statute to state that [a]n agency is not required to prepare an environmental document with respect to a proposed agency action if the preparation of such document would clearly and fundamentally conflict with the requirements of another provision of law. FRA 106(a) (codified at 42 U.S.C. 4336(a)(3)). This statutory reform was effective in June of 2023, before this SEIS was issued, so the SEIS should have been issued in compliance with these statutory changes. The SEIS clearly appears not to have considered the new reforms. Therefore, BLM, by misguided attempts to comply with NEPA, has created a conflict with ANILCA. The Department is without discretion in creating access for the Ambler Road Project. The Secretarys decision to sua sponte direct further environmental review violated current regulation in 2021 and now violates the basic parameters of NEPA as amended by the FRA; it also exceeds the Courts Remand Order, which was narrower in scope.	See response to letter 29489, comment 36.
29497	1	Remand of Final EIS	In 2020, the BLM, National Park Service (NPS) and the U.S. Army Corps of Engineers (USACE) selected Alternative A as the preferred route through a joint record of decision (JROD) and those decisions still stand today. The alternative selected in the 2020 JROD was not subject to judicial review and was determined by USACE to be the alternative with the least environmental impact. Therefore, the inclusion of new additional alternatives is outside the BLMs scope of authority for the DSEIS. The submission of an entirely new DSEIS is also outside the BLMs scope of authority the document should only have covered the issues that were raised as part of the remand notice.	See response to letter 58, comment 3.
29497	3	Remand of Final EIS	In February 2022, the U.S. Department of the Interior requested the U.S. District Court for Alaska grant voluntary remand, stating that additional legal analysis had revealed deficiencies in the BLMs analysis of subsistence impacts under Alaska National Interest Lands Conservation Act (ANILCA) Section 810 and consultation with Tribes pursuant to Section 106 of the National Historic Preservation Act. Specifically, these are covered by the Declaration of Deputy Secretary of the Interior ECF No. 1130-1 of Feb 22, 2022 and are limited to: 1) Subsistence Use related to caribou forage vegetation, ref ANILCA 810; 2) Subsistence Use - related to water impacts on fish habitat, ref ANILCA 810; and 3) Cultural & Religious Properties- Consultation with Tribes in relation to the Programmatic Agreement, ref NHPA 106. The Court granted that request in May 2022, returning the matter to the BLM to correct the identified deficiencies. The supplemental analysis should only address deficiencies identified during the litigation process.	See response to letter 31764, comment 1.
29497	4	Remand of Final EIS	This broadened scope is inconsistent with the remand court ruling and ANILCA. BLMs authorities are limited to the Project components that occur on BLM-managed public lands. This new DSEIS goes beyond the scope of what the court ordered. When the federal agencies filed their motion for remand, the court advocated for a relatively narrow, targeted and timely remand process. The BLM must recognize that this process be expedited as dictated by the court ruling and should be consistent with ANILCA.	See response to letter 31764, comment 1.
29497	5	Remand of Final EIS	As previously outlined, many federal agencies are intimately familiar with the environmental analysis for the Project. They have spent years permitting the Project, during which time they offered multiple opportunities for public comment. The federal agencies produced an administrative record that consists of almost 200,000 pages submitted to the court. The federal agencies needlessly extended the timeframe for the remand process by including a scoping period, and they are significantly expanding the scope of the remand by significantly expanding the scope of the supplemental EIS and by including alternatives that have already been analyzed. This is inappropriate and contrary to the law. This DSEIS needs to be limited to the deficiencies identified by the Declaration of Deputy Secretary of the Interior ECF No. 1130-1 of Feb 22, 2022.	See responses to letter 58, comment 3 and letter 31764, comment 1.
29497	6	Remand of Final EIS	This new DSEIS totals 1,283 pages and four volumes and includes an analysis of: water resources, air quality and climate, vegetation and wetlands, fish and aquatics, birds, mammals, transportation and access, environmental justice, subsistence, and cultural resources. AAP DSEIS Vol. 1 Far beyond the scope of the items identified as needing supplemental information as per the remand. The voluntary remand that DOI submitted identified two issues to be addressed: subsistence uses in ANILCA and tribal consultation under the National Historic Preservation Act. However, the DSEIS included expanded and additional analyses on issues beyond the remand, including a new phasing option for the road. The scope of the DSEIS should be constrained to the two issues identified in the remand.	See response to letter 31764, comment 1.
29497	7	Remand of Final EIS	Route A was already selected by multiple cooperating government agencies based on fewer overall environmental impacts. This decision was not subject to judicial review. The Alternatives sections including the Phased Approach option need to be removed as this is outside the scope of the remand notice.	See response to letter 58, comment 3.
29497	8	Remand of Final EIS	BLM includes new additional alternatives in the DSEIS without sufficient explanation. In 2020, the BLM, National Park Service (NPS) and the U.S. Army Corps of Engineers (USACE) selected Alternative A as the preferred route and those decisions still stand today. The alternative selected in the 2020 JROD was not subject to judicial review and was determined by USACE to be the alternative with the least environmental impact. The inclusion of new additional alternatives is outside the BLMs scope of authority for the DSEIS.	See response to letter 58, comment 3.
29497	9	Land use/management	Although it is recognized that the No Action Alternative must be included in all NEPA documents, the BLM must not choose the No-Action Alternative. The BLM authority here is to grant a Right-of-Way across only the BLM lands the majority of which occur in the Pipeline Utility Corridor and are administered by the current Utility Corridor Land Use Management Plan EIS, where the Ambler Access Road (the current proposed AAP) is consistent with the current land use plan: The primary function of the Corridor is the transportation of energy resources (see 1-8). In fact, the document further recognizes that: This RMP	The BLM took a hard look at the No Action Alternative. The affected environment in each of the resources sections establishes a baseline against which the impacts of the alternatives are compared. In the absence of an alternative being built, those conditions are expected to continue (as is stated in the impact discussion). That affected environment discussion is essentially a description of what the environment would constitute if the project is not built. The BLM collected

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			addresses rights-of-way corridors to the fullest extent possible and include: 1) the Trans-Alaska Pipeline Utility Corridor and 2) the Ambler Mining District/Dalton Highway access corridor [Sec. 201(4)(b) ANILCA] (see page 2-23). Furthermore, on page 2-25 of the document: To facilitate issuance of rights-of-way from the Ambler Mining District to the Dalton Highway in accordance with the provisions of Sec. 201(4) (b-e) of ANILCA, the draft RMP recommended designation of a transportation corridor near Prospect/Pump Station 5 (Map 2.1). Also, on page 2-120: BLM identified this same area in the draft plan (USDOI, BLM, 1987) as the appropriate location for the Ambler Mining District Transportation Corridor. The corridor was identified to facilitate BLMs responsibility under ANILCA Sec. 201 (4)(b) to provide a right-of-way from the Ambler Mining District (AMD) to the Dalton Highway. And again on page 4-4 and 4-19: BLM is directed to allow for access from the Ambler Mining District to the Dalton Highway by Sec. 20 I (4)(b-e) of ANILCA. And finally, directly from the Utility Corridor Land Use Management Plan EIS and Record of Decision signed January 11, 1991 by Edward F. Spang: However, as required by section 20I(4)(b) of the ANILCA, the need for access to the Ambler Mining District is hereby recognized and will be provided upon application by the State of Alaska. All of these references in the current BLM Land Management Plan make it clear that the BLM must grant the right of way across the Utility Corridor Lands and therefore the No-Action Alternative must NOT be selected. Furthermore, both ANILCA Title 2 and the BLM current Land Use Management Plan Record of Decision expressly recognize and guarantee a right of way across federal lands for the Ambler Road therefore, the NO ACTION Alternative should be off the table!	and evaluated baseline data to characterize the affected environment under each of the resource topics in Chapter 3. The federal agency may always elect to take no action.
29497	10	Public access	Access and Trespass it is highly inappropriate for BLM to make statements and conclude that the Ambler Road will eventually become public.	See response to letter 23508, comment 8.
29497	11	Public access	This is totally inappropriate and it is factually untrue that this DSEIS will be the document used to make that decision. It would appear that the BLM has no other purpose than to intentionally confuse the public since the parts of the DSEIS that make that clear are again relegated to obscure part of the purposefully voluminous document. If the BLM insists on pointing out that the AAP could become a public road, then it should also state what would be required for that to happen. All opinions on this matter should be removed from the document. The AAP is being permitted as a private industrial access corridor and measures will taken. AIDEA has committed to maintaining guard stations at both ends of the road to ensure that no public access is allowed. Modern drone and surveillance equipment could be used to monitor the situation along the entire road route. All contractors would sign legally binding agreements to ensure that no contractors stop to hunt or fish while constructing or operating equipment along the road corridor. As stated in the Right-of-Way request by AIDEA, this will be a Private Road. There are examples in Alaska where roads have been maintained as private industrial roads (Pogo Mine Road and Delong Mountain Transportation System (DTMS), so it can be done!	See response to letter 23508, comment 8.
29497	12	Public access	The DSEIS supposes that trespass and authorized use by the public is inevitable. While it is important to consider the possibility of trespass it should be considered that the Proponent will implement all possible measures to prevent it. Merely concluding that trespass will happen without including objective evaluation of the reality of the environment and mitigation possibilities is unfair to everyone. This can be done by reviewing the track record of Red Dog DMTS and the Pogo Mine road, which studies were not included in the DSEIS, and also by working with the local communities in the region. The Ambler Road would be a PRIVATE ROAD with no public access provided to ensure that no hunting or fishing would take place along the road corridor. AIDEA has committed to maintaining guard stations at both ends of the road to ensure that no public access is allowed. Modern drone and surveillance equipment could be used to monitor the situation along the entire road route. All contractors would sign legally binding agreements to ensure that no contractors stop to hunt or fish while constructing or operating equipment along the road corridor. As stated in the Right-of-Way request by AIDEA, this will be a Private Road. The only way for it to become a public road would be to go through a new EIS process that would fully evaluate the potential impacts of it becoming a public road including impacts to fish and wildlife, caribou migration and subsistence resources. Furthermore, the Bond Holders who finance the Road would have to be compensated and each of the Right-of-Way agreement with land owners including the State, Federal and private owners would have to be modified to accommodate public access. It would be a major, time-consuming and expensive undertaking.	See response to letter 19418, comment 3.
29497	14	Fish and aquatics	1.5.11 Fish and Aquatics pg C-11: The following statement needs to be added to the fish and aquatics section as it is pertinent to the issues that were identified during the remand process, and is important for the route selection. Alternative A is the most direct route and therefore has the smallest Project footprint in wildlife habitat, wetlands, and fish habitat and is also the most economically feasible to construct, operate, maintain, and eventually reclaim. The overall Project footprint is less for Alternative A than Alternative B, and significantly less than Alternative C. Of particular relevance to subsistence impacts, Alternative A places a river crossing on the Reed River 7 miles farther from known sheefish spawning habitat than Alternative B, which means less potential for impacts to this important subsistence resource. Alternative A also places the road outside of Amblers vegetation subsistence harvest area, while Alternative B overlaps it. Alternative A requires fewer disturbed acres (4,524 acres, of which 1,022 acres are on DOI-managed land) than Alternative B (5,138 acres, of which 1,033 are on DOI-managed land) and Alternative C (8,210 acres). Alternative A also avoids placing an airstrip, construction camp, and maintenance facility within GAAR, while Alternative B includes these features within GAAR. Direct quote on page 9 from Section 6.2 Bureau of Land Managements Rationale for Adopting Alternative A Joint Record of Decision 2020. By BLMs own language, and in particular to subsistence impacts, Alterative A is clearly the best route for having overall significantly lower environmental and subsistence impacts. This language needs to be included in the DSEIS.	Supplemental EIS Appendix C, Chapter 2, Alternatives Tables and Supplemental Information, Section 1.5.11, Fish and Aquatics, summarizes the anticipated impacts the alternatives would have on fish and aquatics; other sections in this appendix summarize the impacts to other resources (e.g., wildlife habitat, wetlands, subsistence). Section 1.5.11 includes metrics comparing the action alternatives.
29497	16	Mammals	The DSEIS cites data about caribou population that is not actually definitive and ignores that post- DMTS construction and operation, the Western Arctic Herd population actually increased in that region.	See response to letter 27727 comment 10.

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29497	17	Subsistence	The DSEIS fails to acknowledge current successful structures of Subsistence Advisory Committees, particularly at the Red Dog Mine, in which communities have management authority in issues impacting subsistence uses. This is irresponsible and must be taken into consideration moving forward.	In several places, Section 3.4.7 of the Supplemental EIS discusses the Ambler Access Road SAC and its role in reducing potential impacts to subsistence.
29497	18	Fish and aquatics	In no place does the DSEIS acknowledge that Alaska has a history of roads coexisting with the environment, wildlife, and human health. If the agency is going to amplify concerns such as suggesting the road project would damage fish habitat, then it must also outline permitting requirements and mitigation measures required by the Alaska Department of Fish and Game that has successfully regulated projects near fish habitat for decades. This is an oversight by not including the track records for projects across the State in the DSEIS.	The purpose of an EIS's analyses is to identify potential project impacts, including ways to minimize impacts. Supplemental EIS Section 3.3.2, Fish and Aquatics, includes descriptions of ADF&G's involvement as a consulting and permitting agency. Note: The Supplemental EIS includes acknowledgement of ADF&G's Fish Passage Inventory Database, which has identified several culverts that limit or preclude fish passage along the Dalton Highway.
29497	19	Water resources	The DSEIS infers the road will sever hydrology in some areas and ignores that the applicant has proposed a significant number of bridges and culverts to maintain connectivity. The objective balance of both must be considered.	See response to letter 23508, comment 17.
29497	20	Alternatives	Pg C-7 = First yellow paragraph is OPINION. Doesn't specify what short-term resource effects would be greater under a combined option. REMOVE.	This paragraph is a summary of the effects listed throughout the rest of Section 1.5. Added language clarifying short-term resource effects.
29497	21	Hazardous waste	Pg C-8 = Hazardous waste what report did these numbers come from? No references if there are no references then these are Opinion and need to be removed.	Numbers are from Section 3.2.3, Hazardous Waste.
29497	22	Mammals	Pg C-12 and C-13Section 1.5.13 = yellow paragraph starting with only Alt C would affect. This is written in a very Opinionated manner and in fact if you read your detailed notes in Chapter 3 on Caribou, your analysis actually says that Alt C will have more impacts on the WAH caribou. This section is written poorly and is full of opinion. Remove Public Road language it is mis-leading the way it is written and it is much better addressed in Appendix H. Suggest taking language out entirely and referring to Appendix H Section 2.2.2 Moose represents a greater subsistence resource for villages along Alt C route, but this is not mentioned anywhere in the documentation.	Text reviewed and no changes needed.
29497	23	Transportation and access	Pg C-15 = Section 1.5.15 = This yellow box language makes no sense. REMOVE	Language in yellow box under Section 1.5.15 revised to clarify.
29497	24	Visual resources	Pg C-16 = Section 1.5.17 Visual Resources Phased approach comment is opinion REMOVE	Text has been revised to more clearly describe how the phased approach would affect visual resources.
29497	25	Socioeconomics and communities	Section 1.5.18 Socioeconomic & Communities = yellow box language added references Section 2.5 that no longer exists. All references need to be cross referenced appropriately.	References to Section 2.5 have been corrected.
29497	26	Cultural resources	Pg C-18 Section 1.5.21 Cultural Resources = Route A/B have same alignment at the start of the road remove second sentence as that is a false statement.	Text has been revised to reflect the number of sites within the study area.
29497	27	Socioeconomics and communities	The DSEIS downplays the economic benefits and opportunities if development were to take place: in the 1,200+ page document, yet the term is only mentioned 11 times. Villages in the Kobuk and Koyukuk regions that choose to connect to the Ambler Road could have opportunity to bring in commercial goods, fuel and equipment at significantly lower costs than currently available. In addition, they could decide to access the Fiber Optic high speed internet for tele-medicine and tele-education. These important improvements would only be made possible if the Ambler Road is approved. The associated fiber optic line should be approved, and access and socioeconomic benefits of greater connectivity to schools, health clinics, and local villages and communities throughout the region should be a priority. These points are not mentioned anywhere.	See response to letter 27727, comment 7.
29497	29	Socioeconomics and communities	The DSEIS ignores concerns about production of minerals and oil and gas in this region to begin winding down. Should this happen, jobs and economic benefits will decrease, elevating the importance of replicating the successes of projects like Red Dog. According to the Northwest Arctic Boroughs (NWAB) Comprehensive Plan Update for 2030, 83% of the boroughs operating funds came from Red Dog in 2020. In April 2023, the governing bodies of the NAWB and North Slope Borough (NSB) each passed joint resolutions in April of 2023 in support of the AAP and development of the Ambler Mining District in recognition of the jobs, revenue, and good stewards mining companies can be.	See response to letter 25649, comment 1.
29497	31	Proposed action	Chapter 1 pg 1-3, Section 1.2.2: First Paragraph from FEIS was removed and needs to be reinserted. In 1980, Congress passed ANILCA recognizing the mineral potential in the District. o Chapter 1 pg 1-4, Section 1.2.2: First yellow paragraph need to specify which route was selected this has been left out and in actuality was decided jointly to be Alt A. o Chapter 1 pg 1-4, Section 1.2.3: Second paragraph from FEIS was removed why? This is an important statement given that cobalt and germanium are both critical metals and are found in the district with significant studies conducted on both. The sentence removed was Studies have also identified cobalt and molybdenum as having real or potential economic value in the mineral deposits based on currently active prospects (USGS 2018a). This needs to be reinserted!!	The BLM and NPS ROWs have been suspended while the Supplemental EIS is being developed and new decisions are issued. The USGS (2018a) reference was not present in the References Cited section of the 2020 Final EIS, and the statement could not be confirmed.
29497	34	Proposed action	o Pg 2-12 Section 2.4.3= added section on Climate Change related challenges. This section needs to be removed as there are no facts or scientific studies to support this. OPINION REMOVE. Uncertain Project Features paragraph THIS IS OPINION! This is exactly why we do detailed engineering so we can answer these questions. These are the studies that BLM has denied to be done so that some of these questions could have been addressed. THIS ENTIRE SECTION IS OPINION AND NEEDS TO BE REMOVED	Climate change effects and how they affect underlying conditions in the project area are discussed throughout the Supplemental EIS (see for example Section 3.2.7, Affected Environment and Climate). The text has been reviewed and is accurate as written.
29497	35	Proposed action	Pg 2-13 Section 2.4.4 General Completion of Use (Reclamation/Restoration): Remove last sentence from yellow box this is OPINION and needs to be removed. The reclamation bond for the road is put into place with AIDEA finances meaning the	See response to letter 28632, comment 26.

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			bond holders are required to put the reclamation bond in place. Your statement here is incorrect and inaccurate. Remove this last sentence!	
29497	36	Geology and minerals	Pg 3-5 Permafrost: Statement that Routes A/B traverse primarily mountainous areas of continuous permafrost this is untrue we have drilled 100 holes at the Sun deposit and have no intersected permafrost once. o Pg 3-9 Section 3.2.1 = Entire Yellow box is all OPINION. There are facts or reports referenced. This needs to be deleted. o Pg 3-10 = yellow box is OPINION and needs to be removed.	This comment is addressed in two parts: 1) Regarding the Sun deposit exploratory drilling program: The same paragraph (Ch. 3, P. 3-5 of the Draft EIS) includes the statement: "... exploratory work showed discontinuous permafrost throughout southern Brooks Range near Alternatives A and B." Therefore, the drilling program was acknowledged in the Supplemental EIS. No change to the Supplemental EIS. 2) Regarding the text in "yellow box": Section 1.1, Introduction, of the Supplemental EIS explains the text highlighted in light yellow denotes new or substantially revised text in the Supplemental EIS and should be considered as part of the normal narrative in context of the applicable section.
29497	37	Geology and minerals	Pg 3-14 = yellow box under Mining, Access, Etc. should include a statement that says all of these processes require rigorous studies and permitting to undertake these activities.	Same response as for letter 28632, comment 28.
29497	39	Mammals	o P 3-145 = Alt C has greater percentage of WAH crossings, how come this information wasn't stated? Also where is additional data on RMH?	Duplicate, see response to letter 28632 comment 29.
29497	40	Subsistence	Section 3.4.7 = it should be stated that working with AIDEA there are mitigation measures that could be implemented to help improve the subsistence foods populations.	Section 3.4.7 summarizes potential mitigation measures that could be adopted by AIDEA to reduce impacts to subsistence. See sections Resource Availability and User Access.
29497	42	Proposed action	The new additions in yellow highlighted boxes reference sections that dont exist (i.e., Section 2.5 is referenced many times and does not exist),	References to Section 2.5 have been corrected.
29497	43	Decision process - general	Lots of sections of the FEIS were removed and not flagged which sections were removed! That is unlawful and dishonest!	The Supplemental EIS was prepared in accordance with BLM policies and procedures as well as the CEQ implementing regulations for NEPA (40 CFR 1500-1508). The 2020 Final EIS remains available for comparison.
29497	44	Geology and minerals	Chapter 3 Page 3-5: Statement that Routes A & B traverse primarily mountains areas of continuous permafrost This is not true. Valhalla has 100 drill holes at the Sun deposit and no permafrost has been encountered in any drilling on Valhalla property to date.	The comment refers to text in the Supplemental EIS (Section 3.2.1). The same paragraph includes the statement: "... exploratory work showed discontinuous permafrost throughout southern Brooks Range near Alternatives A and B." Therefore, the mineral exploration drilling program was acknowledged in the Supplemental EIS.
29497	45	Cumulative and indirect effects analysis	Appendix H 2.1 pg H- To evaluate the indirect and cumulative effects of reasonably foreseeable development, the BLM convened a team of agency and private sector National Environmental Policy Act (NEPA) and mining professionals and consulted with AIDEA and companies that anticipate mining in the District to gather information to inform development of a reasonable mining scenario. THIS IS UNTRUE- Valhalla was never contacted by anyone at BLM; nor were Ambler Metals, Trilogy Metals or South32. This is a categorically false lie and needs to corrected with: The BLM made no attempt to work with any of the mining companies who have collectively invested well over a hundred million dollars to prove up the critical metals required to decarbonize the world and transition to a non-fossil fuel, all-electric energy and transportation future!	This statement has been revised to clarify that the BLM consulted with AIDEA and mining companies during the drafting of the 2020 EIS. In developing the Supplemental EIS, the BLM and cooperating agencies re-examined the mining development scenario from the 2020 Final EIS and made updates, as necessary, to incorporate new and updated information.
29556	1	Decision process – general	Our primary comment is that the DSEIS consistently draws conclusions that have remote or implausible impacts with little to no proven scientific or factual evidence underlying the conclusions. An SEIS should provide context and communicate the likelihood and severity of potential impacts so that the public can effectively analyze the proposed action and weigh the pros and cons of that action. That aim is hindered greatly when every conceivable impact is assumed to be a form of worst-case scenario, despite numerous agreed upon mitigation measures and ignoring decades of responsible development in Alaska and the Arctic in particular. The SEIS needs work to provide substance and context around the impacts and associated conclusions.	See response to letter 27727, comment 9.
29556	2	Remand of Final EIS	The draft SEIS (DSEIS) issued on October 13, 2023 covers much more scope than what the Declaration outlined. For example, the DSEIS analyzes three route alternates that were previously evaluated in the 2020 environmental analysis. Route A was selected then, and that route is still the only economically viable route for the Road with the least environmental impact.	See response to letter 58, comment 3.
29556	3	ANILCA 810 analysis	Furthermore, the DSEIS unnecessarily expands the ANILCA 810 analysis from 27 communities to 66 communities that BLM believes would be impacted by the Road. This overstates the Roads subsistence impacts on communities because (1) most of those communities are far away from the Road and (2) impacts are exaggerated without substantiation or comparable historical evidence.	See response to letter 23196, comment 6.
29556	4	Public access	The DSEIS also says that public use of the Road is reasonably foreseeable, even though the permit request for the Road, by the project proponent, is for industrial use only. The DSEIS discards the project proponent's concrete plans to control access to the Road; it would be limited to industrial use by toll paying mining companies only. Any other use is not reasonably foreseeable. The unnecessary and legally incorrect characterization of trespass as a foreseeable public use of the Road is a major deficiency in the DSEIS and must be corrected.	See response to letter 23508, comment 8.
29556	5	Public access	Access is a crucial issue for the proposed Ambler Access Project (AAP). Local residents in the NANA and Doyon region continuously voice their concerns about outsiders coming into their region via AAP and harvesting their subsistence resources, or otherwise causing harm to their local communities. Those concerns have been heard loud and clear from the outset of the project. As a consequence, controlled industrial only access has been front and center for the project proponent	See response to letter 23508, comment 8.

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			AIDEA. Controlled access will be achieved in several ways. First, the National Environmental Policy Act action being analyzed by the BLM is for restricted access industrial road only. There is no alternative being discussed allowing public access; only approved industrial use would be allowed. Allowing public access would require a changed decision by BLM and a new NEPA analysis (likely EIS). The SEIS should say this clearly since it leaves the reader with the impression that the road could be opened up to the public by the stroke of a pen. Second, there are numerous landholders who would be able to control access across their lands, including the BLM, Doyon, the State of Alaska, the National Park Service, and the NANA Regional Corporation. All of these landholders support only industrial access and would have to change their minds and unanimously agree to allow public access. That is extremely unlikely and something that is not reasonably foreseeable.	
29556	6	Public access	There are three separate types of access and they should be discussed separately: (1) local use by residents who live in the area of the Road, (2) trespass use by the general public, and (3) use by the general public and locals that would only occur as a result of a legal change in the status of the Road from private to public.	See response to letter 23145, comment 4.
29556	7	Public access	The DSEIS incorrectly identifies the allowed use to cross AAP by local residents as trespass. Under AIDEAs plan, outlined in Volume 1, Sec. 2.4.4 it states: AIDEA would form a subsistence working group for communication and knowledge sharing. The group would help determine where subsistence users would need to cross the Road. The number and extent of these crossings would be negotiated with the group. Ramps would be constructed in select areas to aid such crossings if the subsistence working group determines that such construction is warranted to mitigate impacts to subsistence. This statement is later ignored and lumped in with unauthorized trespass by outsiders. Access to cross the Road at road crossings by residents who live in the vicinity of the Road should not be identified as trespass. This allowed use is only likely for residents already living in these communities and the BLM must acknowledge and differentiate between local resident authorized use and outsider trespass, the latter which is not reasonably foreseeable (discussed below).	See response to letter 23508, comment 8.
29556	8	Public access	In considering trespass use by the general public, the first fact that must be highlighted is that there will be a gate on the Road with security at the gate and security patrols on the Road itself. To assume that a security gate, staffed 24 hours a day 7 days a week 365 days a year, will routinely fail ignores logic and all of the evidence to the contrary. It is not reasonably foreseeable to conclude that a vehicle or ATV from an outsider will be on the Road. If it were to occur at all (unlikely), the use would be at such low levels such that it would be immaterial for purposes of the analysis required in this DSEIS. To bolster this conclusion, BLM should cite trespass data from other existing roads protected by security. The best example is the Pogo Mine Road, which has a gate and, as a consequence, sees no trespass. Other relevant examples include the DeLong Mountain Transportation System (Red Dog Road), the Greens Creek Mine Road, and the Spine Road on the North Slope. The DSEIS must account for the difficulty for the public of using a road that is secured by a gate and security. This potential use is not reasonably foreseeable. The SDEIS should identify this potential issue and characterize it as such and not identify it further in the DSEIS.	See response to letter 23508, comment 8.
29556	9	Public access	The third type of access discussed in the DSEIS is AAP eventually being opened to the general public. This category of use is not reasonably foreseeable. First, this type of access is not included in AIDEAs application, which states that AAP will be reclaimed after 50 years or upon completion of its industrial use. Second, any change by BLM in its authorization for the Road would require a new or modified Right of Way (ROW). That would be a major federal action and require a new NEPA analysis (likely an EIS). Last, as noted above, there are numerous landowners and every one of them would have to simultaneously agree to change their decisions (and open their lands) to allow full public access to the Road. This is not reasonably foreseeable under any set of circumstances. The SEIS should acknowledge the possibility that the legal status of the Road could change at some future date and discuss the circumstances that would have to fall into place (outlined above) for that to occur. It should conclude that (1) general public use is not reasonably foreseeable and will not be analyzed in the SEIS, and (2) if the Road were to be opened to the public it would require a new and separate NEPA action and the impacts would be analyzed at that time in that document.	See response to letter 23508, comment 8.
29556	10	Public access	To summarize, BLM should change the tone and tenor around trespass use. It should acknowledge and discuss the reality that Alaska has an excellent track record of industrial access roads being used only as intended; for industrial uses, and that these industrial access roads have been able to effectively prevent access by the general public for decades. It should cite the Pogo Mine Road as an excellent example of controlled use to a mine as well as the other industrial road examples noted above.	See response to letter 23508, comment 8.
29556	11	Subsistence	The DSEIS correctly points out the integral role that cash plays in subsistence participation stating that Subsistence is part of a rural economic system called a mixed, subsistence- market economy, wherein families invest money into small-scale, efficient technologies to harvest wild foods (Wolfe 2000). Without cash, modern subsistence involving snow machines, ATVs, boats, gasoline, guns, bullets, or other non-handmade items is impossible. Thus, subsistence today requires cash, and thus employment or some other reliable means to acquire that cash. The fact that in todays world subsistence requires cash must be more strongly stated in the SEIS.	Added text to Section 3.4.7, Sociocultural Impacts, reiterating the importance of cash in supporting subsistence activities.
29556	12	Subsistence	The DSEIS states Indirect and cumulative impacts of Alternatives A and B related to resource abundance and availability would likely be greater than those under Alternative C, as they would be more likely to affect resource availability of migrating caribou to the subsistence study communities, particularly during fall, and are more likely to adversely affect sheefish and whitefish, key subsistence species among the study communities. This is factually incorrect. The negative impacts to subsistence for Kobuk and Shungnak under Alternative C would potentially be devastating, whereas Alternatives A and B would be minimal or non-existent for all communities including Kobuk and Shungnak. Alternative C would pass 1.3 miles from Kobuk, and 5 miles from Shungnak, utilizing the Kobuk to Bornite Mine Road, a well-documented subsistence use area, for hauling concentrate to the Dalton Highway. The noise and sheer proximity to the communities would impact caribou and	Reviewed and edited comparison of alternatives under Mining, Access, and Other Indirect and Cumulative Impacts to provide additional clarity and nuance regarding the differences between the alternatives. All alternatives would affect subsistence uses, and proximity of the road to a community is not the only metric to determine impacts.

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			other subsistence resources to a far greater extent than Alternatives A or B, which would be located over 10 miles away and on the other side of a mountain range (Cosmos Hills). The DSEIS is materially flawed in ignoring this obvious fact and drawing this inaccurate conclusion. It should be stated clearly in the DSEIS that Alternative C will have far greater impacts to subsistence than Alternatives A or B.	
29556	13	Subsistence	The DSEIS and ANILCA 810 Analysis casts the net for possible impacts so broadly as to have limited usefulness by the general public to actually determine likely impacts to subsistence resources or access to those resources, which is the whole point of the analysis. To simply state that because the proposed road crosses a river and therefore will impact all subsistence users downstream is overbroad and defies common sense. There are dozens if not hundreds of rivers in Alaska that are crossed by roads with no measurable impacts including the Yukon River, Kenai, Kasilof, Koyukuk, Twenty Mile, Placer, Thorne, Susitna, Matanuska, Nenana, and countless others. Where is the documented harm from these roads, which encounter orders of magnitude more traffic, after decades of operation by both industrial operations and the general public? Simply identifying communities located downstream of a bridge crossing and then assuming impacts to them is unfounded.	The selection of study communities was broad to capture potential direct, indirect, and cumulative impacts to subsistence resource abundance and availability. If population-level impacts to migratory resources such as caribou and fish occur, then any users of those resources stocks (e.g., WAH, Kobuk River sheefish) could be affected. The Ambler Road project must also be analyzed in the context of its purpose, which is to provide access to the Ambler Mining District, and potential impacts of mining activity are addressed in the Supplemental EIS under Cumulative Impacts.
29556	14	Subsistence	Conversely, while a small percentage of the caribou in the Western Arctic Herd (WAH) migrate and winter near and within the AAP corridor, there is no factual and scientific basis to assume that all communities that harvest WAH caribou will be impacted by AAP. That is again too broad and doesn't factor in likelihood and severity of these impacts. As a single example of the nature of the unfounded conclusions (there are many), the DSEIS concludes that Shishmaref, an island in the Chukchi Sea hundreds of miles from the project, will be severely impacted by AAP. This defies common sense, is way off the mark, and a long way from presenting a rational discussion of impacts that are reasonably foreseeable. Painting subsistence impacts with such a broad brush, while ignoring the obvious and real impacts that would be caused to Kobuk and Shungnak if Alternative C were to be developed, does a disservice to the communities and their subsistence way of life.	The selection of study communities was broad to capture potential direct, indirect, and cumulative impacts to subsistence resource abundance and availability. If population-level impacts to migratory resources such as caribou and fish occur, then any users of those resources stocks (e.g., WAH, Kobuk River sheefish) could be affected. The BLM's conclusions are that the Ambler Road could cause population-level effects on the WAH, and therefore any user of the WAH (e.g., Shishmaref, located on a barrier island to the southwest of the road where nearly 100 percent of households use caribou) could be affected.
29556	15	Alternatives	Significantly, the USACE concluded that Alternative A is the Least Environmentally Damaging Practicable Alternative (LEDPA). That means it is the only alternative that is permissible under federal law. Given the history and work on alternatives in the FEIS, the USACEs finding that Alternative A is the LEDPA, and the limited scope of the remand (which was not focused on developing or re-instating prior alternatives), we are at a loss why BLM is attempting to breathe new life into an alternative which was rigorously analyzed and determined to be suboptimal on every front.	See responses to letter 58, comment 3 and letter 31764, comment 1.
29556	17	Compliance with other laws	In addition to the reasons noted above, BLM does not legally have the option to select Alternative C in the ROD. Congress, through ANILCA, already determined that if a project proponent AIDEA in this case seeks to permit a road through the Gates of the Arctic Preserve, the federal agencies shall permit that route. There is no discretion with BLM or other agencies to force AIDEA to accept an alternative route. ANILCA 201(4)(b) says the Secretary shall permit such access in accordance with the provisions of this subsection. (emphasis added); ANILCA 4(c) says Upon the filing of an application pursuant to section 1104 (b), and (c) of this Act for a right-of-way across the Western (Kobuk River) unit of the preserve, including the Kobuk Wild and Scenic River, the Secretary shall give notice in the Federal Register of a thirty-day period for other applicants to apply for access. (emphasis added); ANILCA 4(d) says the Secretaries of Interior and Transportation shall jointly prepare an environmental and economic analysis solely for the purpose of determining the most desirable route for the right-of-way and terms and conditions which may be required for the issuance of that right-of-way. This analysis shall be completed within one year and the draft thereof within nine months of the receipt of the application and shall be prepared in lieu of an environmental impact statement which would otherwise be required under [NEPA] shall be deemed to satisfy all requirements of that Act and shall not be subject to judicial review. Such environmental and economic analysis shall be prepared in accordance with the procedural requirements of section 1104(e). (emphasis added); and ANILCA 4(e) says Within 60 days of the completion of the environmental and economic analysis, the Secretaries shall jointly agree upon a route for issuance of the right-of-way across the preserve. Such right-of-way shall be issued in accordance with the provisions of section 1107 of this Act. (emphasis added); A statutes use of the word shall in a statutory directive to an agency signals mandatory action. Nat. Res. Def. Council v. Reilly, 983 F.2d 259, 266 (D.C. Cir. 1993) (internal quotation marks and citation omitted); Am. Forest Res. Council v. Hammond, 422 F. Supp. 3d 184, 190 (D.D.C. 2019) (resource management plans violated mandatory directives from Congress by excluding portions of O&C timberland from sustained yield timber harvest). Congressional intent is clear in ANILCA, and BLM should step back from any attempt to resuscitate an alternative (Alternative C) which has a greater environmental impact than Alternative A, is uneconomic, and which clearly violates ANILCA.	See response to letter 23310, comment 1.
29556	18	Alternatives	The DSEIS proposes a combined phasing alternative for constructing the Road, rather than the originally proposed construction phasing. It should be noted that AIDEA and their transportation engineering consultant spent a significant amount of time analyzing various construction phasing scenarios, and consulted with state and federal agencies to determine a construction phasing plan that would minimize environmental impacts, while allowing efficient construction activities and sequencing to occur, given the limited construction season and general challenges related to constructing a 211-mile road in this remote area of Alaska. The DSEIS does not clearly describe what analysis went into this new combined phasing alternative, or if transportation engineers and road construction subject matter experts were engaged to ensure this alternative is even feasible.	The combined phased option was developed in light of AIDEAs amended application to the USACE which proposes to build the road to Phase II standards in sensitive permafrost and wetland areas.
29556	19	Alternatives	The combined phasing alternative developed as part of this DSEIS applies to all 3 routes analyzed in the DSEIS. BLMs justification for this alternative is that it would result in less environmental impacts, because it supposedly takes less time to build. This alternative has several fatal flaws; for example, (1) it will likely increase the construction schedule because it eliminates the pioneer road surface access and limits mobilizing equipment and materials along the corridor to a few months per year when the winter trail is open, (2) mobilizing bridge girders to river crossings will also be dependent on use of the winter trail and could delay completion of bridges by a year if all materials cannot be fabricated and delivered while the winter trail is open. Any girders fabricated after the winter trail closes will have to be stockpiled until the next winter season, (3) the	The combined phased option was developed in light of AIDEAs amended application to the USACE which proposes to build the road to Phase II standards in sensitive permafrost and wetland areas.

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			lack of a pioneer road along the corridor will also hinder development of material sites, maintenance stations, and communication equipment, which will likely impact operations during construction and further slow progress, (4) the cumulative delays and extended schedule will make the Road more costly to build and maintain, and (5) it will delay use of the Road by the mining companies constructing their projects, by at least one and possibly multiple years, thus making them economically less viable.	
29556	20	Alternatives	Without a pioneer road, construction activities would have to be more reliant on aircraft through the entire Phase 2 construction effort, resulting in increased air traffic along the road corridor along with increased noise impacts and visual impacts to area users and wildlife. The lack of a pioneer road would also make it more difficult and more costly to respond to spills, wildfires, and emergencies along the road corridor. Without continuous surface access to the Dalton Highway; emergency response would be more heavily reliant on aircraft to access the road corridor and would be more likely impacted or delayed by inclement weather. Ambler Metals strongly recommends that BLM consult with transportation design and rural road construction subject matter experts to fully analyze the combined phasing alternative, taking into consideration constructability issues and logistics related to construction sequencing in such a remote area of Alaska.	The Supplemental EIS contains sufficient information for each of the action alternatives to adequately compare impacts among the alternatives and to make an informed decision on the ROW application.
29556	21	Alternatives	The original AAP FEIS and JROD, and the DSEIS make it clear that Alternative C (332-miles) would result in much greater environmental impacts than Alternative A (211-miles). Furthermore, given the additional construction costs for an additional 121-miles of road under Alternative C, Ambler Metals believes its highly unlikely to ever get constructed. For this reason, we would argue that Alternative C likely does not meet the NEPA definition of a reasonable alternative. The Council on Environmental Quality (CEQ) NEPA regulations define a reasonable alternative as a reasonable range of alternatives that are technically and economically feasible and meet the purpose and need for the proposed action (40 CFR Part 1508). It should be noted that the CEQ specifically stated in its April 2022 final rulemaking that Both the development of purpose and need statements and the identification of alternatives are governed by a rule of reason; the range of alternatives should be reasonable, practical, and not boundless. Ambler Metals strongly believes that BLM must take a hard look at Alternative C, and it should conclude the alternative does not meet the NEPA definition of a reasonable alternative. This finding and rationale should be discussed in the Final SEIS.	In accordance with the CEQ NEPA implementing regulations at 40 CFR 1502.14, The BLM has rigorously explored and objectively evaluated reasonable alternatives for this project and discussed reasons why other alternatives were determined not to be reasonable. This analysis is summarized in Chapter 2 of the EIS with additional detail included in Appendix G, Alternatives Development Memorandum. Economic feasibility is a screening criterion, with notes both on construction costs and maintenance costs included in the matrices attached to Appendix G, Alternatives Development Memorandum. Alternative C was carried forward for full examination in the Supplemental EIS despite relatively high costs. While it is reasonable to consider cost as a measure of economic feasibility among the criteria, cost was not the sole criterion used in deciding whether any of the alternatives were reasonable or not reasonable. All criteria used are described in Appendix G. The environmental and social impacts of Alternative C are analyzed in detail throughout the Supplemental EIS and where Alternative C impacts are greater than Alternatives A or B for specific resource, those comparisons are made in the Supplemental EIS analysis.
29556	22	Alternatives	Even in the unlikely event that it was determined to meet the NEPA definition of a reasonable alternative, Alternative C should be dismissed from further consideration for the following reasons: It has the greatest impact, by far, on wildlife habitat, subsistence, wetlands, as well as other natural resources. Because of the much greater impacts, specifically on wetlands and other Waters of the U.S., Alternative C does not meet the USACE Section 404 standards, which require the USACE to permit the Least Environmentally Damaging Practicable Alternative (LEDPA). The Alternative C alignment would have substantial impacts on the communities of Kobuk and Shungnak, given their close proximity to that route. We would question whether the communities would be in favor of this route given the noise, among other things. Impacts on Barge / River Access The location proposed in the DSEIS for crossing the Kobuk and Koyukuk Rivers is described in a positive light, because the river crossings would be 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. However, Alternative C would impact barge service to Kobuk and would certainly impact small boat traffic in those locations, which is orders of magnitude more impactful than the small amount of recreational boating that occurs at the Alternative A river crossings. We request that Alternative C be further analyzed for the potential impacts to both barge traffic and small craft that use the areas proposed for crossing of the Kobuk and Koyukuk Rivers, to put things into perspective, and that this be clearly disclosed in the Final SEIS. As noted above, Alternative C would likely never be built, due to the much higher construction costs.	See response to letter 29556, comment 21.
29556	23	Transportation and access	One example of the way impacts is over-exaggerated for Alternatives A and B are potential Dalton Highway improvements that might be needed. Rather than clearly stating that Alternatives A and B minimize impacts by using the existing Dalton Highway to the extent possible (which is how this would normally be described), the DSEIS assumes and emphasizes Alternative A and B would have impacts to wetlands and waterways from major upgrades to the Dalton Highway that could be needed (e.g. widening or realigning highway curves requiring new culverts or lengthening existing culverts). It seems to imply that these impacts could be substantial, and its not at all clear where this assumption came from, as the Dalton Highway already accommodates large haul trucks that use this road every day for trips to the North Slope oil fields. We suggest that BLM provide further analysis and appropriate context on the likelihood and extent of upgrades that would be necessary to the Dalton Highway. The Dalton Highway is a road whose primary purpose is to service the North Slope oil fields. We do not believe major upgrades would be required, and its surprising that this is even mentioned as a potential impact of Alternatives A and B, when were quite certain that the USACE and other permitting agencies would normally consider the use of an existing highway (that already accommodates heavy industrial truck traffic) to be a major avoidance and minimization measure, as opposed to construction of an additional 121-miles of new roadway (Alternative C) across undeveloped wildlife habitat and wetlands. This fact is not clearly stated in the DSEIS, and we request this be made very clear in the Final SEIS.	Section 3.3.1 and associated tables in Appendix E, Section 1.1.2 clearly state that estimated wetland impacts are significantly lower for Alternatives A and B compared to Alternative C. Similarly, Section 3.2.5 and associated tables in Appendix D Section 1.5 show estimated impacts to waterways are less for Alternatives A and B compared to Alternative C. The USACE issued a CWA Section 404 permit for Alternative A in 2020, indicating USACE considered Alternative A the Least Environmentally Damaging Practicable Alternative (LEDPA). Required upgrades to the Dalton Highway in response to predicted traffic increases is a reasonable foreseeable action. The current draft DOT&PF Statewide Transportation Improvement Plan (STIP) and DOT&PF Northwest Transportation Plan Update 2022 identify several proposed Dalton Highway improvement projects between MP 161 (where Alternatives A/B would intersect) and Fairbanks, including MP 0-9, MP 18-37, MP 109-121, MP 120-135, and MP 135-144.
29556	24	Socioeconomics and communities	Lastly, it is stated in Volume 1, 3-204 of the DSEIS that As a distinction between alternatives, Alternatives A and B would be likely to affect public health in Hughes while Alternative C would not." This is a typo, Alternative C passes much nearer to Hughes than Alternatives A or B and would obviously be more likely to have impacts to Hughes.	Text has been revised to fix this typo.
29556	25	Socioeconomics and communities	The DSEIS grossly underestimates the economic benefits to the region and to the communities close to the Road. The DSEIS, for example, states that impacts to employment would occur but would not be expected to disproportionately benefit	The minority and low-income populations in the communities impacted by road construction and road maintenance are expected to have the same economic opportunities as the rest of the

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			low-income and minority populations. This couldn't be further from the truth, as evidenced by the substantial economic benefits the Red Dog Mine, comparable to potential mine developments along the Road, brought to the Northwest Arctic Borough (NAB) region. For more than 30 years, the Red Dog Mine has been the regions largest employer. It provides 370 direct year-round jobs and 90% of the Boroughs operating funds. The Red Dog Mine also contributes \$8 million each year to the Village Improvement Fund. Jobs will go to all economic levels of relevant communities, unskilled or under-skilled potential workers will be trained to work on future mines and on the AAP Road project.	population; they 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. However, the indirect economic impacts associated with mining activities that are on NANA or Doyon lands are expected to generate more benefits to shareholders of the ANCSA corporations. See also response to letter 25185, comment 5 regarding EJ employment effects.
29556	26	Socioeconomics and communities	The DSEIS also states: benefits associated with increased employment and income would be most likely to occur for NANA shareholders and communities due to agreements between mining companies on NANA lands regarding local hire policies. Thus, interior communities such as Alatna, Allakaket, Bettles, and Evansville may experience subsistence impacts (e.g., reduced resource availability and access to traditional harvesting areas) without the counter benefits of increased income and employment associated with mine development. Whereas it is true the Ambler Mining District is the NANA region, the Road traverses lands in both Interior (Doyon) and NANA regions. Benefits from the Road, and to some extent from the Ambler Mining District, will also benefit Interior communities in terms of good paying jobs, relevant service contracts, and community improvement projects. The new jobs will go hand in hand with maintaining the subsistence way of life in the communities. In fact, without the impetus of development brought about by the Road, it is likely that Interior communities will, sadly, continue to lose population and experience further economic decline.	See response to letter 27727, comment 7.
29556	28	Fish and aquatics	It is stated in Volume 1, Sec. 3-107 of the DSEIS that: As of 2018, Ambler Metals (formerly Trilogy) proposed to manage selenium by discharging the combined effluent directly into the Shungnak River via an 11-kilometer (6.8-mile) pipeline (Trilogy 2018a). Trilogy (2018a) predicted that water quality in Shungnak Creek below the discharge point would meet water quality criteria after a mixing zone, although the length of the mixing zone or levels of selenium concentrations are not identified. Discharging high levels of selenium into the Shungnak River could have detrimental effects to aquatic life. Ambler Metals has stated that obtaining a permit to approve the discharge of selenium into the Shungnak River is a regulatory risk for their project (Trilogy 2018a). Ambler Metals recommended several additional studies be conducted at the potential Arctic Mine site (Trilogy 2018a). Among these is evaluating the size of the mixing zone that would be necessary on the Shungnak River to meet stream selenium water quality limits (Trilogy 2018a). This statement does not accurately reflect the water management strategy for Amble Metals Arctic Project, which does not use a mixing zone to meet Alaska Water Quality Standards. Please review the updated 43-101 compliant Feasibility study for the Arctic Project, available at https://trilogymetals.com/properties/arctic/ for project details including water management and treatment strategy.	The text has been revised to eliminate the discussion on the Arctic Project using a mixing zone and now reflects planned water treatment in perpetuity.
29556	29	Fish and aquatics	The DSEIS states in Vol. 1, Sec 3.3.2 that "While there is a series of rapids in a canyon just upstream from this point, ADF&G has indicated that the rapids are not necessarily a barrier, and chum salmon may occur farther upstream (Giefer 2018)." This contradicts numerous public reports by ADF&G as well as the Anadromous Waters Catalog maintained by ADF&G. It is incorrect to speculate about the presence of salmon without presenting any evidence to support that claim. This DSEIS statement should be removed from the SEIS.	On August 13, 2018, an ADF&G biologist visited the Shungnak River as part of an AWC survey. The biologist submitted an AWC Fish Survey Nomination Form Anadromous Waters Catalog with the following comments: "Started sampling right below a lengthy canyon section with some significant 'necked down' rapids. Spotted chum salmon trying to swim up rapids in reach of habitat station where we landed to start. Substrate good throughout sample reaches. Chum may migrate higher in system but timing would coincide with project window. Don't think the canyon rapids can be assumed to be a (hydraulic) barrier." The ADF&G AWC Nomination form is available at: https://www.adfg.alaska.gov/FDDDOCS/NOM_PDFs/ARC/18-186.PDF.
29556	30	Mammals	The DSEIS states in Vol. 1 Sec. 3.3.4 that The BLM designated the arctic ground squirrel, northern bog lemming, and little brown bat, each of which occurs in the project area, as watch list species (BLM 2019), and the state lists 16 mammal species as Species of Greatest Conservation Need (ADF&G 2015; see Appendix E, Table 18). However, two paragraphs above that the DSEIS states that "Little brown bat is the most widely distributed bat in Alaska; however, its presence within the project area is unknown." Please clarify if the little brown bat is located within the project area or not. Contradictory statements such as this one should be removed from the SEIS.	Text revised to make clear that the little brown bat is likely to occur in the project area.
29556	31	Mammals	The perceived impacts to caribou herd migration are confusing and contradictory. In Volume 1 Sec. 3-137 of the DSEIS, it states that As described above, local residents indicate that the historical caribou distribution in the project area shifted following the construction of TAPS and the Dalton Highway. Prior to construction of the pipeline and road, caribou migrated through the eastern portions of the project area, near Bettles, Alatna, and Allakaket. Following construction, residents say that the caribou stopped coming through this area (WAH WG 2015, 2016). Earlier in the document, in Vol. 1, Sec. 3-127 the DSEIS states that Residents of Huslia recounted high caribou availability in that area 30 years ago, but very few today. The Dalton and TAPS had been around for about 50 years when there was high caribou availability in that area. These confusing statements must be clarified in the Final SEIS.	Both local descriptions of past caribou movements and annual or decadal patterns of caribou distribution are variable but it is not clear that these observations from Bettles/Alatna/Allakaket and observations from Huslia are contradictory. TAPS could have impacted caribou distribution near the eastern communities but not Huslia. It is also possible that construction of the Dalton highway could have altered the distribution of the Porcupine Herd in ways that impacted communities in the eastern portion of the project area.
29556	32	Mammals	Further, in Vol. 1 Sec. 3-138, the DSEIS states 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. Although caribou generally do not use specific migratory or seasonal movement paths every year, in many recent years, the majority of WAH caribou migrate west of the proposed action alternatives (Dau 2015). Impacts to WAH caribou during winter movements would be localized and limited as movement rates are lowest during mid to late winter (Dau 2015; Joly 2011). What is the reader to make of these seemingly contradictory statements: that caribou herds no longer use areas due to the Dalton Highway and TAPS except for Huslia several decades after TAPS and the Dalton were	The wintering distribution of the WAH is variable on an annual and a decadal scale. In some years, the wintering distribution has high overlap with the project alternatives, as described in Section 3.3.4 of the Supplemental EIS.

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			constructed, while ADF&G maintains that the migratory patterns of the WAH as a whole would likely remain intact? The DSEIS and ANILCA 810 Analysis should provide context as to the likelihood of the impacts to caribou migration and subsistence in light of the analysis by ADF&G.	
29556	33	Mammals	A dizzying array of distances are used in the DSEIS for caribou impacts and avoidance due to infrastructure. From 0.6 miles, 1.2 miles, and 3.1 miles (Johnson 2020), to 2.5 miles (Cameron et al. 1992) to a staggering 30 miles (Dau 2023), a notable outlier. Of these, the findings from Dau reflect a very specific circumstance: migrating caribou that interact with deflected caribou and they all wander off together. This specific and rare circumstance and deflection distance is then incorrectly ascribed to all caribou at all times for impacts, including non-migrating overwintering caribou though there is no scientific basis to do so. A more agreed upon impact distance that is supported by multiple studies; between 1 and 3 miles, is much more realistic and predictive of caribou behavior and should be used throughout the SEIS document when analyzing potential impacts.	The text was modified to make clear 30 miles is the farthest distance any behavioral impacts have been observed on this herd, only some caribou exhibited altered movements to this distance, and impacts to this range may be less likely on winter range compared to migratory range.
29556	34	Recreation and tourism	It is stated in Volume 1, Sec. 3.4.3 of the DSEIS that Although recreational use of the road is not a proposed use (see Chapter 2), some people may try to hike or hitch a ride out to the Dalton Highway from a bridge crossing. This statement is simply incorrect and reflects a basic misunderstanding of how industrial access roads work. To assume that a mine employed truck driver would stop and pick up a group of rafters, violating numerous and predictable company policies, and then transport them through the AAP gate, to the Dalton Highway is not believable and should be removed from the SEIS.	As this statement reflects the possibility of individuals attempting to hike or hitchhike to the Dalton Highway, which is plausible, and because public use and trespass are reasonably expected, the statement will be retained.
29556	35	Cultural resources	It is stated in Vol. 1, Sec 3.4.8 of the DSEIS that For the purposes of the NHPA, historic properties are considered within an APE, which is the geographic area within which a proposed project may result in direct or indirect adverse effects to historic properties. As part of the Programmatic Agreement (PA) process during the Final EIS, the BLM defined the APE for this project as a 1-mile buffer on each side of the project corridor and around all project components (see Appendix J, Attachment A). As part of the Remand, the BLM revisited the APE definition to ensure potential adverse effects are adequately considered, particularly in regard to considering visual, auditory, and olfactory impacts. The DSEIS uses the 10-mile-wide study area to broadly encompass the APE, and uses the ROW corridor (generally 500 feet wide) to address cultural resources that would be most likely to be destroyed or damaged from construction of the Road and associated project components (e.g., turnouts, camps, staging areas, material sources, airstrips, access roads, maintenance stations). However, no rational evidence is presented for the need for a ten-mile-wide APE, a 500% increase from the previous APE, to be established. This BLM proposed APE corridor needs significant justification as to how the Road would cause olfactory impacts to historic properties for a distance of 10 miles. Its also unclear how visual impacts will be caused to areas that are located on the other side of one or several mountains from the road corridor. These direct and indirect sensory impacts are utterly unfounded and without precedent. For example, in the recent BLM authored Willow SEIS, 2.5 miles was used for an APE, not twenty miles. The APE should reflect reasonably foreseeable impacts to historic properties, meaning it should only consider the proposed right of way, a width of 250 feet on each side of the Road.	The study area for cultural resources as described within the Supplemental EIS is the same study area that was used in the 2020 EIS. Under NEPA, the BLM is required to identify impacts to cultural resources that could be affected by the proposed action and alternatives, not just those that may be relevant under the NHPA. The BLM affirms in the Supplemental EIS that the 10-mile wide study area around each action alternative as originally proposed remains adequate to analyze potential impacts to cultural resources from each route. Any changes to the APE for the project can only be made through the PA amendment process.
29556	36	Geology and minerals	The impacts to permafrost due to the construction and operation of AAP are greatly overstated in the DSEIS. Already agreed upon and proven mitigation measures will minimize or eliminate the impacts to the point they are insignificant, especially considering the predicted natural melting that is expected to occur due to climate change. Any effects to permafrost due to AAP will be planned for, mitigated and should be considered minimal. The SEIS should reflect that fact.	The Supplemental EIS addressed anticipated impacts of the proposed alternatives and proposed mitigation to reduce or eliminate those impacts are addressed in the appendices.
29556	37	Geology and minerals	The NOA risks discussed throughout the DSEIS document (primarily Section 3.2.1) are overstated and ignore agreed upon mitigation measures. The discussion, maps, and tables misinterpret the factual NOA data. The source of the NOA data is from the Alaska Division of Geological & Geophysical Surveys, Miscellaneous Publication 157, Preliminary Evaluation of Bedrock Potential for Naturally Occurring Asbestos in Alaska by D. Solie and J. Athey. In their section entitled Limitations of the Data the authors specifically state Asbestos will not actually be present in many areas displayed as having NOA potential and There is a very good chance that asbestos exists in significant quantities in areas indicated as having zero-to-low potential for NOA. This advice is ignored, however, in Appendix D of Chapter 3, Physical Environment Tables & Supplemental Information, Geology and soils Table 3 (p. D-2) of the DSEIS, where the acreage of high and low potential NOA are taken simplistically to represent the risk along each route. This designation is a disingenuous use of the NOA potential map and ignores actual observed NOA. This matter should be made clear in the SEIS.	Text has been revised. Appendix D, Table 3, was revised to add explanatory notes to provide context for data.
29556	38	Geology and minerals	The known occurrences of asbestos (facts) should be shown separately from areas where potential is estimated (postulated). Presumably the known occurrences should be at least as concerning as the high probability areas. Observed NOA is noted in the document for the Ambler-Shungnak area, but there are several known occurrences of asbestos along the Dalton Highway and in the Ray Mountains along Route C that are not mentioned in the DSEIS. Specifically, the known occurrences in the Ray Mountains very closely straddle Route C, see the figure below.	GIS for Volume 4, Map3-02. NOA known occurrences have been added to the map (from Solie and Athey [2015]).
29556	40	Geology and minerals	The risk of creating acid rock drainage (ARD) is overstated and lacks context as stated in the DSEIS.	Section 3.2.1 has been revised to clearly explain that ARD and ML are naturally occurring processes as part of the affected environment.
29556	41	Geology and minerals	In Section 3.2.2, p. 68, the DSEIS states a concern that exposure of subsurface iron sulfide minerals to air and water could result in the creation and leaching of acidic drainage into water bodies. Throughout Alaska and this region, there are currently iron sulfide minerals exposed at surface that are creating and leaching some amount of local acidic drainage into water bodies. The SEIS does not directly acknowledge this existing process, nor mention any concern around this naturally occurring phenomenon. This naturally occurring process is unwittingly highlighted, however, in Section 3.2.1, p. 71 of the DSEIS, which states oxidized metals commonly create yellow, orange, and red colors in the bedrock; aerial imagery identified areas exhibiting this characteristic staining in multiple locations along all action alternatives, indicating the potential for ARD	Section 3.2.1 has been revised to clearly explain that ARD and ML are naturally occurring processes in the affected environment. Section 3.2.2 has been revised to explain potential impact could include increased ARD and ML because of the project exposing bedrock containing iron sulfide minerals (e.g., excavation/blasting at some material sites) to air and water.

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			(DOWL 2011a). This observation shows explicitly that there are already iron sulfide minerals naturally exposed on surface and ARD is already occurring naturally in multiple locations along all routes according to aerial imagery and the ecosystem is working with its presence and has not been destroyed. Weathering of sulfide-bearing rocks is a natural process and any enhancement of this process by road development must be contextualized within the existing natural processes to fairly assess the potential risk.	
29556	42	Geology and minerals	The maps showing Alaska state claims are all out of date. In addition to the state claims held by Ambler Metals, Teck, and Valhalla, there are 200 claims held by 995 (Trilogy) covering 32,000 acres and 1648 claims covering 263,680 acres held by South32. All of these state claims are along Route A.	Alaska state claim information has been updated on Map 3-35.
29556	43	Cumulative and indirect effects analysis	The use of AMDIAR (used 49 times in Appendix C), and AMDIAP, is outdated and should be updated to reflect the currently used nomenclature AAP. Using outdated names is confusing to the reader.	The Supplemental EIS has been revised to include the updated acronym.
29556	44	Cumulative and indirect effects analysis	The DSEIS makes frequent use of the superseded 2018 Trilogy Pre-Feasibility Study. The SEIS authors should review and incorporate the more recent, relevant, and publicly available 43-101 compliant Feasibility Study for the Arctic Project issued in 2023 and available at https://trilogymetals.com/properties/arctic/ .	See response to letter 29489, comment 91.
29839	1	Alternatives	Trilogy Metals believes the 211 mile Alternative A will have the least impact on the environment and will best balance the competing issues and needs of the various stakeholders. BLM reached this conclusion in the 2020 EIS, and it is again supported by almost all the information provided in the Draft SEIS as highlighted in Table 1 (Appendix C, Chapter 2, p. C-2 to C-3). Table 1 is reproduced below with each area where Alt. A demonstrates the least amount of physical impact to the environment highlighted in green. This important table demonstrating Alt. As smaller environmental impact should be included in the Draft SEIS Executive Summary. [Table 1: Summary of major project components for each action alternative]	The Executive Summary contains a brief overview of each alternative. This table will remain in Appendix C to maintain the page limit of the Supplemental EIS.
29839	2	Alternatives	Further, Alt. A is described as having similar impacts as Alts. B and C, for other affected resources and resource categories. However, the actual impact on many resource categories would be approximately 50% greater for Alt. C as the route is approximately 50% longer. This discrepancy should be addressed and corrected in the Final SEIS. Accordingly, Alt. A and B also have significantly less impact than Alt. C in the following resource categories: -Acid-rock drainage (ARD) -Fossil and Non-fossil evidence of ancient life -Water Resources in terms of ice road, bridge and culvert construction, gravel extraction and placement, water withdrawal, and wastewater discharge -Noise including direct effects to soundscape -Pollutants, including dust, during road construction -Birds and bird habitat	See response to letter 29556, comment 21.
29839	3	Socioeconomics and communities	Alternative A is the shortest total transport distance from site to port and will have the smallest social and environmental impact of the of the three alternatives studied. Further, Alt. A is also the least expensive to construct, maintain and reclaim (Table 1). This is a very significant consideration since it impacts the economic feasibility of potential projects, and this fact should be discussed further in the Final SEIS and highlighted as a significant factor favoring Alt. A.	See response to letter 26253, comment 4.
29839	4	Alternatives	The Draft SEIS has numerous references to combine phasing when discussing construction of the road. Protection of the permafrost and wetlands are critical design aspects regardless and this report indicates the same protection cannot be achieved with the current design approach as explained in the original AIDEA plan. It is important to minimize haul distances from material sites and make the most efficient use of the equipment to reduce the run time of the equipment. This will reduce the greenhouse effects of the project which should be seen as a positive and highlighted in the Final SEIS. The proposal of going directly to phase 2 creates a worst-case scenario for equipment run time and the overall time required to build the road.	The combined phased option was developed in light of AIDEAs amended application to the USACE which proposes to build the road to Phase II standards in sensitive permafrost and wetland areas.
29839	5	Alternatives	AIDEA and their consultants spent considerable time discussing the road and best ways to construct the road to minimize the construction time, and protect the permafrost and wetlands as required in any road construction in Alaska. The pioneer road is a design that has been used on other Alaskan road construction sites with no detrimental impacts to permafrost or wetlands, and it reduces construction time. The Draft SEIS discusses the 2020 USACE permit (POA-2013-00396) which requires the road be constructed directly to Phase 2 criteria at thaw sensitive permafrost soils and emergent wetlands areas. There is no rationale to add this requirement to the complete road construction as it delays the construction time and increases greenhouse gas emissions from the construction equipment.	The Supplemental EIS discusses the combined phasing option for all action alternatives and the impacts from this option for each resource in Section 3.
29839	6	Alternatives	In Section 2.4.8 in Volume 1, the Draft SEIS states that by combining Phase 1 and 2 the estimated construction time would be 2-3 years compared to 3-4 years. This statement is incorrect and should be deleted. The original design has 4 active faces to build the road which is far faster than a single face as indicated. The pioneer road and/or winter road is required to advance the camps and will be along the alignment of the permanent road, therefore there would be no additional environmental impact. Another key aspect is advancing the road to the next material site to speed up the construction. The approach in the Draft SEIS will negate that advantage, thereby slowing down construction of the road.	See responses to letter 32724, comments 214 and 254. The Supplemental EIS analyzes all 3 phases of the proposed road and all identified associated facilities, including material sources, consistent with AIDEA's application for a ROW.
29839	7	Geology and minerals	The Draft SEIS estimated that 60% of the road would be in permafrost and therefore built at Phase 2 and then states to build the remaining 40% to phase 2 would not be a significant impact. The 60% estimate is a fatal flaw. Field work is required to establish the actual permafrost and since the road is on the edge of the permafrost regime it could vary significantly from the map. The permafrost map (Map 3-01 in Volume 4), shows that Bornite, Arctic and the complete Ambler Mineral Belt is underlain by continuous permafrost (see Figure 1). Ambler Metals has drilled over 350 diamond drill holes throughout this area to depths between 500-1,500, and only 1 drill hole intersected an ice lens (approximately 100 below surface). Based on the actual onsite information, our field data shows that this map is not to an accuracy level that can be used to determine the percentage of the road in permafrost, but rather gives a general interpretation of permafrost for the State of Alaska. It is possible that the AAP road would never encounter permafrost and certainly not the 60% as stated in the Draft SEIS. Therefore, requiring 100% of the road to be built to phase 2 with little evidence of any permafrost is expensive and time	Section 3.2.1 includes the statement: "... exploratory work showed discontinuous permafrost throughout southern Brooks Range near Alternatives A and B." Therefore, the mineral exploration drilling program was acknowledged in the Supplemental EIS.

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			consuming. There is no basis for drawing this conclusion in the Final SEIS. [Figure 1. Map of Permafrost (Map 3-01 Volume 4) showing general location of areas drilled by Ambler Metals and Valhalla Metals where permafrost was not encountered, differing from the distribution of continuous permafrost shown on the map.]	
29839	8	Compliance with other laws	BLM does not legally have the option to select Alternative C in the ROD. Congress, through ANILCA, already determined that if a project proponent AIDEA in this case seeks to permit a road through the Gates of the Arctic Preserve, the federal agencies shall permit that route. There is no discretion with BLM or other agencies to force AIDEA to accept an alternative route. ANILCA 201(4)(b) says the Secretary shall permit such access in accordance with the provisions of this subsection. (emphasis added); ANILCA 4(c) says Upon the filing of an application pursuant to section 1104 (b), and (c) of this Act for a right-of-way across the Western (Kobuk River) unit of the preserve, including the Kobuk Wild and Scenic River, the Secretary shall give notice in the Federal Register of a thirty-day period for other applicants to apply for access. (emphasis added); ANILCA 4(d) says the Secretaries of Interior and Transportation shall jointly prepare an environmental and economic analysis solely for the purpose of determining the most desirable route for the right-of-way and terms and conditions which may be required for the issuance of that right-of-way. This analysis shall be completed within one year and the draft thereof within nine months of the receipt of the application and shall be prepared in lieu of an environmental impact statement which would otherwise be required under [NEPA] shall be deemed to satisfy all requirements of that Act and shall not be subject to judicial review. Such environmental and economic analysis shall be prepared in accordance with the procedural requirements of section 1104(e). (emphasis added); and ANILCA 4(e) says Within 60 days of the completion of the environmental and economic analysis, the Secretaries shall jointly agree upon a route for issuance of the right-of-way across the preserve. Such right-of-way shall be issued in accordance with the provisions of section 1107 of this Act. (emphasis added) A statutes use of the word shall in a statutory directive to an agency signals mandatory action. Nat. Res. Def. Council v. Reilly, 983 F.2d 259, 266 (D.C. Cir. 1993) (internal quotation marks and citation omitted); Am. Forest Res. Council v. Hammond, 422 F. Supp. 3d 184, 190 (D.D.C. 2019) (resource management plans violated mandatory directives from Congress by excluding portions of O&C timberland from sustained yield timber harvest). Congressional intent is clear in ANILCA, and BLM should step back from any attempt to resuscitate an alternative (Alternative C) which is environmentally more impactful than Alternative A, which is un- economic, and which clearly violates ANILCA.	See response to letter 23310, comment 1.
29839	9	Public access	By design this will be an Industrial Access Road with a security gate staffed 24 hours a day, 7 days a week, 365 days a year. We do not understand why the Draft SEIS would include this comment, While the road would not be open to the general public by design, public use and trespass are reasonably foreseeable and the impacts of which are therefore analyzed in this Draft Supplemental EIS. It is not reasonably foreseeable to conclude that security at the junction of the AAP and the Dalton Highway would routinely fail to prevent unauthorized access onto the AAP.	See response to letter 23508, comment 8.
29839	10	Public access	With the Pogo Mine Road, the DeLong Mountain Transportation System, and the Greens Creek Road having demonstrated success in keeping the general public off their roads, we are at a complete loss why BLM spends so much time and effort in the Draft SEIS highlighting the risks and impacts of public and unauthorized use of the road. BLM must provide far more color grounded in the reality of existing controlled access roads in Alaska on controlled access with a focus on the scenario that is reasonably foreseeable (very little trespass/unauthorized access) instead of highlighting scenarios that are not reasonably foreseeable.	See response to letter 23508, comment 8.
29839	11	Public access	There are many statements in the Draft SEIS that the private industrial road will eventually turn into a public road. This is not plausible during the 50-year ROW for the AAP as it is an authorization for a private industrial access road. The BLM is speculating with these statements on future events without describing what needs to happen for the road to turn into a public road. The BLM acknowledges on page H-32 of Volume 2, Modifying a restricted access industrial road to one capable of supporting public access would require a new ROW application and authorization process and renegotiation of easements, financing, and insurance. AIDEAs original application for the AAP began in 2017 and after 7 years from submission, they still dont have a valid authorization. The EIS process is rigorous by design. To add more complexity, there are 3 significant landowners along Alternative A or B which are the State of Alaska, NANA Regional Corporation, Inc. and Doyon Limited. All three landowners would need to agree to change the private nature of the road AND a new authorization would have to be granted.	See response to letter 23508, comment 8.
29839	12	Public access	The BLM should conclude that general public use of the road is not reasonably foreseeable and if the AAP were to be opened to the public, it would require a new and separate NEPA application and the impacts would be analyzed for what was relevant at that time. This would be a multi-year process with significant opportunities for public input. This future permitting step for the BLM should be highlighted and discussed in the Final SEIS to ensure the public fully understands that a shift to public access would be a significant change in the use of the road, would take years to implement, would involve extensive public input, and would require coordination and agreement of at least four landowners. For all these reasons general public use should be seen as unlikely to occur.	See response to letter 23508, comment 8.
29839	13	Cumulative and indirect effects analysis	Although there are no formal development proposals for any specific mine at this time, we understand that the BLM has included the Arctic project in its assessment of cumulative impacts in the Draft SEIS. The Draft SEIS references the Arctic PFS from 2018 which is an outdated technical study. Our most up to date study is titled, Arctic Project, NI 43-101 Technical Report and Feasibility Study, Ambler Mining District, Alaska with an effective date of January 20, 2023 (Arctic FS). The Arctic FS can be found on our website at https://trilogymetals.com/properties/arctic/ . Each reference in the Draft SEIS for the Arctic PFS should be removed and replaced with the updated information from the Arctic FS in the Final SEIS.	See response to letter 29489, comment 91.
29839	14	Fish and aquatics	In Volume 1, page 3-106 and 3-107, the BLM has referenced the Arctic PFS to discuss selenium and mixing zones. A significant change in the Arctic FS is our updated work on water treatment. The new design does not require a mixing zone,	The text has been updated to reflect the 2023 Trilogy Feasibility Study and remove the discussion about a planned mixing zone.

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			and the water discharged from the water treatment plant will meet the discharge standards for the State of Alaska. All references to a mixing zone and selenium need to be deleted in the Final SEIS and all references to the Arctic PFS must be updated to the Arctic FS including all information and references in Appendix H.	
29839	15	Cumulative and indirect effects analysis	The Draft SEIS would have benefitted greatly from consultation with companies that are exploring in the Ambler Mining District and along the three alternative routes. Consultation could have included a discussion on the strategic assessment of geological prospectivity and the opportunities and risks that companies consider in their analysis. Unfortunately, this was not done, despite the draft saying: To evaluate the indirect and cumulative effects of reasonably foreseeable development, the BLM convened a team of agency and private sector National Environmental Policy Act (NEPA) and mining professionals, and consulted with AIDEA and companies that anticipate mining in the District to gather information to inform development of a reasonable mining scenario. (p.H-2). From our own enquiries, not a single exploration or mining company working in the area was contacted.	The mining scenario presented in Appendix H was prepared in conjunction with the 2020 EIS, at which time consultation occurred as written. Text has been revised to indicate the scenario was drafted during the 2020 EIS.
29839	16	Cumulative and indirect effects analysis	BLMs assessment of future mineral exploration and mining (Appendix H) is inaccurate, in part, because it is not based on current information. The number of mining claims described in the Draft SEIS (p. H-5 to H-9) and the map showing mining claims (Volume 4, Map 3-25) have not been updated since the 2020 EIS. Figure 2 of this submission compares the mining claim map in the Draft SEIS with maps that are current as of mid-2023. In fact, since the EIS was published and the JROD for Alternate A was issued in 2020, the total number of mining claims in the District and along the length of the Ambler Mineral Belt has approximately doubled, doubling minimum annual exploration expenditures and annual license fees (rent) to the State of Alaska, and increasing local seasonal hires. These mineral claims were staked by companies, including Trilogy, confident that Alternate A had been approved and the process to actually build a road into the Ambler Mining District as required by ANILCA would be realized. Many of the new mineral claims, including two claim blocks totaling 200 claims (32,000 acres) staked by Trilogy, were staked over the eastward continuation of the prospective volcanic belt in the Ambler Mining District that is followed by Alt. A. The full length of the belt is considered to be highly prospective for volcanogenic massive sulphide (VMS) deposits (like Arctic) and other types of base metal deposits, but it has been less explored due to its remoteness. Over the decades, VMS style mineralization (like Arctic) was discovered, on Roosevelt Creek (see Figure 2c) and numerous geochemical anomalies in stream sediments were defined by these companies and the United States Geological Survey (USGS).	Maps 1, 2, 9, 10, and 11 in Appendix H and Map 3-25 in Volume 4 have been updated to show the most recent DNR State Mining Claim data set. The number of mining claims described in Appendix H, Section 2.1.3 has been updated based on recent feasibility studies and technical reports for the 4 major mining projects, as well as current DNR state mining claim data.
29839	18	Cumulative and indirect effects analysis	Access and permitting are the greatest challenge in developing mines in Alaska and are the main reasons why no new major mines have been developed in the state for 15 years. The JROD provided the level of certainty to exploration and mining companies to explore, while the remand has created significant uncertainty and increasing risk. The statement that mineral exploration is expected to persist regardless of the outcome of the proposed Ambler Road (p. H-38) is completely unfounded in the reality facing private mining exploration companies. Further, there are many inaccurate statements relating to exploration in Table 3-1 (Appendix H) such as conclusions that mining exploration has little contributing effect to the socioeconomics and communities in the project area. Again, it is disappointing BLM did not consult the companies exploring in the belt for the Draft SEIS. These statements should be deleted or significantly modified to make clear that: (i) exploration activity is absolutely tied to Alt. A and that the adoption of any alternative other than Alt. A would likely result in a complete shutdown of exploration activity in the broader Ambler Mining District, and (ii) exploration mining can play a significant role in contributing to the socioeconomics and community development in the region.	The impacts of mining are analyzed to the extent that information is available to do so. No specific mining application/permit request for the District has been submitted to date. The BLM evaluated reasonably foreseeable mining development as indirect and cumulative impacts, using a hypothetical mining development scenario. When officially proposed, each mine would go through its own project-specific NEPA analysis and permitting process, which would provide further detail and analysis regarding the specific impacts of each mine operation.
29839	19	Geology and minerals	This Draft SEIS assessment relies entirely on Map 3-02 in Volume 4 (Asbestos Potential in Alaska) that is sourced from DGGS Miscellaneous Publication 157 prepared for the Alaska Department of Transportation and Public Facilities in 2015 (Solie and Athey). The 2015 publication is an Alaska-wide interpretation of NOA potential that includes 21 1:500,000 sheets. However, for an unknown reason, the map used in the Draft SEIS omits the locations and references to known or reported asbestos occurrences that are shown on the original DGGS map (Fig. 4). According to the DGGS map there are two known asbestos districts in the region covered by Map 3-02 area: (i) near Ambler and Kobuk in the Jade Mountains and Cosmos Hills (Fig. 5) and, (ii) in the Ray Mountains (Fig. 6). Alternate C crosses both of these asbestos districts while Alts. A and B do not cross either district. As the asbestos occurrences are omitted from the map in the Draft SEIS, the crossings of Alt. C through the two asbestos districts were missed in the Draft SEIS.	GIS Revision to Map 3-02 to add locations of known NOA; Appendix D, Table 3 has additional notes to provide context for the data.
29839	20	Geology and minerals	The asbestos occurrences that outcrop around Amber and Kobuk are well known (Fig. 4) and two surficial deposits (Ambler airport gravel pit and at the confluence of the Kobuk and Shungak rivers) are mentioned briefly in the Draft SEIS (p. 3.6). From government mapping (Fritts, 1970 and Hitzman et al., 1982), the Alaska Minerals Database (Fig. 4), and from field visits by our geologists, asbestos minerals have been mapped and reported in three geological settings that are all hosted by ultramafic complexes (JPzTu; USGS, 2015): 1. serpentinite along a fault contact between the Upper Bornite sequence and the Cretaceous conglomerates on the south side of the Cosmos Arch (5-8 miles north of Kobuk and Shungnak); 2. tremolite and chrysotile at the old Ing-Ihk asbestos mine (about 6 miles northeast of Kobuk); and 3. nephrite in the Jade Mtns. (10 miles northwest of Ambler) (Fritts, 1970). Alt. C crosses the Upper Bornite-Cretaceous fault contact in Wesley Creek, about 5.5 miles north-northwest of Kobuk (and about 10 miles south of the AAP). Serpentinite from this fault contact is the likely source of the asbestos found near the confluence of the Kobuk and Shungnak rivers (mentioned on p.3-6), and it is reasonable to assume NOA occurs in all surficial deposits that are downhill and downstream of this fault contact.	Map 3-02 revised by GIS to include the known NOA occurrences from Solie and Athey (2015).
29839	21	Geology and minerals	In the Ray Mountains, the DDGS map shows five asbestos occurrences that are within several miles of the Alt. C route that are not included in the Draft SEIS (Fig. 5). Regarding the High Potential NOA area shown to extend along more than half the length of Alts. A and B (Fig. 3), there are no known asbestos occurrences in the Alaska Mineral Database along the routes of Alternates A and B.	Map 3-02 revised by GIS to include the known NOA occurrences from Solie and Athey (2015).

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29839	22	Geology and minerals	The unevaluated surficial deposits near Alternatives A and B (91 and 86 percent of mapped footprints, respectively) are likely to have measurable amounts of NOA (see Appendix D, Table 3, which helps define the magnitude of potential impact). (p.3-12) We do not believe there is any factual basis to describe the unevaluated surficial deposits along Alternatives A & B as likely. As there are no known occurrences it would be better to simply quote from Solie and Athey (2015) that all surficial deposits in Alaska could contain asbestos depending on the origin of the sediments. In the case of Alternative C, it would seem more reasonable to say the unevaluated surficial deposits are likely to have measurable amounts of NOA as this is supported by the two sites presented in the Draft SEIS (Ambler airport gravel pit and confluence of the Shungak and Kobuk rivers).	GIS edits have been made to Map 3-02 to add the known NOA occurrence locations.
29839	23	Fish and aquatics	There is also the potential that NOA released into rivers could lead to higher concentrations of some trace metals in fish tissues (Schreier et al. 1987). (p. 3-95 and M-22) The NOA described in the paper by Schreier et al. is indirectly associated with higher concentrations of Ni and Mn in several small fish species. The paper describes a tributary of the Fraser River in British Columbia and the State of Washington where chrysotile asbestos fibers entered the river from a land slide. The fibers in the landslide contained elevated concentrations of Ni, Co, Cr, and Mn, and these elements were interpreted to be released into water and sediment as the fibers disintegrated while being transported downstream. Some fish were also found to have elevated Cu, suspected to be due to agricultural impact. There was no evidence the fish were adversely affected.	Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA, notes that AIDEA has committed to using materials with a 0.1 percent NOA occurrence as the project's threshold (DOT&PF regulations use a 0.25 percent NOA threshold). If NOA material cannot be avoided, AIDEA would follow DOT&PF measures described in 17 AAC 97.
29839	24	Air quality and climate	Annual cumulative GHG emissions from ore transportation shown in Table 26 (Appendix D) shows that Alt. Cs total emissions for GHG are approximately 4.5% less on a tons per year basis. This table only considers truck emissions. It should also take into account all the other aspects required to make this road available for the trucking of concentrate, including maintenance shops and camps which will be powered by diesel generators, snow removal equipment and all the mobile equipment required to do the annual maintenance and resurfacing for a road that is 50% longer than Alt A or B. Maintenance facilities, snow removal and annual maintenance should be included in the table to give a complete picture when comparing GHG for transportation.	Comment noted. Appendix D Table 26 summarizes annual GHG emissions for the operational phase including transportation of mining ore from the Ambler Mining District to the Port of Alaska. These estimated emissions are based on traffic estimates developed as part of the mine development and production schedule scenario outlined in Appendix H and maintenance facilities, snow removal and annual maintenance would be a small portion of the emissions. Without the detailed information regarding maintenance facilities, snow removal and annual maintenance necessary to calculate emissions the annual emissions will continue to be calculated utilized traffic estimates.
29839	25	Air quality and climate	In addition, Trilogy has not been able to reproduce the GHG figures shown in Table 6 using the information in the Draft SEIS. The Final SEIS should clarify the methodology and provide a summary of all data used to summarize GHG emissions.	Comment noted. The methodology and emission information provided in Appendix D is correct and accurate. No additional detailed calculations are warranted at this time.
29839	27	Cultural resources	Moreover, Trilogy strongly disagrees with the statements that single out construction workers and maintenance and operations personnel as potential looters (p. 3-247 to 3-249). We are not aware of any basis for this conclusion, and it ignores the significant training around cultural resources followed by mining companies and their contractors.	Despite cultural resource training, unauthorized collection of artifacts is an impact that can potentially occur. Furthermore, construction workers were not singled out but also other unauthorized users. Cultural awareness training is also addressed in the text as well.
29839	28	Mammals	The Draft SEIS correctly devotes much analysis to the Western Arctic Herd (WAH) however there is not much detail given on the Ray Mountains Herd (RMH). Alternate C is the only route that affects the RMH; the proposed route bisects the summer, fall and winter habitats and importantly cuts along the core calving area that is concentrated between Mt. Tozi and the Toznita area (Jandt, 1998). Figure 6 compares the location of the Alternate C route with a map of the calving grounds that was established by BLM-Alaska between 1995-97. This should be included in the Final SEIS.	An additional figure showing the seasonal distribution of the RMH and the HHH based on recent GPS data was added and discussed.
29839	29	Fish and aquatics	No Chum in the Upper Shungnak River An addition to Section 3.3.2 Fish and Aquatics includes a sentence on the potential for chum salmon in the upper part of Shungnak river that forms part of the AAP project area (p. 3-104). While there is a series of rapids in a canyon just upstream from this point, ADF&G has indicated that the rapids are not necessarily a barrier, and chum salmon may occur farther upstream (Giefer 2018). The addition is based on a speculative comment in the field notes of an ADF&G habitat biologist who was unaware of the fish studies on the Shungnak river carried out by ADF&G for Trilogy Metals that state the falls on the lower Shungnak river function as a hydrologic barrier to all anadromous fish. This has now been clarified with ADF&G and the Anadromous Waters Catalogue (AWC) will be corrected in June 2024. We recommend BLM review the ADF&G reports relating to the Shungnak river (Bradley, 2017; Clawson, 2019 and 2020), refers to them in the Draft SEIS and contact ADF&Gs Sport Fish Division that oversees the AWC to confirm the correction. From there the Final SEIS should be corrected to clarify the expected range of chum salmon in the Shungnak river.	On August 13, 2018, an ADF&G biologist visited the Shungnak River as part of an AWC survey. The biologist submitted an AWC Fish Survey Nomination Form Anadromous Waters Catalog with the following comments: "Started sampling right below a lengthy canyon section with some significant 'necked down' rapids. Spotted chum salmon trying to swim up rapids in reach of habitat station where we landed to start. Substrate good throughout sample reaches. Chum may migrate higher in system but timing would coincide with project window. Don't think the canyon rapids can be assumed to be a (hydraulic) barrier." The ADF&G AWC Nomination form is available at: https://www.adfg.alaska.gov/FDDDOCS/NOM_PDFs/ARC/18-186.PDF.
29839	30	Socioeconomics and communities	Section 3.4.6 (Vol. 1, p. 3-204) As a distinction between alternatives, Alternatives A and B would be likely to affect public health in Hughes while Alternative C would not. As a distinction between alternatives, Alternatives A and B C would be likely to affect public health in Hughes while Alternatives A and B C would not.	Text has been revised for clarification.
29839	30	Environmental justice	Section 3.4.6 (Vol. 1, p. 3-204) As a distinction between alternatives, Alternatives A and B would be likely to affect public health in Hughes while Alternative C would not. As a distinction between alternatives, Alternatives A and B C would be likely to affect public health in Hughes while Alternatives A and B C would not.	Revised to correct the error.
29839	31	Fish and aquatics	Appendix E, Table 16 (Vol. 1, E-14) Footnotes a and b: Geifer is misspelt, correct spelling is Giefer	Footnote revised.
30027	1	Proposed action	There are many problems with the prior permitting process including but were not limited to is important project design and baseline information that has yet to even be developed or provided to BLM and other agencies involved in this permitting decision. Despite the magnitude of this project, and all that is at stake if it were to proceed, AIDEA has yet to provide sufficient information about the project or resources in the project area for the public or federal agencies to conduct a full analysis of both the impacts and necessary mitigation measures. Due to insufficient site-specific information about both the project proposal and project area, the BLM and other agencies cannot accurately or adequately analyze the full effects of this project. NEPA does not permit agencies to consider information after the fact, as its purpose is to analyze and consider relevant information prior to, and part of, making a decision. Without all of the information needed for a proper analysis, the BLM must adopt the no action alternative.	See responses to letter 21015, comment 5 and letter 22855, comment 1.

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30027	2	Proposed action	It is also unclear exactly what AIDEA is asking permission to do or what was authorized in 2020. AIDEA submitted a revised permit application to only the Army Corps of Engineers, not the BLM or other agencies. This resulted in the Corps authorizing a different version of the project from the other agencies. To resolve this inconsistency and address the broader lack of information about the project and what is being proposed, AIDEA should submit a new unified permit application. As a first step, all agencies need to rescind prior authorizations. For the BLM, this entails selecting the no action alternative in this SEIS.	See responses to letter 32724, comments 214 and 254.
30027	3	Decision process - general	As detailed in previous comments we have submitted throughout this permitting process, and in our litigation, the previous EIS lacked significant details about many elements of the project, including baseline information, analysis of impacts, and a sufficient range of alternatives, and not all of these information gaps have been addressed in this SEIS. Perhaps most concerningly, AIDEA has not gathered much of the baseline information necessary to fully understand the impacts of this project. Baseline information that should be collected prior to the BLM even considering this project include: 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 Site-specific information about the material sites that will be used for building the project.	See response to letter 22855, comment 1.
30027	4	Proposed action	Even after remand, the draft SEIS still provides little information about the project design and almost no site-specific information about the proposal and how it could impact a wide range of resources along the road corridor. Even the width of the corridor right-of-way has not been identified. Indeed, in reviewing the SEIS one comes away with the impression that the feasibility of the entire project is speculative. The Brooks Range is too wild, and too special, to risk speculative development. The BLM should not approve any project where there is inadequate baseline information and insufficient information about the project to provide for a thorough analysis.	See responses to letter 21015, comment 5 and letter 22855, comment 1.
30027	5	Proposed action	The SEIS does not clearly describe the timeline or material sources for the project, nor is it clear how the different phases will occur. Changes to the road size and to sizes of culverts between one phase and another, and the amount of gravel needed for the project (or where the gravel mines will be located) will have significant hydrological effects as well as other effects.	See responses to letter 21015, comment 5 and letter 22855, comment 1.
30027	6	Proposed action	The SEIS also provides no information on whether ice roads will be used for the project or not, or any details pertaining to this type of road (including amount of water needed and time when ice roads may be utilized).	See responses to letter 21015, comment 5 and letter 22855, comment 1.
30027	7	Proposed action	Likewise, the SEIS does not provide information on what type of insulation will be used to protect permafrost or other information to provide a full analysis on permafrost impacts. The SEIS also does not provide sufficient information about how impacts to permafrost might be mitigated, or the likely effectiveness of any mitigation measures. Given the potential of this project to severely disrupt permafrost, and the global implications of accelerated permafrost melt (in terms of climate change), this is extremely important information to consider before any permits are issued. Without more details, the SEIS does not contain adequate information to support a decision.	See responses to letter 21015, comment 5 and letter 22855, comment 1.
30027	8	Proposed action	Air and (eventual) road traffic are other important pieces of information that are not sufficiently considered in the SEIS. The SEIS states that AIDEA will construct airstrips but there is no specificity as to the number or location of these airstrips or how frequently they might be used once constructed. Without this information the SEIS cannot (and does not) analyze the impact that these airstrips will have on the surrounding environment or communities during construction or once the road is in operation. Impacts to wildlife and subsistence uses of wildlife are of particular concern when considering air traffic and airstrip development.	See responses to letter 21015, comment 5 and letter 22855, comment 1.
30027	9	Transportation and access	The BLM also fails to provide sufficient information concerning the projected levels of traffic on the road. Considering this project is a road, it would seem that an analysis of traffic levels throughout the life of the project would be a fundamental aspect of the analysis. However, the SEIS only provides vague information with little supporting documentation.	See response to letter 23769, comment 1.
30027	10	Decision process - general	The SEIS, and prior EIS, are also difficult to fully digest because the BLM adhered to NEPA regulations that were never implemented and have since been overturned by the current administration. Most notably, this included arbitrary page limits and incorporation of many important documents by reference or into appendices. Because much of the important information about the projects environmental impacts are buried in appendices, the layperson has a great deal of difficulty understanding or interpreting this analysis. A disjointed EIS with key information broken into appendices has also resulted in mistakes and missing data and analysis.	The Supplemental EIS was prepared in accordance with BLM policies and procedures as well as the CEQ implementing regulations for NEPA (40 CFR 1500-1508). The Fiscal Responsibility Act of 2023 requires page limits; EISs shall not exceed 300 pages for actions of extraordinary complexity, not including any citations or appendices.
30027	11	Purpose and need	The purpose and need statement in this SEIS is too narrow to allow for a reasonable range of alternatives. For example, it frames the need for this project as requiring year-round industrial surface transportation. By doing so, the purpose and need needlessly precludes access via other means, such as ice road, aircraft or barge. By narrowly defining the purpose and need, the BLM has limited this SEIS to alternatives based on a gravel road extending east from the Ambler Mining District, constructed in two or three phases. While this may be AIDEAs preference, the BLM is obligated to give meaningful consideration to a reasonable range of alternatives. In scoping comments on the EIS and SEIS, we, and many other commentors, provided suggestions for other alternatives for the BLM to consider. These included TCCs tribal alternative; rail access; seasonal ice road access; aircraft access; barge access; and other alignments coming from the west.	The BLM reviewed the purpose and need for the Supplemental EIS and determined no changes were needed. Surface transportation access in support of mining exploration was part of the ROW application and is therefore a defining part of the purpose and need for the proposed action. See Volume 2, Appendix G, Alternatives Development Memorandum, for the detailed discussion regarding determining the range of alternatives.

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30027	12	Alternatives	Unfortunately, the EIS and this SEIS only contain a No Action and 3 almost-identical Action alternatives. Two alternatives describe 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, entering the Ambler Mining District from the south. No alternative considers rail, air, or water transport options. Three substantively similar alternatives does not constitute a reasonable range. It appears that much of the BLMs rationale for dismissing other potential alternatives hinges on whether AIDEA believes other options to be financially viable. Not only should financial viability not be a threshold for alternative consideration, considering the scant information AIDEA has been able to provide about their proposal and changes they have made in cost estimates, its not even clear that the alternatives in this SEIS are financially viable. Thus, using this as a reason to eliminate other alternatives is contradictory.	In accordance with the CEQ NEPA implementing regulations at 40 CFR 1502.14, the BLM has explored and evaluated all reasonable alternatives for this project and discussed reasons why other alternatives were determined not to be reasonable. To determine whether an alternative was reasonable, the BLM considered an alternative's effectiveness at satisfying the purpose and need, technical and economic feasibility, the practicality of the alternative, and whether he alternative duplicated others evaluated. Western routes, both road and rail were specifically considered and were eliminated from further consideration due to economic feasibility and practicality. For details on the alternatives examined and the reasons some were not carried forward for detailed analysis, see Supplemental EIS Appendix G.
30027	13	Alternatives	Furthermore, the SEIS analysis of the No Action alternative is not adequate. This is in large part due to the lack of baseline information, which precludes any sort of meaningful analysis. In the SEIS, for each resource the BLM repeats that, under the no action alternative, the road would not be built and thus impacts would not occur. Given the scale of impacts that would occur were one of the action alternatives to be pursued, impacts would not occur is a good outcome, but this is also a somewhat meaningless conclusion. The SEIS should, but does not, consider the differences between alternatives for each resource, including how baseline conditions would be altered and how conditions would change over time, in each alternative including the No Action. Doing nothing is not equivalent to no effect if the effect of no action is that the wildlife, waters, and communities of the southern Brooks Range continue along their current trajectories, this has a social, ecological, and economic impact that must be considered and weighed against the impacts of other alternatives.	See responses to letter 21015, comment 5 and letter 22855, comment 1.
30027	14	Decision process - general	The SEIS gives a vague description of the project area, 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, yet Map 1-1 shows only the road corridors under consideration, not the areas surrounding the corridor, associated gravel mines, airstrips, or other facilities. In addition, the Ambler Mining District is noted on the map, but it is not clear whether the entire mining district is being considered as part of the project area for purposes of BLMs analysis. This vagueness makes it difficult for the public to even know what scope of the analysis is, much less to comment on whether this scope is appropriate or not. This inconsistency also prevents the BLM from fully analyzing the significant impacts of approving any of the action alternatives. This is yet another reason the agency must select the no action alternative.	See response to letter 32724, comment 82.
30027	15	Decision process - general	The SEIS must also provide information regarding the scope of BLMs impact analysis for individual resources. While the SEIS states that the scope of analysis for individual resources can be found in each resource section and in corresponding maps, this information is missing for many resources. For example, there is no map depicting the affected area for birds and the bird analysis section does not define the affected area. The SEIS also repeatedly refers to localized impacts without defining the geographic scope of impacts. The SEIS 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.	See response to letter 32724, comment 82.
30027	16	Decision process - general	In addition to defining the geographic scope of the project, the SEIS should have accurately and fully described the temporal scope of the project, along with the magnitude and duration of potential impacts. Although the construction phase of this project is limited (albeit unknown), the eventual road would almost certainly be permanent in some form or another. As we have learned from fragmenting formerly roadless lands across the world, roads and their impacts -are forever. Failure to consider the long-term effects of the Ambler Road constitutes a grave breach of the publics trust in the BLM to accurately evaluate this project before making a decision. As such, the best course of action is to select the no action alternative.	See response to letter 32724, comment 82.
30027	17	Public access	The SEIS also fails to consider impacts of public use of the road authorized or unauthorized. Instead, it relies on AIDEAs (current) plan of this being an industrial access road only, and the assumption that AIDEA will properly control access. The BLM cannot avoid analyzing the impacts of public access along the new road, especially as the agency simultaneously acknowledges that the road may someday become open to the public. The SEIS should consider the potential for, and impacts of, construction of new trails, airstrips, and campsites and an increase in water traffic and the subsequent impact these activities would have on subsistence use.	See response to letter 23145, comment 4.
30027	18	Cumulative and indirect effects analysis	Another important, connected, impact of this project that cannot be ignored are the environmental consequences of developing the Ambler Mining District. If the sole purpose of this road is to achieve that purpose, it is a clear connected action that must be considered. The SEIS must include a more robust analysis of the impacts developing the Ambler mining district, including the cumulative and indirect effects of mining, climate change, and revisions to relevant management plans.	The potential cumulative and indirect effects of mining-related activities and climate change on environmental resources are discussed and analyzed in Chapter 3 of the Supplemental EIS. See also responses to letter 24369, comment 9 and letter 32724, comment 175.
30027	19	Fish and aquatics	Introducing a road into this landscape will bring significant changes to hydrology, sedimentation, barriers, water temperature, and surface and sub-surface flows, among other habitat impacts. And, given the scale of this project and the number of waterbodies the road will cross or otherwise affect, we have grave concerns about how these impacts will add to the cumulative stresses these fish populations are already facing, as well as how the project will affect other fish species. However, given the lack of baseline data or project-specific details discussed above, the BLM is in an impossible situation of assessing impacts based on an incomplete understanding of a project. Until AIDEA provides the BLM with a fully developed project proposal, and baseline data on the state of the project area, the BLM can't fully evaluate the differences in impacts between alternatives or meaningfully assess impacts to fisheries from the proposed Ambler Road and develop site-specific mitigation impacts. At present, the SEIS fails to fully assess potential impacts (especially at the site-specific level) and provides only vague mitigation measures.	Should an action alternative be approved in the BLM's ROD, additional surveys and studies would be conducted as needed in support of other local, state, and federal permits. As described in Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA - Biological Resources, fish surveys would be conducted to assess fish presence in rivers in streams for all life history stages along the selected alignment. The scope of these surveys would be coordinated with ADF&G, USFWS, and the National Marine Fisheries Service. The Supplemental EIS includes a description of design features and mitigation measures that are intended to reduce impacts to waterways, fish, and aquatic habitat from road construction and the installation of bridges and culverts (see Supplemental EIS Section 2.4.4, Design Features

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				Proposed by AIDEA - Physical Environment, Section 3.2.5, Water Resources - Impacts Common to All Action Alternatives, Appendix N, Potential Mitigation).
30027	20	Mammals	The draft SEIS states that even relatively low traffic levels can have detrimental effects on caribou movement patterns. We appreciate that the BLM recognizes this, but would like to acknowledge that there are additional studies not cited in the SEIS that support this claim. These studies should also be cited. Conversely, there are multiple places in the SEIS where the BLM makes claims regarding caribou that are not supported by citations. For example, the SEIS claims that ADF&G studies show that the road would cause some disruption to caribou movement but that that Western Arctic herds migratory patterns, as a whole, would likely remain intact. Without citations to scientific literature to support claims such as this, the SEIS cannot claim that the road would not disrupt caribou migratory patterns. In general, the BLM needs to review the SEIS and ensure that science-based claims regarding caribou are properly cited, that unsupported assumptions or misleading claims are deleted, and that the analysis reflects a full understanding of how industrial infrastructure, traffic, and roads may affect the Western Arctic caribou herd.	Sentence saying “ADF&G studies show that the road would cause some disruption to caribou movement but that that Western Arctic herds migratory patterns, as a whole, would likely remain intact” will be revised.
30027	21	Mammals	We appreciate that the SEIS discusses how climate change is impacting caribou and how this exacerbates potential impacts from the proposed road on caribou habitat quality, but believe the BLM could address these topics in more thorough detail.	Comment noted. The climate change section was reviewed in relation to new literature.
30027	22	Mitigation/monitoring	Likewise, while we appreciate that the SEIS includes mitigation measures proposed by AIDEA and potential mitigation measures proposed by BLM. However, we do not believe these measures go far enough to protect caribou in the face of this project. At the very least, the BLM should require all of the mitigation measures described in Appendix N as a minimum condition of road approval. These measures could be further strengthened with additional details regarding timing, monitoring, reporting requirements, and restoration. The best way to protect caribou in the project area, however, would be to not permit the road in the first place.	Should the project be approved, the ROD will determine which mitigation measures will be required.
30027	23	Birds	Despite the local and far-reaching importance of birds, 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. This is to say that the BLM does not know what is at risk, much less how to address or minimize risks, when it comes to birds and the Ambler Road. This is yet another example of why baseline data collection should have been conducted prior to BLM considering AIDEAs proposal, and why the agency should revoke the permits for the road now. We understand that there are many (142) bird species in the project area, but AIDEA and the BLM could gather important information about birds by focusing on a limited number of focal species, survey for birds in the road corridors and zones of influences (rather than the entire project area), or use vegetation data to develop models to better understand or predict bird distribution. Without more information on bird species distributions and abundance, the BLM can’t conduct the site-specific analysis of impacts required by NEPA and must select the No Action alternative.	According to 40 CFR 1502.22, when an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an EIS and there is incomplete or unavailable information, the agency will make clear that such information is lacking. A number of topics are called out within chapter 3 of the Supplemental EIS where information is incomplete or unavailable. The BLM evaluated the data to determine if any missing information would be relevant to determining reasonably foreseeable significant adverse impacts or essential to making a reasoned choice among alternatives and, if it was, whether the overall costs of obtaining it would not be exorbitant (see Appendix R). 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 Supplemental 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. The BLM has evaluated the impacts in the Supplemental EIS based upon research methods and theoretical approaches that are accepted in the scientific community. Based on a review of the data that are available, summarized, and cited in the Supplemental EIS and in accompanying appendices, sufficient data exists to allow the BLM to make a reasoned choice among the alternatives. If the project moves forward, additional studies and information would be generated during permitting. Some potential mitigation measures identified in Appendix N have provisions for data collection and monitoring.
30027	24	Mitigation/monitoring	Furthermore, the SEIS does not include adequate mitigation measures for birds, so unless the agency chooses the No Action alternative it is at risk of approving a project that will violate the Migratory Bird Treaty Act in addition to causing inexcusable impacts to a multitude of bird species.	The potential mitigation measures in Supplemental EIS Appendix N contains measures that serve to minimize potential impacts to resources from the project. Should the project be approved, the BLM will make a decision on what mitigation measures will be required in the ROD.
30027	25	Geology and minerals	As the primary substrate upon which this road would be built, the massive changes that happen to the landscape when permafrost melts, and the likelihood that any disturbances related to road building will affect permafrost, it is incredibly important to thoroughly understand permafrost conditions and to integrate this understanding into project design and alternative development. Despite the importance of permafrost, site-specific baseline data about the permafrost conditions has not informed this NEPA process to-date. As a result, the description of the baseline is woefully inadequate, cursory, and too generalized and not site-specific enough to provide for a meaningful analysis. Instead, the BLM has punted consideration of how to address permafrost impacts to the design phase of the project. This is not appropriate, when NEPA requires the SEIS be a hard look at impacts.	According to 40 CFR 1502.22, when an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an EIS and there is incomplete or unavailable information, the agency will make clear that such information is lacking. A number of topics are called out within Chapter 3 of the EIS and the appendices where information is incomplete or unavailable. The BLM evaluated the data to determine if any missing information would be relevant to determining reasonably foreseeable significant adverse impacts or was essential to making a reasoned choice among alternatives and, if it was, whether the overall costs of obtaining it would or would not be exorbitant (see Appendix R). 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, the EIS makes clear to the reader where information is lacking, explains the relevance of the information, and summarizes the existing credible scientific evidence that is relevant to evaluating reasonably foreseeable significant adverse impacts on the human environment. The BLM has evaluated the impacts in the EIS based upon research methods and theoretical approaches that are accepted in the scientific community. Based on a review of the data that are available, summarized, and cited in the EIS and in accompanying appendices, sufficient data exists to allow the BLM to make a reasoned choice among the alternatives. If the project moves forward, additional studies and information would be generated

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				during later permitting and final engineering design. Some potential mitigation measures identified in Appendix N include provisions for data collection and monitoring.
30027	26	Alternatives	The fact that the SEIS does not include a reasonable range of alternatives is also problematic. Substantively different road routes, a seasonal ice road, or use of a rail rather than gravel road are all possible alternatives that would potentially reduce impacts on vegetation and permafrost yet none of these options are considered in the SEIS.	In accordance with the CEQ NEPA implementing regulations, 40 CFR 1502.14, the BLM has explored and evaluated all reasonable alternatives for this project and discussed reasons why other alternatives were determined not to be reasonable. To determine whether an alternative was reasonable, the BLM considered an alternative's effectiveness at satisfying the purpose and need, technical and economic feasibility, the practicality of the alternative, and whether he alternative duplicated others evaluated. Western routes, both road and rail were specifically considered and were eliminated from further consideration due to economic feasibility and practicality. An ice road alternative is discussed in Appendix G, Section 6.3 and was determined not to meet the purpose and need of the project, and was eliminated due to technical and economic feasibility and practicality. Various rail routes were considered in Appendix G Section 6.4 but were eliminated from detailed analysis due to practicality.
30027	28	Geology and minerals	Finally, the SEIS should consider how permafrost would be affected by, and would affect, mining in the Ambler mining district. As development of this district is the sole purpose of the Ambler road, effects related to the mining district are clearly directly connected to this project. AIDEA has failed to provide the necessary baseline information on permafrost, or a detailed enough proposal, to the BLM to inform an appropriate analysis under NEPA.	The Supplemental EIS addresses reasonably foreseeable mine development as indirect and cumulative impacts. See Appendix H, Indirect and Cumulative Scenarios, for a detailed description of the reasonably foreseeable mining scenario.
30027	29	Air quality and climate	Climate change amplifies every threat and change posed by the Ambler Road, and would be further exacerbated by building the road and developing the Ambler mining district. For example, building the road, and developing the mining district, will necessarily involve wetland and permafrost destruction; traffic from trucks, planes, helicopters, trains, and ships with associated emissions; 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. These are emissions that would not occur without these developments, and that they will help to move the planet towards a climate tipping point. However, in the SEIS the BLM has only considered a small subset of emissions associated with this project, and then relied on this erroneous tally to conclude 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.	Comment noted. See response to letter 132, comment 2.
30027	30	Air quality and climate	Climate change will also dramatically affect the Ambler Road if it were to be built. As discussed above, continuous permafrost underlies the region proposed for the Ambler Road. By disturbing this permafrost, the road is expected to cause soils to warm and potentially thaw. The SEIS acknowledges that increased permafrost temperatures may lead to increased soil movement on slopes and slope failures and that permafrost thawing and warming may lead to development of thaw settlement and thaw ponds. These are issues that already plague roads in Alaska (most notably the Denali Park Road) and it is not difficult to predict how the Ambler Road would hold up over time. The BLM should look to the Denali Park Road as an example of how gravel roads in permafrost landscapes degrade over time, and how such degradation may accelerate dramatically, accelerated by thawing permafrost. The final SEIS must explain climate change will impact each Alternative and its direct, indirect, and cumulative impacts.	Permafrost and climate change is discussed in Chapter 3, Section 3.2.7 of the Supplemental EIS and each alternative's footprint is discussed in relation to permafrost impacts. The Supplemental EIS notes, road project effects and mining project effects of the types discussed in this Supplemental EIS that can hasten permafrost thaw, coupled with the effects of a generally warming climate on permafrost, could cumulatively release CH4 and further contribute to climate change. The Supplemental EIS states such impacts to permafrost are anticipated in Section 3.2.1. The applicant's estimate of construction costs includes the anticipated construction costs associated with thicker embankments, or additional insulation, to preserve the existing soil thermal regime as much as possible and the necessary maintenance to keep the road functional and useful for its users. Impacts to water quality from the thawing of permafrost are addressed in Chapter 3, Section 3.2.5.
30027	31	Air quality and climate	In conducting this analysis, BLM must consider best available climate science, including the most recent scientific information and consider and analyze all aspects of this proposal in the context of climate change.	Comment noted. See response to letter 132, comment 2.
30027	32	Recreation and tourism	Most tourism and recreation in the project area occurs in the summer, which overlaps with construction season. Thus, this is likely to be the time of greatest impact, at least during the construction phases of this project. However, the BLM does not quantify what these impacts are and instead states that AIDEA will develop a plan to minimize impact to high-use tourist and recreation seasons by timing construction activities. This doesn't provide any information as to how impacts will actually be minimized, nor does it hold AIDEA meaningfully accountable for doing so. For lesser-visited seasons of the year, such as winter, the SEIS offers virtually nothing. As with all other elements of this SEIS, there is inadequate baseline data on recreation and tourism to inform analysis, development of mitigation measures, or a decision.	According to 40 CFR 1502.22, when an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an EIS and there is incomplete or unavailable information, the agency will make clear that such information is lacking. A number of topics are called out within chapter 3 of the Supplemental EIS where information is incomplete or unavailable. The BLM evaluated the data to determine if any missing information would be relevant to determining reasonably foreseeable significant adverse impacts or essential to making a reasoned choice among alternatives and, if it was, whether the overall costs of obtaining it would not be exorbitant (see Appendix R). 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 Supplemental 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. The BLM has evaluated the impacts in the Supplemental EIS based upon research methods and theoretical approaches that are accepted in the scientific community. Based on a review of the data that are available, summarized, and cited in the Supplemental EIS and in accompanying appendices, sufficient data exists to allow the BLM to make a reasoned choice among the alternatives. If the project moves forward, additional studies and information would be generated during permitting. Some potential mitigation measures identified in Appendix N have provisions for data collection and monitoring.

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30130	1	Wetlands	I conduct scientific research on how disturbances to landscapes in the arctic and subarctic of Alaska alter ecosystem functions and know firsthand how sensitive these landscapes are to change. Specifically, I am concerned about the, at a minimum, 2,000 acres of wetlands that would be directly impacted by Ambler Road construction, and more than 10,000 acres that would be indirectly impacted (Appendix C. Chapter 2 Alternatives Tables and Supplemental Information). Wetlands provide crucial functions such as habitat for wildlife, flood attenuation, insulation of permafrost, and storage of surface runoff. All alternatives pass through areas with wetlands, and constructing a road would eliminate both upland and wetland vegetation (page C-11, section 1.5.10) While the SEIS does state that BMPs and other measures would be implemented to attempt to minimize impacts, the impacts would not be eliminated (page C-9). Additionally, Alternative A would pass within 0.25 mile up-gradient of a rare wetland, the Nutuvuki Fen, creating a risk of pollutants entering the rare fen in addition to building on 116.3 acres of high value wetlands (Palustrine Emergent wetlands). Losses and damages to wetland ecosystems would be high-likelihood and long or permanent in duration. Wetlands are also tightly linked to permafrost extent, as permafrost degrades, the extent of wetlands also declines (Avis, C., Weaver, A. & Meissner, K. Reduction in areal extent of high-latitude wetlands in response to permafrost thaw. Nature Geosci 4, 444448 (2011). https://doi.org/10.1038/ngeo1160). The draft SEIS fails to address the compounding interactions between the projects impact on permafrost and further destruction of wetland systems.	The Supplemental EIS discloses the extent of permanent wetland loss as does the USACE Section 404 wetland permit. Unavoidable impacts are addressed in the wetlands permit through a series of special conditions designed to avoid or minimize impacts. Special conditions are cited within the report text and provided in Appendix N, Potential Mitigation.
30130	2	Subsistence	The updated analysis identifies 66 communities whose subsistence activities could be potentially impacted, finding that any road alternative may significantly restrict subsistence uses in nearly half of these communities. Beyond impacting subsistence activities, there is a demonstrated link between construction and resource extraction near Indigenous communities and increased risk to Indigenous women and young peoples safety and health in North America (Kathleen Finn, Erica Gajda, Thomas Perin, and Carla Fredericks, Responsible Resource Development and Prevention of Sex Trafficking: Safeguarding Native Women and Children on the Fort Berthold Reservation, 40 Harv. J.L. & Gender 1 (2017), available at https://scholar.law.colorado.edu/faculty-articles/629). The devastating impacts of the environmental violence this causes ranges from sexual and domestic violence, drugs and alcohol, murders and disappearances, reproductive illnesses and toxic exposure, threats to culture and Indigenous lifeways, crime, and other social stressors. The United Nations Declaration on the Rights of Indigenous Peoples, Emphasizes the rights of indigenous peoples to live in dignity, to maintain and strengthen their own institutions, cultures and traditions and to pursue their self-determined development, in keeping with their own needs and aspirations (Declaration on the Rights of Indigenous Peoples (2007). United Nations Permanent Forum on Indigenous Issues. Retrieved from http://www.un.org/esa/socdev/unpfii/documents/faq_drips_en.pdf).	See response to letter 34767, comment 94.
30193	2	Proposed action	Third, there are other options for copper and resource extraction that have significantly less negative impact on the environment and that offer a much more profitable option. This project would not assist in the push toward clean energy in the foreseeable future. On balance, the Ambler Mining project does not make financial, economic, or environmental sense.	See response to letter 21906, comment 1.
30286	1	Recreation and tourism	I am concerned that the SEIS does not appropriately quantify the social impacts of the Ambler Road. For example, what are the metrics used to quantify the social carrying capacity of the proposed road? Are the indicators being used specific, manageable, quantifiable and accurate enough to track the impact? How have recreational experiences been factored into the planning? Are the motivations of recreationalists considered when quantifying the impact of the road?	The Supplemental EIS uses the best available information to quantify physical impacts to recreational opportunities from each action alternative and includes discussion of impacts to recreational benefits (see response to letter 22770, comment 12).
30286	2	Noise	How is the sound of the road going to impact the aural detection range of fauna? I am concerned that the SEIS does not use the appropriate A-weighted decibel indicator to assess the impact of the road traffic on the wildlife as well as on the human visitors.	Section 3.2.6 discusses the potential impacts on wildlife from noise and Appendix D, Attachment A Predictive Noise Modeling of the Ambler Road shows the appropriate A-weighted decibel indicator to assess the impact of the road traffic on the wildlife as well as on the human visitor
30330	1	Recreation and tourism	Economic Impact to existing tourism economies. The great asset of Northern Alaska and the Brooks Range is the vast wilderness that it protects. As someone whose business relies on wild areas to draw visitors, I would like to know precisely the likely impact on the tourism economy if Gates of the Arctic National Park and Preserve can no longer claim roadless status. Or how visitors will feel, expecting a true wilderness visit when they are forced to fly over an industrial highway on their way to the Brooks Range. This road will impact tourism, an existing, sustainable income stream. This needs more attention in the EIS.	The Supplemental EIS uses the best available information to discuss potential impacts to recreation opportunities and the recreation industry and notes that the development of the road may reduce the demand and require business model alternations for nearby guides and lodge owners and may require mobile guides to shift their activities to other areas. However, quantification of economic impacts due to changes in recreation use would be speculative at best and will not be completed at this time. The BLM believes that the Recreation and Tourism, Socioeconomic, Visual Resources, and Land Ownership, Use, Management, and Specials Designations sections in the EIS and Appendix H adequately consider the topics in this comment and are sufficient to allow decision makers to make an informed decision about choosing among build alternatives or to choose the No Action Alternative.
30330	2	Birds	I searched the documents for any mention of Gray-headed Chickadees and found none. Gray-headed Chickadees are noted by Birdlife International to be the most at-risk species of tit worldwide. Even the Alaska Department of Fish and Game notes that the Gray-headed Chickadee appears to be “most vulnerable to human disturbance”. Anecdotal evidence from Alaska suggests the population in the state is in significant decline, as regular breeding areas no longer support the species. The northern edge of the boreal forest is the area where Gray-headed Chickadees are most likely to be encountered, particularly in winter. In other words, directly where the proposed Ambler Road will run. What impacts will this loss of habitat, new risk of vehicle strikes, and habitat loss and degradation have on the remaining population of Gray-headed Chickadees in Alaska? As this species is the least known bird species in the northern hemisphere, that is a question that cannot easily be answered without significant additional study. This EIS and SEIS utterly fails to address the subject, despite the significant impact the project will have on the species.	Gray-headed chickadees are discussed on in Section 3.3.3 under Affected Environment. “The lanthami subspecies of gray-headed chickadee is endemic to Alaska and northwestern Canada and is 1 of 3 resident chickadee species found in mixed coniferous and deciduous forests of the project area (Booms et al. 2020). Gray-headed chickadees were once considered locally common in parts of interior Alaska; however, the species’ distribution has contracted, and its population has declined during the past 2 decades (Booms et al. 2020).”
30516	1	Compliance with other laws	In the NOA, BLM asserts that [t]he input of Alaska Native Tribes and Corporations is of critical importance to this Supplemental EIS. 88 Fed. Reg. at 72532. Therefore, the NOA continues, during the NEPA process, the BLM will continue to consult with potentially affected Federally recognized Tribes on a government-to-government basis, and with affected Alaska	See response to letter 25830, comment 3.

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			Native Corporations in accordance with Executive Order 13175, as well as Public Law 108199, Div. H, sec. 161, 118 Stat. 452, as amended by Public Law 108447, Div. H, sec. 518, 118 Stat. 3267, and other Department and Bureau policies. We respectfully request participation in consultation by Alaska Native Tribes and Alaska Native Corporations to provide their views and recommendations on the analysis, including effects from the proposed activities.	
30516	2	Compliance with other laws	Unfortunately, as Doyon explained in its scoping comments, BLM has failed to consistently meet its obligations to consult with Doyon prior to taking actions concerning Ambler Road that have the potential to affect Doyons interests. This included BLMs decision to suspend the right-of-way authorizations for the Project resulting in this SEIS process without first consulting with Doyon to consider its position and interests. It also included BLMs effort last year again, without first consulting with Doyon to block Alaska Industrial Development and Export Authority (AIDEA) from undertaking preliminary survey and field work activities on Doyon-owned lands. This was despite Doyons explicit agreement authorizing AIDEA to engage in such activities, and despite the fact that, as a private landowner, it is Doyon not BLM that has the power and authority to grant (or to deny) rights to third parties for access to and use of Doyon lands.	See response to letter 25830, comment 3.
30516	3	Compliance with other laws	BLM also inexplicably continues to misrepresent the nature and extent of its obligations to consult with ANCs. In the DSEIS, BLM states, in its discussion of Collaboration and Coordination, that, as a matter of policy, the BLM initiates consultation with Alaska Native corporations for actions that have a substantial direct effect on them. DSEIS, p. 1-7 (emphasis added); see also FEIS, p. 1-5 (containing the same statement).1 As BLM should be well aware because this has been the case for nearly 20 years, because Doyon specifically drew the agencys attention to it in its scoping comments on the SEIS (not to mention in response to countless other comment opportunities), and because it is noted in the NOA its obligations to consult with ANCs are not merely a matter of policy but are directed by federal law. In Executive Order (EO) 13175, Consultation and Coordination with Indian Tribal Governments, the President required federal agencies to implement an effective process to ensure meaningful and timely consultation with tribes during the development of policies or projects that may have tribal implications. While EO 13175 itself applies specifically to federally recognized tribal governments, pursuant to Pub. L. 108-199, 118 Stat. 452, as amended by Pub. L. 108-447, 118 Stat. 3267, Congress by statute specifically extended these obligations to ANCs, requiring the Office of Management and Budget and all Federal agencies, including BLM, to consult with Alaska Native corporations on the same basis as Indian tribes under Executive Order No. 13175.	See response to letter 25830, comment 2.
30516	4	Compliance with other laws	Appendix I of the DSEIS (Preparers, Consultation and Collaboration) also fails to accurately represent BLMs consultation obligations to ANCs and document BLM consultation meetings with ANCs. Section 2 of Appendix I addresses Government-to-Government Consultation and includes a table (Table 2) that presents the dates, locations, and attending agencies and other entities involved in government-to-government consultation meetings associated with the Supplemental EIS and Section 106. DSEIS, pp. I- 2 - I-3. However, there is no corresponding section addressing ANC consultation. The only discussion of consultation with ANCs in this appendix is in section 3, which addresses Section 106 and includes two tables: Table 3, which presents the dates, locations, and attending agencies and other entities involved in Section 106 consultation meetings that have occurred since July 2020; and Table 4, which presents information regarding the regularly recurring meetings held to assist with implementation of the [Section 106 Programmatic Agreement]. DSEIS, pp. I-3 - I-4. Consultation under section 106 of the National Historic Preservation Act, however, is different from the consultation required pursuant to EO 13175, as extended to ANCs by Congress.	See response to letter 25830, comment 2.
30516	5	Compliance with other laws	There is simply no excuse for the DSEISs failure to accurately and fully explain BLMs obligations to consult with ANCs under applicable law and to properly describe the agencys efforts to consult with ANCs on the AAP and DSEIS. As Doyon said in our scoping comments, BLM must do better to consistently recognize and meet its consultation obligations as it considers further actions with respect to this Project.	See response to letter 25830, comment 2.
30516	6	Alternatives	Common to each of these action alternatives is that they presuppose that Doyon will grant a right-of-way for the construction and operation of the AAP across Doyon lands. Doyon has made clear, however, both in the context of this environmental review and in related litigation, that it has not committed to granting a right-of-way for the Project. It has cautioned BLM against limiting its consideration of action alternatives to alternatives that rely upon use of Doyon lands. In its previously submitted comments on the Projects environmental review and in consultation discussions, Doyon had urged that variations of the routes westward from the Ambler Mining District that had been included in the 2012 Alaska (DOT&PF) Ambler Mining District Access Summary Report AKSAS 63812 (DOWL HKM, 2012) would provide significant comparative benefits and lesser impacts than previously reported and described in the DEIS and should be given further detailed consideration in the FEIS and BLMs decisionmaking process. It urged BLM to reconsider its decision not to undertake a detailed evaluation of alternative routes to the west from the Ambler Mining District, such as the Nome/Council route that Doyon presented to BLM or any other route that would not require the use of Doyon lands.	See response to letter 25830, comment 5. In regard to the Nome/Council route, the BLM discusses this route in Appendix G, Alternatives Development Memorandum. This alternative was eliminated from detailed analysis due to high cost, environmental impacts, and speculative assumptions regarding the reasonably foreseeable Port of Nome development. Various other westward routes are discussed in Appendix G and were eliminated from further analysis for various economic, technical, practical, and environmental reasons.
30516	7	Land use/management	In the DSEIS, the BLM asserts that it reconsidered various road and rail routes including certain westward routes, determined they are not reasonable, and eliminated them from detailed analysis. DSEIS, at 2-4 - 2-5. The result is that every single action alternative carried forward for detailed consideration involves a route that would cross Doyon lands and presumes that Doyon will authorize a right-of-way across approximately ten to twelve miles of Doyon-owned lands. Though BLM does acknowledge in its discussion of Socioeconomics and Communities that AIDEA would need to negotiate access across Doyon Lands, DSEIS, at 3-196, a presumption that AIDEA will have access across Doyon lands is inappropriate. As Doyon has explained to BLM, As a private landowner, it is Doyon and not BLM that has the power and authority to grant (or to deny) rights to third parties for access to and use of Doyon lands. Whether for short-term access for preliminary field work or long-term authorization of a right-of-way, any decision to authorize, restrict, or deny access to and use of Doyon lands is Doyons decision alone. BLM decisions do not determine or control the location of surface-disturbing activities on Doyon lands. Letter from A. Schutt to T. Stone-Manning, dated May 11, 2022, at 2-3 (attached).	Section 505 of FLPMA requires the BLM to identify terms and conditions necessary to protect public lands and interests associated with any rights-of-way it issues. The BLM's direct regulatory authority is limited to public lands managed by the BLM; FLPMA requirements do not extend to other lands.

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30516	8	Alternatives	In meeting its obligation under NEPA to consider a reasonable range of alternatives, BLM should consider in detail at least one alternative that does not involve access to and across Doyon lands. Despite the findings in the DSEIS, Doyon continues to believe that detailed consideration of its alternative route is warranted based on BLMs determination that a deep water port at Nome is now considered reasonably foreseeable given funding for planning and construction of the port. DSEIS, at 2-5, G-34. As noted in the document that Doyon provided to BLM on August 3, 2019, Doyon also believes that the potential comparative benefits of this alternative route are greater, and the costs/impacts lesser, than previously reported for the western routes included in the Alaska DOT&PF 2012 report on potential corridor options, and then BLM has represented in the DSEIS. For instance, by better utilizing upland terrain and more closely following the Continental Divide, the amount of wetland habitat traversed and the number of stream crossings could both be reduced; the crossing of the Selawik Wild and Scenic River could be avoided (contrary to the DSEISs statement that the route crosses the Selawik River, DSEIS, at 2-5); and availability of material sites could be greatly improved (contrary to the DSEISs noting of limited material sites, DSEIS, at G-34). These factors also would be expected to result in improved constructability and lower construction costs.	See response to letter 25830, comment 5.
30516	9	Alternatives	The BLMs dismissal of any western route alternative means that every action alternative that BLM considered in detail presumes use of Doyon lands. AIDEA has acknowledged that it does not possess the power of eminent domain to enable it to take private lands for use by the Project, and Doyon has not agreed and may not agree to authorize use of its lands for the Project something Doyon has consistently explained to both BLM and AIDEA in this environmental review process, in related litigation, and otherwise. The same could be true of other private landowners. As Doyon has indicated, and despite BLMs efforts to demonstrate benefits to Doyon in the DSEIS, Doyon does not currently anticipate that it and its shareholders will benefit from this Project in any meaningful way that would justify the impacts to communities or resources in its region. Doyon has therefore consistently recommended that BLM and AIDEA fully assess at least one route that does not cross Doyon lands.	See response to letter 25830, comment 5.
30516	10	Land use/management	To date, AIDEA has not engaged with Doyon on substantive discussions regarding a potential right-of-way (ROW) across Doyon lands for the construction and operation of the Project. Doyon has raised serious concerns with both AIDEA and BLM about the Project that have not been satisfactorily addressed. In the event that the final selected route would propose to cross Doyon lands, among other conditions to its considering granting a ROW, Doyon would require appropriate compensation for the use of its lands, as well as other assurances. These assurances would include, but not be limited to, restrictions on the transfer or assignment of the ROW, or any rights thereunder, to any other entity (including any other state, federal, or local governmental entity). That AIDEA and Doyon will be able to reach agreement on terms and conditions for access to Doyon lands is by no means assured, and to assume that the proposed Project will occupy Doyon lands, as the DSEIS does, is presumptuous. As such, it is inappropriate for BLM to assume that AIDEA will be able to obtain a ROW across the entire route for any of the three action alternatives carried forward in the DSEIS. Indeed, the DSEIS appears to fail to fully appreciate landowners rights and the implications of those rights with respect to each of the action alternatives. For instance, the DSEIS states, No change in the broad pattern of underlying land ownership is anticipated as a result of the project because the project would not be a land conveyance but rather the entities would authorize use of their lands. DSEIS, at 3-159. The reality, however, is that each of the action alternatives is highly dependent upon landowners other than BLM authorizing use of their lands for the Project. As the DSEIS recognizes, Under AIDEAs proposal, approximately 25 miles of the proposed road would cross BLM-managed lands. DSEIS, at 1-1. The BLM has authority only over BLM-managed lands. Management relative to the proposed road, including mitigation measures, stipulations, terms and conditions required to minimize environmental impacts, would be the responsibility of each landowning entity. DSEIS, at 3-159. Only a portion of each alternative would be on BLM-managed land, and therefore the BLMs authority to require and enforce specific mitigation measures may be limited ... Each agency or landowner may select measures such as these for inclusion in decisions related to their own jurisdictions. In other words, under each of the action alternatives, BLM lands are only a small fraction of the overall lands required for the Project, and the decisions of Doyon and other landowners whether to grant access and if so, under what terms and conditions, are critical to any implementation.	Section 505 of FLPMA requires the BLM to identify terms and conditions necessary to protect public lands and interests associated with any rights-of-way it issues. The BLM's direct regulatory authority is limited to public lands managed by the BLM; FLPMA requirements do not extend to other lands.
30516	13	Alternatives	Among other information, Appendix G: Alternatives Development Memorandum identifies the Distance to Transportation Network (mi) (distance to existing port site) for each alternative. For the applicants Proposed Route (Alternative A), that distance is 939 miles (from Ambler Mining District to Port of Seward). For Alternative B, the distance is 956 miles (from Ambler Mining District to Port of Seward). For Alternative A, the DSEIS addresses only 211 of the 939 miles (approximately 22%) of total distance required for transportation between Ambler Mining District and the Port of Seward; for Alternative B, the DSEIS addresses only 228 of the required 956 miles (approximately 24%). DSEIS, at C-2. The DSEIS does not in any meaningful way, if at all, address to what extent improvements or additions to existing infrastructure will be necessary or the infrastructure construction and/or improvement costs, operation, and maintenance costs (for example, the increased costs for maintenance of the Dalton, Elliot and Parks highways), or impacts associated with that additional infrastructure and transportation. Instead, the DSEIS simply concludes that these alternatives do not rely on speculative assumptions or remotely feasible circumstances, DSEIS, at G-41 - G-42, and states that, while the overall distance to transportation network for Alternative A was a high number it was one that AIDEA appeared to be comfortable with and the majority of which (approximately 725 miles) would be utilizing existing transportation infrastructure. DSEIS, at G-41. For BLMs preferred alternatives, Alternatives A and B, the DSEIS states that BLMs analysis Includes no speculative assumptions/foreseeable circumstances. However, assumes adequate capacity/loading facilities at Port of Alaska or other existing port location in Southcentral AK. DSEIS, at G-C-1. The DSEIS, however, provides no basis for its assumption that the facilities at the Port of Alaska are adequate and gives no scrutiny to the project proponents comfort with the sufficiency of existing transportation infrastructure that will be necessary in connection with the road.	The information presented in Appendix G, Alternatives Development Memorandum, explains the methodology used by the BLM to screen proposed alternatives for inclusion as action alternatives to be carried forward for further detailed analysis.

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30516	14	Alternatives	Despite the increases in road traffic, rail traffic, and vessel transport that would be associated with the contemplated mining activity that would use the AAP for only a portion of the overall logistics train and concentrate transportation, the DSEIS does not consider whether the road, rail, and port facilities are sufficient to accommodate the type and levels of use associated with the contemplated mining activity. See DSEIS, at H-20 H-24.	See response to letter 30516, comment 13.
30516	17	Alternatives	The failure to make these meaningful comparisons, and the decision to limit the alternatives analysis to three very similar action alternatives (one of which, Alternative C, is so much longer and impactful than the other two that it is difficult to view it even as a meaningful alternative), remains a concern. BLMs environmental review must address in further detail, for each of the action alternatives, the sufficiency of and need to improve or add to existing infrastructure along the entire transportation route, including any upgrades to roads or port facilities that may be necessary in order for the proposed Project to serve its intended purpose and need, as well as the transfer facility near Fairbanks.	See response to letter 30516, comment 13.
30516	22	Socioeconomics and communities	With regard to BLMs assertion of economic benefits for ANCSA corporations, such as Doyon and NANA, from road construction, these purported benefits remain highly speculative and uncertain. Cardnos 2015 estimate of \$28.6 million in material sales for Alaskan Native entities or Native corporations was based on the development of 11 material sites on Native lands. Depending on which alternative is selected, there potentially could be between one and five material sites on Doyon lands. Regardless of the number of material sites, such material sales would be determined by the actual local construction requirements on or near Doyon lands, rather than the total number of material sites. A review of the proposed material site locations shown for Alternatives A and B are relatively tightly spaced over a short length of road corridor. Due to the limited engineering detail and other information provided in the DSEIS, it is not feasible to calculate an accurate estimate of the amount that Doyon could receive from material sales. Indeed, in a discussion of a significant number of uncertain project features, the DSEIS specifically acknowledges that Material site sources are untested and locations unknown, therefore the availability of appropriate types, quality, and volumes of mineral materials is unknown. DSEIS, at 2-12.	See response to letter 25830, comment 23.
30516	24	Socioeconomics and communities	The DSEIS states, Some comments on the Draft EIS indicated a sense of disproportionate effects between residents of different parts of the study area or between members of different Alaska Native corporations. They will get the royalties; we will get the pollution is an example. Because the Bornite Mine site is on NANA lands, NANA village corporations and residents of the NANA region would stand to benefit from payments made by the mining companies. Doyon region residents would have tens or hundreds of miles of road with potential impacts, as detailed in the main body of the EIS, and would see less economic benefit. DSEIS, at 3-195. The DSEIS further explains, [R]elatively lucrative mining jobs . . . are less likely to go to Doyon shareholders whose subsistence areas would be equally affected. Those communities in the Doyon region, with fewer job benefits coupled with distance from the new road, would be further affected because they would not benefit from reduced costs of supplies and fuel; only communities close to the road, such as Bettles/Evansville (Alternatives A and B) and Hughes (Alternative C) have the potential to see benefits from reduced costs of fuel, goods, and groceries, including fuel, fishing and hunting tools, snowmobiles and boats that help in the subsistence harvest. Other subsistence communities in the Doyon region would experience the impacts of the road crossing their subsistence use areas but would be too far from the road to benefit from the reduced costs of subsistence activities. DSEIS, at 3-236. BLMs response to these issues is that AIDEA would need to negotiate access across Doyon lands, so Doyon may be able to leverage some degree of compensation for the inequity. DSEIS, at 3-195. As noted above, AIDEA still has not engaged with Doyon in any meaningful way to demonstrate that Doyons support for the Project and its consent to grant a ROW across Doyon lands would protect and further Doyons and its shareholders interests. Doyon continues to remain unaware of any definitive, material economic or other benefit, either direct or indirect, that would accrue to Doyon and its shareholders from the proposed Project.	The level and scope of economic consequences of the proposed project and the indirect effects of future mining activities will vary across communities depending on proximity to the road and potential mining sites. Section 3.4.5 notes that "road construction could also potentially generate economic benefits for ANCSA corporations, such as Doyon Limited and NANA. For example, portions of the road alignments cross 10 to 12 miles of land that Doyon Limited owns, including ownership of the surface and subsurface (Alternatives A and B) or subsurface only (Alternative C). Furthermore, there are proposed project material sites located on land for which Doyon Limited owns the subsurface estate. Elsewhere, Doyon Limited manages 40 sand, gravel, and rock sources in 34 villages within the Doyon region to generate revenue (Doyon Limited 2019)." See also response to letter 25830, comment 25 regarding ANCSA crossings.
30516	28	Proposed action	The DSEIS states that prior to any proposed mining action, the company would be required to provide Financial Assurance to the State for the Reclamation and Closure of the mine, DSEIS, at H-9. According to the DSEIS, AIDEAs application states that, at the projects 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. DSEIS, at 2-13. These statements raise questions as to how BLM will require appropriate financial assurance sufficient for reclamation of the road in a way that is not dependent upon hypothetical future mining revenues that may not materialize. Given BLMs recognition of this uncertainty, BLM should call upon AIDEA to present a plan for reclamation of the proposed Project for when there are no mining operations and ensure that appropriate assurances are in place to cover reclamation costs in the absence of funds contributed from mining development. This plan must address a scenario in which the road has already been built, but mineral project development is not economic. AIDEA should help make certain that these issues are addressed in BLMs permitting process and associated environmental review.	See response to letter 25830, comment 26.
30516	29	Subsistence	While, as we have emphasized throughout this environmental review process, Doyon prioritizes the protection of subsistence interests, we have serious concerns regarding this enormous expansion of the area evaluated for potential subsistence impacts. Rather than broaden the scope to communities far removed from the Project area, BLMs subsistence impacts evaluation should be focused on the communities actually located in or near the Project area and most directly affected by the Project. Its attention should be directed toward the subsistence resources (including species other than caribou and fish) of interest to these communities, access to those resources for subsistence harvest, and mitigation to address potential impacts on these communities related to such impacts. As noted in the DSEIS, [a] recent study comparing road-connected to non-road-connected communities showed that road-connected communities have substantially lower subsistence harvests than non-road-connected communities (Guettabi et al. 2016). DSEIS, at 3-237. The focus belongs on the communities in or	The scope of subsistence study communities was broadened to include 32 fish study communities which are downstream from the project. These were added to the Supplemental EIS in response to the remand for the 2020 EIS. Not all study communities were found to have significant impacts on their subsistence uses. The focus of the Supplemental EIS is on the primary subsistence study communities, and addresses all resources and access to those resources.

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			near the Project area, rather than those that are hundreds of miles away, for which the DSEIS assumes, without scientific basis, that subsistence uses would be significantly restricted.	
30516	30	Mitigation/monitoring	One of the potential BLM mitigation measures identified in Appendix N is the formation of a subsistence working group for communication and knowledge sharing. DSEIS, at 2-19, N-47. According to the DSEIS, The group would help determine where subsistence users would need to cross the road. The number and extent of these crossings would be negotiated with the group. Ramps would be constructed in select areas to aid such crossings if the subsistence working group determines that such construction is warranted to mitigate impacts to subsistence. DSEIS, at 2-19. In earlier comments, Doyon commented that such a measure seemed desirable conceptually, but that the roles of the group and its composition must be clearly defined and meaningful. With that in mind, Doyon appreciates and generally supports the mitigation measure in the DSEIS that would require AIDEA to consult directly and regularly with affected subsistence communities, and ensure that affected communities are represented on the subsistence working group and the guidelines proposed for formation of the group and ongoing consultation. Among other guidelines, Doyon supports requiring AIDEA to consult with directly affected subsistence communities to discuss the siting, timing, and methods of road construction and operations to help discover local traditional and scientific knowledge, including locations needed to cross the Ambler Road, resulting in measures that minimize impacts to subsistence uses, potentially to include ramps for road crossing locations. DSEIS, at N-48. Doyon emphasizes, however, the importance of including federal, state, ANC, and other landowners in these discussions, given the role of landowners and government authorities in implementing certain measures to mitigate impacts on subsistence access and use. Moreover, while Doyon generally supports the inclusion of a new mitigation measure requiring AIDEA to prepare and submit a comprehensive Access Plan inclusive of construction and operational periods that would be developed in consultation with the State, NPS, BLM, ANCSA village corporations owning lands in the ROW, and the Subsistence Advisory Committee (SAC), and would be approved by the Authorized Officer, such a measure must specifically include consultation with ANCSA regional corporation landowners as well. DSEIS, at N-40.	PMM has been revised as suggested.
30516	33	Public access	see also DSEIS, at M-20 (Although public access to the area would be prohibited, it is possible that unauthorized use [of] the ROW and road would occur. Unauthorized use of the project area by non-local hunters could increase disturbances, as well as increasing competition for the resource between non-local and local hunters.). While the DSEIS identifies certain potential mitigation measures to attempt to address these concerns (e.g., control of access at the entry point), as the DSEIS explains, [p]ublic use could be allowed at designated crossings increasing accessibility and potential for trespass, DSEIS, p. 3-165 and [r]ecreational hunters or anglers . . . similarly may try to use (i.e., trespass on) portions of the road to access fish and game. DSEIS, at 3-175. The DSEIS characterization of these [r]esidual impacts as minor trespass issues, DSEIS, at N-42, is unsupported.	The potential cumulative and indirect effects of trespass are analyzed in Chapter 3 resource sections; the likelihood and magnitude for trespass-related effects are not necessarily the same for all resources and may impact some resources more than others.
30516	34	Mitigation/monitoring	Doyon continues to have concerns about Project airstrips facilitating aircraft landing in our region and making game much more easily accessible to hunters who would compete with local village residents. The FSEIS should set forth specific and enforceable mitigation measures to ensure that access to the airstrips is restricted and monitored during all Project construction and operation phases and thereafter. Accordingly, Doyon generally supports the inclusion of the following mitigation measure in the FSEIS and any ROW that may be issued: In keeping with operation of the Ambler Road as an industrial access road not generally open to the public, AIDEA would operate project airstrips for Ambler Road activities only, except for emergency landings. Public access to airstrips for recreation, hunting, or other general uses would not be allowed and would be monitored by construction camp/maintenance camp crews and Ambler Road security. Details regarding methods of restricting access to project airstrips would be included in the Access Plan (see mitigation measure 1, Section 3.4.2). DSEIS, at N-41; see also DSEIS, at 3-45 - 3-46 (Project airstrips would be located at construction/maintenance camps that would typically be staffed full time, so any trespass by unauthorized users at airstrips would likely be noticed immediately.).	Comment noted.
30528	2	Remand of Final EIS	The DSEIS is over 1,000 pages and includes analysis of water resources, air quality and climate, vegetation and wetlands, fish and aquatics, birds, mammals, transportation and access, environmental justice, subsistence, and cultural resources. The voluntary remand from the DOI identified subsistence and tribal consultation as two issues to be addressed. But, the DSEIS included expanded and additional analyses on issues beyond that remand, including a new phasing option for the road. The scope of the DSEIS should be limited to the two issues identified in the remand.	See response to letter 31764, comment 1.
30528	3	Compliance with other laws	The new Alternatives do not Alaskas statehood rights and ANILCA access The new alternatives included in the DSEIS do not recognize that in 2020, the National Park Service (NPS) and the U.S. Army Corps of Engineers (USACE) selected alternative A as the preferred route and those decisions (should) still stand today. Any alternative consider must recognize that access to Alaskas mineral resources were granted at Statehood and access to the Ambler Mining District was expressly provided for in ANILCA.	See response to letter 31764, comment 2.
30528	4	Subsistence	No justification for the expansion of Subsistence Impacts expansion in the DEIS: The DSEIS expands the geographic area and associated communities being considered from 27 to 66. These areas are hundreds of miles apart and are not impacted by this road and the JROD recognized this. The focus of the SEIS should remain on the 10 villages closest to the road, and BLM should look at the real-life examples of years of successful coexistence of other Alaskan private industrial road: the Delong Mountain Transportation System (DMTS) at Red Dog Mine in Kotzebue and the road to Pogo Mine, south of Fairbanks.	The selection of study communities was broad to capture potential direct, indirect, and cumulative impacts to subsistence resource abundance and availability. If population-level impacts to migratory resources such as caribou and fish occur, then any users of those resources stocks (e.g., WAH, Kobuk River sheefish) could be affected.
30528	5	Socioeconomics and communities	he DEIS Failed to Properly Consider the Economic and Community Benefits: One of the most disturbing aspects of the DEIS is how is underestimates the economic benefits to Alaskans especially those who will gain the most rural Alaskans, many of whom are at a poverty level. The Ambler Project potentially will create thousands of direct and indirect, quality jobs, especially	See response to letter 27727, comment 7.

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			for those living closest to the project through construction and following into the operation phases. On average, Alaskas mining industry provided for 11,400 direct and indirect jobs in 2022, with a wage of over \$130,000 per year. Consider the support position of the Northwest Arctic Borough (NWAB) and their analysis contained in the Comprehensive Plan Update for 2030. NWAB indicated that 83% of the boroughs operating funds came from Red Dog in 2020. Both the NAWB and North Slope Borough assemblies passed a joint resolution in April of 2023 in support of the AAP and development of the Ambler Mining District in recognition of the jobs, revenue, and good stewards mining companies can be.	
30537	1	Mammals	Proposed mitigations do not adequately address the impacts of noise and habitat fragmentation on Caribou that will be created if the road is constructed. Caribou have highly acute hearing (Perra et al. 2022), and evidence suggests that they do not become habituated to human noise (Johnson & Russel 2019). Multiple studies have shown that caribou alter their movement and distribution in response to anthropogenic noise (Bradshaw et al. 1997, Cumming & Hyer 1998, Wilson et al. 2016, Johnson and Russel 2019,) Studies have shown that proximity to infrastructure has a negative impact on calf weights (Arthur and Veccio 2009) and probably of pregnancy in reproductive females (Wilson et al. 2016). Further, wolves preferentially travel along linear corridors constructed by humans, resulting in significantly higher predation and predator impacts on caribou near roads (James & Stuart-Smith 2000).	There is an extensive amount of literature relating to the effects of development on caribou behavior and distribution. Section 3.3.4 of the Supplemental EIS discusses multiple papers that are relevant to a road on the winter range of a herd in Alaska.
30537	2	Subsistence	If the Ambler road is built, it will significantly impact the movement, distribution, and population size of the Western Arctic Caribou Herd, and thus the subsistence opportunity available to rural Alaskans in communities near the road which rely on the herd. Altered movement patterns resulting from road and predator avoidance will disrupt hunting patterns that have been developed over millennia, and lower reproductive rates and higher predation will result in herd declines. Both of these impacts will severely affect local communities. Additionally, although the Ambler Road will be closed to public use, workers employed in constructing and operating the road and ore hauling activities will constitute competition with local subsistence users for caribou and other resources.	Impacts to the WAH and subsistence uses of the WAH resulting from the road are discussed in Sections 3.3.4 and 3.4.7).
30735	1	Cooperating agency involvement	The National Park Service has failed to fulfill its responsibilities under NEPA regarding the Ambler Road proposal. While Congress allowed a road through the GAAR Preserve under certain circumstances, it can only be an NPS (Executive Branch) decision to permit material sites, maintenance facilities, an airstrip, etc. on NPS lands. These facilities are not required by ANILCA to be on NPS land. This SEIS and the Ambler EIS before it do not evaluate a road through the Preserve without the applicant-requested additional facilities, as required by NEPA and NPS implementing policy requirements. Therefore, the NPS must do a separate Environmental Assessment with a no-action alternative to evaluate whether the applicant-requested facilities on NPS land offer no significant impact, whether an alternative with no facilities in the Preserve is a better choice, or whether a stand-alone EIS is required given the magnitude and duration of the project.	Section 201(4)(d) of ANILCA exempts the NPS's review of the project from NEPA and instead requires the preparation of an EEA in lieu of an EIS.
30737	1	Fish and aquatics	Water quality and waterway/waterbody characteristics, including classification of anadromous waterways, along the proposed routes are virtually nonexistent, which means that expected impacts to water quality and fish habitat cannot be effectively evaluated; and proposed limitations on water withdrawals, and mitigations for water quality could not be effectively implemented. Region and statewide salmon populations are already in severe collapse, and it would be inappropriate to move ahead with a proposal that has a completely unquantifiable impact on salmon and other subsistence fish resources.	The Supplemental EIS acknowledges the limited data available throughout the project area (see Supplemental EIS Section 3.1, Introduction - Data Limitations). Should an action alternative be approved in the BLM's ROD, additional surveys and studies would be conducted as needed in support of other local, state, and federal permits. As described in Draft Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA - Biological Resources, fish surveys would be conducted to assess fish presence in rivers in streams for all life history stages along the selected alignment. The scope of these surveys would be coordinated with ADF&G, USFWS, and the National Marine Fisheries Service. The Supplemental EIS includes a description of design features and mitigation measures that are intended to reduce impacts to waterways, fish, and aquatic habitat from road construction and the installation of bridges and culverts (see Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA - Physical Environment, Section 3.2.5, Water Resources - Impacts Common to All Action Alternatives, Appendix N, Potential Mitigation).
30737	2	Mammals	Information on almost all mammal species other than caribou along the proposed routes are lacking, meaning there is no way to predict or measure impacts of the proposed project. This is an unacceptable risk for both subsistence and non-subsistence species. Furthermore, the information on caribou strongly suggests that both construction and use of the proposed road would negatively impact migration activities and food resources on this ecologically and culturally essential species.	Section 3.3.4 of the Supplemental EIS discusses many mammal species, but focuses on species that are important for subsistence users or more likely to be impacted by the project.
30737	3	Mitigation/monitoring	Appendix N, describing mitigations to the documented threats, references at least 26 (twenty-six) plans or protocols that would need to be developed by AIDEA to monitor resources, document damages, implement mitigations, and work with communities. Without seeing these plans in full, it is impossible to accurately assess the effectiveness of mitigation efforts, and thus the environmental impacts and risks to natural resources and human health from the proposed project.	Should the project be approved, the ROD will determine which mitigation measures will be required.
30775	2	Alternatives	Again in this Draft SEIS all westward routes are summarily rejected (Section 2.3.2) in the 2-step screening process, consistently stating there is no rational end point for a westward road to tidewater. But in this same Draft SEIS it is states that Red Dog Mine may end in 2031. This would free up the DMTS port and provide a new customer for AIDEA. Timing seems perfect as there is no decision on the economic value of the Ambler District minerals at this time.	The screening analysis in Appendix G balances the pros and cons of multiple western routes. These alternatives were determined to not meet the Purpose and Need of the project and/or were removed from further consideration due to either practicality, cost, or environmental concerns.
30775	3	Transportation and access	I also have a major concern about the mine plan after the Ambler Road is built regarding trucking ore to Fairbanks on public infrastructure, then rail to tidewater in Southcentral Alaska. 184 truck trips per day 24/7/365 for 50 years are estimated (doubled if trailers are split for the Dalton haul to Fairbanks) make for a lot of industrial truck traffic converging on Fairbanks.	See response to letter 23769, comment 1. Appendix H Table 2-6 listed estimated truck traffic for the 3 proposed phases of road

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			If you couple that with daily Mahn Choh mine traffic of 160 trucks 24/7/365 pulling 95 foot trailers, you have a major increase in traffic around Fairbanks, with accompanying safety and road maintenance requirements.	development, including legal highway trucks on the Dalton Highway and public highway system. Concurrent development of the Mahn Choh Mine is also discussed in Appendix H.
30775	4	Funding and bonding	This SEIS states in Chapter 2, Appendix C, page 351, \$672 million for road construction, \$780 million with reclamation for Alternate A. Alternate B is \$50 million higher. Road maintenance is estimated at \$8-9 million annually. If maintenance costs are indicative of the assumption adding a 2 inch layer of gravel annually (Chapter2, page 2-10) to compensate for winter plowing and fall permafrost degradation, the AIDEA cost estimate is off by at least an order of magnitude. I was a Civil Field engineer on the North Slope during the 1980s and 90s. Those are numbers for continuous permafrost road maintenance. At discontinuous permafrost and wet areas 6 -12-inch additions of gravel were more typical. Today climate change will turn gravel road maintenance on its head without major investments in rigid board insulation above the water line or passive/active cooling techniques at critical locations. Culverts will be similarly affected by climate change.	Design features to be incorporated by AIDEA related to the physical environment including permafrost are described in the Supplemental EIS Section 2.4.4 Design Features Proposed by AIDEA.
30795	1	Transportation and access	The Department of Transportation is under scrutiny for not being able to adequately maintain the Dalton Highway which makes us question how they will be able to maintain an additional 200+ miles of Ambler road through permafrost, tundra, etc. in addition to the Dalton Highway? It seems highly unlikely this will be done, given the current track record for a road that has been around since the 70s. Arctic roads and maintenance up here require frequent and significant daily repairs and currently the State of Alaska is struggling to find a workforce that wants/has qualifications for these jobs or provide adequate maintenance and safety to one of the most important roads already serving this country (Dalton Highway). If the proposed Ambler Road is to be approved - the State of Alaska should first prove it can adequately staff and maintain the Dalton, as a prerequisite. That has yet to be seen. With the amount of vehicles that will be added from the Ambler Road, we do not see adequate safety features that are in place should a spill happen with limited / no service. Let alone any sort of accident/collision with other industry workers, residents, and/or the public. We currently have one full time State Trooper overseeing hundreds of miles of remote road based out of Coldfoot which is simply inadequate with a new proposed road in the Brooks Range.	See response to letter 26253, comment 1. See response to letter 23769, comment 1.
30795	2	Mitigation/monitoring	It is said that trucks servicing the Ambler project will stop for caribou migrations and allow them to pass. Who will be able to monitor such behavior? Same with any sort of contaminant or spill were to occur. It's a private industrial road where the public isn't privy to witnessing such actions.	Appendix N, Sections 3.3.2 and 3.3.5, describe proposed mitigation measures that would include animal crossing policies, animal avoidance on the road, potential for road closures, a wildlife monitoring plan for fish, birds, and key wildlife species, mitigation measures related to hazardous materials, and a waste management plan. Appendix N Section 1.1 PMM 10 would require AIDEA to prepare a monitoring plan designed to demonstrate compliance with the approved plan of operations and other federal and state environmental laws and regulations, provide early detection of potential problems, and supply information that would assist in directing corrective actions should they become necessary. Regulations at 43 CFR 2805.12 require that ROW holders construct, operate, maintain, and terminate the facilities on the lands in the ROW in a manner consistent with the grant, including the approved POD, and comply with all project-specific terms, conditions, and stipulations. Regulations at 43 CFR 2807.17 give the BLM the authority to suspend or terminate the grant if the operator does not comply.
30795	3	Transportation and access	Using the Dalton as an example - a top ongoing complaint among current industry commercial drivers is the lack of CB communications from the new pilot cars to new heavy load haulers that are unfamiliar with this road and the use of communications on this road. These are mostly out of state and Canadian drivers that aren't properly prepared and we imagine there will be a large influx of out-of-state drivers and Canadian drivers that do not have such knowledge for the Ambler Road. Thus, safety is a major issue that isn't as adequately addressed in the addition to protecting subsistence uses.	See response to letter 23769, comment 1. As discussed in Section 2.3.1 of the Supplemental EIS, the road would have controlled access and strict operational controls to prioritize safety; only authorized drivers would be allowed to operate on the proposed road. AIDEA would establish an authorization and training process, and anyone accessing the road (drivers or passengers) would be required to take specialized safety training, have a very high frequency (VHF) radio, and carry personal protective equipment. AIDEA has proposed to adopt the wildlife interaction protocols used on its Red Dog Mine road (DMTS) during operation of the proposed Ambler Road, which would include vehicles waiting when caribou are nearby. Personnel trained in first aid and emergency spill response would be present at each maintenance station and all maintenance and security vehicles and staffed facilities would be required to have spill response equipment. As part of the road construction, communication infrastructure would be constructed providing communication capabilities over the full length of the road. Radio communication would coordinate traffic operations over the extent of the road.
30795	4	Funding and bonding	The Ambler Road will be difficult to maintain just as the Dalton Highway already is. With a road built on permafrost soils in a warming environment, who will pay for the road maintenance? The State of Alaska is already having a difficult time keeping elementary schools open in its largest city of Anchorage and streets plowed. The Dalton has horrible maintenance and with our warming climate, there is more flooding occurring and washouts of the road. Thus, who is responsible for maintaining and then taking out the road when the mines project is done? If it's the State, why are they investing in a foreign mining company endeavors? The financials don't make sense for this project at all.	See response to letter 25549, comment 1.
30795	5	Public access	The proponents of the Ambler Road say that the road would maintain private rights only for the Ambler Mine use or deemed for approved industrial use in such they see fit. Given the vague fine print, we can only assume there are loopholes for all sorts of users, as measures have not been taken to prove otherwise. Someone who is granted access could paper-stake a mining claim. If the road is to be built and people are allowed to paper stake mining claims on State lands or other approved uses under their "industry" in order to be known as an "industry user" or whatever the road permits - you see how this could get out of hand. All loopholes in relation to activities that can impact subsistence uses should be closed to protect subsistence rights and resources. This should be non-negotiable. The Bureau of Land Managment should set strict enforcement as part of a road approval that there should be no allowance of road use for transportation of hunters,	See response to letter 14098, comment 1.

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			fishermen, game/fish parts/gear by any commercial or industrial user or permitted person on the road. This would also include the use of boats/ATV/machines.	
30803	1	Mammals	There are several reasons why I believe that this is the best option. First off is the impact and disruption construction of a road would have on native species migration, including caribou. There is evidence to suggest that roads alter migratory patterns and movement of caribou. Roads in Western Alaska built to support the Red Dog Mine have been shown to affect caribou movement (https://www.researchgate.net/profile/Kyle-Joly/publication/289506106_Effects_of_roads_on_individual_caribou_movements_during_migration/links/5a5779bba6fdcc30f86f27cc/Effects-of-roads-on-individual-caribou-movements-during-migration.pdf) With the decline of caribou herd populations, any further pressure on these animals could be devastating to the continuation of the species as we know it. Let us not allow caribou to go the way of so many other species. There once were millions of Plains Bison across the continental US and now are only small isolated herds, why would we allow this to happen to caribou if we can stop it? Efforts to repopulate and reintroduce animals after they have been displaced and populations have been decimated requires significantly more work and investment than maintaining the population and keeping them safe from harm in the first place would.	The potential for the project to impact caribou movements and studies of caribou movements along the DMTS are discussed in Section 3.3.4 of the Supplemental EIS.
30842	1	Proposed action	We raised concerns in our Draft EIS comments about whether the Ambler Road actually would be removed and the land reclaimed when the estimated 50-year life of the mines in the Ambler District was completed. The new DSEIS continues to claim that this will occur, though with greater acknowledgement that other possibilities exist. As described in more detail in the restoration section below, we remain skeptical about whether this will occur a stance only increased by statements in the DSEIS. In our experience, Alaska does not have a record of removing and reclaiming roads and previously-mined areas in remote locations once they are built (Arnett 2005). The DSEIS failure to consider an alternative with a longer life than 50 years, or possibly in perpetuity, represents a segmentation of the overall project such that a significant portion of future impacts are not analyzed. We requested in our Draft EIS comments that BLM disclose in the Final EIS how many miles of mining road they manage in Alaska that have actually been put to bed and reclaimed. This was not done in the Final EIS or the DSEIS. TWS attempted a search and could only find a few examples of short roads (e.g. Frying Pan Creek and Acme Creek) that were reclaimed. Rather, the record is one in which there is the continued existence and evolving uses of many short mining roads (e.g. Prospect Creek, Chapman Creek, Slate Creek, and Marion Creek off the Dalton, and Hogatza-Aloha Creek off the Koyukuk). To our knowledge there have been no major BLM- or State-permitted mining roads that have been reclaimed in Alaska. This is also reflected in prior reviews that found that virtually no infrastructure from previous oil and gas development had been removed (NRC 2003). TWS therefore recommends that the FSEIS include a scenario in which the road is planned to be open for a period much longer than 50 years, and in which it will not be removed and reclaimed and fully analyze the expected impacts this would have on wildlife, environmental processes, and subsistence and other human activities.	See response to letter 22595, comment 13.
30842	2	Public access	TWS strongly objected to the repeated assumption in the Draft EIS that the road will be a private road and will never be opened to the public. Just as for the 50-year life mentioned above, once constructed, in our judgment it is reasonably foreseeable that economics, social justice concerns, and political pressure will likely cause the Ambler road to be made public, eventually. This is not speculative -- it is reality in rural Alaska and based on historic observations. We were pleased to see acknowledgement of this in the DSEIS. However, its treatment still falls short of a reasonable standard of scientific rigor, for although the likelihood of the road being made publicly available was mentioned, there was no analysis of how this would affect traffic levels, species, or other impacts in the future. This is a glaring omission and TWS once again strongly urges that BLM add an alternative scenario to the FSEIS in which the impacts are analyzed of the Ambler Road being eventually opened for public use.	See response to letter 19418, comment 3.
30842	3	Cumulative and indirect effects analysis	Another concern raised in our Draft EIS comments regarded how BLM artificially and incorrectly limited the scope of the Cumulative Impacts analysis by focusing primarily on four mines within the Ambler Mining District. TWS maintains that it is reasonably foreseeable that other mines outside of the Ambler District and near the road could be developed, given the improved access. Again, this is not speculative, rather it indicates that over the long term, the four hypothetical mines at the end of the Ambler Road represent a minimum impact scenario. The DSEIS acknowledges the potential for other mineral development, yet still fails to include a more intensive impact scenario that includes the additive and cumulative impacts from the host of other mines, large and small, which may be proposed and approved elsewhere along the routes of Alternatives A, B, or C. It is common in scientific simulation studies to examine a range of possible alternatives (e.g., 5%, median, 95% or 25%, 50%, 75%) to depict the range of variation in expected effects of proposed treatments. TWS therefore recommends that BLM follow such an approach and analyze at least one additional future mine development scenario over and above the four Ambler mines in final analysis of cumulative impacts.	See responses to letter 23145, comment 3 and letter 26152, comment 1.
30842	4	Mitigation/monitoring	A fourth issue raised in our Draft EIS comments was about the significant qualifications and caveats in the Draft EIS that raise questions about the effectiveness of permitting, mitigation and enforcement, given the multiple jurisdictional authorities that will share the Ambler Road. Each agency and private Native Corporation land owner/manager along the Ambler Road corridor has differing legal responsibilities and therefore may have differing interpretations of priorities pertaining to wildlife, fisheries and their habitats in the project area. These qualifications indicate to our cadre of professional wildlife biologists and habitat managers that there is potential for significant inter-agency and inter-organizational confusion, and possibly disagreements, on how permits will be approved, managed, and enforced. Unfortunately, this is an issue that continues to occur in the DSEIS, as the following quotes illustrate: During winter, steep snow banks may prevent caribou movement and reduce road crossings except on BLM-managed lands where this potential impact may be partially mitigated (p. 3-137). The Bureau of Land Managements (BLMs) authority to require and enforce mitigation generally is limited to mitigating impacts to BLM-managed lands and resources on those lands (p. N-1). The discussion includes consideration of whether and how the	Each land manager that issues a ROW or some other right of access is responsible for ensuring compliance with the terms of the grant for access.

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			effectiveness of mitigation on BLM-managed land would be affected if the same mitigation is not applied off BLM-managed land. The landowner discussion is necessary, because the BLM manages only part of the land along each alternative and its authority is limited to mitigating impacts to BLM-managed lands and resources. The BLM would have authority over approximately 3,000 to 3,500 acres of the project on federal lands for Alternatives A and B (out of approximately 15,000 acres for the total project footprint), and authority over approximately 19,000 acres of the project on federal lands along Alternative C (out of approximately 23,000 acres total) (p. N-1). However, if the plan is only implemented within the BLM-managed portions of the routes, then this measure would be partially effective under Alternatives A and B. Under Alternative C, this measure still would be partially effective; however, given the larger proportion of BLM-managed lands on that route, the area of effectiveness would be larger (p. N-30 N-31) Because BLM-managed land constitutes a small proportion of Alternatives A and B, if these mitigation measures are not adopted by AIDEA for other land management agencies, then their implementation would do little to reduce impacts across the entire project. (p. N-39).	
30842	5	Mitigation/monitoring	TWS remains extremely concerned that because of multiple jurisdictions there will not be unified and consistent management and enforcement of permits, stipulations, and mitigation measures. In the late 1970s some of our membership worked on environmental monitoring aspects during construction and initial commissioning of the Trans-Alaska Oil Pipeline System (TAPS). There is a significant body of research based on experience from the TAPS mega-project which suggests that a cooperative inter-agency approach is the only feasible means to ensure consistent application of environmental protection measures for a project of the magnitude of the Ambler Road and its associated mining development across multiple land jurisdictions (Morehouse et al. 1978, Pamplin 1979, CGI/Quest 1980). In the case of TAPS, a Joint Fish and Wildlife Assistance Team (JFWAT), consisting of State, Federal, and private consultant-level environmental experts, was formed to work under the Federal Alaska Pipeline Office and State Pipeline Coordinator office (See also Mead 1978, Wickwire 1979, McGrath 1977, Hanraban and Gruenstein 1977, and McCracken 1976 for historic descriptions of the chaotic start and effects of TAPS construction on Alaska wildlands and social systems). TWS implores all agencies and land managers involved in permitting the road and ensuing mines to create and enforce a consistent set of strict permit stipulations and mitigation actions. Should the Ambler Road project advance to the design phase, TWS strongly urges the proponents, and all involved landowners and managers, to sign a cooperative agreement aimed towards unified permit approval procedures, stipulations, management, mitigation, and enforcement, for the road and ensuing mineral developments. We see a joint inter-organizational permit management field office, similar to JFWAT, as the only way for the Ambler Road project and the mineral development along the road to be managed in a manner that adequately protects fish, wildlife, habitats, and the people who depend on them.	Comment noted.
30842	6	Vegetation	We note that p. 3-65 calls out an infestation of bird vetch adjacent to the Dalton Highway at the eastern end of Alternative C, but does not mention infestation of white sweetclover at that location; it also fails to correctly report that both species have also infested the eastern end of Alternatives A/B along the Dalton. We are extremely concerned because terrestrial bird vetch and white sweetclover, along with the aquatic Elodea, are rated as highly invasive, and all three have the ability to alter habitats permanently (Spellman 2008, Gucker 2009, Graziano et al. 2016).	Section 3.3.1, Non-native Invasive Plants, cites the Carlson (2016) document and includes new NNIS species records on Map 3-11 and discussion highlights the current known infestation density on the Dalton Highway and the risks of NNIS spread through the region with the development of the proposed project. This section also mentions white sweetclover (among other species) as follows: "Dominant vascular species, mostly centered around the Dalton Highway, include white sweetclover, narrowleaf hawksbeard, meadow foxtail, foxtail barley, pineapple weed, and bird vetch. Of the 32 invasive species found in the study area, quackgrass, orange hawkweed, and butter and eggs are prohibited or restricted for use in Alaska. Most documented species are weakly to modestly invasive with European bird cherry, orange hawkweed, Siberian peashrub, and white sweetclover rated as highly to extremely invasive by ACCS (Carlson et al. 2008, Appendix E Table 7). Map 3-11 displays all known NNIS observations and modeled invasiveness vulnerability ratings for watersheds within the study area. Vulnerability ratings were derived from modeled data, which are presented in Carlson et al. (2016)." New collection data for Elodea were also included in the same section and in Map 3-12 along with identification and discussion of the most vulnerable river corridors to expanding Elodea ranges.
30842	7	Mitigation/monitoring	We appreciate that BLM accepted our suggestion from 2019 and added Potential Mitigation Measure 1.1.14 (p. N-5), which requires plowing and grading only in a west to east direction to minimize spread of NNIS seeds westward from the Dalton. The words to the extent practicable should be deleted from that mitigation. This must be strictly adhered to in order to minimize the spread of these habitat-altering species.	Supplemental EIS Appendix N presents potential mitigation measures. Should the project be approved, the ROD will determine which mitigation measures will be required.
30842	8	Mitigation/monitoring	Similarly, Potential Mitigation Measure 3.3.1.3.3 (p. N-28) should be modified slightly: Permitted activities, including road and snow maintenance activities, would ALWAYS commence from areas known to not be infested with invasive plants (e.g., western end of the road) and progress toward known infested areas (ALWAYS should be added).	Potential Mitigation Measure is sufficient as written as <i>would</i> implies <i>always</i> .
30842	9	Mitigation/monitoring	Furthermore, we appreciate that Mitigation 3.3.1.3.1 states BLM will require an overall Invasive Species Prevention and Management Plan for their lands (p. N-27), but we strongly recommend it be required along all lands traversed by the Ambler Road. As described above, this will require close coordination with the various land managers, ideally through a signed inter-organizational agreement and team.	Comment noted.
30842	10	Mitigation/monitoring	Potential Mitigation Measure 3.3.1.1.2 (p. N-24) should be clarified to use previously stockpiled local topsoil with live native vegetation. Use of non-local topsoil would risk importation of non-local NNIS that could be within the non-local topsoil.	PMM revised as suggested.
30842	11	Mitigation/monitoring	Potential Mitigation Measure 3.3.1.3.2 provides for: Specific practices, procedures, and BMPs for preventing the spread of NNIS, addressing inspection and washing/brushing of vehicles (including tires and undercarriage), and cleaning of equipment, clothing, and shoes. Specific procedures to ensure that aircraft, vehicles/equipment, or materials that have traveled to, parked in, or been staged in areas infested with invasive plants are inspected and certified weed-free prior to	Appendix N, Potential Mitigation Measure 3.3.1.3.2, proposes an adaptive management plan for invasive species. Specific aspects of that plan, such as you mention, would be developed as part of that plan. Should the project be approved, the ROD will determine which mitigation measures will be required by the BLM.

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			being allowed on the right of way (p. N-27). These measures seem like they could be effective in non-winter months, however, TWS recommends more specific details for effective winter operations. Will there be a heated building at the start of the highway to conduct washing and inspections? If water cannot be used for washing in winter what other options will be approved in the final ROW permit? TWS adds this caution because seeds of the most invasive species on the Dalton, white sweetclover, are only about 1/16 in diameter and could easily be missed when embedded in snow or mud within treads (or other places) during an inspection. Studies have demonstrated that these seeds can be spread in winter simply from driving a snowmobile through an infested area to a non-infested area (T. Craig, Kanuti NWR, pers. comm.).	
30842	12	Mitigation/monitoring	Potential Mitigation Measures 1.1.10 (p. N-4) and 3.3.2.2 (p. N-20) require water, fish, and wildlife monitoring plans. We suggest the water monitoring plan should be more specific as to what is required to be monitored, and for how long and where. Variables such as permafrost thaw depth; water temperature; turbidity; pH; petroleum, oil, and lubricant (POL) contaminants; fugitive dust contaminants; heavy metals; etc. should be specified before a ROW permit is issued. Similarly, the locations, features, and variables to be monitored in the fish and wildlife monitoring plan should be specified before any ROD and ROW permit are issued.	Appendix N, Potential Mitigation Measures 1.1.10 and 3.3.2.2, propose adaptive management plans for monitoring. Specific aspects of these plans, such as you mention, would be developed as part of that plan. Should the project be approved, the ROD will determine which mitigation measures will be required by the BLM.
30842	13	Mitigation/monitoring	The DSEIS acknowledges that road dust is a major issue. We earlier suggested that BLM and the proponent research alternatives for dust control and include strong mitigation actions. We maintain that calcium chloride, pesticides, and herbicides should not be used at any time. We question why Potential Mitigation Measure 3.3.3.8 states Dust suppressants or pesticides with ingredients potentially harmful to aquatic organisms would not be used within 328 feet of any fish-bearing stream and higher-value wetland (p. N-35). Clear description and citation is needed of the scientific literature that supports the notion that toxic effects of these compounds would be ameliorated at distances greater than 328 feet from the waters edge if it is to be relied upon as a mitigation measure.	This mitigation measure was proposed from Special Condition 23 of the project's USACE 404 permit. Text in Appendix N has been updated to clarify this mitigation measure.
30842	14	Mitigation/monitoring	We support the Section 404 Clean Water Act mitigation measures to be adopted from the Corps of Engineers Permit (see Potential Mitigation Measure series 3.5, pp. N-51 to N-55), especially because they would apply to the entire road project. A commitment should be made in the FSEIS that a similar set of Corps stipulations will also be applied to any spur roads and vegetation clearing made for all ensuing mine developments. It is critical that fish passage is not impeded and impacts to water quality be minimized. Protection of water quality, fish spawning, rearing, migration paths, and wintering habitats should be among the highest priorities on the project, if it is to be built.	Should the project be approved, the ROD will determine which mitigation will be required. A ROW issued by the BLM would be applicable to public lands managed by the BLM. Each land manager that issues a ROW or some other right of access is responsible for ensuring compliance with the terms of the grant for access.
30842	15	Fish and aquatics	Of the salmon species, the DSEIS states Chinook and Chum Salmon are most important, but due to declining abundance and fishing closures, the non-salmonids have become more important. The DSEIS further states, Sheefish, Broad Whitefish, Humpback Whitefish, and Grayling comprise most of the non-salmon subsistence harvest for Koyukuk River and Upper Kobuk communities (p. 3-85). TWS recommended in 2019, and suggests again, that Least Cisco also be added to the list of key species because of their subsistence importance (TWS 2019, Georgette and Scheidt 2005, Andersen 2007, and F. Adams, USFWS fish biologist, retired, pers. comm.). Perhaps insufficient species identification occurred in the harvest surveys, but this important species should not be ignored because of that.	Added least cisco to the list of important subsistence species. Added a sentence pointing out that recent salmon declines create a situation where other species (like whitefish) take on greater cultural and subsistence roles in area communities.
30842	16	Mitigation/monitoring	Potential Mitigation Measure 3.2.5.1.1 specifies design of fish-bearing stream crossings to withstand 100-year discharge flood levels. It also has the qualification: In developing estimates of flows and discharge for crossing design, climate trends would be used to improve the future discharge estimates and delineation of the floodplains (pp. N-19 - N-20). We encourage the proponent and BLM to disclose how they will design more specifically to deal with the increasing frequency of extreme climate events, which increase the likelihood that the old 100-year flood level will occur more often (Lader et al. 2017). These crossings should have the resilience to deal with predicted extremes of 2X or 3X in the future.	Should the project be approved, the ROD will determine which mitigation will be required.
30842	17	Mitigation/monitoring	Several mitigation measures include discretion or approval by the BLM Authorized Officer. The FSEIS should include citations of standards that the Authorized Officer would use to make such decisions. Standards for such decisions need to be supported by policy manuals that include the reference to the best available science and BMPs.	All decisions made by federal land management officials are in compliance with Federal laws and regulations, and their implementing guidance.
30842	18	Birds	Importantly, it also notes 69 species that various agencies and organizations have called for special attention because of their status as being of conservation concern (USFWS); sensitive or watchlist (BLM); at risk (ADFG); red list or yellow list (Audubon); near-threatened or vulnerable (IUCN); and, common but steep decline or needing continental stewardship (BPIF). These species are variably associated with boreal wetland habitats, riparian areas, mesic spruce forests, upland shrublands, and alpine tundra. We suggest the Wildlife Monitoring Plan should give special attention to the habitats used by the species of concern that have been listed by these separate organizations.	Mitigation measure 2, under Appendix N, Section 3.3.2 (Wildlife), has been revised as requested.
30842	19	Mitigation/monitoring	Potential Mitigation Measure 3.3.4.1 (p. N-35) prohibiting land clearing May 15 - July 15 should be strictly enforced.	Comment noted.
30842	20	Birds	The Gray-headed Chickadee (Poecile cinctus) is listed incorrectly as 'uncommon' in the study area (p. E-17). This should be corrected because the species is rare in North America, occurring only in northern and western Alaska and northwestern Canada, and there is evidence of recent population decline and range contraction for the unique subspecies (p. c. lathami) that occurs in North America. Because of its small population size, limited distribution, and apparent population decline, the Gray-headed Chickadee should be the subject of focused surveys throughout any proposed road corridor in this region. It has been recorded using narrow belts of riparian shrubland and forest habitats along the southern Brooks Range for breeding within the region, and thus the species could be at great risk from any of the alternatives, but particularly A and B (DeCicco et al. 2017, Hailman and Haftorn 1995).	Changed status of gray-headed chickadee from U (uncommon) to R (rare) in Appendix E-17. New surveys are neither prescribed nor required as part of the NEPA process. Gray-headed chickadees and their habitat preferences are discussed in Section 3.3.3 under Affected Environment and the most recent publication (Booms et al. 2020) is cited in support.

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30842	21	Mitigation/monitoring	The stipulations for riparian floodplains (Proposed Mitigation Measure 3.2.5.1.6, pp. N20-21) and wetlands (Proposed Mitigation Measure 3.2.5.2.4, pp. N21-N22), should be adhered to strictly over the entire project in order to protect important bird habitats.	Comment noted.
30842	22	Mitigation/monitoring	The DSEIS properly recognizes that the North American avifauna is already in a prolonged and significant decline, citing on page 3-116 a concerning study by Rosenberg et al. (2019). Unfortunately, when important bird habitats such as boreal wetlands, riparian floodplains, mesic spruce forests, upland shrublands, and alpine tundra, are replaced with a gravel road and open-pit mining developments, there are no permit stipulations or mitigations that can eliminate that loss. Therefore, because of the continentally diminishing abundance and biodiversity TWS recommends that compensatory mitigation be a part of this project. BLM manages significant acreage of degraded and previously-mined riparian and wetland habitats elsewhere in Alaska, particularly in the Central Yukon (M. Spindler pers comm.), Eastern Alaska (Arnette 2005, Brady et al. 2018), and Glenallen Districts. The FSEIS should propose specific acreages of degraded placer mining areas that will be reclaimed and restored to functional riparian habitat. If the FSEIS and ROD conclude that the Ambler Road will be permitted, the compensatory mitigation should be funded by a percentage of profits derived from future mining developments in the Ambler District.	Should the project be approved, the ROD will determine which mitigation measures will be required.
30842	23	Mammals	The DSEIS stated: ...currently available information on habitat value for most small mammal species is unavailable. Therefore, potential impacts cannot be quantified (p. 3-141). We are aware of one study in the project area that was not cited that may help shed some light on this question (Swanson 1996).	Information in Swanson (1996) was added. Swanson, Shelly A. 1996. Small Mammal Populations in Post-Fire Black Spruce (Picea mariana) Seral Communities in the Upper Kobuk River Valley, Alaska. Gates of the Arctic National Park & Preserve. Gates of the Arctic National Park offices, ARL Fires, DSC-TIC.
30842	24	Mitigation/monitoring	Even so, we believe the DSEIS correctly speculated The indirect and cumulative impacts from development of the District and secondary access roads, and other development or activities to small mammals throughout the analysis area would add to those from the action alternatives. Habitat loss and alteration due to the reasonably foreseeable development of the District could equal or exceed that from the road itself (p. 3-154). Again, compensatory mitigation should be required for these losses.	Should the project be approved, the ROD will determine which mitigation measures will be required, including compensatory mitigation if applicable.
30842	25	Mitigation/monitoring	We recommend the Fish and Wildlife Monitoring Plan and pre-clearing surveys take specific note of any bat observations or roost sites. As with all bird nests, bat tree roosts should be identified to avoid destruction during the land clearing phase of the road project.	Comment noted.
30842	26	Mitigation/monitoring	Potential Mitigation Measure 3.3.4.1 for birds (p. N-35), preventing land clearing during bird nesting, should be added for the little brown bat pup rearing period: June through early August.	PMM is sufficient as written. Bats will be taken into consideration as part of wildlife plans (e.g., Appendix N, Section 3.3.2, Wildlife PMM 1 and 2).
30842	27	Mitigation/monitoring	Most of the region is extremely low-density moose habitat, and, as stated in the DSEIS, According to NPS and ADF&G studies, population estimates do not appear to be meeting management objectives, natural mortality is high, and harvest is currently restricted (p. 3-130). Given the average density of moose in the area, at 0.48/mi2 that could mean the loss of 23-36 mi2 of habitat for 48-75 moose, depending on the alternative. Again, TWS believes the only fair solution is compensatory mitigation that restores 23-36 mi2 (14,000 to 23,000 acres) of riparian habitat previously degraded by placer mining, depending on the alternative.	Should the project be approved, the ROD will determine which mitigation measures will be required, including compensatory mitigation if applicable.
30842	28	Mammals	In our previous comments, we noted that while the Draft EIS states that studies have shown that caribou displacement may span up to 9.6 km from disturbance, it fails to reference and discuss recent studies, some of which indicate larger areas of displacement than those referenced in the Draft EIS. While the DSEIS did include more recent citations, it failed to update the indicated maximum displacement distance, still stating that other studies have identified larger displacement zones: up to 6 miles (9.6 kilometers) from various forms of disturbance (p. 3-136). Plante et al. (2018), which we recommended including in our Draft EIS comments is cited in the DSEIS, but its reported displacement zones around roads (0-15 km), mining exploration (2-21 km), mines (21-23 km), and human settlements (2-18 km) do not appear to have been taken into consideration in the text. We also recommended Boulanger et al. (2012) be cited in our Draft EIS comments, which found avoidance of 11-14 km around mines, but this was not cited in the DSEIS, nor was its more recent update (Boulanger et al. 2021). The maximum displacement distance mentioned in the FSEIS should be increased to reflect the information from these various studies.	Plante et al. (2018) and Boulanger et al. (2021) are cited in Section 3.3.4 of the Supplemental EIS. Many different distances of displacement have been reported for different development types, human activity levels, herds, and seasons as discussed in the Supplemental EIS.
30842	29	Mammals	In our Draft EIS comments we also urged BLM to go beyond reporting the physical footprint of infrastructure to also include expected displacement effects. As the citations above describe, as well as other studies such as those looking at effects of dust deposition along roads (e.g., Walker and Everett 1987, Myers-Smith et al. 2006, Ackerman and Finlay 2019, Neitlich et al. 2022), the habitat area lost to caribou and other species is likely to be much larger than just that due to direct effects of the physical footprint (c.f., NRC 2003). Despite pointing this out, however, indirect impacts beyond habitat loss due to vegetation removal and gravel fill are not quantified in the DSEIS because they are dependent on numerous variables (p. 3-133). This is an insufficient rationale for not including analysis of these important and expected impacts of road and associated mining development. Various scientific techniques are available for forecasting potential impacts of future development while accounting for uncertainty (e.g., Wilson et al. 2013, Fullman et al. 2021). Such techniques or others from the many available in the scientific literature should be used to estimate potential displacement and other indirect habitat loss from development of the Ambler Road. This also needs to include the effects of mines and other infrastructure associated with or facilitated by the road. The DSEIS acknowledges that habitat loss and alteration due to the reasonably foreseeable development of the District could equal or exceed that from the road itselfand exponentially increase fragmentation of migratory and winter range (p. 3-147). We agree with the DSEIS statement that It is much more likely that a system of roads would jeopardize long-distance migration than any single road (p. 3-148), making it important that these cumulative impacts be quantified alongside the anticipated direct and indirect impacts of the Ambler Road itself.	Section 3.3.4 of the Supplemental EIS does evaluate indirect effects (e.g., Appendix E, Table 22). Indirect effects of cumulative impacts are discussed but cannot be quantified without project plans. Future developments would be subject to NEPA process requirements.

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30842	30	Mammals	The DSEIS now contains depictions of variable amounts of winter use by collared caribou. Nonetheless, reporting on these historical patterns of use, while important, does not necessarily describe the future patterns of use. We previously asked that BLM analyze what the effects would be if another shift in winter distribution, as has been seen in the past for the Western Arctic Herd (e.g., Skoog 1968, Burch Jr. 2012, Dau 2001) causes the area to be more heavily used. This was not done in the DSEIS but should be for the FSEIS.	Section 3.3.4 of the Supplemental EIS describes telemetry data from over 40 years during which time the herd changed dramatically in size and used various different wintering areas. Information on historical patterns of range use prior to the telemetry data era are discussed but they lack specificity and in some cases reflect uncertain herd identity.
30842	31	Mammals	In the future, if lichen ranges or snow conditions in the west of the WAH range become challenging, the herd may try to move east again in search of better conditions, especially in the absence of a major development like the Ambler Road. If the Ambler Road and mining developments are built perpendicular to the migration route, we question whether the WAH caribou would be successful in making such a shift again. We also again reiterate that even in years in which relatively few caribou pass through the project area, those individuals can be of vital importance to subsistence hunters from the communities in the area.	Section 3.3.4 of the Supplemental EIS uses over 40 years of telemetry data to document shifts in wintering range and acknowledges that long-term changes in seasonal distribution can occur. The potential for the road to impact caribou movements in ways that impact subsistence hunters is discussed.
30842	32	Mammals	We noted before that treatment of potential habituation of caribou to disturbance associated with the Ambler Road was overstated in the Draft EIS and did not align with the best-available science, which has repeatedly failed to demonstrate habituation for caribou. We were pleased to see the DSEIS acknowledge this, though the statement in the DSEIS was limited to the calving season. In fact, recent scientific studies have found a lack of habituation in other seasons as well, with caribou continuing to exhibit displacement from infrastructure despite a long history of exposure and use of mitigation measures (e.g., Johnson et al. 2020, Prichard et al. 2020). In light of our previous comments on this topic and the extensive array of scientific information that we cited in our Draft EIS comments, it was disappointing to see that while the DSEIS was improved with regards to habituation, it still suggested that initially exposing caribou to a small pioneer road may increase their tolerance of the larger Phase 2 road (p. 3-146, C-13). The lack of robust scientific evidence for caribou habituation to roads makes it inappropriate to even suggest that this might happen and we urge that these statements be removed.	Text on habituation was added. Neither Johnson et al. (2020) nor Prichard et al. (2020) tested for habituation of the Central Arctic Herd, Johnson et al. 2020 inferred a lack of habituation because some displacement occurred after decades of development. In addition, both studies relied on GPS collar data and did not use behavioral observations of caribou. There is strong evidence from Alaska herds that caribou do not habituate to roads and traffic during calving but there is little scientific consensus for whether or not habituation to development occurs during other seasons.
30842	33	Mammals	One of the hallmarks of a sound scientific assessment is reliance on accurate reference to the previously established scientific literature. This standard does not seem to have been followed regarding the DSEIS claim that the strongest reactions of caribou to human disturbance occur in response to humans on foot. Three studies are cited in support of this statement (p. 3-136), but none actually provide that support. The only peer- reviewed source cited does not deal at all with evaluation of caribou response to humans on foot (Curatolo and Murphy 1986). Cronin et al. (1994) is a report that makes recommendations for reducing impacts of oil and gas development on caribou. This includes reductions in human foot traffic, but the report does not present any data that would indicate greater disturbance from foot traffic compared to other sources. The final citation is an industry report on caribou monitoring for the Endicott Development Project that contains qualitative statements about strong reactions of caribou to humans on foot but does not actually state that these reactions were stronger than that to other sources, nor provides data to that effect. In that monitoring, humans on foot only comprised about 5% of caribou disturbance events while vehicles were the most common cause of disturbance in the study, comprising around 75% of events. In summary, none of the cited sources provide evidence for the associated statement, which should either be justified with accurate scientific sources or removed from the FSEIS.	Lawhead et al. (1993) conducted a multi-year study of caribou behavior using observations from towers. They concluded that humans on foot consistently elicited reactions from caribou. Vehicle disturbances were more common because foot traffic was rare. Roby (1978) also found that “Humans outside their vehicles (especially when attempting to photograph caribou near the road) usually elicit a strong flight response.” Because on the ground behavioral studies are now rare, these sources provide valuable input on this topic and are included in the Supplemental EIS.
30842	34	Mammals	Another discrepancy with the scientific literature occurs in the DSEIS description of other Alaskan caribou herds. The DSEIS points to the Central Arctic Herd, which it says has maintained habitat connectivity and general migration patterns despite being intersected by highways and roads (p. 3-215). This statement does not consider 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 It also did not development (Wolfe. 2000; Cameron et al. 2002; Russell and Gunn. 2019). adequately reflect recent studies that find that despite caribou still using some developed areas, they show altered movement behavior and ongoing displacement around roads and human activity (e.g., Johnson et al. 2020; Prichard et al. 2020; Severson et al. 2023). A more complete picture of the scientific information regarding disruption of migration and connectivity by infrastructure and human activity is needed in the FSEIS.	The Supplemental EIS cites Johnson et al. (2020) and Prichard et al. (2020) regarding the shift in calving distribution, but the herd crosses roads frequently (Prichard et al. 2020; Severson et al. 2023) and, although the herd calves in two segments, the herd remains intact and is together at other times of year (Nicholson et al. 2016).
30842	35	Mammals	After noting that Alternative B would lead to 15% more habitat loss and alteration than Alternative A but with less than half as much winter habitat affected, the DSEIS states that the functional effects of the two alternatives would likely be the same for caribou (p. 3-143). As is the case for many conclusions in the DSEIS, no citation or justification is made for this statement. Elsewhere, the DSEIS notes the disproportionate impact that loss of lichen-dominated winter forage vegetation types would have on caribou (e.g., p. 3-133) and that loss of winter range would be particularly detrimental to the Western Arctic Herd due to winter forage limitation (p. 3-219), but these concerns do not seem to have been taken into account here. Winter is a critical time for caribou. Foraging opportunities are limited during the winter and caribou rely on body stores of energy for survival and gestation (Barboza et al. 2008, Taillon et al. 2013). Studies in other ungulate species of displacement and altered habitat use due to energy development have noted that fitness costs are likely greater during winter, when individuals already exhibit a negative energy balance (Northrup et al. 2015). Further energetic costs at such a time may lead to loss of body mass and depletion of vital energy reserves (Bradshaw et al. 1998).	The impacts of the different alternatives have to be assessed based on all the metrics calculated for the Supplemental EIS, direct loss of habitat from gravel placement alone is not a good basis for comparing alternatives because the total acres directly lost is a small fraction of the total winter range for the herd.
30842	36	Mammals	There has been little study of winter responses by caribou to industrial development and activity in Alaska. Nonetheless, studies from Canada reveal that disturbances, such as loud noises, can lead to flight responses in caribou (Bradshaw et al. 1997, Bradshaw et al. 1998), causing them to expend additional energy, and that caribou may avoid human infrastructure and disturbance in the winter (Dyer et al. 2002, Johnson and Russell 2014, Plante et al. 2018). Behavioral changes have also been noted in proximity to temporary industrial ice roads (Smith and Johnson 2023, Smith et al. 2023). Any extra expenditure of energy that caribou undertake as a result of interaction with roads, mining activity, or other infrastructure is of concern as reproductive success in caribou is strongly correlated with nutritional stress (Cameron et al. 2005). Late winter body mass of female caribou has been strongly linked to calf production and survival (Cameron et al. 2005, Albon et al. 2017, Veiberg et al.	Discussion of Smith and Johnson (2023) was added and other references reviewed for possible citation. Results from woodland caribou may be less applicable to the WAH than other references.

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			2017), potentially influencing population growth rates. While caribou exhibit their lowest annual movement rates during the winter (Person et al. 2007, Prichard et al. 2014), this does not imply a lack of awareness or response to their environment. Studies of European reindeer (the same species as caribou) found vigilance was highest in winter, compared to other seasons (Reimers et al. 2000). A study in Canada found that caribou avoided human settlements more strongly in winter than summer, resulting in a smaller winter range due to development (Plante et al. 2018). In light of these factors, it is crucial that BLM support and justify from the scientific literature any claims about similar levels of impact between alternatives.	
30842	37	Mammals	The DSEIS describes four clusters of state mining claims overlapping the range of the Ray Mountains Herd, which could see increased potential for development under Alternative C (p. 3-149). We note that the University of Alaska has reportedly requested a land transfer from BLM (e.g., Brooks 2023), which would overlap range for this herd, including areas of the Tozitna North Area of Critical Environmental Concern and Spooky Valley Research Natural Area (BLM n.d., DNR 2023). Our understanding is that one possibility for this land is that, if transferred, it may be sold by the university to mining interests. The Ray Mountains Herd is a small herd and has limited suitable habitat beyond the alpine refugia in this area. Additional discussion seems warranted in the FSEIS about the effects if the small caribou herd gets displaced from the known calving area or additional development is facilitated. This serves as another tangible example of how the Ambler Road will enable a far larger cumulative impact than just the footprint of the corridor.	See Supplemental EIS Section 3.3.4, Mammals, for discussion of potential cumulative effects to the RMH from mining.
30842	38	Subsistence	However, we believe the main nugget statement in the cumulative effects analysis understates impacts: The cumulative impacts to subsistence resulting from the proposed road, other reasonably foreseeable developments, and climate change could result in reduced harvesting opportunities for local residents and alterations in subsistence harvesting patterns (p. 3-324, italics added). This does not accurately portray the serious impacts to subsistence that professionals in our organization believe will undoubtedly occur. And, as we noted above, and in our 2019 letter, the cumulative effects analysis is flawed because BLM and AIDEA do not honestly recognize the political and economic reality that once constructed, the Ambler Road will eventually be opened to the public, and that it will remain open for longer than the 50 years stated in the DSEIS. Qualifiers such as: While the BLM is not considering issuance of a ROW for a public road given in several places in the subsistence impacts discussion (e.g. pp. 3-272, 3-235) deny that reality. The statement after the useful life of the road for mineral development efforts to convert the road to a public road (p. 3-235) offers a more realistic scenario of the future. Indeed, several entities, such as Noatak (p. M-39), WAH Working Group (2019) and WIRAC (M-38), Allakaket, Alatna, and Evansville told BLM they also believe the road will eventually open to the public. For those reasons, and BLMs established poor track record of closure and reclamation of other mining roads in Alaska (Arnett 2005), TWS believes the FSEIS and ROD must evaluate impacts to subsistence through the lens of a permanent Ambler Road that is in place indefinitely.	Supplemental Appendix H Section 2.2, Road Access Scenarios, discusses commercial access for communities, non-industrial access, and trespass as reasonably foreseeable, and provides the basis for the indirect and cumulative impact analysis of these uses as presented in Chapter 3.
30842	39	Mitigation/monitoring	Both State and Federal law have means to address a subsistence priority in times of shortage due to lack of abundance or lack of access, but they are complex and sometimes not successful. Some of our professional members have dealt with the imposition of management strategies that included complex additional restrictions that have become necessary to manage the wildlife harvest along the Dalton Highway (c.f. hunting regulations for the Dalton Highway Corridor, Unit 24A moose, and/or Unit 26B caribou compared to adjacent units; ADFG 2023, USFWS 2022). Indeed, both the Alaska State Department of Fish and Game, Alaska Board of Game, and the Federal Subsistence Board have had to take special actions, and/or create a special management area along the Dalton Highway, as a result of the increased access and harvest pressures on these resources. It is our professional judgment that compensatory actions such as ROW permit mitigation measures and special fish and game management regulations will not be sufficient to avoid such serious impacts to subsistence harvest opportunity. It is our judgment that the decision to permit the construction of a very probable permanent Ambler Road means the certainty of diminished subsistence opportunity.	Comment noted.
30842	41	Subsistence	Pages 3-325, M-35, and L-201 refer to the Manh Choh mine near Tetlin as a reasonably foreseeable action adding a cumulative impact to the Ambler Road. This mine is several hundred miles distant from even the southern terminus of the Dalton Highway. It would be more accurate to state that A new model to develop small mineral prospects throughout Alaska now relies on using the public highway system for transport of ore. This is a controversial paradigm shift (Parshley 2023). It is reasonably foreseeable that additional projects near the Dalton Highway, and a future Ambler Road, would also propose to rely on the highway system to transport ore from the mine to a central processing facility such as Fort Knox near Fairbanks.	The Manh Choh Mine is included in Appendix H, Indirect and Cumulative Scenarios, Section 2.3.3, Other Reasonably Foreseeable Actions. Revised text as requested.
30842	42	Subsistence	Page M-15-16 accurately refers to the Koyukon tradition of hunting black bears in dens at the onset of winter. This traditional practice occurs in Huslia, Hughes, Allakaket, Alatna, and sometimes adjacent villages (Ravens Story elders recordings 1995-2004). While the quantities may not be that large, the importance of this bear hunt was not adequately described in the subsistence impact analysis in Chapter 3. If for some reason moose or caribou are not available, black bears can be an important addition to food security, especially because elders know the specific den sites that are often occupied.	Reviewed and incorporated Indigenous Knowledge from Raven's Story interviews regarding the importance of bear hunting.
30842	43	Subsistence	The statements regarding Teshekpuk Lake caribou not being as affected by road activities compared to the Western Arctic Herd at the Red Dog mine road (pp. M-19, L-179) are misleading. It could be a majority of the Teshekpuk herds movements are parallel the Dalton Highway rather than across it, so the impacts may be less than for the Red Dog Road.	Reviewed subsistence section and edited for clarity; the statement refers to Teshekpuk caribou crossing the DMTS.
30842	44	Subsistence	Page L-195 states Alternative C does not cross through the primary migratory range for the WAH and does not intersect the primary north-south migratory movement of the herd. That may be true in recent times, but, as pointed out above in our Caribou discussion, there is traditional knowledge of large caribou migration southward across the Melozitna area nearly a century ago (Ravens Story 1995).	Reviewed and incorporated Indigenous Knowledge regarding traditional movement patterns from Ravens Story interviews.
30842	45	Subsistence	Table 50, p. L197 does not accurately reflect Alatna and Allakaket villages dependence on resources close to the Alternative B alignment. Alatna and Allakaket people regularly traveled up Alatna River beyond the confluence with Siruk Creek to	The subsistence use areas upon which the table is based includes uses as referenced along Siruk Creek; however, the alignment does not bisect Alatna and Allakaket subsistence use areas

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			harvest whitefish by seining in summer, and to hunt caribou in winter (Ravens Story 1995-2004). This confluence region has been a fairly regular wintering area for WAH caribou, even in years of lesser southward or eastward extent (M. Spindler, USFWS Kanuti NWR (retired), Fairbanks, AK, pers. observation, and WAH Working Group 2019).	as it does for other subsistence communities. Therefore, the table is accurate. The text in Section 5.3.1 notes that there is high use of the alignment by Alatna/Allakaket.
30842	46	Proposed action	It is unclear from information in the DSEIS whether reclamation will actually take place. For example, the DSEIS states that, 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 (p. 2-12). This suggests that not all roads may be removed from the program area, with some roads, aircraft activity, and traffic likely continuing after mining has ceased. We note that the DSEIS states that these may continue in perpetuity, suggesting that infrastructure may never be removed and habitat recovered. Such features are in addition to things like fencing around mines, creation of pit lakes, and even establishment of onsite landfills that will be left after the project is completed (e.g., p. H-18). The impacts of the roads and mines can reasonably be expected to last long beyond the operation of the Ambler Mining District mines.	See response to letter 22595, comment 13.
30842	47	Cumulative and indirect effects analysis	The intention to decommission the road may also be countered by community justice considerations. The Alaska Department of Transportation & Public Facilities has indicated that if the Ambler Road is developed, nearby communities may connect to the National Highway System on a permit basis and BLM acknowledges that once communities are connected to the road for commercial purposes, it is unlikely that those commercial uses would be discontinued (p. H-33). Indeed, the DSEIS 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 DMTS [DeLong Mountain Transportation System, or Red Dog Road] (p. H-33). Apparently, this has already been stated as a goal by some organizations (p. H-33). Furthermore, the DSEIS states that AIDEA proposes to place fiberoptic communications lines for internet and phone service along the road, which may be made available to communities to enhance their internet and phone access (p. H-35). It seems highly unlikely that removal of such telecommunications access to support full reclamation will be undertaken. In fact, there are reasonable questions about whether it would be just to do so. This needs to be acknowledged and analyzed accordingly in the FSEIS.	Text has been revised as suggested.
30842	48	Proposed action	Previous experience at the Red Dog Road, also operated by AIDEA, raises additional questions about whether AIDEA truly intends to remove the Ambler Road after its 50-year ROW ends. The DSEIS mentions a 2017 document from AIDEA that describes potential uses of the Red Dog Road after current mining ends (p. H-33). It is unknown to what extent there would be similar interest in uses for an Ambler Road, but this demonstrates that AIDEA has a record of pursuing additional uses for its roads rather than simply seeking to reclaim and restore them. This should be given due consideration in regard to the longevity of project impacts.	See response to letter 22595, comment 13.
30842	49	Proposed action	The DSEIS indicates that AIDEA does not intend to develop a reclamation plan until close to the road closure date (p. 1-3). This raises questions about whether it will be possible to meaningfully remove and reclaim impacts. As the old adage says, failure to plan is planning to fail. By the time a mitigation plan is drafted, AIDEA will already have obtained revenues from decades of road use by mining companies, which may reduce incentives to produce a robust and potentially costly plan, as well as limiting options for strengthening the proposed plan. It is important to allow flexibility for plan improvements with new scientific studies and technological advances in restoration approaches, however this does not mean that no initial plan can be developed. A detailed reclamation plan should be developed before a ROW is approved that demonstrates that a technically feasible reclamation plan exists. This then can serve as a baseline which can be improved upon through periodic revisions of no less than every 10 years, as technology and conditions improve. The initial proposed plan and all subsequent updates should confirm to the best available scientific information and Indigenous Knowledge about environmental impacts of a potential road and mining and their remediation, being reviewed and approved by an independent group of scientists, agency staff, and subsistence users from communities potentially affected by the road and should be made available for public review and comment prior to approval.	See response to letter 29489, comment 92.
30842	50	Mammals	Even if reclamation occurs, the DSEIS acknowledges that linear features would remain for decades after the road is closed, leading to a continuation of higher predation rates in the vicinity of the Ambler Road corridor (p. 3-139). The Western Arctic Herd is in a sustained decline with recent population counts at the lowest levels since the 1970s (WACH Working Group 2023). This has led to multiple proposals of reduced subsistence harvest of caribou for northwest Alaska residents, as well as near complete elimination of out-of-state harvest. In such a context, the potential for increased predation facilitated by the project activities, which would continue even after removal of project infrastructure, is of great concern and questions the effectiveness of proposed reclamation.	The text of Section 3.3.4 of the Supplemental EIS was updated to say that a reclaimed linear corridor may have increased use by predators.
30842	51	Funding and bonding	BLM plans to require proof of ability to pay for the project and sufficient bonding to ensure road closure and reclamation prior to allowing construction to proceed (p. 2-13). It is difficult to ascertain how an appropriate amount will be identified, however, if the restoration plan is not developed until decades later. Nonetheless, BLMs requirement of up-front bonding should be included as a stipulation in the event of right-of-way approval to ensure that it is clear to all parties and enforceable. The DSEIS notes that there is uncertainty about this [reclamation bonding], 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 (p. 2-13). This acknowledgement, even before a plan is created, raises serious concerns about whether sufficient funding for meaningful restoration will be provided. The bonding amount needs to be set to a level that can be demonstrated to have a high likelihood of sufficiency for achieving the desired restoration outcomes, based on other similar projects, and should be protected from inflation so that intended actions are able to be carried out decades into the future. The bonding	See responses to letter 22770, comment 15 and letter 25830, comment 26.

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			amount should be periodically reviewed along with the reclamation plan and be updated if necessary to account for future economic shifts that may increase the amount required for reclamation.	
30972	1	Mammals	Caribou are known to hav risk averse behavior, and high energy expenditure to avoid human development on their land. These behaviors cause low birth weights, premature death, and low birth counts. Caribou need to be protected they are a vital part of the ecosystem and food source for subsistence living.	Caribou have a very low cost of locomotion so large increases in movements are required to have substantial energetic effects but changes in range use resulting in lower forage quality, less accessible forage, or changes in predation rates can have large impacts on caribou survival or reproduction.
31057	3	Birds	Noise from the proposed Ambler road would be particularly devastating for animal species that rely on acoustic communication, such as birds and amphibians. This is deserving of more consideration	See response to letter 17542, comment 1.
31057	4	Fish and aquatics	The disturbance of soil and vegetation caused by mining roads can lead to an increased risk of water-based disease outbreaks, putting animal populations at risk. Ambler is no exception and the risk to caribou and fish via disease is not examined in the SEIS.	Noted. However, without a reference, we are inclined to focus on impacts similar to those described in letter 25643, comment 12, which focuses on direct or indirect impacts to water quality (e.g., pH from metals, sedimentation impacting gill function). We are not aware of studies which focus on disease outbreaks from mine roads. Recent studies have indicated that chemicals in tires are increasingly a concern on road systems. This is documented in the Impacts Common to all Alternatives.
31057	5	Mammals	There have been concerns expressed by locals that coyote would use this road to travel overland in ways they usually cannot. The introduction of new predator species to areas near mining roads can have unexpected ecological impacts.	It is difficult to know if coyotes will use a road with traffic as a movement corridor, high use could result in increased probability of vehicle collision mortality. Coyotes are listed as carnivores in Section 3.3.4.
31057	7	Environmental justice	The current SEIS fails to adequately address the concerns and rights of Indigenous communities surrounding the MMIW crisis.	See response to letter 34767, comment 94.
31057	8	Environmental justice	The commodification of Indigenous lands and resources has dehumanized Indigenous women and girls, making them more vulnerable to violence and disappearance. This risk is understated in the SEIS and deserves to be considered more deeply.	See response to letter 34767, comment 94.
31057	9	Environmental justice	As resource extraction continues to expand, so does the MMIW crisis. This is because resource extraction creates an environment of lawlessness and impunity for those who commit violence against Indigenous women and girls. There is no plan to combat this offered by any proponent of the Ambler industrial mining road and no existing resources available to Interior villages. This alone justifies a no action alternative.	See response to letter 34767, comment 94.
31242	1	Hazardous waste	I am concerned about the rising numbers of PFAS and other toxic forever chemicals that are endocrine disruptors in our water supply today as well as food we hunt or fish. As you know our natural water supply in North Pole is un drinkable and has plenty of PFAS. I ask for this to to be looked into as there are studies of frogs becoming intersex due to endocrine disruptors. I would hate for our future generations to suffer health consequences from todays choices in one of the worlds last untouched natural resources. Please consider the effects of endocrine disruptors and PFAS.	Public health effects are analyzed in Section 3.4.5 (Socioeconomics and Communities) of the Supplemental EIS and are further analyzed in the HIA prepared for the project. This health effects from exposure to hazardous chemicals associated with future mining are described in general. No specific mining application/permit request for the District has been submitted to date. The BLM evaluated reasonably foreseeable mining development as indirect and cumulative impacts, using a hypothetical mining development scenario. When officially proposed, each mine would go through its own project-specific NEPA analysis and permitting process, which would provide further detail and analysis regarding the specific impacts of each mine operation, including the potential chemicals associated with each project that could pose a health risk.
31470	1	Socioeconomics and communities	The proposed Ambler road cannot be justified from any angle. There are more mining jobs in Alaska today than Alaskans can fill. This project would only benefit outsiders and cost Alaskans food insecurity. What about the bush aviation industry? The Ambler road would destroy hundreds of small Alaskan businesses.	The potential impacts to recreation and tourism activities and businesses are discussed in Section 3.4.3.
31470	3	Subsistence	Choosing between \$21/pound chicken and a caribou taken with a 25cent shell is not a choice. People will not have enough to eat. The SEIS suggestion that people along the Ambler road route would lose their ability to hunt and fish but could use a road to bring in costly western food is really the modern let them eat cake.	While Section 3.4.7 addresses the potential economic benefits of a road into the area, it does not state that these economic benefits would offset the impacts to subsistence.
31605	1	Socioeconomics and communities	If subsistence resources are disrupted, how will the government and private mining companies respond? How much money will be distributed to those affected? How many jobs are actually being created for this project, and how many native Alaskans are risking the loss of stable food supplies?	Jobs associated with the proposed action are discussed in Chapter 3.4.5 (Socioeconomics and Communities). Potential subsistence impacts are described in Section 3.4.7 (Subsistence Uses and Resources) of the Supplemental EIS, and Appendix N (Potential Mitigation) discusses numerous potential measures to mitigate adverse impacts from the project. Should the project be approved, the ROD will determine which mitigation measures will be required.
31605	2	Cultural resources	Tribal and cultural resources will be destroyed (including impacts to historical places, trails, hunting grounds, subsistence areas, berry patches, and sacred sites). Access to tribal sites is a fundamental right for indigenous peoples. The Ambler Road would reduce access to important tribal sites and reduce access to cultural and natural resources.	Added text to address reduced access to culturally important areas and sites.
31721	1	Fish and aquatics	Heavy metal contamination: A series of 4+ scientific publications from 2001-2022 have established that the Red Dog Mine haul road (Delong Mountain Transportation System, nearby, in Northwest Alaska) has caused heavy metal contamination of soil and vegetation up to 5 km on either side of the 84-km road1-5. The Ambler Road would result in similar contamination, because ore would also be trucked along this corridor, resulting in fugitive dust releases into the tundra and waterways. However, the 320+ km Ambler Road would be longer, crossing major rivers such as the Kobuk, Alatna, John, Wild, and Koyukuk, so the impacts would be greater than the Delong Mountain Transportation System. The fish populations in the rivers crossed by the Ambler Road would be susceptible to increased heavy metal contaminant loads, as metals originating from the road work their way through the aquatic food web, and downstream, in these river drainages. Inconnu (sheefish), a species internationally recognized by recreational anglers for its uniqueness and fighting prowess, spawn downstream of the	The Red Dog Mine haul road cannot be directly compared to the proposed Ambler Road. Ore hauling along the Red Dog Mine road occurred for many years in uncovered or tarp covered trucks which released fugitive dust, the extent of which is currently being further delineated. The Red Dog Mine converted to a covered conveyor system and covered trucks to mitigate these impacts. Ore hauling on the Ambler Road would occur using covered and sealed ore hauling containers (Supplemental EIS Section 2.4.3, Features Common to All Action Alternatives, and Figure 2-2 in Appendix A Figures), eliminating this source of fugitive dust.

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			proposed Ambler Road crossing on the Kobuk and Alatna Rivers (as outlined in map 3-18 from the SEIS). Sheefish, Chinook salmon, chum salmon, and Arctic grayling that spawn around and downstream of the proposed route (as shown in SEIS map 3-17) would likely take on higher contaminant loads, which would represent a health risk for subsistence and recreational anglers who commonly harvest and eat these species. In addition, increased traffic on the Dalton Highway from trucks going to and from the Ambler Road will cause more contamination ⁵ , spills, and impacts to wildlife within this adjacent transportation corridor.	
31721	2	Fish and aquatics	Blocking of fish passage by unmaintained culverts: The Ambler Road would cross thousands of streams and wetlands, many of which support populations of anadromous fish. The freeze-thaw-runoff cycle in northern Alaska commonly causes culverts to become impassable to fish after just a few seasons (culverts become perched or filled with sediment (K. Fraley personal observation along the “Road to Tanana”). Even if the stream crossings were initially constructed to acceptable standards, it is unlikely that the mining companies maintaining the road would monitor fish passage or rehabilitate impassable culverts in subsequent years. This will result in inability of salmon and other fish to access spawning and rearing habitat, resulting in lower production of juveniles, similar to what was expected for the Pebble Mine haul road ⁶ . During these times of low salmon abundance, particularly in the Koyukuk-Yukon drainages where subsistence and recreational fishing is closed, additional negative impacts on salmon should be avoided.	AIDEA, the project proponent, would be responsible for culvert maintenance, not mining companies. AIDEA would operate year-round maintenance stations. AIDEA would implement an adaptive management plan for monitoring, maintaining, and repairing culverts over the life of the road, with input from ADF&G and the USACE (see Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA). The plan would include documentation of culvert locations using a global positioning system, and regular monitoring during culvert installation and through road operations. The plan would identify corrective measures that would be taken if concerns are identified, and timeframes for those measures to be implemented. Corrective measures may include additional culverts, increasing culvert sizes, adding thaw lines, adding dead-man anchors, or other appropriate measures. The proposed subsistence advisory committee (see design feature under Social Systems) would help in the oversight of the plan and overall road operations and maintenance. Potential impacts from culverts are described in Supplemental EIS Sections 3.2.5, Water Resources, and Section 3.3.2, Fish and Aquatics.
31721	3	Fish and aquatics	Spills to waterways upstream of sheefish and chum salmon spawning areas: Truck rollovers and spills on the Dalton Highway occur commonly enough to warrant concern when thinking about the Ambler Road, where fuels and chemicals will be transported in a similar manner. Since 2006, according to the Alaska Department of Environmental Conservation, at least 8 diesel spills of over 2,000 gallons have occurred on the Dalton Highway. If a similar spill occurred along the Ambler Road into an anadromous waterway upstream of the inconnu and salmon spawning areas shown in maps 3-16 and 3-17 of the SEIS, the consequences to inconnu and salmon could be devastating (mass mortality could occur ⁷).	The Supplemental EIS acknowledges that spills of chemicals or fuel could occur during project construction, operations, and reclamation. Spill impacts would be mitigated through best management practices such as maintaining spill response supplies on all operations and maintenance vehicles to help expedite cleanup responses, maintaining spill response staff at each maintenance station, maintaining a spill prevention and response plan, etc. See Supplemental EIS Section 2.4.3, Features Common to All Action Alternatives, and Appendix N, Potential Mitigation.
31721	4	Fish and aquatics	Sedimentation and asbestos affecting water quality and fish health: Map 3-02 in the SEIS shows the high asbestos content of soils that will potentially be used as material for the Ambler Road. If asbestos-rich soils are applied to the road, the fugitive dust and runoff from this would represent a threat to fish. Several studies have shown that salmon can be negatively affected by asbestos fibers in water ⁸ , and that runoff from asbestos-rich soil can be a vehicle for metals contamination of streams and fish ⁹ . The Dalton Highway (nearby the proposed Ambler Road) has been shown to cause negative impacts to tundra and aquatic ecosystems through mobilization and accumulation of road dust ¹⁰ , and a similar affect would be produced by the Ambler Road. Sedimentation of waterways negatively affects invertebrate abundance and fish spawning success, among other ecological processes ¹¹ .	NOA and potential interactions with NOA are described throughout the Supplemental EIS. The presence of soils and materials with NOA, and the impacts of encountering NOA material, are disclosed in Chapter 3, Section 3.2.1. Supplemental EIS Appendix D, Table 3, discloses the asbestos potential for each action alternative. Potential stipulations and mitigation measures to minimize impacts from NOA are described in Appendix N, Potential Mitigation. Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA, describes project design features that AIDEA would apply to minimize impacts from the project, including NOA. AIDEA would avoid the use of materials containing NOA to the greatest extent feasible. For the purposes of this project, AIDEA has identified a threshold of 0.1 percent asbestos by mass as its definition of NOA materials (DOT&PF’s regulations are specified for materials above 0.25 percent NOA; however, AIDEA has committed to a lower threshold). If use of NOA materials cannot be avoided, AIDEA would follow DOT&PF measures as allowed under 17 AAC 97 and described in their May 14, 2015, regulations regarding the use of materials containing NOA.
31721	5	Fish and aquatics	Acid mine drainage: Scientific literature has strongly established the negative effects of sulfide metal mining (Arctic and other Ambler District prospects are sulfide deposits) on aquatic environments and fish¹². If the 4+ mines slated to be constructed at the end of the Ambler Road are constructed, it is likely that acid mine drainage into waterways will occur. In a 2022 scientific review of 3,000+ mines in Northwest North America, it was noted that “Acid mine reactions in sulfide-bearing metal ores and coal deposits are common, largely unavoidable, and can persist for millennia¹³.” This constitutes an additional risk to populations of inconnu, chum salmon, and other species in the Kobuk River drainage where the Ambler mines would be installed. Inconnu are important recreational angling species, and are also harvested by subsistence fishers (more than 20,000 annually in the Kotzebue Sound/Kobuk River region). Chum salmon are harvested in the region for human and sled dog sustenance, and also are the target of a small-scale commercial fishery in Kotzebue Sound. Inconnu and chum salmon represent an important component of regional food security for Indigenous and rural residents of Northwest Alaska, and thus negative impacts to their populations should be avoided.	The risks associated with the potential development of new mining prospects in the Ambler Mining District, including the potential for acid mine drainage and the release of other toxic metals, and the potential impacts to fish and aquatic habitat are described in Supplemental EIS Section 3.3.2, Fish and Aquatics - Mining, Access, and Other Indirect and Cumulative Effects.
31721	6	Fish and aquatics	Contamination of fish: Atmospheric exposure and milling of rock, as well as the use of chemicals such as cyanide, are unavoidable mining practices that can result in heavy metals and other harmful contaminants leaching into waterways, entering aquatic food webs, and bioaccumulating in fish ^{13,14} . This represents a potential health hazard for people who harvest and consume fish in the Kobuk River drainage near the proposed mines.	The risks associated with the potential development of new mining prospects in the Ambler Mining District, including the potential for toxic/fugitive dust production and chemical use, and the potential impacts to fish and aquatic habitat are described in Supplemental EIS Section 3.3.2, Fish and Aquatics - Mining, Access, and Other Indirect and Cumulative Effects.
31721	7	Fish and aquatics	Risk of spill or tailings dam failure: Large-scale metal mines commonly store toxic water and rock in tailings piles or dams. If these piles and dams breach or drain to waterways, aquatic biota can be wiped out for dozens or hundreds of miles downstream ¹³ . The 2014 Mount Polley Mine disaster in Canada is a stark reminder of the consequences of this possibility ¹⁵ , which would be devastating to fish and communities along the Kobuk River.	Any future project that proposes the construction of dam (e.g., tailings dam) would require a review of the dam design and operation to receive state certification from ADNRR’s Division of Mining, Land, and Water, Dam Safety and Construction Unit.

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				The Supplemental EIS notes in Section 3.2.3, Hazardous Waste - Mining, Access, and Other Indirect and Cumulative Effects, “tailings dam failures occur and could have major adverse effects to water quality, fish and wildlife habitat, fish and wildlife mortality, and human mortality.”
31721	8	Cumulative and indirect effects analysis	Perpetual monitoring and treatment: As several studies assessing mining impacts have noted13,16, sulfide deposit metal mines often require monitoring and mitigation in perpetuity to avoid contamination and damage to the environment. Eventually this burden becomes the responsibility of local communities and tribes, and potential costs and damages to the environment are borne by locals who may lose wild food harvest and outdoor recreation opportunities through degradation of the environment13.	Supplemental EIS Section 3.4.5 (Socioeconomics and Communities) discusses how the potential costs of long term monitoring and water treatment for the mining development scenario could affect state and local governments, in the event that financial bonds are insufficient, or could affect the cost of living for community members by limiting access to drinking water and subsistence resources.
31742	1	Socioeconomics and communities	Socially, trespass on Native lands will be impossible to police, further increasing pressure on the caribou and other subsistence foods traditionally harvested there. The presence of more outside and Outside workers, especially men, threatens local women, who already suffer significantly higher murder and disappearance rates than white women in Alaska. In addition, the citizens of Alaska will pay for building and maintaining this road which has no guarantee of benefiting the state budget. These are some of the reasons I ask BLM to not permit the Ambler road.	See response to letter 34767, comment 94 regarding MMIW. Supplemental EIS Appendix N, Section 2. Alternatives includes Potential Mitigation Measure 2 that would require financial guarantees, such as a performance bond, maintenance bond, and reclamation bond, making funds accessible to BLM to cover the full cost of construction, operation, maintenance, and termination/reclamation. Future financial commitments by the State of Alaska are beyond the scope of the Supplemental EIS.
31764	1	Decision process - general	The State, as indicated in the scoping comments, believes that this SEIS is redundant and a robust analysis of the project has already taken place in accordance with the National Environmental Policy Act (NEPA), and BLM has presented no new information or circumstances that justify the preparation of a SEIS. BLM appears to be engaging in an unlawful NEPA process to halt the Ambler Road Project. This violates the intent of Congress and the requirements for the development of transportation systems under the Alaska National Interest Lands Conservation Act (ANILCA).	In May 2022, in two lawsuits challenging the JROD and associated environmental analyses, the U.S. District Court for the District of Alaska (District Court) granted voluntary remand at the request of the DOI due, in part, to deficiencies in the BLM's analysis of subsistence impacts under ANILCA Section 810 and consultation with Tribes pursuant to Section 106 of the NHPA. This Supplemental EIS addresses the deficiencies identified in the motion for voluntary remand.
31764	2	Compliance with other laws	BLM should recognize ANILCAs grant to the State and private landowners of rights as may be necessary to ensure adequate and feasible access for economic and other purposes. Where there are State and private owners of lands, including subsurface rights, valid mining claims, and other valid occupancies that are within or effectively surrounded by one or more conservation system units, BLM must give the State and private owners of such lands such rights as may be necessary to assure adequate and feasible access for economic and other purposes to State owned and privately owned land, to fully comply with ANILCA.	Appendix B, Table 1 describes the statutes that are applicable to the proposed project including ANILCA Title XI.
31764	3	Compliance with other laws	The DSEIS also fails to recognize Congressional direction, in ANILCA Section 201(4)(b), that there is need for access for surface transportation purposes (from the Ambler Mining District to the Alaska Pipeline Haul Road) and that the Secretary of the Interior (Secretary) shall [emphasis added] approve such access. Congress also tasked the Secretary and the Secretary of Transportation, in Section 201(4)(d) with determining the most desirable route for the right-of-way and the terms and conditions which may be required for the issuance of that right of way. Despite the clear Congressional direction to approve surface transportation access, BLM inappropriately states on page M-3 that Section 810 provides a federal agency with the jurisdiction to prohibit the action. We assume this language is from BLM Instruction Memorandum (IM) Alaska (AK) 2011-008. To our knowledge, IM AK 2011-008, has been replaced by Permanent IM No. AK-2021-13, and BLM has provided no explanation for its reliance on an outdated policy document. Federal agencies are required to acknowledge such policy changes and provide a reasoned explanation for the change. Either way, BLM does not have the authority to prohibit authorization for the Ambler Road (or any other project) through the Evaluation by effectively blocking needed access across some BLM lands. To do so would render section 201(4)(b) meaningless and violate clear statutory intent in ANILCA. Furthermore, Title XI of ANILCA applies to rights of way that, in part, cross conservation system units. This means that BLM must acknowledge the requirements and limitations imposed by Title XI for the entire route and delete the language indicating that BLM can prohibit the action.	See responses to letter 23034, comment 1 and letter 31764, comment 2. The language on page M-3 has been revised.
31764	5	Public access	While the currently proposed road is an industrial access only road, the DSEIS assumes that the road will become public at some point in the future, emphasizing that an eventual public use road is inevitable or could easily be accomplished. There is no basis for this assumption. AIDEA is seeking federal and state authorizations for a private, industrial use road. Any future change in the proposed use of the road would require additional federal and state review, including public process, and approval. That has not been proposed by any party to the project, and only process, and approval. That has not been proposed by any party to the project, and only authorizations for a private road are being sought. Speculative information about future public use authorizations for a private road are being sought. Speculative information about future public use that ignores the public process inherent in such use, and over-emphasis of information on public road impacts that are not based on actual, anticipated activities, should be removed. Comparisons have been made between the proposed Ambler Road and both the Pogo Road and the Dalton Highway, and neither are appropriate comparisons. The Pogo Road includes both a public and private easement, where DNR retained the authority to issue third party access permits for extractive activities (forestry and small-scale mining). The Dalton Highway became public due to a number of complex factors that do not apply to the proposed Ambler Road.	See response to letter 19418, comment 3.
31764	6	Subsistence	Although the State does not have concerns with Traditional Knowledge being used as a method in the analysis, the State requests that BLM clearly state the definition of Traditional Knowledge, (and either differentiate it from Indigenous Knowledge and Local Knowledge, or use one phrase consistently). BLM should also plainly explain the various diverse knowledge types that BLM identifies as providing substantive information for the Ambler Road Project, the standard and method for acquiring and evaluating the information, and how the information is actualized in practice. Traditional Knowledge is often defined as place-based knowledge that is accumulated and transmitted across generations within specific cultural contexts22. It is unclear by inclusion of certain statements, whether BLM has adhered to this definition. For example, in Volume 1, page 3-127	Text has been added to Supplemental EIS Chapter 3, Affected Environment and Environmental Consequences, Section 3.1, Introduction, that discusses the use of Indigenous knowledge and local knowledge within the Supplemental EIS, including the USDOI definition of Indigenous knowledge per 301 DM 7 Departmental Responsibilities for Consideration and Inclusion of Indigenous Knowledge in Departmental Actions and Scientific Research.

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			BLM includes the following statement, At least 1 local resident reports a drastic change in caribou abundance near Bornite since mineral exploration began in the District. It is unclear whether the recent observation of one resident is consistent with the accepted definition of Traditional Knowledge, and what weight is given to this statement in BLMs analysis. In BLMs haste to address the consultation deficiency, it appears to have overcompensated in the opposite direction.	
31764	7	Subsistence	Additionally, the State believes that the format in the SEIS of including direct quotes collected from individuals during government-to-government consultations and Federal Subsistence Resource Advisory Council (RAC) meetings is unprecedented. It is unclear why these quotes were included and how they will be used as they do not necessarily add new information to the SEIS and often offer conflicting evidence. There are many examples throughout the SEIS. For instance, stating that They never did catch a salmon in those silt water places. (p3-217) ignores the fact that Alaskans harvest salmon from the turbid waters of the mainstem Yukon, Tanana, Kuskokwim, Kenai, and Copper rivers every year. Reporting dead salmon on the [river] sides after spawning (3-223) could be from several factors including natural salmon life history. And understanding what At least 1 local resident reports a drastic change in caribou abundance near Bornite since mineral exploration began in the District (3-127) means without regard to correlation or causation is unreasonable. Individual experiences may be important to capture; however, their bias cannot be overstated, they cannot be assumed to be representative, and they should not be included in the technical NEPA analysis.	See response to letter 31764, comment 6. The inclusion of direct quotes from potentially affected subsistence users can be found in numerous EISs, see for example Alpine Satellite Development EIS (2006); NPR-A IAP EIS (2012); Donlin Gold EIS (2018); GMT-2 SEIS (2018); and Nanushuk EIS (2018), among many others.
31764	8	Subsistence	Further, the terms Traditional Knowledge and Indigenous Knowledge should be defined and related to ANILCA Sections 801(5) and 805, which require the establishment of an administrative structure to include rural residents who have personal knowledge of local conditions and requirements to have a meaningful role in the management of fish and wildlife and subsistence uses on the public lands in Alaska. Clear descriptive definitions will avoid potentially misleading ambiguity and should clarify how BLM is considering traditional knowledge and indigenous knowledge, along with other sciences.	Text has been added to Supplemental EIS Chapter 3, Affected Environment and Environmental Consequences, Section 3.1, Introduction, that discusses the use of Indigenous knowledge and local knowledge within the EIS, including the DOI definition of Indigenous knowledge per 301 DM 7 Departmental Responsibilities for Consideration and Inclusion of Indigenous Knowledge in Departmental Actions and Scientific Research.
31764	9	Subsistence	Earlier this year BLM released a nationwide proposed rule titled Conservation and Landscape Health that provided additional direction on the use of and a definition of indigenous knowledge. This SEIS appears to incorporate elements of that proposed rule, which to date has not been finalized; in our comments on the proposed rule we requested BLM recognize that ANILCA is the controlling statute, including for fish and wildlife management in Alaska. The final SEIS needs to comply with ANILCA and clarify how the use of indigenous knowledge and traditional knowledge intersect and interact with ANILCAs local knowledge mandate.	Text has been added to Supplemental EIS Chapter 3 Affected Environment and Environmental Consequences, Section 3.1, Introduction that discusses the use of Indigenous knowledge and local knowledge within the EIS, including the DOI definition of Indigenous knowledge per 301 DM 7 Departmental Responsibilities for Consideration and Inclusion of Indigenous Knowledge in Departmental Actions and Scientific Research.
31764	10	Subsistence	ANILCA created RACs to ensure the consideration of local knowledge in federal management actions related to subsistence uses of fish and wildlife. Section 805 sets a standard that local knowledge should be supported by substantial evidence. The SEIS should document that all information used in making management decisions regarding the projects impacts is supported by substantial evidence. The State is concerned about how BLM is using comments made by individuals during government-to-government consultations and during Subsistence RAC meetings. Currently, these comments are presented as unsubstantiated comments without any links to supporting data or analysis. The final SEIS should only include substantiated comments or should clearly identify the purpose of including the comments within the SEIS. By clearly basing decisions on information supported by substantial evidence, BLM can incorporate multiple types of knowledge within the SEIS to better address management strategies for the Ambler Road.	Indigenous knowledge can stand on its own without being substantiated by Western science. The Supplemental EIS provides data from a Western science perspective, and local and Indigenous Knowledge from residents who have a close relationship to the land and insights into the biological and physical environment year-round through repeated observations.
31764	11	ANILCA 810 analysis	Currently, the Evaluation provides detailed, separate analyses of the effects to abundance, availability, access interference, as well as references to competition between users for each alternative as well as for the cumulative case. ANILCA carries no requirement for an evaluation of the cumulative case. Thus, please delete section B. 5 of the Evaluation.	Similar to the Supplemental EIS, the Section 810 evaluation includes the cumulative case because it is appropriate to consider cumulative impacts in concert with the action alternatives in order to identify the full scope of impacts to subsistence uses and needs.
31764	12	ANILCA 810 analysis	The Evaluation lacks a concise statement of the overall determination for each alternative and for the project as a whole regarding whether the proposed action significantly restricts subsistence users. The inclusion of four separate determinations under each Findings heading is confusing to the reader as to the BLMs overall finding for each alternative and for the cumulative case. We recommend the Evaluation in the final SEIS plainly state the findings required by Section 810.	The findings of the Section 810 are clearly stated under each alternative and the cumulative case under the heading, Findings. Each of these sections begins with the list of communities for which the alternative would cause a significant restriction to subsistence uses.
31764	13	ANILCA 810 analysis	The Evaluation states: Substantial reductions are generally caused by large reductions in resource increases in the use of those resources by non-subsistence users. We object to the identification of increases in use by non-subsistence users as a cause of substantial reductions in subsistence use. We recognize it may be necessary to analyze the effects of non-subsistence harvest on the abundance of subsistence resources; however, both subsistence and non-subsistence harvest must be considered to determine the sustainability of the populations. Also, rural residents can and do harvest wildlife under general hunting regulations. We also recognize that conflicts between user groups can occur, BLMs pre-decisional determination that non- subsistence users are the sole source of user impacts to subsistence resources is unsupported and inaccurate. ANILCA Section 804 Preference for Subsistence Uses recognizes this in the list of criteria it includes for implementing the subsistence priority. We request the following revisions on page M-3. Substantial reductions are generally caused by large reductions in resource abundance, a major redistribution of resources, or extensive interference with access (including conflicts between different user groups)	Text revised as suggested.
31764	14	ANILCA 810 analysis	We anticipate that after considering public comments and hearing testimony, the final EIS will include a Section 810(a)(3) determination, addressing the following: such a significant restriction of subsistence uses is necessary, consistent with sound management principles for the use of public lands, the proposed activity will involve the minimal amount of public land necessary to accomplish the purpose of the use, occupancy, or other disposition, and reasonable steps to be taken to minimize adverse effects on subsistence reasonable steps to be taken to minimize adverse effects on subsistence uses and resources resulting from such actions. The final Evaluation should clearly identify the conditions and stipulations being taken to mitigate the Ambler Roads effects to subsistence uses and resources, including reference to Appendix N, as appropriate.	The BLM has finalized the ANILCA 810 evaluation (see Appendix M).

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			These conditions and stipulations can be considered reasonable steps to minimize adverse effects on subsistence uses and resources..." under Section 810(a)(3)(C). Examples, not to include all, found in the SEIS but not listed in the Evaluation include: Installation of crossing ramps for local subsistence users at certain junctures of the road to reduce impacts to local residents access to subsistence resources. (Identified in Appendix L, on page L-188 but not in Appendix M. ADF&G as well as local subsistence committees and fish and game advisory boards should be involved in determining the crossing locations.) Implementation of the federal subsistence priority by the Federal Subsistence Board to protect the continued viability of fish or wildlife populations, or to continue such uses, protect the continued viability of fish or wildlife populations, or to continue such uses, when justified in accordance with ANILCA Section 804. Management actions taken by ADF&G to ensure sustainable Management actions taken by ADF&G to ensure sustainable fish and wildlife populations. actions taken by ADF&G to ensure sustainable fish and wildlife populations.	
31764	15	ANILCA 810 analysis	Mitigation is not required under ANILCA, however, compensatory mitigation will be required to meet the Clean Water Act Section 404/10 requirements. We encourage BLM to consider the value any compensatory mitigation projects may have in simultaneously meeting the requirements of Section 810(a)(3)(C). Since the duration of project impacts is unforeseeable, long-term or permanent mitigation should be considered along with short-term mitigation.	To the extent that relevant compensatory mitigation requirements are known at the time that the BLM makes determinations under Section 810(a)(3)(c), such mitigation requirements are taken into account.
31764	16	Purpose and need	Please add language reflecting that the Ambler Road Project can enable responsible domestic production of mineral deposits, including copper, reducing reliance on foreign sources, and supporting our nations transition to renewable energy usage, new technology, and security. These are foundational purposes for the project.	Supplemental EIS Section 1.3, Applicant's Goals for the Project, states their goal to support mineral resource exploration and development.
31764	17	Environmental justice	Please add language stating that the Ambler Road Project can support EJ priorities, bringing jobs and revenues to rural Alaskans with limited opportunities for other employment, being some of the most economically underprivileged in the U.S., and that the Ambler Road Project can maintain rural schools and culture, including traditional ways of life, and facilitate other essential services such as education and medicine.	See response to letter 25185, comment 5.
31764	18	Water resources	McKenna 2015 is a specific report to the Henshaw Creek, whereas Jallen et al. 2022 is the Stock Status of Yukon River salmon runs. All references to McKenna 2015 should say McKenna 2015; Jallen et al. 2022.	Section 3.4.4, Visual Resources in the Supplemental EIS, does not provide data to support the statement that local residents would be disproportionately affected by potential project impacts to visual resources. However, based on information in Section 3.4.8, Cultural Resources in the Supplemental EIS, the environmental justice analysis determined that there is potential for impacts to ethnographic resources and cultural properties in the proposed road corridors, and these impacts would likely be felt most strongly by communities composed largely of environmental justice populations. Therefore, Section 3.4.6, Environmental Justice, has been revised to include additional text describing potential impacts to cultural resources, including visual impacts.
31764	18	Fish and aquatics	McKenna 2015 is a specific report to the Henshaw Creek, whereas Jallen et al. 2022 is the Stock Status of Yukon River salmon runs. All references to McKenna 2015 should say McKenna 2015; Jallen et al. 2022.	The Jallen et al. (2022) reference has been added to citations where McKenna (2015) is used, as applicable.
31764	19	Cumulative and indirect effects analysis	Spell Check - Manh Choh Mine is spelled incorrectly in a couple locations in this document.	The Supplemental EIS has been revised to correct these spelling errors.
31764	20	Fish and aquatics	Grayling should be changed to Arctic grayling throughout the document	The text has been revised as suggested.
31764	21	Mammals	ADF&G acknowledges that roads have the potential to impact the movement of migratory species such as caribou. Mitigation measures have been put in place in locations such as the DeLong Mountain Transportation System, however it is difficult to measure the effectiveness of such measures when caribou appear to delay their crossings of the road. Therefore, we appreciate the updates to the proposed BLM mitigation measures including the planned development and implementation of a Comprehensive Wildlife Interaction and Avoidance Plan (pN-30) which will be reviewed and updated every 5 years, allowing for adaptive management practices and the application of new and innovative solutions for wildlife crossing designs or structures.	Comment noted, if the Comprehensive Wildlife Interaction Plan is implemented it could allow for mitigation measures to be assessed based on new information.
31764	22	Fish and aquatics	Worst case scenarios are presented throughout the document with regards to toxins from road run off, spills, etc. (p3-94). However, it should be stated that very few of the proposed bridge crossings are located adjacent to known spawning areas and it is highly unlikely that road impacts will range miles downstream. Other roads are located adjacent to large Alaskan communities and cross rivers with salmon spawning populations (Yukon, Chena, Salcha, Copper, Gulkana, Kenai rivers, etc.).	The purpose of an EIS's analyses is to identify potential project impacts, including ways to minimize impacts. Supplemental EIS Section 3.3.2, Fish and Aquatics, includes descriptions of potential spills and contamination on fish and their habitat. Spills or other accidental releases present an opportunity for highly mobile contaminants to spread across a broad environment, and are treated accordingly in the Supplemental EIS analyses.
31764	25	Water resources	Page #: 3-45 last sentence Delete extra s from "road users, s."	Revised as noted.
31764	26	Geology and minerals	Page: 3-46 Table: Fiber optic cable Potential development of fiber-optic cables in the Ambler Road vicinity or along the Ambler Road corridor could lead to permafrost thaw and disruptions to existing drainage patterns resulting from trenching for cable installation. - awkward statement - suggest change development to deployment or installation	Volume 1, Section 3.2.5, Fiber-Optic Cable. Text has been revised to read: Trenching for installation of fiber-optic cable(s) in the Ambler Road vicinity or along the Ambler Road corridor could lead to permafrost thaw and disruptions to existing drainage patterns.
31764	27	Noise	Page: 3-50 Noise Section Awkward and unclear why Manh Choh Mine is referenced	Comment noted and the reference to the Manh Choh Mine has been erased.
31764	28	Air quality and climate	Section: 3.2.7 Pages: 3-53 Lines 6-7 contains several technical errors. The BLM has noted For the previous 3 years (2019 through 2021) average concentrations of PM10 were 13.1 micrograms per cubic meter (g/m3) compared to the standard of 150 g/m3. Please note that air emissions are regulated by the federal Clean Air Act , as well as Alaska Statutes AS 46.03 and AS 46.014 . These are then reflected in Alaska Ambient Air Quality Standards found in 18 AAC 50 . The quoted sentence misrepresents the federal and Alaska ambient air quality standards. First, the PM10 National Ambient Air Quality Standard	Comment noted. Supplemental EIS Section 3.2.7 has been modified to include the Alaska Statutes. The PM10 concentration has been corrected to the second-highest 24-hour concentration, as the average was not utilized.

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			(NAAQS) of 150 g/m3 is for the 24 hour standard, there currently is no annual standard for PM10. Second, to compare air quality measurements to the NAAQS, the 2nd highest 24 hour concentration measured in the year is used, not an average. Comparing an average concentration to the PM10 standard is misleading. Please correct and compare the proper values for PM10.	
31764	29	Air quality and climate	Section: 3.2.7 Pages: 3-61 Lines 30 32 contain a point that is poorly phrased 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. Since this paragraph specifically discusses fugitive dust, the sentence should address both permit restrictions and fugitive dust guidance. Since the Ambler SEIS is for a proposed road construction project, the air emissions from mobile sources such as heavy construction equipment and trucks hauling ore concentrate are under the regulatory authority of the Environmental Protection Agency. The air emission sources that fall under DEC's regulatory authority could include rock crushers, as well as fugitive dust. Please note that 18 AAC 50.045(d) requires that a person who causes or permits bulk materials to be handled, transported, or stored, or who engages in an industrial activity or construction project shall take reasonable precautions to prevent particulate matter from being emitted into the ambient air. The department has created guidance and best management practices for other industrial roads in Alaska with similar characteristics. Please delete the cited sentence and replace it with the explanation provided. This should make it clear that if an activity is not deemed to need a permit to operate, they will still need to implement precautions to protect.	Comment noted. The suggested statement has been added to Section 3.2.7, making it clear that if an activity is not deemed to need a permit to operate, they will still need to implement precautions to protect. However the quoted statement has not been erased, as this is a summary statement, which is expanded upon below, where the more detailed language has been added.
31764	30	Vegetation	Section: 3.3 Pages: 3-61 3.3 Biological Resources Second sentence is incorrect: This section addresses vegetation and wetlands, fish and aquatics, birds, and mammals. Together with humans, insects, fungi, and microscopic life forms, these make up the biodiversity of species on earth and the biodiversity of a specific region - to be clear, amphibians, arachnids, crustaceans, reptiles, plus more taxonomic groups all contribute to the earth's biodiversity. Rewrite first two sentences of this section.	The text has been revised as follows: "This section addresses biodiversity of vegetation and wetlands, fish and aquatics, birds, and mammals in the region. Together with humans, insects, fungi, and microscopic life forms, these make up the biodiversity of species on earth and the biodiversity of a specific region. Reduction of biodiversity on a global scale, exacerbated by pollution, climate change, and human population growth, is a trend now affecting Alaska and the project study area. Scientists are concerned about a recent increase in the rate of species extinction and the loss of biodiversity globally. Pollution, climate change, and human population growth are threats to biodiversity (National Geographic Society 2019). The health of biological resources in the study area is a key concern to the Tribes living in the region. Native Alaskan communities in the region. Tribes are acknowledged for their special expertise as expert knowledge holders regarding the biological resources of their homelands."
31764	31	Vegetation	Section: 3.3.1 Pages: 3-62 3.3.1 Vegetation. Latin names should only be provided the first time that they are mentioned. Or leave them out, use is inconsistent among mammal, fish & plant sections of the document.	Text in Chapter 3 has been revised to remove scientific names, which are located in Appendix E, Chapter 3, Biological Resources Tables and Supplemental Information.
31764	32	Water resources	Section: 3.3.1 Pages: 3-63 Wetlands, Paragraph 3 Remove is at wetlands is Discontinuous	Revised as noted.
31764	33	Air quality and climate	Section: Wildfire Ecology & Mgt Pages: 3-81 The number of wildfires would increase due to more human-caused wildfires and more natural lightning-caused due to warmer temperatures and longer fires seasons. Wildfire suppression would be increased in areas surrounding the proposed action. The greater length of Alternative C could result in more frequent or more severe wildfires compared to Alternatives A and B - it is unclear how the proposed road would result in more natural lightning-caused wildfires, or how Alternative C results in more severe wildfires that Alternatives A&B - suggest deletion.	Comment noted. Strike the "more natural lightning fires..." portion of this sentence as there is no correlation to lightning with, or without, the road.as it , or how Alternative C results in more severe wildfires. Removed the word severe as more road miles could result in more frequent fires, but not necessarily more "severe."
31764	34	Fish and aquatics	Section: 3.3.2 Pages: 3-82 3.3.2 Fish & Aquatics The BLM has relied upon ADF&Gs annual Anadromous Waters Catalog (AWC) surveys, Alaska Freshwater Fish Inventory (AFFI) surveys, and G2G consultation as important sources of information on fish distribution in the study area. - add text in bold	Edited as suggested.
31764	35	Fish and aquatics	Pages: 3-85, Non-salmon Species: Sheefish, the largest member of the whitefish family, require specialized spawning habitat limited by water temperature, substrate composition, and specific water quality characteristics influenced by geologic features (Alt 1994; Braem et al. 2015; Savereide and Huang 2016) (see Volume 4, Map 3-18). They typically exhibit a high degree of spawning site fidelity, not only to spawning streams but to specific areas within a reach of stream (Savereide and Huang 201624). Sheefish and other whitefish broadcast spawn over mixed sized gravels in swift flowing water in fall (Gerken 2009), eggs develop over winter, and larvae emerge in spring, with young dispersing downstream typically during spring floods. Spawning areas are used selectively, and large populations may target an area of ideal spawning grounds within a very short river reach (Underwood et al. 1998; Tanner 2008; Gerken 2009). Immature whitefish typically rear in a wide range of habitats for several years before migrating upstream to spawn (Brown 2009) Comment: Similar statements can be made for Pacific salmon, it is unclear why the section on sheefish has so much more detail than the preceding section RE salmon species	Added language in section Affected environment under Pacific Salmon, describing specific habitat needs and spawning behavior of salmon.
31764	36	Fish and aquatics	Section 3.3.2 Pages 3-85 Table/Row/Line 20 Add (Stuby 2018) to citations	The text has been revised as suggested.
31764	37	Fish and aquatics	Section 3.3.2 Pages 3-85 Table/row/line 26 Add (Stuby 2018) to citations	The text has been revised as suggested.
31764	38	Fish and aquatics	Section 3.3.2 Pages 3-85 Line 28 last sentence in paragraph (Brown 2009); [however, the mainstem of the Kobuk River downstream from Ambler is frequently used by adult sheefish for feeding]. Add text in [brackets].	Added text to identify the Kobuk River as important sheefish feeding habitat.
31764	39	Fish and aquatics	Pages 3-87 Line 3 ADF&G also performed surveys in 2023 at over 200 sites in the proposed road corridor, these results will be presented in an ADF&G Technical Report in Spring 2024.	The report noted by the commenter is not yet available and as such, cannot be reviewed and potentially incorporated into the Supplemental EIS analysis.

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31764	40	Fish and aquatics	Pages 3-91 -bottom of page- “Culverts would need to be cleared each year prior to spring breakup to avoid impeding fish movement, particularly for Arctic grayling and other species that migrate under the ice to reach spawning or other seasonal habitats.” Comment: Culverts should be inspected and cleaned regularly, not necessarily just in the spring. Suggest deleting second part of this sentence (particularly for Arctic grayling...).	Added additional language on causes of culvert blockage. Referenced Appendix N, Potential Mitigation, to ensure proper culvert function and maintenance.
31764	41	Fish and aquatics	Section 3.3.2 Pages 3-95 Line 30 First sentence in the last paragraph could cite (Stuby 2018).	Noted, however, it is unclear what value that reference adds to the sentence. The sentence already has a reference that focuses more on water quality impacts and egg survival. The Stuby paper focuses more on life history.
31764	42	Fish and aquatics	Pages 3-97 -5th paragraph- Any work that requires water withdrawal [from fish bearing waterbodies] is governed by AS Title 16, which ensures protection of fish habitat for anadromous fish and fish passage for any fish species and would necessitate issuance of fish habitat permits from ADF&G. Add text in [brackets]	The text has been revised as suggested.
31764	43	Fish and aquatics	Section 3.3.2 Pages 3-99 Line 22 sentence ending in downstream habitat [but just upstream from downstream habitat, important summer feeding areas, as well as salmon migration corridors]. Add text in [brackets].	Made edit to text for additional clarity, in paragraph beginning with “Appendix E, Table 16, which identifies...”
31764	44	Fish and aquatics	Pages 3-99 Line 32 This statement is inaccurate..... “As noted in Impacts Common to all Action Alternatives, ice roads can impact fish and aquatic organisms during withdrawal of water by decreasing available water volume (overwintering habitat) and reducing oxygen and nutrient levels.” Comment: Water withdrawal does not necessarily mean nutrients levels are lowered. Anoxic condition can increase nutrient levels. Suggest clarifying this statement.	Additional text edited for clarity.
31764	45	Fish and aquatics	Section: Mining, Access & Other. Impacts Pages: 3-103, text excerpt in middle of page - The large text excerpt regarding historical mining activities does not appear to add much to the discussion, and the text itself supports that conclusion: Despite the unavoidable disruption of stream substrate that occurs with placer mining operations, none are directly threatening known whitefish spawning habitats at this time. We know of no plans to extract gravel from any of the known whitefish spawning habitats, but these habitats should be considered when planning riverbed gravel extraction projects in the future. - Suggest deletion.	The text excerpt describes historical mining impacts in the region and while there are no known proposals to mine gravel from spawning habitat, the text is appropriate to provide context for past actions as part of the cumulative effects analysis, as well as the importance of spawning grounds.
31764	46	Fish and aquatics	Section: 3-104 3rd paragraph Ambler Metals (formerly Trilogy) has funded multi-year aquatic biomonitoring studies in streams located near the Arctic and Bornite prospects (Bradley 2017, 2018; Clawson [2019, 2020], 2022 and 2023; Trilogy 2018a). - add text in [brackets]	The text has been revised as suggested.
31764	47	Fish and aquatics	Pages 3-104 3rd paragraph ADF&G has indicated that the rapids are not necessarily a barrier, and chum salmon may occur farther upstream (Giefer 2018). Incorrect statement, delete	On August 13, 2018, an ADF&G biologist visited the Shungnak River as part of an AWC survey. The biologist submitted an AWC Fish Survey Nomination Form Anadromous Waters Catalog with the following comments: “Started sampling right below a lengthy canyon section with some significant ‘necked down’ rapids. Spotted chum salmon trying to swim up rapids in reach of habitat station where we landed to start. Substrate good throughout sample reaches. Chum may migrate higher in system but timing would coincide with project window. Don’t think the canyon rapids can be assumed to be a (hydraulic) barrier.” The ADF&G AWC Nomination form is available at: https://www.adfg.alaska.gov/FDDDOCS/NOM_PDFs/ARC/18-186.PDF.
31764	48	Fish and aquatics	Pages 3-104 3rd paragraph Subarctic Creek is a Shungnak River tributary that supports multiple age classes and life stages of Dolly Varden ([non anadromous]), Arctic grayling and sculpin (Bradley 2018; Clawson 2019). - Add text in [brackets].	The text has been revised as suggested.
31764	49	Fish and aquatics	Pages 3-104 - 108 Without a final mine plan, many of these statements regarding mine impacts are speculative, and should not be considered within the limitations of this road sEIS document. Suggest deleting	The cited pages are part of the cumulative effects analysis (Supplemental EIS Section 3.3.2, Fish and Aquatics) and use the best available information on potential projects that could be advanced with the construction of the Ambler Road. The potential impacts described are consistent with the type of impacts that could occur in the Ambler Mining District should any of the proposals advance to construction and operation.
31764	50	Fish and aquatics	Section 3.3.2 Pages 3-108 Line 43: Sentence ending in known spawning habitat in the Kobuk River could be cited. Carter et al. (2015) found the permafrost slump on the Selawik caused a change in the age structure (loss of a cohorts) due to siltation.	Reference added for Hander et al. 2019 (not 2015). This reference includes Ray Hander, Randy Brown, and William Carter and does indeed discuss sheefish age structure and spawning population abundance within the Selawik National Wildlife Refuge, in the context of the 2014 (and still active) permafrost thaw slump. Added to the Supplemental EIS References section (Appendix O).
31764	51	Fish and aquatics	Pages 3-108 This statement is speculative and inaccurate: “To accommodate this change, additional commercial flights could be added at lower costs, which may make recreation more inviting in this area. An increase in recreational fishing has the potential to affect subsistence harvest. While access aside from industrial use is not being considered, fishing pressure could impact the sheefish population and availability of this species for subsistence harvest if that were to change in the future” Improvements to the Dalton Highway - paving stating in the 90’s, and did not result in increases in fishing effort. Also, harvest of all species would remain sustainable regardless of fishing pressure through the implementation of SOA sport fishing	Discussion regarding commercial air traffic (available to the public) was removed as commercial operators are unlikely to establish regular service available to the public. There are currently public airstrips (e.g., Dahl Creek) in the area that are available for private aircraft or charter services, which can provide access to the region for the public. Any new airstrips constructed in the area are likely to be privately owned and operated (e.g., mining company) and any commercial air service would not be authorized to bring members of the public to these locations.

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			regulations. Moreover subsistence fisheries has a priority use determination, so subsistence harvests would not be impacted due to recreational fishing. Suggest deleting.	
31764	52	Fish and aquatics	Section 3.3.2 Pages 3-109 Line 21: Sentence beginning Tanner (2008) could be additionally cited. Stuby found specific habitat requirements in a few sheefish spawning sites that are similar to spawning areas in other sheefish drainages. Add Citation: (Stuby 2018)	Reference was added.
31764	53	Fish and aquatics	Pages 3-111 There is a lot of discussion about the general affects of warmer temperatures related to climate driven changes. This is not related/linked to mining activities being proposed. There is no evidence provided that the proposed road and mining will exacerbate changes on landscape level. It is climate change, not mining. Suggest deleting entire page and related paragraphs.	Supplemental EIS Section 3.3.2, Fish and Aquatics - Mining, Access, and Other Indirect and Cumulative Impacts, includes a discussion on climate change. Climate change impacts are anticipated to cause changes to the natural environment, which may be exacerbated by road and mine construction, as described in the section. The Supplemental EIS considers project impacts in conjunction with anticipated climate change impacts to provide the best assessment of potential future impacts.
31764	54	Fish and aquatics	Pages 3-112 This statement is inaccurate: "Most impacts to fish from trespassers would come directly from fishing activity. Increased activity may directly impact spawning and rearing habitat by disrupting spawning gravels or changing local hydrology. These activities may also create unintended competition for resources between subsistence users and the public, creating additional strains on local fish populations." Fishing does not impact spawning gravels. The author fails to provide evidence or describe how fishing would impact survival of incubating eggs. Nor does it say how fishing would alter local hydrology. Setting a gill net in a back eddy does not alter the stream channel. Suggest deleting.	Text revised to: "Most impacts to fish from trespassers would come directly from the harvest of individual fish. Should enough trespass fishing occur, the activity may create competition for resources between subsistence users and the public, creating additional strains on local fish populations."
31764	55	Fish and aquatics	Section 3.32 Pages 3-113 Line 2: Sentence starting with "The Chinook salmon declining for decades for unknown reasons is not true. There are multiple studies that have shown negative impacts to Chinook salmon production. Perhaps cite Ohlberger et al. 2020; Neuswanger et al 2015; Mundy and Evenson 2011; Ruggerone et al. 2023 - just to name a few.	The commenter did not provide full reference citations, and references Ohlberger et al. 2020, Neuswanger et al. 2015, Mundy and Evenson 2011, and Ruggerone et al. 2023 cannot be identified.
31764	56	Birds	Pages 3-119 -4th paragraph- ...while light pollution can alter singing, nesting, and mating patterns (Da Silva et al. 2015). These behavioral changes could result in reduced foraging rates and decreased mating success. - It is unlikely that light pollution would impact summer bird behavior (singing/nesting/mating) north of the Arctic Circle where there is almost continuous summer daylight - suggest deleting	Changed status of gray-headed chickadee from U (uncommon) to R (rare) in Appendix E-17. New surveys are neither prescribed nor required as part of the NEPA process. Gray-headed chickadees and their habitat preferences are discussed in Section 3.3.3, Affected Environment, and the most recent publication (Booms et al. 2020) is cited in support.
31764	57	Mammals	Section 3.3.4 Pages 3-127 Census update for the WAH 2023 estimate 152,000 animals down ~7.5% from 2022 (ADF&G wildlife biologist Hansen, pers comm)	The WAH population estimate was updated with the new estimate of the size of the herd.
31764	58	Mammals	Section 3.3.4 Pages 3-131 Adult moose density estimates for the Upper Kobuk, the area in which the road and mining development is proposed, was 0.19 adult moose/mi2 in 2003, 0.16 in 2006, 0.13 in 2014, and 0.10 in 2019 (Saito 2014, Osburn in prep). Moose abundance within the Upper Kobuk survey area saw an annual decline of -2% per year between 2003 and 2019 (Saito 2014, Osburn in prep).	These moose density numbers were used to update the text of Section 3.3.4 of the Supplemental EIS.
31764	59	Mammals	Section 3.3.4 Pages 3-131 & 3-139 While Dall sheep are not expected to be near the road surface we suggest that BLM review this report, "NPS Arctic Network, Dall's sheep Resource Brief, Dec. 2020" for clarification of sheep presence in proposed development area.	Information from this report on Dall sheep was added.
31764	60	Mammals	Section 3.3.4 Pages 3-133 last paragraph WAH collars are purchased, deployed and managed by ADF&G and NPS only	Text was changed to reflect that collars were for ADFG and NPS only
31764	61	Mammals	Section 3.3.4 Pages 3-141 "Bears and foxes may be attracted to human activity areas by real or perceived availability of food sources, such as trash. Use of disturbed areas by bears increases mortality rates (Berland et al. 2008). Bears and foxes may be killed in defense of life and property if they threaten people or become a nuisance. Measures to properly secure wildlife attractants and to discourage feeding of wildlife by AIDEA employees (see Appendix N, Section 3.3.5, Mammals) would be effective in reducing human-wildlife conflict, if implemented." - suggestion: expand statements to include all scavengers (fox, wolf, coyote, etc.) and the possibility of disease transmission when these scavengers congregate into a location because of improperly managed attractants.	Text as changed as suggested
31764	62	Mammals	Section 3.3.4 Pages 3-144 Any additional road mileage would incrementally increase the risk of road-strike for ungulates (moose, caribou) and large carnivores that may use the road surface for travel. Risk for moose road strike would likely be higher in winter when snow depth may encourage use of the road for easier travel but limit their ability to move off the road surface quickly. As the mileage of alternatives B and C are longer, there would be additional risk of road strike, as well as increased harvest, and habitat degradation. This point is addressed in the RFA section but not specifically identified under alternatives B and C.	Text discussing how vehicle collision risk could increase due to snow depth and length of road was added to Section 3.3.4.
31764	63	Fish and aquatics	Section: Mining, Access & Other Impacts, Pages 3-147. This section regarding RFAs with regards to caribou is a much better written section than what was provided in the fish section (pages 104-108).	Noted. The commentor does not provide specifics.
31764	64	Mammals	Section 3.3.4 Pages 3-147 1st paragraph The WAH peaked in 2003 and has been in a declining trend since then (20 year	This sentence was updated to make clear the decline in the WAH population has occurred since 2003.
31764	65	Mammals	Section 3.3.4 Pages 3-151 While Dall sheep are not expected to be near the road surface we suggest that BLM review this report, "NPS Arctic Network, Dall's sheep Resource Brief, Dec. 2020" for clarification of sheep presence in proposed development area.	See response to letter 31764, comment 59.
31764	66	Terrestrial	Chapter: throughout, example in Vol 1, Chapter 3 Pages: example, page 3-153. It is critical the SEIS accurately capture ADF&Gs management responsibility for fish and wildlife populations. ADF&G manages fish and wildlife to maintain	Viability was replaced with sustainability when referencing ADF&G fish and wildlife management.

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			sustainable fish and wildlife populations for the maximum benefit of the people, taking actions to conserve populations when necessary. At times the SIES states ADF&G manages populations of all species for continued viability (e.g., page Volume 1, page 3-153). When referencing ADF&G fish and wildlife management, please replace viability with sustainability. Sustainability goes beyond viability and encompasses a broader perspective that takes into account the interconnectedness of the various natural systems. The term viability is correctly used regarding fish and wildlife population management when determining if it is necessary to restrict fish and wildlife takings under ANILCA Title VIII.	
31764	67	Land use/management	Chapter: Volume 1; Chapter 3 Section: 3.4.1 Pages: 3-156 Section titled State Lands This section mentions the following state management plans: Northwest Area Plan and Yukon Tanana Area Plan. There is also the Ambler Road Site State Lands Section Specific Plan which should be included. It can be found at https://dnr.alaska.gov/mlw/planning/siteplans/ambler-road/pdf/arssp-2022-complete.pdf .	Section 3.4.1, State Lands section, has been updated to include the Ambler Road Site Specific Plan.
31764	69	Cumulative and indirect effects analysis	Pages 3-162 last paragraph- This is the only reference to the Roosevelt Project in the document. Should it be considered in the RFA section?	See response to letter 26152, comment 1.
31764	70	Public access	Section 3.4.3 Pages 3-178 2nd paragraph The tone of this paragraph emphasizes that eventual public use of the road is inevitable or could be easily accomplished. That language should be corrected by emphasizing that there are significant hurdles to converting the road to a public road, including purchasing the improvements from the private owner (AIDEA or other), completing necessary upgrades, and agency authorizations that would require new analysis and review to include a public process.	See response to letter 19418, comment 3.
31764	77	Subsistence	Section: 3.3.4 Pages 3-230 3rd paragraph Suggest deleting the numbers of communities in parentheses following each listed resource (ex/ caribou (9 communities)) since the migratory nature of several of the resources makes it difficult to quantify.	The parentheses provide the number of communities that could be directly (not indirectly) affected by the project, measured by whether the community's subsistence use areas overlap with the project and impacts could occur at the same time and place as the action.
31764	78	Subsistence	Chapter 3 Section: 3.4.7 Pages: 3-231 Line 36 particularly affecting communities for which this resource is of high importance (Ambler, Kiana, Kobuk, and Noorvik). Insert Shungnak	Revised text and table to include Shungnak.
31764	79	Subsistence	Section: 3.4.7 Pages: 3-232 3rd paragraph Melozitna River is misspelled.	Revised as requested.
31764	80	Subsistence	Pages: 3-235 4th paragraph It is not clear why the Manh Choh Mine (note spelling) is mentioned here or Air Force Lands as they are located far from the proposed Ambler Road.	These are both reasonably foreseeable future actions that could contribute to cumulative impacts of the road.
31764	81	Subsistence	Pages: 3-236 2nd paragraph The discussion of access and job competition between NANA and Doyon shareholders is speculative, unclear and imprecise ("chunks of time off") - suggest deletion or rewrite	Revised sentence to remove referenced clause.
31764	82	Public access	Section: 3.3.4 Pages: 3-239 second to last paragraph As stated multiple times in the document...If the road is opened to the public, federal and state agencies may need to adjust hunting regulations to prevent overharvest of wildlife - although there is no basis to assert road will be open to the public.	See response to letter 23058, comment 8.
31764	83	Subsistence	3.4.7 3-240 Last sentence of 3rd paragraph Citing Magdanz et al. 2016, the draft sEIS states that communities that become connected to the road system experience decreases in subsistence harvesting activity. This inaccurately assumes causation, when Magdanz et al. 2016 were describing a correlation between harvest levels and road connectedness. We do not know how building a new road would affect contemporary harvest practices and levels of subsistence harvest. It is difficult to say definitively that building a road to a community reduces its participation in subsistence activities. The communities on the road system have different subsistence patterns in part because they have access to cheaper foods and goods, but most road connected communities in Alaska are also areas that have a higher proportion of non- Indigenous residents. Remove Magdanz et al. 2016 citation from this sentence. If the sentence remains as is, replace Magdanz et al. 2016 with an appropriate citation.	The sentence cites the access to cheaper foods and goods resulting from the road as one of the potential causes of a decrease in subsistence harvests. Magdanz et al. (2016) does find a statistically significant correlation between road connectedness and reduced subsistence harvests, taking into account factors such as % indigenous populations.
31764	84	Cultural resources	Section: 4.8 Pages: 3-241 Footnote 75 Bulletin 38 has not been revised. A draft has been circulated that may be adopted. Use of draft guidance in lieu of the existing approved guidance in the SEIS is problematic, especially as NPS has indicated that there will be another version of the draft distributed prior to moving to finalize updated guidance on Bulletin 38. Recommend either using the approved NRHP term "Traditional Cultural Properties" in the text of the SEIS or revising the footnote to acknowledge that the guidance has not been adopted but the SEIS will use the proposed term "Traditional Cultural Places," including an explanation for why it is appropriate to use draft language.	Revised footnote to acknowledge guidance has not been adopted.
31764	85	Cultural resources	Section: 3.4.8 Pages: 3-242 First sentence under "Ethnographic Overview" Incorrect use of Iupiat. "Iupiat" refers to three or more Iupiaq people. When used as a modifier, the word Iupiaq is correct. Change "Iupiat peoples" to "Iupiat".	Revised as requested.
31764	86	Cultural resources	Section: 4.8 Pages 3-242 2nd yellow box The introductory statement regarding place-names does not do enough to support the rest of the discussion. Recommend revising: There are innumerable indigenous place-names in the study area. Traditional ecological knowledge shows that ancestral populations made extensive use of the study area for millennia and had multiple travel corridors to carry out trade and resource acquisition. Rivers and adjacent shores were heavily used for transportation and that use continues into the present day. For example, the Kobuk and Koyukuk Rivers facilitated trade and travel between the coast and interior Alaska.	Suggested edits do not meaningfully improve paragraph. Did not revise.
31764	87	Cultural resources	Chapter 3 Section 4.8 Pages 3-250 Indirect and Cumulative Impacts The communications discussion in Section 2.4 only includes fiber in the road embankment and towers in material sites or at maintenance stations. A reasonably foreseeable effect is use and development in the access road ROW by entities that are not affiliated with AIDEA or the Access Road	Impacts related to reasonably foreseeable public and non-industrial access to the Ambler Road is discussed on p. 3-251.

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			Project, perhaps to provide service to a community or exploration/mining projects in the future. Recommend including discussing actions that occur in other ROWs as possible impacts to be considered or address why such use couldn't occur.	
31764	88	Mammals	Chapter 3 Section A-4 Figure 3-1 Could be updated with 2023 WAH population estimate	Figure 3-1 showing population estimates of the WAH was updated with the 2023 estimate of herd size.
31764	89	Subsistence	Chapter 3 Section: F-38 Table 30 Why is there no data for Fairbanks, Koyukuk, Nome or Shaktoolik? Those communities have been surveyed regularly by ADF&G, or harvest data is available.	The rankings in this table are based on available ADF&G household harvest data. According to the ADF&G CSIS, Koyukuk only has one year of household harvest data for fish. Fairbanks has not had any comprehensive ADF&G household surveys conducted. Nome only has one year of data for birds and eggs. Shaktoolik only has single-resource studies; calculated ranges based on other communities and revised table to include ranking for Shaktoolik.
31764	90	Subsistence	Chapter 3 Section: F-39 Table 31 Why is there no data for Koyukuk, Pitkas Point & St Mary's? Those communities have been surveyed regularly by ADF&G.	The rankings in this table are based on available ADF&G household harvest data. Koyukuk only has one year of household harvest data for fish; calculated ranges based on other communities and revised table to include ranking for Koyukuk. No fish harvest data are available on the ADF&G CSIS for Pitkas Point or St. Mary's.
31764	91	Cultural resources	Volume 1; Appendix C Cultural Resources Page #: C-24 Table 2; First row on pg. C-24 Please add a footnote stating that the higher number of sites and trails of Alternative A relative to B, and A & B relative to C is very likely due to greater cultural resource sampling effort conducted during preconstruction field work by AIDEA and its contractors for Alternative A. Without this footnote, it appears that Alternative C is the least impactful to cultural resources, when this conclusion may be erroneous since Alternative C has not received the same degree of survey effort.	Footnote added to Table 2 in Appendix C.
31764	92	Mammals	Appendix C Section #1.5.13 Page #C-13 As stated multiple times in the document...If the road is opened to the public, federal and state agencies may need to adjust hunting regulations to prevent overharvest of wildlife - although there is no basis to assert road will be open to the public.	The potential for public access to the road is discussed throughout the Supplemental EIS and in detail in Appendix H.
31764	93	Noise	Appendix D Attachment A D-A-5 According to the analysis in Attachment A, the anticipated average noise free interval is <9.9 minutes based on a 6 truck/hr traffic volume over a 24 hr period. ADF&G experience with DMTS truck traffic at 4 trips per hour is that the influence of traffic including noise often delays caribou migration across the road (ADF&G wildlife biologist Hansen, pers comm).	Comment noted. In Section 3.3.5 of Appendix N, a potential BLM mitigation measure seeking to minimize disturbance to migrating caribou states that the BLM may require temporary cessation of traffic on the road. This would reduce noise and disturbance, despite the anticipated average noise free interval is <9.9 minutes based on a 6 truck/hour traffic volume over a 24-hour period. Another potential BLM mitigation measure would require AIDEA to work with land managers and wildlife agencies to identify construction timing windows to protect wildlife. See Section 3.3.2 of Appendix N, Timing.
31764	94	Fish and aquatics	Appendix E Table 15 E-13 Footnote "c" update "declined" to "varied in abundance". Add Jallen et al. 2022 citation (McKenna 2015; Jallen et al. 2022)	The text has been revised as suggested.
31764	95	Fish and aquatics	Appendix E-2. References for Tables in App E, Page # E-26: New reference, McKenna 2015 is a specific report to the Henshaw Creek, whereas Jallen et al. 2022 is the Stock Status of Yukon River salmon runs. Add Jallen et al. 2022 citation	The Jallen et al. (2022) reference has been added to the Appendix E references.
31764	96	Cultural resources	Appendix F Section 1.8.1 Page F-50 Table 34 Smith and Kari 2023 doesn't appear in the references. Double check that sources are referenced.	Reference has been added to the References section (Appendix O).
31764	97	Public access	Volume 2; Appendix H 2.2.2 Public and Non-Industrial Access Page: H-32 -Last sentence in second to last paragraph regarding Pogo Mine Rd- Regarding Pogo Mine Road, BLM states: However, miners of other land users who have a legitimate need to access can apply for a land use authorization from ADNOR allowing them to utilize the road. This sentence is unclear given the context of previous sentences in the paragraph. If this sentence is referring to ADNOR permitting uses of the Pogo ROW, then it is mischaracterizing DNRs authority to issue permits. In this case, DNR specifically reserved the ability to grant authorizations on the road: The right-of-way permit will specifically reserve to the State the right to grant additional authorization to third parties for compatible uses (including other rights-of-way) on or adjacent to the land under the right-of way (Pogo Project Right-of-Way Final Decision, ADL 416809 & ADL 417066, section XI. Economic Benefits). There is no mention of permitting users with a legitimate need. If fact, DNR permits on Pogo road are limited to extractive purposes such as mining and forestry uses. If this sentence is referring to ADNOR permitting uses of the Ambler Road ROW, again it is mischaracterizing ADNORs authority to issue permits. AIDEA has applied to ADNOR for a private exclusive easement, over which it would have exclusive permitting authority over any installed infrastructure. While ADNOR has in the past reserved the ability to issue permits in right-of-way authorizations (e.g., Pogo), this is not guaranteed in an authorization to AIDEA. DNR is currently adjudicating the application but has not issued a Decision at this time. Assuming that ADNOR will reserve the ability to issue permits to users with a legitimate need mischaracterizes the adjudication of the easement application and, unless a decision by the State of Alaska is issued that reserves such a use, is currently false.	Text has been revised.
31764	98	Public access	Volume 2; Appendix H Section: 2.2.2 Public and Non-Industrial Access Page: H-34 First bulleted list, third bullet- Regarding a reasonably foreseeable future scenario for the Ambler Road, BLM states: "Individuals with valid existing land use rights within the area (such as miners wanting to access their state or federal mining claims) may apply for road access." This sentence is unclear with regard to permitting authority. Individuals may apply to use the road, but such applications would have to be submitted to ADIEA or the entity that owns the improvements. To issue State authorizations, ADNOR would have to reserve this in the decision to issue a right-of-way, but the State is still adjudicating ADIEAs application and has not released that decision. To assume that the State will create such a reservation mischaracterizes possible access to the road. This should be clarified.	See response to letter 26067, comment 3.

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31764	99	Subsistence	Appendix L Section 3, Subsistence, Definition and Regulatory Setting In Appendix L, Section 3, BLM fails to capture that, as Congress recognized in ANILCA, subsistence uses are central to the customs and traditions of rural Alaskans as a whole, and particularly for indigenous peoples in Alaska. Section 801 of ANILCA clarifies Congressional intent regarding subsistence uses it sought to protect, stating: the continuation of the opportunity for subsistence uses by rural residents of Alaska, including both Natives and non-natives on public lands... is essential Please revise the first sentence of Appendix L as follows: Subsistence uses are central to the customs and traditions of many Alaskans, particularly rural and indigenous peoples in Alaska. (Page L-6)	Revised as requested.
31764	100	Subsistence	Appendix L Section: 3 L-8 We request the following additional revision on page L-8 to accurately describe federal and state wildlife management under ANILCA: The federal government [recognizes] (implements a) subsistence [priorities] (priority) for rural residents on federal public lands. (The priority is implemented, in accordance with Sections 802(2) and 804, whenever it is necessary to restrict the taking of populations of fish and wildlife on public lands for subsistence uses in order to protect the continued viability of such populations or to continue such uses. The priority is implemented through appropriate limitations based on the following criteria:) (1) customary and direct dependence upon the populations as the mainstay of livelihood; (2) local residency; and (3) the availability of alternative resources. [While] (The State of) Alaska (manages for sustainable fish and wildlife populations under the sustained yield principle mandated by the State Constitution. The intent is to provide all residents with the opportunity to utilize the States fish and wildlife populations for hunting and fishing among other uses.) Replace [bracketed sections] with (sections in parentheses)	Revised text as requested with some minor edits.
31764	101	Subsistence	Appendix L Section: 5.4.2 Page L-104 Last sentence- The text states, Data on resource contribution are not available for the community of Nenana, for which there are no comprehensive (i.e., all resources) harvest studies. The department completed a comprehensive harvest survey in Nenana in 2015. Information from the technical report for that study, Brown and Kostick 2017, is included in Tables 29-33, and the study is included as a reference in Table 2 and in the References Section. Brown, C.L., and M.L. Kostick, editors. 2017. Harvest and Use of Subsistence Resources in 4 Communities in the Nenana Basin, 2015. Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 429, Fairbanks. The quoted sentence should be modified or deleted accordingly.	Updated figures and revised text to reflect most recent comprehensive harvest study for Nenana.
31764	102	Subsistence	Appendix L Section: 5.5.1 Page: L-121 Table 33 According to Brown and Kostick 2017, 13.4% of Nenana households received marine mammals in 2015, so the value in that column ("N/A") is inaccurate. Compare Table 33 against Table 5-5 in Brown and Kostick 2017 for accuracy and correct as necessary.	Revised table to incorporate new data.
31764	103	Subsistence	Appendix L Section: 4.1 Page: L-14 Table 2 Additional data source for Buckland available. Resources include all subsistence resource categories (Comprehensive): Elizabeth H. Mikow; Margaret Cunningham. 2020. Harvest and use of wild resources in Buckland, Alaska, 2018. ADF&G Division of Subsistence, Technical Paper No. 472, Anchorage	This source is listed in the table.
31764	104	Subsistence	Appendix L Section: 4.1 Page: L-16 Table 2 Additional data source available for Kiana. Resources include all subsistence resource categories (Comprehensive). Citation: Lamb, M., C.L. Brown, H. Cold, and L. Navarro. In prep. The Harvest and Use of Wild Resources in Kiana, Alaska, 2021. Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 495, Anchorage.	Incorporated new harvest data as requested.
31764	105	Subsistence	Appendix L Section: 6.4.1 Page: L-162 Line 3 of first paragraph Analysis includes statement describing cultural importance of small land mammals harvests and their contribution to subsistence diets, but it fails to mention economic role of fur sales. Fur sales contribute to mixed cash-subsistence economies by providing cash, which is necessary to support other subsistence activities through gear, fuel, and other purchases. Insert: "However, fur sales contribute cash to the mixed subsistence-cash economies of these communities, which may be used to support other subsistence resource harvests." after the third line of the first paragraph on page L-162.	Added suggested text.
31764	106	Subsistence	Appendix L Section 4.3 L-24, L-25 Last sentence that begins on L-24 The following statement is incorrect: ADF&G data that can be used to quantitatively measure the cultural importance of subsistence resources include data related to participation (percent of households attempting harvests of each resource) and sharing (percent of households receiving each resource). The use of quantitative measures of participation and sharing alone are inappropriate to fully describe the cultural importance of wild resources to the study communities. The EIS should report these metrics as they are, and should not try to link them to a complex theoretical concept like cultural importance". Remove the framing of these three quantitative measures as indicative of cultural importance.	These measures of resource importance have been used in multiple recent EISs and are useful in identifying the key resources for a community. The EIS recognizes the limitations of using quantitative measures for cultural importance, stating, "This analysis, while reflecting one method of quantitatively measuring the importance of subsistence resources, does not take into account a multitude of factors for which quantitative data do not exist (e.g., spirituality, ethics and values, ideologies, identities, celebration and ceremonies). Rankings of resources under high, moderate, and low importance should be viewed only in terms of the indicators presented here and not in terms of overall importance. Subsistence harvesters in the study communities routinely view all of the resources they harvest during their seasonal cycle of availability as important to their community and/or individual health and cultural identity. To take into account the aspects of subsistence such as spirituality, values, and identity that could be impacted and which are not easily characterized by quantitative data, the project relies on the Indigenous Knowledge and concerns identified in the scoping comments for this project in both assessing impacts and providing potential mitigation measures and other potential strategies to minimize construction and operational impacts on resources and subsistence harvesters."
31764	107	Subsistence	Appendix L Section 5.1.1 Page: L-26 last line of page Number 2 inserted incorrectly before word "occurs": "Furbearer trapping 2occurs in an . . ."	Revised as requested.
31764	108	Subsistence	Appendix L Section: 5.1.1 Page: L-27 last line of paragraph 2 Additional data source available for Kiana. Replace last line of paragraph 2 with the following spatial data interpretation: Most contemporary Kiana use areas (Lamb et al. in prep) fall within the geographic boundaries described by Schroder et al., but also include an area along the Noatak River about 15	Incorporated additional use area description as requested.

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			miles south of Noatak, as well as specific locations southwest of Hooper Bay on the Nuok spit and water bodies near Anchorage and the Kenai River.	
31764	109	Subsistence	Appendix L Section: 5.1.1 Page L-29 map legend The “community type” labels for the legend for this map and subsequent resource harvest and use maps throughout Appendix L are not associated with any verbal description within the text. The reader may have a hard time understanding the meaning or significance of each community type. I assume they are references to the type of subsistence data available for each location, but it is unclear. Include a verbal description of each community type label within the legend in the narrative. Include reasoning for/significance of distinctions in narrative.	The community types are clearly defined in the text accompanying the maps. It is not feasible to add a definition of each community type on the map itself.
31764	110	Subsistence	Appendix L Section: 5.1.2 Page: L-39 Harvest data, last line of first paragraph Author compares relative composition of harvest data to per capita harvest data in same section. Last sentence reads: “In addition, the community of Ambler shows a higher reliance on caribou than some other communities and a lower reliance on salmon, although recent fish-only studies show higher per capita harvests of salmon for Ambler.” Author compares relative composition of harvest data to per capita harvest data in same section. Last sentence reads: “In addition, the community of Ambler shows a higher reliance on caribou than some other communities and a lower reliance on salmon, although recent fish-only studies show higher per capita harvests of salmon for Ambler.” Because we cannot compare the per capita harvest of salmon in recent studies to per capita harvests of other resources for those timeframes, we cannot assume higher per capita harvests mean higher reliance. Remove the second half of the last sentence that reads “although recent fish-only studies show higher per capita harvests of salmon for Ambler” or reword sentence by including reference to per capita data for previous study years to facilitate comparison.	Separated these into two sentences. It is still notable that per capita harvests for fish have increased in recent years, even if composition data are not available for those years.
31764	111	Subsistence	Appendix L Section 5.1.3 Page: L-44 Timing of Subsistence Activities Suggest revisiting wording/grammar in last sentence of third paragraph and first 2 sentences of fourth paragraph. Repetitive use of word “peaks” and repetitive narrative regarding seasonality and large land mammal harvests.	Revised as requested.
31764	112	Subsistence	Appendix L Section: 3 Page L-8 The discussion on page L-8 also fails to accurately capture the Federal Subsistence Boards (FSB) authority, please revise as shown below: The Federal Subsistence Board, under Title VIII of ANILCA and regulations at 36 Code of Federal Regulations (CFR) 242.1 and 50 CFR 100.1, implements the Federal Subsistence Management Program on public lands within the State of Alaska. Sections 36 CFR 242.3(a) and 50 CFR 100.3(a) state: The regulations in this part implement the provisions of Title VIII of ANILCA relevant to the taking of fish and wildlife on public lands in the State of Alaska.	Revised as requested.
31764	113	Subsistence	Appendix L Section: Multiple Page: Multiple Tables 5, 7-12, 14-18, 20-29, 31-35, 37-42 In tables that include harvest and use data, there are instances where the value is reported as “N/A”, where it should actually be zero. “Not applicable” is not the same as zero; “N/A” is to be used when there is no value for that metric (i.e., the question was not asked on the survey, or other methodological problem that resulted in no estimate), not when the value of that metric is zero. Change “N/A” values in the referenced tables to zero where the data source lists those values as zero.	N/A = not available, which may mean that the data are not available at the level being presented in the table (e.g., ADF&G did not report certain metrics for “whitefish,” only for whitefish species. In other cases “N/A” means that the data were not collected by ADF&G in any study years (e.g., “receive” and “give” were not always collected in earlier studies or for species-specific studies).
31764	114	Subsistence	Appendix L Section: Multiple Page: Multiple Figures 2, 3, 5, 6, 8, 9, 11, 12, 14, 15 The data are not showing a linear trend across x values, which are categories of resources. A column chart is more appropriate for these data.	Changed figures to column charts.
31764	115	Subsistence	Appendix M Appendix L sets the stage for the Evaluation found in Appendix M. References to supporting information in Appendix L, as well as to relevant mitigating measures in Appendix N that will be used to minimize impacts to subsistence, should be included in the final Evaluation.	Reviewed Section 810 to ensure data are adequately cross-referenced and mitigation measures are identified.
31764	116	Subsistence	Appendix M Section A.1 Subsistence Evaluation Factors Page: M-2 BLM states: “Three factors are considered when determining if a significant restriction of subsistence uses and needs may result from the proposed action, alternatives, or in the cumulative case, as follows” It is important to distinguish between the requirements of ANILCA Section 810 and those of BLM’s instruction manual for ANILCA Section 810 compliance. In this sentence, the requirement was unclear or inadvertently suggests ANILCA requires consideration of these factors. Our suggested edit provides needed clarity. We request the following revisions (additions in [brackets]): “[BLM’s instruction manual for ANILCA Section 810 compliance requires that] three factors are considered when determining if a significant restriction of subsistence uses and needs may result from the proposed action, alternatives, or in the cumulative case, as follows”	Minor revisions to text on page M-2 have been made.
31764	117	ANILCA 810 analysis	Appendix M Section A.1 Subsistence Evaluation Factors Page M-2 BLM states: “ANILCA Section 810 also requires that cumulative impacts be analyzed.” This statement is incorrect. ANILCA Section 810 is silent on the analysis of cumulative impacts. It is BLM’s 2011 instruction manual for compliance with ANILCA Section 810 that requires cumulative impacts be analyzed as part of a Section 810 analysis. We suggest this sentence be deleted. If it is retained, we request the following revisions: “[BLM’s instruction manual for ANILCA Section 810 compliance] also requires that cumulative impacts be analyzed.” Additionally, we request that BLM confirm that the 2011 instruction manual is the guiding policy in this ANILCA Section 810 analysis rather than the 2021 instruction manual. We note that, if the 2021 instruction manual is the correct guiding policy, the analysis of cumulative impacts may not be required.	See responses to letter 31764, comments 11 and 120. The incorrect statement has been removed from Appendix M.
31764	118	ANILCA 810 analysis	Appendix M Section: B. ANILCA, Section 810(A) Evaluations and Findings for All Alternatives and the Cumulative Case Page: M-7 BLM states: “These impacts were compared to the three subsistence impact categories according to Section 810 of ANILCA: resource abundance, resource availability and user access.” This statement is incorrect. ANILCA Section 810 is silent on impact categories. It is BLM’s 2011 and 2021 instruction manuals which define these three categories. We request the following revisions: “These impacts were compared to the three subsistence impact categories [defined in BLM’s instruction manual for ANILCA Section 810 compliance:] resource abundance, resource availability and user access.”	The text in Appendix M, page M-7 has been revised.

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31764	119	ANILCA 810 analysis	Volume 3; Appendix M B.2.1 Evaluation of the Effect of Use, Occupancy or Disposition on Subsistence Use and Need Pages: M-24 & M-25 Section: Subsistence User Access In this section, BLM discusses potential impacts to subsistence user access across the entire route of the proposed road (a more extensive area than that of the BLM ROW). ANILCA Section 810(a)(3) requires the BLM to consider whether “reasonable steps will be taken to minimize adverse impacts upon subsistence uses and resources resulting from such actions.” We note that, where the proposed road will require state authorizations, the State is working with the applicant to mitigate impacts to access, including for subsistence, on state lands.	Noted.
31764	120	ANILCA 810 analysis	Appendix M Section E. References Page M-43 The BLM cites as its guiding document for the ANILCA Section 810 Analysis its 2011 Instruction and Policy for Compliance with Section 810 of the Alaska National Interest Lands Conservation Act (ANILCA). Instruction Memorandum No. AK-2011-008. The State is aware of Permanent Instruction Memorandum No. AK-2021-013 Compliance with Section 810 of the Alaska National Interest Lands Conservation Act (ANILCA). The transmittal memo for this 2021 instruction memorandum states that it “replaces the ANILCA Section 810 compliance procedures outlined in BLM IM-AK-2011-008.” Please explain why the BLM has chosen to follow the 2011 instruction memorandum rather than the 2021 instruction memorandum. We note that there are procedural differences between the two documents.	Permanent Instruction Memorandum No. AK-2021-013. Compliance with Section 810 of the Alaska National Interest Lands Conservation Act (ANILCA) was rescinded on June 30, 2021. Accordingly, there is no approved policy in place. The References section accompanying Appendix M has been revised accordingly.
31764	121	Subsistence	Appendix O Add citation: Padilla, A. J., S. K. S. Decker, B. M. Borba, and T. Hamazaki. 2021. Subsistence and personal use salmon harvests in the Alaska portion of the Yukon River drainage, 2016. Alaska Department of Fish and Game, Fishery Data Series No. 21-06, Anchorage.	Added citation
31764	122	Fish and aquatics	Appendix O References. Correct citation: Clawson, C.M. 2019. Aquatic Biomonitoring at the Arctic-Bornite Prospect, 2018. Technical Report No. 19-05 Alaska Department of Fish and Game. Fairbanks, Alaska.	The citation has been corrected in the Supplemental EIS References section (Appendix O).
31764	123	Fish and aquatics	Appendix O References. Add citation: Clawson, C.M. 2020. Aquatic Biomonitoring at the Arctic-Bornite Prospect, 2019. Technical Report No. 20-01 Alaska Department of Fish and Game. Fairbanks, Alaska.	The citation has been added to the Supplemental EIS References section (Appendix O).
31764	124	Fish and aquatics	Appendix O References. Add citation: Clawson, C.M. 2022. Aquatic Biomonitoring at the Arctic-Bornite Prospect, 2021. Technical Report No. 22-06 Alaska Department of Fish and Game. Fairbanks, Alaska.	The citation has been added to the Supplemental EIS References section (Appendix O).
31764	125	Fish and aquatics	Appendix O References. Add citation: Clawson, C.M. 2023. Aquatic Biomonitoring at the Arctic-Bornite Prospect, 2022. Technical Report No. 23-04 Alaska Department of Fish and Game. Fairbanks, Alaska	The citation has been added to the Supplemental EIS References section (Appendix O).
31764	126	Fish and aquatics	Appendix O References Add citation: Bear, C.E. 2022. Ambler Road Corridor (Mile (0-55) Fish Investigations in Koyukuk River Tributaries, 2021. Technical Report No. 22-05 Alaska Department of Fish and Game. Fairbanks, Alaska.	This citation was included in the Supplemental EIS References section (Appendix O).
31764	127	Fish and aquatics	Appendix O References. Add citation: Carter, Bill, Ray Hander, and Randy Brown. “A Permafrost Thaw Slump and Its Effect on Selawik River Inconnu Recruitment in Northwest Alaska.” 145th Annual Meeting of the American Fisheries Society. AFS, 2015.	The commenter did not provide a full reference citation and the cited presentation (Carter, Hander, and Brown 2015) cannot be identified.
31764	128	Fish and aquatics	Appendix O References. Add citation: Stuby, Lisa. “Contributions to the life history of Kuskokwim River inconnu.” Transactions of the American Fisheries Society 147.5 (2018): 879-890	The citation has been added to the Supplemental EIS References section (Appendix O).
31764	129	Subsistence	Appendix O References Add citation: Elizabeth H. Mikow; Margaret Cunningham. 2020. Harvest and use of wild resources in Buckland, Alaska, 2018. ADF&G Division of Subsistence, Technical Paper No. 472, Anchorage.	Added citation.
31764	130	Subsistence	Appendix O References Add citation: Lamb, M., C.L. Brown, H. Cold, and L. Navarro. In prep. The Harvest and Use of Wild Resources in Kiana, Alaska, 2021. Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 495, Anchorage.	Added citation.
31764	131	Mammals	Appendix O References Add citation: Osburn, C. In prep. Moose management report and plan, Game Management Unit 23: Report period 1 July 201530 June 2020, and plan period 1 July 202030 June 2025. Alaska Department of Fish and Game, Species Management Report and Plan ADF&G/DWC/SMR&P-20XX-XX, Juneau.	This citation was added to Section 3.3.4.
31764	132	Fish and aquatics	Appendix O References. Add citation: Gryska, A.D. 2018. Spawning Locations of Tanana River Summer Resident Sheefish 2010 and 2011. Alaska Department of Fish and Game, Fishery Data Series No. 18- 36, Anchorage.	The citation has been added to the Supplemental EIS References section (Appendix O).
31914	1a	Mitigation/monitoring	Suggestions! 1. More funds appropriated for the study of processing minerals using electric power alone; with minimum use of polluting chemicals. Note: May have been done at MIT.	The impacts of mining are analyzed to the extent that information is available to do so. No specific mining application/permit request for the District has been submitted to date. The BLM evaluated reasonably foreseeable mining development as indirect and cumulative impacts, using a hypothetical mining development scenario. When officially proposed, each mine would go through its own project-specific NEPA analysis and permitting process, which would provide further detail and analysis regarding the specific impacts of each mine operation.
31914	1b	Mitigation/monitoring	2. Funding for the Creation of “Game Warden” for each village impacted by the road. Including training and transportation such as boats, sno-machines, vehicles, and small airplanes.	See Appendix N, Section 3.4.5, Socioeconomics, PMM 1 regarding opportunities for local residents.
31914	1c	Mitigation/monitoring	3. Strict federal and state oversight of any mining activity along the Ambler Road to ensure that there is no downstream pollution of any rivers or river tributaries.	ach land manager that issues a ROW or some other right of access is responsible for ensuring compliance with the terms of the grant for access.
31914	1d	Mitigation/monitoring	4. Village and federal oversight of actual building of Ambler Road to ensure no rivers or creeks are disturbed.	ach land manager that issues a ROW or some other right of access is responsible for ensuring compliance with the terms of the grant for access.

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31986	1	Water resources	Lake and Stream Withdrawals for road construction and maintenance may not be replenished annually by nature. Climate changing impacts will affect the quantity of water for project uses. The initial construction of ice roads will require 1 million gallons of water per mile. Plus, there is all the construction roads to access the needed gravel, water, and airport access to consider. Each ice pad uses 250,000 gallons. I believe that the conclusions of a recent study in the National Petroleum Reserve Alaska (NPRA) can be applied to the Ambler Road construction and maintenance along with the mining that will occur. Winter Lake Water Withdrawal (LWW) is NOT BEING REPLENISHED ANNUALLY BY SAME YEAR SNOWMELT RECHARGE in that study. This suggested conclusion is based on the Water and Environmental Research Center at the University of Alaska Fairbanks 2022 study of Modeling Stream Flow Response to Scenarios of Tundra Lake withdrawal and Seasonal Climate Extremes, Arctic Coastal Plain research article 10.1029(2022). The study occurred in the northeast corner of the NPRA which is the Crea Creek watershed which is a sub-watershed of the Fish Creek drainage system. The area has historically supplied water and ice chips for oil exploration. The Key Points of the Water Resources Research are: The winter Lake Water Withdrawal (LWW) reduces summer low and average stream flow with the recovery time of up to 3 years. The winter LWW is not counterbalanced by same year snowmelt recharge as is currently assumed in the land management regulations. Low rainfall (21% of normal) combined with winter LWW lead to intermittently dry streams in the following 3 summers. The recovery time for multiple years of LWW is 2-5 years. One year replenishment is not enough. The combined effects on stream flow means the hydrological equilibrium is changed. Fragmentation of the surface water network occurs. Impassable fish stream conditions can then occur. This ultimately could modify fish species distribution and assemblage. This ecosystem is already experiencing fragmentation due to climate change. This will be exacerbated by permafrost thaws due to being exposed by the road and mine development. Irreversible damage to natural topography, vegetative patterns, hydrological flow, and aquatic habitat occurs. Mining industrialization can affect the snow and ice fields in the south side of the Brooks Range. These areas feed important springs that emerge in the north side of the Brooks Range which are within the Arctic National Wildlife Refuge. This hydrological connection should not be deteriorated. These springs are important habitat for fish and wildlife in the winter.	See response to letter 18334, comment 1.
31986	2	Socioeconomics and communities	Public safety, human and wildlife health are jeopardized. Overwhelming cultural changes may result over a period of time. The man-camp construction camps bring an influx of outside people into the area. The supply of drugs, alcohol, and crime results. Law enforcement is sparse in remote Alaska villages. In fact, the public perception is that law enforcement is notoriously lacking. Yes, the state troopers and wildlife officers still respond to crime. But they are short staffed. Currently, there are 50 empty trooper spots. The troopers that are recruited are hard to retain. Thus, there is less ability to cover in a timely manner the large distances. Weather comes in that eliminates plane travel. A one-hour plane ride gets replaced by 8 hours on via snowmachine. This is hard data to be used in realistically appraising the level of community and state services needed due to an increase in population and industrialization. It is unrealistic to think illegal use of the road can be stopped. Law enforcement is unable to respond adequately to most trespass issues in rural Alaska currently. Illegal use will not adequately be addressed.	See response to letter 18334, comment 2.
32083	1	Cumulative and indirect effects analysis	The BLM has also failed to consider the extreme likely result that building a road would enable further development down the line. Constructing 211+ miles of road enables the possibility, and we argue, probability, that it will facilitate more connecting roads, spur roads, access roads, and mining claims throughout one of the most pristine landscapes left intact on the planet. Developers would have better opportunities to expand once a road is laid. Therefore, the DSEIS underestimates impacts by failing to analyze reasonably foreseeable development that would have a significant impact on the Western Arctic Caribou Herd. This includes a possible extension of a road from the Ambler Mining District west to the coast that would create a road barrier across the entire WAH migratory route.	Per the BLM's NEPA Handbook (H-1790-1), reasonably foreseeable actions are those for which there are existing decisions, funding, formal proposals, or which are highly probable, based on known opportunities or trends. Although the Supplemental EIS acknowledges the potential for the proposed road to facilitate additional development in the broader region down the line (see Appendix H, Section 2.1.3), the BLM is not required to speculate about future actions which lack detailed studies or proposals. See also response to letter 26152, comment 1.
32083	2	Mammals	It also fails to analyze the reasonably foreseeable potential impacts of a public road and road-based sport-hunting access to the Western Arctic herd. Even if left "closed" to the public, trespass from non-local hunters is common issue many Tribes already face, and we fail to see how this road will be any different, as the Draft SEIS does not meaningfully address this matter.	Section 3.3.4 of the Supplemental EIS discusses the potential for trespassing of the proposed roads and how that could add to potential impacts for wildlife.
32083	3	Cumulative and indirect effects analysis	In addition to unscheduled future hypothetical projects, there are currently 9 development projects facing this region at this time. It is inappropriate to view development as isolated, finite projects. The BLM must take a holistic approach to reviewing the combined potential effects of such projects, or at least address the possible cumulative effects on a shared landscape in some way. This is an unacceptable oversight and a true example of tragedy of the commons. These current projects include: 1. Ambler road and mining district 2. ANSCA D-1 land withdrawals 3. NPR-A special area rule making 4. Graphite One Mine 5. OTZ Microwave Tower broadband project 6. ASTAC Fiber Optic Project 7. Anarraaq-Aktigiruaq exploration 8. Willing master development plan SEIS 9. Noatak Red Dog Road	The Ambler Road and hypothetical mining development scenario, ANCSA 17(d)(1) withdrawals, Graphite One mine, OTZ broadband project, and Willow MDP are already included in the list of past, present, and reasonably foreseeable actions (see Section 2.3 of Appendix H). Potential cumulative effects of these projects are analyzed in Table 3-1 of Appendix H, as well as the cumulative and indirect effect analyses throughout Chapter 3 of the Supplemental EIS, wherever applicable to each resource.
32083	4	Mammals	While the SEIS acknowledges the disproportionate importance of lichen habitat for the Western Arctic herd, it concludes that project impacts on lichen habitat cannot be quantified due to the expense of obtaining lichen data. This is unacceptable, especially given acknowledgement that habitat alteration of lichens could extend away from the footprint of the road, and in some instances may have effects equivalent to complete habitat loss. Lichen is most commonly relied upon by caribou as a winter forage source. Given the overlap of the proposed project area with WAH winter range, this makes any negative effects to lichen alarming. A more robust accounting for these potential impacts is needed.	Section 3.3.4 of the Supplemental EIS does quantify lichen top cover along the 3 alternatives using recent lichen maps based on remote sensing data (Macander et al. 2022).
32294	1	Cooperating agency involvement	I think the Executive Summary is a bit misleading when it comes to Gates of the Arctic and ANILCA responsibilities. Sec. 201 (4) (b) did exempt NEPA when considering access across the Kobuk portion of the Preserve but it did require the EEA for the purpose of determining the most desirable route for a ROW and terms and conditions required which would result in fewer or less adverse impacts on the Preserve, including a list of values to be protected. That EEA should be updated with the enhanced information presented in the DSEIS, update its analysis to address problems with the prior decision, and ensure it	See response to letter 26938, comment 3.

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			is acting on complete information about this project. NPS needs to acknowledge all the information that is not available to make rational decisions. Any prior authorizations (the ROW) should be rescinded.	
32294	3	Compliance with other laws	Until such a time where a permit for actual mining has been issued and a mining need for access has been identified there should be no need to proceed with this process. Congress did not authorize the NPS to allow access across the Preserve for the variety of purposes that are discussed in the DSEIS. Access authority is strictly for mineral extraction purposes. If there are no mining plans or permits issued there is no requirement to provide access to the Dalton Highway. Plans need to come first then access can be reconsidered.	AIDEA's purpose for the project is to provide surface transportation access to the Ambler Mining District and allow for expanded exploration, mine development, and mine operations at mineral prospects throughout the District.
32294	4	Compliance with other laws	Where is the report with the Secretary of Transportation in accordance with ANILCA 201 (4)(d)? The transportation permit requirement was required by law to take all federal uses into account. The DSEIS does not take the process of 201(4) into account, and therefore is not a legitimate application. Any application must take park law 201(4) and "Purposes" of Gates of the Arctic into account. Where are the discussions of Title XI?	The EEA developed by the NPS in coordination with the USDOT can be found on the NPS website at: https://parkplanning.nps.gov/projectHome.cfm?projectId=37092
32294	5	Land use/management	The topic of access is key. Doyon recently announced they will not allow access for this road across their lands. That should be the end of this discussion and the proponent could later come back to the public with a realistic scenario for further analyses.	Section 505 of FLPMA requires the BLM to identify terms and conditions necessary to protect public lands and interests associated with any ROWs it issues. The BLM's direct regulatory authority is limited to public lands managed by the BLM; FLPMA requirements do not extend to other lands.
32294	6	Cumulative and indirect effects analysis	The hypothetical mining scenario represents a high production rate and favorable market conditions. This also needs to be more realistic. The projected revenues reflect 4 fully operating mines, probably not likely to occur.	See response to letter 29489, comment 57.
32294	7	Fish and aquatics	AIDEA has committed to fish passage, what does that look like?	As described in Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA, culverts would be designed to maintain fish passage. For waterways to be crossed with culverts and which are deemed to be fish-bearing, the design would comply with ADF&G fish passage standards, which require prescribed velocities and capacities among other design factors, to minimize and/or mitigate impacts to fish habitat from construction activities and operations. Design features of each fish stream crossing structure would be determined through coordination with the ADF&G during the design/permitting phase and incorporated into permit stipulations to ensure structures are designed to maintain fish passage per the Fish Passage Act (AS 16.05.841). All perennial rivers and streams are assumed to provide fish habitat, and crossings of them would be designed to provide fish passage. Crossings of well-established ephemeral channels likely to provide fish habitat during seasonal flow periods would also be designed to provide fish passage. Fish passage culverts would be designed and installed using stream simulation principles with embedded culverts filled with substrate to replicate natural channel characteristics and function. Fish passage crossings would be designed to convey the 100-year peak flood (1 percent exceedance probability). See Section 2.5.7 (Water Resources), Water – General, for additional culvert information. The design, construction, and installation of all anadromous water crossings would comply with the methods and recommendations in "Culvert Design Guidelines for Ecological Function, Alaska Fish Passage Program" (USFWS 2020). All fish passage culvert designs would additionally comply with the State of Washington stream simulation culvert width standards, which call for culvert widths of 1.2 times bankfull width plus 2 feet.
32294	8	Socioeconomics and communities	There are no federal revenues projected, what about for any gravel removed from BLM lands?	The Supplemental EIS focused on potential revenues to local, regional, and state governments, including ANCSA corporations. The Cardno 2015 Economic Impact Analysis report provided an estimate of federal revenues from material sales.
32294	9	Mitigation/monitoring	Money in escrow is essential for restoration to occur. Why not follow the model from the Alyeska Pipeline Service Company Haul Road, let the companies, not the State of Alaska, bear the financial burden and create an escrow account for restoration and remediation. This project is NOT the same as the Red Dog Mine.	A statement demonstrating the financial and technical ability to construct, operate, maintain, and terminate a project is required pursuant to 43 CFR 2804.26(a)(5)(i) prior to approving a right-of-way application. Reclamation is a component of the proposed action and considered in all action alternatives.
32386	1a	Mammals	Probable Impacts of the Proposed Ambler Road on WAH Caribou. The most serious potential impact of the proposed road to caribou is habitat fragmentation that delays, deflects, or prevents their movements into established ranges. The potential of this road to reduce the availability of caribou to subsistence users, by affecting caribou movements or contributing to declining numbers, is one of two concerns most frequently expressed in scoping comments to BLM. All 3 action alternatives risk fragmentation of WAH range. The east-west alignment of Alternatives A and B will have the greatest probability of being encountered by caribou migrating south during fall and north during spring. In some fall migrations, caribou moving south that cross the Kobuk River between Onion Portage and Shungnak abruptly turn east and parallel the Kobuk River to overwinter in the Lockwood Hills or on south slopes of the upper Kobuk Valley. Caribou following this movement pattern would contact Alternative C given its northwest-southeast alignment. The SEIS states, "The development of mines 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 (NCASI 2008)." These are significant impacts for caribou	Sample sizes for radio collar data are indeed small for early years of radio collar data, but there is a relatively large data set (1987–present) for the WAH to provide a long-term perspective on wintering ranges.

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			and, in turn, for subsistence users. Table 22 (Appendix E. Chapter 3 Biological Resources Tables and Supplemental Information) as well as Maps 3-23 and 3-23b (Volume 4 - List of Maps for Chapters 1-3) illustrate that the Ambler Mining District and western portion of the proposed road include important WAH migratory and winter range. Limitations of this table and both maps are at least partly attributable to small sample sizes of satellite collared WAH caribou prior to 2009. This may explain why data from multiple years was combined for 1987-1997, 1998-2003, and 2004-2009 in Table 22 and Map 3-23b, and why kernel distributions showing migratory and winter range use were reported for 5-6-year periods in Map 3-23. Combining years of data for this table and maps obscures annual variability in seasonal distribution of this herd. This variability, in and of itself, is likely a biologically important adaptation that enabled caribou to survive the transition from the Pleistocene to current times. This limitation is least problematic for Table 22 because annual values are presented for 2010-2022.	
32386	1b	Mammals	The annual values reported in Table 22 show that during 5 individual years (2012-2016), <5% of the WAH wintered within 30 mi of the Alternative A, B, or C alignments. In contrast, during 2010, 28% of the herd wintered within 30 mi of Alternatives A & B and 18% wintered within 30 mi of Alternative C, and during 2021, 40% of the herd occurred in this portion of Alternatives A & B and 45% in Alternative C. If you accept that caribou survival is influenced by their patterns of range use through space and time (i.e., range use is not an artifact of random chance), then displacement in any single year from some portion of range that often receives little use - but occasionally receives very high use - could increase mortality when environmental conditions necessitate that caribou need that area at that time. Impacts of a catastrophic mortality event in any single year can extend far into the future. The percentages reported in Table 22 suggest that WAH utilization of areas within 30 mi of Alternatives A, B, and C was low in most years. However, if you calculate the number of caribou that wintered in these areas each year using the percentages provided in Table 22 and estimated herd size at that time, substantial numbers of caribou were present even when only a small portion of the herd wintered there. For example, during the winter of 2022-2023, 6.39% of the WAH wintered within 30 mi of the Alternative A alignment. That equates to approximately 10,500 caribou (164,000 caribou X 0.0639=10,479.60), enough to sustain several nearby communities. At the other end of the spectrum, during the winter of 2021-2022, 41% of the herd, roughly 77,000 caribou, wintered in this area. If even half of these caribou (38,500 individuals) were displaced by infrastructure and they experienced a relatively high (but not unprecedented) 33% mortality rate from using a second-choice winter range, roughly 12,000-13,000 caribou would have died as a result. That would constitute a significant loss for any caribou herd but would be especially detrimental for a declining herd. The point is that managing caribou may be less an exercise of protecting specific areas of range deemed 'important' by man than of protecting large areas that give caribou options for selecting areas that provide the best combination of food availability, risk of predation, exposure to insect harassment and disease, snow and ice conditions, etc. Each time development encroaches into intact caribou range, their breadth of choices for finding optimal conditions diminishes. That's why the decline of a caribou population that is driven at least in part by progressive development can be an incremental process: over time, it can lead to collapse by a thousand tiny cuts.	See response to letter 32570, comment 15.
32386	2	Subsistence	Given impacts of the Red Dog Road on WAH caribou, even under 'industrial use only' status, the proposed Ambler Road will have significant biological impacts on wildlife, including caribou, and social impacts on subsistence users. If the proposed Ambler Road is ever opened to the public, these impacts will greatly intensify as evidenced by the much lower per capita harvest rates for subsistence users that reside in communities along roads vs. communities in roadless areas (Wolfe and Walker 1987), and by the number of caribou herds that have exceeded 100,000 animals with ranges crossed by the Alaska road system (none) vs. herds in roadless areas (3) over the last 50 years.	Section 3.4.7 addresses the potential impacts to subsistence uses of the WAH, including sociocultural impacts, and addresses the potential for public use of the road.
32386	3	Public access	The SEIS notes that the road could remain open after the mines close. However, it does not describe a process for making that decision; identify potential participants for such a process; describe criteria that would be used; or discuss road maintenance and funding if the road does remain open. This is a significant oversight given the high probability of a public road impacting caribou and subsistence users, and the high level of concern regarding impacts from a public road that has been expressed by many individuals.	Appendix H, Section 2.2.2, Public and Non-Industrial Access, describes the legal and contractual requirements that would need to occur for the road to become public.
32386	4	Mitigation/monitoring	A serious limitation of this section is that mitigation measures developed by BLM, as lead agency for developing the SEIS, will apply only on BLM lands (i.e., other agencies and landowners will decide whether BLM measures will apply on their lands). The SEIS states, "It is anticipated that land managers for non-BLM-managed lands would be supportive of implementing the [mitigation] plan." But what if they don't? This limitation is significant and pervasive, partly because BLM manages <25% of lands crossed by Alternatives A, B, and C. Additionally, for mitigation measures included in the SEIS but not applied to non-BLM lands, there is no discussion regarding how alternative measures will be developed and applied on these 'other' lands, or how inconsistencies in mitigation stipulations, enforcement, etc., will affect protection of resources and people.	Each land manager that issues a ROW or some other right of access is responsible for ensuring compliance with the terms of the grant for access.
32386	5	Mitigation/monitoring	The issue of consistency in managing a road across jurisdictional boundaries is not unique to the Ambler Road project. Prior to construction of the TAPS and Dalton Highway, the state and federal governments signed a cooperative agreement for joint protection of fish and wildlife along that entire route. This agreement, and the prospect of inconsistencies in permit approval procedures, permit stipulations, management, mitigation, and enforcement among federal, state, and private landowners throughout the TAPS and Dalton Highway project area, led to the formation of the Joint Fish and Wildlife Advisory Team (JFWAT, Morehouse 1984). This team was composed of biologists from the ADF&G, Fish and Wildlife Service, National Marine Fisheries Service, and BLM that, among many other tasks, sought consistency in technical issues of resource management throughout the TAPS and Dalton Highway project area. A similar approach for technical oversight of resource management, including mitigation, for the proposed project (and mines) would be superior to AIDEA assuming these responsibilities given its vested interest in maximizing the financial return on its investment (a 'fox and henhouse' arrangement).	Comment noted.

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32386	6	Mitigation/monitoring	Many mitigation measures included in the SEIS (e.g., 3.3.2 Wildlife General) are too vague to effectively protect resources and people (an example is Potential BLM Mitigation Measure: 6). Although the SEIS cannot include the level of detail provided in mitigation plans or training programs, to be effective, it needs to be much more explicit in outlining mitigation measures and actions that will minimize impacts to wildlife and people.	Should the project be approved, the ROD will determine which mitigation measures will be required.
32386	7	Mitigation/monitoring	Because habitat fragmentation is such a serious issue for caribou and people, this section of the SEIS should stipulate that the road will be closed for days, weeks, or months when substantial numbers of caribou approach it. This would necessitate construction of storage facilities at mines sites with enough capacity to hold days, weeks, or months of processed ore. If this road is built, construction of adequate storage facilities should be a requirement during the permit application process for mines.	Appendix N, Sections 3.3.2, Wildlife, and 3.3.5, Mammals, describe proposed mitigation measures that would include animal crossing policies, animal avoidance on the road, and road closures.
32386	8	Mitigation/monitoring	A limitation of this section is that AIDEA is responsible for developing plans and stipulations that address wildlife issues. AIDEA is not a resource management agency. AIDEA's role in this process is to develop, promote and finance the proposed project to generate revenue for the State of Alaska and to create jobs. As such, AIDEA has a vested interest in maximizing the return on its financial investment. There is a conflict of interest in allowing AIDEA to develop measures to protect resources and people that could reduce its monetary gain. The SEIS should stipulate that mitigation plans, e.g., the 'Comprehensive Wildlife Interaction and Avoidance Plan,' will be developed by qualified professional resource managers and, once implemented, their effectiveness will be monitored by an interagency team of agency and tribal representatives (like JFWAT).	Several of potential mitigation measures in Appendix N describe developing plans in consultation with the relevant State and federal agencies, Tribes, Alaska Native Corporations, and the Subsistence Advisory Committee. These agencies and entities have specific requirements intended to protect the resources under their jurisdiction and are well suited to incorporate detail into achieving the mitigation objectives.
32386	9	Mitigation/monitoring	The 'Summary of Effectiveness' that concludes the Mitigation Section (3.3.5 Mammals) states, "The measures listed above, if implemented collectively, are expected to be partially effective at reducing impacts to mammals. Because BLM-managed lands constitute a small proportion of Alternatives A and B, if these mitigation measures are not adopted by AIDEA for other land management agencies, they would do little to reduce impacts across the entire project. Under Alternative C, these mitigation measures would have a greater affect as a result of the greater proportion of BLM-managed lands under Alternative C. No combination of mitigation measures can fully reduce the potential for behavioral disturbance, displacement, injury, or mortality of wildlife as a result of the Ambler Road. Impacts to wildlife would occur regardless, but these mitigation measures would be successfully [sic] in at least partially reducing these impacts." The word 'partially' is concerning because it means that mitigation measures could be anywhere from 1-99% effective. The SEIS further states, "If major changes to caribou wintering grounds or migration patterns resulted after the road had been in place for several years, the impacts to subsistence communities avoided by the caribou could be substantial despite the mitigation measures. While the risk may not be high that such a major change would occur, it is possible or likely that no mitigation would alter the new wildlife pattern or restore the subsistence use pattern." Given the high probability and seriousness of impacts of this project to caribou, fish, and other resources, and how those impacts would in turn affect subsistence users, this is ample reason for BLM to select the 'No Action' alternative.	Comment noted.
32386	10	ANILCA 810 analysis	If construction of the proposed Ambler Road and associated mines and connecting roads reduces the abundance or availability of traditional foods for subsistence users, this likely would impose financial and psychological costs on them. Individuals who value their subsistence lifestyle and cultural heritage may experience a deep, persistent sense of loss when they cannot harvest subsistence foods in places traditionally used by their ancestors' using techniques handed down for millennia. Short of medical interventions, there are no mitigation measures to address psychological impacts from this project.	Comment noted.
32386	11	Mammals	Development planned for the near future within or near WAH range include: establishment of an industrial mining complex in the Ambler Mining District (predicated on construction of the Ambler Road); expansion of the Red Dog Mine that will require 13 miles of new connecting roads; development of a graphite mine 38 miles north of Nome near the southern extent of WAH winter range; significant expansion of the Nome Port; and construction of the Cape Blossom Port 10 miles south of Kotzebue. Petroleum development on Alaska's North Slope has been expanding westward, toward WAH summer range, since Prudhoe Bay began production in 1977. The 2023 approval of the Willow Project will result in a new oilfield in proximity to the northeastern extent of WAH summer range. The cumulative effects of these existing and planned projects will interact with ongoing impacts of climate change to affect the behavior, distribution, and abundance of WAH caribou. Construction of the proposed Ambler Road to facilitate industrial mining in the Ambler Mining District will be a significant addition to the existing infrastructure and anticipated development noted above. Habitat fragmentation is likely the most serious threat to the WAH posed by the Ambler Road. Managing caribou may be less an exercise of protecting specific areas of critical range than protecting large areas that give caribou options for selecting areas that will provide the best combination of food availability, risk of predation, exposure to insect harassment and disease, snow and ice conditions, risk of harvest, etc., for each season and year. Each time development encroaches into intact caribou range, their breadth of choices for finding optimal conditions in an ever-changing environment diminishes. The decline of a caribou population that is driven at least in part by progressive development can be an incremental process: over time, it can lead to collapse by a thousand tiny cuts. The critical resource for conserving caribou is space to provide them options for finding optimal habitat conditions.	The decline of the WAH and the potential impact of climate change on caribou populations are discussed in Section 3.3.4 of the Supplemental EIS. The potential impacts of RFAs are discussed in the cumulative impacts discussion of Section 3.3.4.
32386	1a	Mammals	Probable Impacts of the Proposed Ambler Road on WAH Caribou. The most serious potential impact of the proposed road to caribou is habitat fragmentation that delays, deflects, or prevents their movements into established ranges. The potential of this road to reduce the availability of caribou to subsistence users, by affecting caribou movements or contributing to declining numbers, is one of two concerns most frequently expressed in scoping comments to BLM. All 3 action alternatives risk fragmentation of WAH range. The east-west alignment of Alternatives A and B will have the greatest probability of being encountered by caribou migrating south during fall and north during spring. In some fall migrations, caribou moving south that cross the Kobuk River between Onion Portage and Shungnak abruptly turn east and parallel the Kobuk River to overwinter in the Lockwood Hills or on south slopes of the upper Kobuk Valley. Caribou following this movement pattern would contact	Sample sizes for radio collar data are indeed small for early years of radio collar data, but there is a relatively large data set (1987–present) for the WAH to provide a long-term perspective on wintering ranges.

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			Alternative C given its northwest-southeast alignment. The SEIS states, "The development of mines 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 (NCASI 2008)." These are significant impacts for caribou and, in turn, for subsistence users. Table 22 (Appendix E. Chapter 3 Biological Resources Tables and Supplemental Information) as well as Maps 3-23 and 3-23b (Volume 4 - List of Maps for Chapters 1-3) illustrate that the Ambler Mining District and western portion of the proposed road include important WAH migratory and winter range. Limitations of this table and both maps are at least partly attributable to small sample sizes of satellite collared WAH caribou prior to 2009. This may explain why data from multiple years was combined for 1987-1997, 1998-2003, and 2004-2009 in Table 22 and Map 3-23b, and why kernel distributions showing migratory and winter range use were reported for 5-6-year periods in Map 3-23. Combining years of data for this table and maps obscures annual variability in seasonal distribution of this herd. This variability, in and of itself, is likely a biologically important adaptation that enabled caribou to survive the transition from the Pleistocene to current times. This limitation is least problematic for Table 22 because annual values are presented for 2010-2022.	
32386	1b	Mammals	The annual values reported in Table 22 show that during 5 individual years (2012-2016), <5% of the WAH wintered within 30 mi of the Alternative A, B, or C alignments. In contrast, during 2010, 28% of the herd wintered within 30 mi of Alternatives A & B and 18% wintered within 30 mi of Alternative C, and during 2021, 40% of the herd occurred in this portion of Alternatives A & B and 45% in Alternative C. If you accept that caribou survival is influenced by their patterns of range use through space and time (i.e., range use is not an artifact of random chance), then displacement in any single year from some portion of range that often receives little use - but occasionally receives very high use - could increase mortality when environmental conditions necessitate that caribou need that area at that time. Impacts of a catastrophic mortality event in any single year can extend far into the future. The percentages reported in Table 22 suggest that WAH utilization of areas within 30 mi of Alternatives A, B, and C was low in most years. However, if you calculate the number of caribou that wintered in these areas each year using the percentages provided in Table 22 and estimated herd size at that time, substantial numbers of caribou were present even when only a small portion of the herd wintered there. For example, during the winter of 2022-2023, 6.39% of the WAH wintered within 30 mi of the Alternative A alignment. That equates to approximately 10,500 caribou (164,000 caribou X 0.0639=10,479.60), enough to sustain several nearby communities. At the other end of the spectrum, during the winter of 2021-2022, 41% of the herd, roughly 77,000 caribou, wintered in this area. If even half of these caribou (38,500 individuals) were displaced by infrastructure and they experienced a relatively high (but not unprecedented) 33% mortality rate from using a second-choice winter range, roughly 12,000-13,000 caribou would have died as a result. That would constitute a significant loss for any caribou herd but would be especially detrimental for a declining herd. The point is that managing caribou may be less an exercise of protecting specific areas of range deemed 'important' by man than of protecting large areas that give caribou options for selecting areas that provide the best combination of food availability, risk of predation, exposure to insect harassment and disease, snow and ice conditions, etc. Each time development encroaches into intact caribou range, their breadth of choices for finding optimal conditions diminishes. That's why the decline of a caribou population that is driven at least in part by progressive development can be an incremental process: over time, it can lead to collapse by a thousand tiny cuts.	See response to letter 32570, comment 15.
32419	1	Transportation and access	Already, the Alaska, Richardson and Steese Highways are slated to have increased ore haul traffic from Kinross's plan to truck gold ore 250 miles from Manh Choh to Fort Knox mine. The original plan would have had a truck run every 7.5 minutes. So, what is the plan for trucks coming from the Ambler Road? How many and how heavy will they be? Where will they take ore? There has been no review of the AIDEA plan from a public safety or transportation safety perspective. Transportation safety is an environmental issue and must be considered before any EIS is approved	See response to letter 23769, comment 1.
32478	1	Subsistence	Theres concern about construction affecting animal migration patterns, and runoff contaminating the water after the road is built. Everyone talks about how expensive it is to live up here in Alaska-but subsistence hunting and fishing lighten that burden for all of our communities. The impact of decreased subsistence availability on this region would be devastating.	Section 3.4.7 addresses the potential for impacts of the road on migration patterns and contamination of resources, in addition to the economic impacts of reduced subsistence availability.
32570	1	Alternatives	In November 2022, TCC commented on the scoping process for the development of this Draft SEIS, including extensive commentary on the assumptions and alternatives requiring analysis, as well as impacts to subsistence, fish and wildlife, waters and wetlands, transportation, and cultural resources. BLM incorporated some, but not all, of TCCs comments in this Draft SEIS. Notably, BLM did not include or analyze alternatives provided by TCC (as well as many other commenters), including a rail access alternative, a western access alternative, or a Tribal alternative.	In accordance with the CEQ NEPA implementing regulations, 40 CFR 1502.14, the BLM has explored and evaluated all reasonable alternatives for this project and discussed reasons why other alternatives were determined not to be reasonable. To determine whether an alternative was reasonable, the BLM considered an alternative's effectiveness at satisfying the purpose and need, technical and economic feasibility, the practicality of the alternative, and whether he alternative duplicated others evaluated. Western routes, both road and rail were specifically considered and were eliminated from further consideration due to economic feasibility and practicality. The Tribal Alternative is discussed in Appendix G, Section 5.4, of the Supplemental EIS
32570	2	Decision process - general	TCC explained during the Draft EIS comment period that BLM improperly segmented the Project by considering the road a standalone project when its fundamental purpose was the development of mining in the Ambler Mining District. In the absence of any mining proposal, the Project does not have sufficient independent utility to justify the cost and impacts of construction, and its impacts must be evaluated in combination with mine development in the District, rather than considering mine development as an indirect impact. This means that BLM should not have moved forward with the EIS	See response to letter 18528, comment 9.

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			process until a mining proposal was submitted. Without such a proposal, BLM cannot perform adequate NEPA impacts analyses.	
32570	3	Cumulative and indirect effects analysis	For most projects subject to an EIS, indirect effects are less, usually substantially less, than direct effects. In this case, although the impacts of the proposed road are substantial and unacceptable, the indirect effects of at least four large scale mines and perhaps many other mines of varying sizes would be disastrous and unsustainable for the region. Additionally, because specific Corps mitigation (i.e., avoid, minimize, compensate) requirements for the mines have been deferred until a later EIS, there is no way to know whether the impacts of the mines can be mitigated. Importantly, the proposed Ambler Road Project involves such a significant dedication of governmental and private resources that it virtually forces federal agencies to later approve mine proposals because of the major investments already made in constructing the industrial use road. The proposed Ambler Road Project and the mining activity it would enable in the District therefore are connected actions, cumulative actions, and/or similar actions.	See responses to letter 34767, comment 160 regarding mining mitigation and letter 34767, comment 3 regarding connected actions.
32570	4	Proposed action	TCC and the Tribes question several of the stated premises of the proposed Ambler Road and associated mining projects. The Final SEIS should provide additional background on AIDEAs and others dubious arguments for the proposed road. The first questionable premise is that the proposed road offers access to needed mineral resources, especially copper. The second questionable premise is that the U.S. should mine minerals domestically so the nation is not dependent on China and other non-friendly countries, especially if the U.S. hopes to transition to a cleaner energy economy. The third questionable premise is that all critical minerals must be mined to ensure they are available for use. Regarding the first premise, TCC and the Tribes dispute the need for copper from the Ambler Mining District. Copper is available from numerous countries the U.S. does not find troubling, with Chile, Australia and Peru having the greatest copper reserves. The second premise is that the U.S. should mine minerals domestically. That statement ignores the fact that copper smelting largely takes place in China. That would be the case for copper produced in the Ambler Mining District. Figure 1 provides copper reserve data from the U.S. Geological Survey and smelting data from Statista.	See response to letter 21906, comment 1.
32570	5	Proposed action	Within the U.S., the largest copper mines are in the Southwest and Utah, and they each produce more copper than expected to be produced by Ambler Metals Arctic mine in the Ambler Mining District (the mine farthest along in the planning process within the District). The Southwestern and Utah mines are located closer to population centers that supply workers, and to copper smelters (Alaska is remote, has winter restrictions for some types of mine work, and has no copper smelters, thus increasing copper production costs). Moreover, most of the Southwestern mines expect to operate much longer than the proposed thirteen-year lifetime of the Arctic mine. The largest copper mine in Canada, the Highland Valley Copper Mine in British Columbia, also produces significantly more copper than what is projected to be produced by the proposed Arctic mine.	See response to letter 21906, comment 1.
32570	6	Proposed action	The third questionable premise is that all critical minerals must be mined to ensure they are available for use. However, there are at least three options that are increasingly utilized to reduce the need for critical minerals before turning to mining, especially in sensitive areas that are important for subsistence such as Interior Alaska: 1. Recycling. More than 30% of copper used worldwide is recycled. Recovered scrap 2020.17 copper makes up about 38% of the U.S. supply in 2020 2. Redesign of Products. Products can be redesigned to not require critical minerals. This includes, for example, eliminating cobalt use from batteries used in electric vehicles. 3. Recovery from Tailings. For a number of critical minerals, trace metals in existing mine tailings can be recovered for use. In summary, it is false to say that the U.S. needs metals from the Ambler Mining District to ensure a clean energy economy.	See response to letter 21906, comment 1.
32570	7	Government to government consultation	In developing the Final SEIS and making its choice of alternative, it is imperative that the BLM meaningfully engage with, incorporate, and respond to the overwhelming opposition to this Project by Tribal Governments. Critically, this engagement does not include participation by AIDEAs Subsistence Advisory Committee (SAC). AIDEA designed the SAC to create the appearance of deference to Indigenous knowledge and Tribes, but AIDEA intentionally failed to include elected Tribal government leaders and has been intolerant of Tribal voices that disagree with AIDEAs plans. SAC members are paid and used in the media to promote the proposed Project, they dismiss the legitimate concerns raised by elected Tribal leaders, and they are postured as if they provide a legitimate counterpoint to the Tribal governments responsible for the communities that would be affected by the Project. BLM must view input provided by cultural advisory bodies created by the applicant as paid advocacy on behalf of industry, and not as an appropriate or valid source for Tribal perspectives. Native corporations likewise are not sovereign. Tribes through their elected leaders, including through their regional Tribal consortiums or representatives, are the sole spokespersons for their sovereign nations. A clear understanding that Tribes are sovereign nations with elected governments should permeate the Final SEIS and inform any future actions. Tribal consultation must be fully independent from industry interests and should not be administered by AIDEA.	See response to letter 17991, comment 2.
32570	8	ANILCA 810 analysis	In addition to the Project not being necessary both because the need for the associated minerals is vastly overstated by AIDEA and project proponents and because AIDEAs application is not associated with any particular mining plan the mitigation measures discussed in the Draft SEIS are woefully insufficient to minimize the adverse impacts of the proposed Project. In light of these factors, authorization of any of the Action Alternatives would violate the federal governments duty to protect subsistence uses and resources. Based on the impacts described in the Draft SEIS, neither BLM nor any other federal agency could legitimately make. the ANILCA 810(a)(3) determinations listed above. Achieving compliance with ANILCAs subsistence protections for any alternative other than the No Action Alternative would, at a minimum, require a fundamental redesign of the alternative, with the attendant analysis and Tribal consultation required under federal law.	See response to letter 31764, comment 14.
32570	9	ANILCA 810 analysis	BLMs ANILCA section 810 evaluation contained in Appendix M relies heavily on outdated subsistence data included in Appendix L. This is particularly problematic because salmon numbers have declined dramatically in recent years so recent subsistence harvest data are important for section 810 decision making. The most recent data in Table 18 in Appendix L for	Added description of methodology for determining harvest percentages to Appendix L. The harvest data presented in Appendix L are the best available subsistence data. Incorporated

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			Koyukuk River region communities harvests for their top five species is 2014 for two communities (Anaktuvuk Pass and Hughes) and 2011 or earlier for the other communities In addition, it is critical for BLM to include the methodology used in determining the subsistence harvest percentages for each of the tables and figures included in Appendix L in the Final SEIS.	description of more recent salmon harvest reports (through personal use fishery reports) to provide more up to date information regarding the recent decline in salmon harvests.
32570	10	Mammals	The Draft SEIS states that Although caribou herd populations tend to fluctuate, the WAH population has declined substantially in recent years. Recent censuses estimated the herds population at 188,000 caribou in 2021 and 164,000 caribou in 2022. The Final SEIS needs to add that, as of July 2023, the WAH numbered 152,000 caribou.	The new WAH population estimate for 2023 was added.
32570	11	Mitigation/monitoring	Minimizing impacts of habitat fragmentation caused by the Project may be less an exercise in protecting specific areas of range than protecting large areas that give caribou options for selecting locations that would provide the best combination each year of food availability, reduced risk of predation, decreased exposure to insect harassment and disease, favorable snow and ice conditions, reduced risk of harvest, etc. Each time development encroaches into intact caribou range, the herds choices for finding optimal conditions diminish. The decline of a caribou population that is driven in part by increased industrial development can be an incremental process: over time, it can lead to caribou population collapse by a thousand tiny cuts. The critical resource for conserving caribou herds is space to provide intact habitat options.	Fragmentation of caribou habitat is discussed in Supplemental EIS Chapter 3, Section 3.3.4, Mammals, under Impacts Common to All Action Alternatives. Appendix N Section 3.3.5 discusses a Fish and Wildlife Protection Plan which would include several measures to minimize the effects of habitat fragmentation on mammals.
32570	12	Mammals	Table 22 in Appendix E and Maps 3-23 and 3-23b in Volume 4 illustrate that the Ambler Mining District and the western portion of the proposed road include important WAH migratory and winter range. Combining years of data for this table and these maps obscures annual variability in seasonal distribution of the herd. This limitation is at least partly attributable to the small sample sizes of satellite collared WAH caribou prior to 2009. Annual variability in seasonal distribution likely is a biologically important adaptation that enabled caribou to survive the transition from the Pleistocene to current times.	Sample sizes for radio collar data are indeed small for early years of radio collar data, but there is a very large data set (1987–present) for the WAH to provide long-term data on wintering ranges.
32570	13	Mammals	The annual values reported in Table 22 show that during five years (2012-2016), <5% of the WAH wintered within 30 miles of the Alternative A, B, or C alignments. In contrast, during 2010, 28% of the herd wintered within 30 miles of Alternatives A and B and 18% wintered within 30 miles of Alternative C. During 2021, 40% of the herd wintered in this portion of Alternatives A and B and 45% in Alternative C. Because caribou survival is influenced by their patterns of range use through space and time (i.e., range use is not an artifact of random chance), displacement in any single year from some portion of their range that often receives little use but occasionally receives very high use could increase mortality when environmental conditions necessitate that caribou need that space. The impacts of a catastrophic mortality event in any single year can extend far into the future.	Appendix E, Table 22 shows that the different alternatives are used to different extents in different years and percentages of the herd in the area of the proposed Ambler Road changes annually and decadal.
32570	14	Mammals	When there's a big herd coming, they always have a leader. He looked after all the big crowd of caribou. He was a leader, one leader. Early in the morning he take off, that leader. He check the ground, he checked a water, he check all the country up that way. Which way he's gonna lead these caribou? Make sure that we'll have good water, good food. He check all the food. And then when they get up, he leads them.	Comment noted.
32570	15	Mammals	The percentages reported in Table 22 suggest that WAH utilization of areas within 30 miles of Alternatives A, B, and C was low in most years. However, if you calculate the number of caribou that wintered in these areas each year using the percentages provided in Table 22 and estimated herd size at that time, low percentages still represent substantial numbers of caribou. For example, during the winter of 2022-2023, 6.39% of the WAH wintered within 30 miles of the Alternative A alignment. That equates to approximately 10,500 caribou (164,000 caribou multiplied by 0.0639 = 10,479.60), enough to sustain several nearby communities. At the other end of the spectrum, during the winter of 2021-2022, 41% of the herd, roughly 77,000 caribou, wintered in this area. If even half of these caribou (38,500 individuals) are displaced by new road infrastructure and they experience a relatively high (but not unprecedented) 33% mortality rate from using a second choice winter range, roughly 12,000-13,000 caribou would die. That would constitute a significant loss for any caribou herd but would be especially detrimental for a declining herd.	It is difficult to predict the population level impacts from displacement from preferred winter range. The 33% mortality of all displaced caribou within 30 miles is a very speculate estimate with little support from studies of other roads.
32570	16	Mammals	Another important point for the SEIS analysis is that the amount of public land required to construct the proposed road likely would be trivial compared to the amount of caribou range and subsistence user areas that could be partially or completely lost due to habitat fragmentation caused by the project. As stated in the Draft SEIS, Fragmentation is impossible to prevent. Appendix M reinforces this point on fragmentation:	Winter range fragmentation is one potential impact from the action alternatives as described in Section 3.3.4 of the Supplemental EIS.
32570	17	Subsistence	If construction of the proposed Ambler Road and associated mines and connecting roads reduces the abundance, availability, and access of traditional foods for subsistence users as the Draft SEIS finds, this likely would impose psychological costs. Individuals who value their subsistence lifestyle and cultural heritage may experience a deep, persistent sense of loss when they cannot harvest subsistence foods in places traditionally used by their ancestors with techniques handed down for millennia. Short of medical interventions, there are no mitigation measures to address psychological impacts from this project.	Section 3.4.7, Sociocultural Impacts, has been revised to address the potential psychological impacts of the project resulting from impacts to subsistence.
32570	18	Subsistence	And I think one of the things that also makes us unique is, you know, colonization, in a lot of places one of the first things it does is it emasculates men, because men, you know, traditionally in our communities were providers, and it kind of does something where it separates them from their traditional role, whether it's hunting, fishing, gathering and then you start to see a breakdown of the community and the family. But our - we haven't had as much of that because our men are able to hunt caribou. Like, our young men are in a healthier position than a lot of other Native communities because they are able to fulfill those responsibilities. And you see that in the joy that they have when caribou season comes around, the confidence that they have in their role to be able to provide meat for the community. They have a purpose, you know, and the women also have their purpose.	Added text addressing the potential impacts of reduced subsistence availability on social roles and cultural identity.
32570	19	Public access	Even if hunting from the proposed Ambler Road is prohibited, hunting activities conducted from connecting roads would increase the potential to disturb and harvest WAH caribou and thus affect subsistence users in and near the project area. The	The Supplemental EIS does not assume that traffic on connecting roads would be less than 1 truck or bus per week; no specific traffic estimates for community and emergency responder use

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			Draft SEIS states that The traffic level for these local community and emergency response operations [on connecting roads] would likely total less than 1 truck or bus per week. This assumption significantly understates the likely use patterns. Even if it is correct for trucks or buses, however, evidence from existing trails around Ambler, Kobuk, and Shungnak suggests that ATV traffic levels on newly constructed connecting roads would vary seasonally and often would be high during fall.	of connecting roads are used in the Supplemental EIS analysis. The commenter appears to be referring to a statement made in Section 3.2.3 (Hazardous Waste), which explains how spills may occur due to trespass, but that the frequency of these spills are assumed to be low based on an assumption of “less than 1 average annual daily traffic from trespass”. This statement is not referring to additional traffic from authorized emergency or community use.
32570	20	Mammals	Collectively, commercial deliveries to connecting communities, public use of connecting roads, agency use, and use of the proposed Ambler Road by nearby mines, lodges, and private landowners could substantially increase traffic and activity levels in the project area. Increased traffic would have greater disrupting impacts on caribou. A new publication shows that caribou react to traffic when it is more than five vehicles per hour. BLM needs to ensure that the Final SEIS analyzes the impacts of all forms of additional traffic on connecting roads, including during different times of the year.	Discussion of Severson et al. (2023), which looks at caribou movements through the Kuparuk oilfield relative to traffic volume, has been added.
32570	21	Fish and aquatics	The proposed road would have cumulative impacts on subsistence and fish far outside the TCC region. The two primary watersheds that would be impacted by the proposed Ambler Road are the Koyukuk River which flows into the Yukon River and the Kobuk River which flows into the Chukchi Sea. Each of the three Action Alternatives would have high impacts on anadromous fish species important to subsistence, particularly salmon, because the Koyukuk and the Kobuk and their tributaries drain into the Yukon and the Chukchi Sea, respectively.	Supplemental EIS Section 3.3.2, Fish and Aquatics, describes the fish species and their habitat in the project area and the potential impacts that could occur from development of the road and future mines. Impacts to subsistence resources are described in Supplemental EIS Section 3.4.7, Subsistence Uses and Resources.
32570	22	ANILCA 810 analysis	The Draft SEIS states that: Impacts to fish under Alternative A could include: direct mortality spawning habitat loss and degradation increased turbidity from sedimentation and erosion contamination from accidental spills introduction of invasive species The first two bullets describe road and associated mines impacts to fish, i.e., killing fish or failed reproduction. The last three bullets describe several key means of habitat degradation. In the Final SEIS, BLM should include an additional bullet for habitat degradation highlighting altered water flows or temperatures.	Impacts to fish habitat are considered in the ANILCA 810 Evaluation of Subsistence Uses and Needs.
32570	24	Fish and aquatics	The Draft SEIS states regarding contamination in Chapter 3 that: “The likelihood of substantial environmental effects is considered low, but there is a small risk that the effect could be substantial for example, if a large volume of toxic material spilled directly into flowing water of an anadromous fish stream and escaped before a response could be mounted.” In addition to large spills, contaminated water released from mining operations even in small quantities poses threats downstream. While captured wastewater would be treated to mitigate harm (see Appendix H), unintentional releases from tailings ponds and acid rock drainage created by mining operations would harm downstream fish and their habitats.	The potential impacts from mining operations, including indirect chemical stressors such as mining-related pollution, acid mine drainage, and the release of toxic materials, are described in Supplemental EIS Section 3.3.2, Fish and Aquatics - Mining, Access, and Other Indirect and Cumulative Effects.
32570	25	Subsistence	Last, it is important to acknowledge that for the people and large carnivores living near the project area, their reliance on fish, caribou, moose, etc. is interconnected. If any one of these resources, e.g., salmon, is depleted, there would be increased food reliance on the other resources such as caribou or moose as well as non-salmon fish. A decline in multiple resources at once would reduce a communitys ability to adapt to these changes and to find suitable substitutions for the declining harvests. Similarly, if bears in the area can no longer capture sufficient numbers of salmon, they likely would turn to other sources of protein, potentially making subsistence more difficult for human populations. Humans and large carnivores thus are competing for a diminishing supply of wild foods, and the proposed road and associated mines would diminish that supply further.	Section 3.4.7 addresses the potential for increased pressure on some resources as a result of communities adapting to reduced availability of other resources. Added additional text to address the potential change in feeding behaviors/distribution of resources such as marine mammals and bears resulting from reduced availability of fish.
32570	26	Cultural resources	In addition to compliance with NHPA, however, BLM also needs to comply with other federal cultural resource protection requirements. Under NEPA, BLM must detail how it is complying with all applicable cultural resource legislation and executive orders (EO). Thus, BLM needs to demonstrate in this SEIS how the agency is consulting with Tribal governments to address Sacred Sites under EO 13007. BLM also needs to explain in the SEIS how it addresses cultural resources under the Federal Lands Management Policy Act of 1976 (43 U.S.C. 1701-1784), the Religious Freedom Restoration Act (42 USC 21b), the American Indian Religious Freedom Act (42 USC 1996), and EO 13175: Consultation and Coordination with Indian Tribal Governments. As the SEIS reads now, the only relevant cultural resource laws are NHPA Section 106 and NEPA, but there are other associated statutory and regulatory requirements.	The BLM is required to comply with all applicable laws, regulations, and executive orders when making decisions. NEPA does not require explanation of said compliance with each applicable legal requirement.
32570	27	Cultural resources	Because the Project would lead to the development of a network of associated mines, connecting roads, and trails sprawling in all directions linked to the Ambler Road corridor, the APE needs to capture the impacts resulting from these facilities. Similarly, because the proposed Project would result in up to several hundred ore trucks daily on the Dalton Highway, the APE must include the Dalton Highway corridor for consideration of cumulative impacts on cultural resources. At the July 13, 2023, and October 20, 2023 quarterly meetings with TCC, BLM staff stated they are considering creating a 20-mile-wide APE, i.e., 10-miles on each side of the road centerline. BLM needs to expand the Final SEIS study area to match this 20-mile-wide proposed APE.	See response to letter 34767, comment 36.
32570	28	Alternatives	Although TCC and the Tribes appreciate BLMs recent ethnographic research efforts for the Project, these efforts are too late to inform the development of Project alternatives. Identification of historic properties is supposed to inform the development and selection of project alternatives through interdisciplinary analysis that is dependent on the constellation of cultural resources across traditional use areas or cultural landscapes. The Advisory Council on Historic Preservation provides guidance on meeting the Reasonable and Good Faith Effort standard. Projects across the country have met the standard so it is concerning that BLM and AIDEA are failing to do so for the proposed Project.	The information presented in Appendix G, Alternatives Development Memorandum, explains the methodology used by the BLM to screen proposed alternatives for inclusion as action alternatives to be carried forward for further detailed analysis.
32570	29	Cultural resources	Because not all cultural resources data are identifiable using archaeological methods, agencies need to conduct ethnographic interviews with knowledgeable Indigenous residents within, or knowledgeable about, the APE. These interviews would help identify culturally significant areas, convey Indigenous knowledge associated with locations in the APE, and inform the assessment of effects to historic properties. BLMs efforts to collect ethnographic information to date have been too late and	Comment noted. The BLM is continuing to conduct ethnographic interviews with knowledgeable Indigenous residents as part of the Section 106 PA process.

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			too vague. Additionally, the ethnographic inventory conducted only with Tribal Liaisons during the archaeological and ethnographic survey falls short of meeting the regulatory requirements.	
32570	30	Cultural resources	Most of the Section 106 identification efforts so far have focused on AIDEAs preferred alternative, Alternative A. This has caused significant data gaps for Alternatives B and C, which does not comply with the implementing regulations for Section 106. These regulations state that an agency must: Identify historic properties and assess the effects of the undertaking on such properties in a manner consistent with the standards and criteria of 800.4 through 800.5, provided that the scope and timing of these steps may be phased to reflect the agency official's consideration of project alternatives in the NEPA process and the effort is commensurate with the assessment of other environmental factors; and Develop in consultation with identified consulting parties alternatives and proposed measures that might avoid, minimize or mitigate any adverse effects of the undertaking on historic properties and describe them in the EA or DEIS. BLM and AIDEA have not done Section 106 identification work for Alternatives B and C, so Project efforts to date do not reflect the agency official's consideration of project alternatives in the NEPA process. BLM also has not Develop[ed] in consultation with identified consulting parties [Project] alternatives. TCC proposed a Tribal Alternative and offered to work with BLM on the development of this alternative, but BLM rejected the consultation effort.	The BLM has complied with the National Historic Preservation Act through execution of a PA (Appendix J), which outlines how historic properties will be taken into account through a phased process. The PA is being executed pursuant to 36 CFR 800.4(b)(2) and 800.14(b), which states: "Where alternatives under consideration consist of corridors or large land areas, or where access to properties is restricted, the agency official may use a phased process to conduct identification and evaluation efforts. The agency official may also defer final identification and evaluation of historic properties if it is specifically provided for in a...programmatic agreement executed pursuant to 36 CFR 800.14(b)." While there is more information for AIDEA's proposed action, there is sufficient information for each of the action alternatives to adequately compare impacts among the alternatives.
32570	31	Section 106 consultation	A cautionary note for BLM and AIDEA cultural and historic sites in the area are poorly documented and largely undocumented by Western science-based knowledge systems. Safeguarding cultural resources begins with identification of lands important to Tribes and sites therein. The publication of information such as Native place names and site locations identifies them to the public and inadvertently provides the information to potential trespassers. Disclosure of location data increases sites vulnerability to vandalism. BLM and AIDEA thus must be very careful in how site information is managed and shared. Protocols on sharing site data may need to be prescribed as amendments to the PA for the Project.	The BLM manages sensitive cultural resource location information, as required by the NHPA.
32570	32	Section 106 consultation	Consult with Tribes in the Development of a New or Amended Programmatic Agreement including Giving Tribes the Option of Becoming Invited Signatories. Any PA developed for this Project needs to include robust consultation with Tribes. Moreover, agencies should provide Tribes with the option of becoming invited signatories, which would help demonstrate the PAs integrity and local support. To date, however, BLM and the other signatories have not shared a single proposed PA amendment with Tribes despite consulting parties requests to do so. There is a need for a more expansive consultation process since the subject matter in the PA is nearly exclusively linked to the cultural heritages of descendent communities affected by the Project.	Consultation with Tribes pursuant to Section 106 of the NHPA is described in Appendix I, Preparers, Consultation, and Collaboration. The PA (Appendix J) contains the process by which amendments to the agreement can be proposed and approved.
32570	33	Water resources	Attachments 6A and B contain, respectively, expert Determinations of whether the proposed Ambler Road Project meets the Corps Public Interest Review Factors and an analysis of the proposed Projects unacceptable, substantial, and irreversible impacts to aquatic resources under the Section 404(b)(1) Guidelines.	See response to letter 20731, comment 1. See response to letter 21015, comment 6. See response to letter 14123, comment 1. See response to letter 18334, comment 1.
32570	34	Wetlands	It is abundantly clear that the Draft SEIS is insufficient to support a LEDPA determination, or to demonstrate compliance with the Section 404(b)(1) Guidelines and the required public interest review. Any of the proposed Action Alternatives would include unacceptable, substantial, and irreversible impacts to likely thousands of waterways and numerous acres of wetlands under Corps jurisdiction. This key paragraph in the Draft SEIS, unaltered from the Final EIS, reinforces these analysis: The development and operation of mines and AIDEAs proposed action could result in contamination to [the] surrounding environment due to fugitive dust from trucks hauling ore or spills from trucking accidents, leading to further loss or alteration of vegetation and wetlands. The loss or alteration of rare or high-value wetland types combined with climate change-induced changes to wetlands could degrade and reduce them from the area. These projects would also result in loss and alteration of tundra types, which are uncommon in the project area, which could also be further impacted by climate change-induced affects and could increase the introduction and spread of [non-native invasive species]. Some of these impacts to wetlands and vegetation would be permanent, forever changing the project area. As such, the impact on vegetation and wetlands from AIDEAs proposed action, reasonably foreseeable future actions, and ongoing climate change is expected to have substantial cumulative and long-term impacts to wetlands and vegetation, including rareplants and ecosystems. The above statement in the Draft SEIS is a strong argument for choosing the No Action Alternative AND for the U.S. Environmental Protection Agency to use its authority under Section 404(c) of the CWA to conduct a review and analysis to determine if the discharge of dredged and fill material should be prohibited.	The Supplemental EIS does not include a Section 404(b)(1) analysis sufficient to determine the Least Environmentally Damaging Practicable Alternative. The Section 404 CWA permit process is done separately from the NEPA analysis and may include a different subset of jurisdictional wetlands.
32570	37	Purpose and need	In the development of the Final SEIS, the Agencies should update the purpose and need statement to more accurately reflect the project goals. Specifically, the Draft SEIS provides that BLMs stated purpose of the Project is for year-round industrial surface transportation access across BLM-managed lands to the Ambler Mining District. This statement is corrected from the Final EIS, removing exploration as part of the Purpose since exploration can and does occur without surface access to the District. The Corps stated overall purpose is, however, to provide year-round surface transportation access for mining exploration and development in the Ambler Mining District. Unlike BLM, the Corps purpose and need statement provides that the Project would be needed for mining exploration in the Ambler Mining District. As TCC and the Tribes have repeatedly expressed, and as BLM has acknowledged throughout the development process for this Draft SEIS, extensive mining exploration currently is being undertaken in the District with access via air. A private, year-round industrial access road is not needed for mining exploration. Access for that purpose can be accomplished through vastly less intrusive and harmful methods. The Corps should resolve this inconsistency by removing mining exploration from its stated purpose and need for the proposed action.	Revisions have been made at the request of the USACE to text in Supplemental EIS Section 1.4, Purpose and Need.

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32570	38	Mitigation/monitoring	The issue of consistency across jurisdictional boundaries is not unique to the Ambler Road Project. Prior to construction of the Trans-Alaska Pipeline System, the state and federal governments signed a cooperative agreement for joint protection of fish and wildlife along the pipeline route. This agreement, and the prospect of inconsistencies in permit approval procedures, permit stipulations, management, mitigation, and enforcement among federal, state, and private landowners, led to the formation of the Joint Fish and Wildlife Advisory Team. This team was composed of biologists from the Alaska Department of Fish and Game, the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, and BLM that, among many other tasks, sought consistency in technical issues of resource management. The Draft SEISs proposed approach, with AIDEA assuming these responsibilities, would be an inappropriate fox in the henhouse arrangement, given AIDEAs vested interest in maximizing the financial return on its investment. The Final SEIS should not assume the efficacy of any mitigation measure unless the various government agencies and stakeholders are committed to the formation of a similar Joint Fish and Wildlife Advisory Team with the active participation and engagement of affected Alaska Native Tribes.	Comment noted.
32570	39a	Mitigation/monitoring	TCC and the Tribes urge BLM to be as specific as possible in the language of its mitigation measures, both to be clear to AIDEA on the measures requirements and to ensure fair and effective enforcement of the mitigation measures. For instance, BLM should replace examples of monitoring programs in measure 1.1:10 with the specific monitoring programs needed, as discussed in Table 1 under 1.1:10, below.	The proposed mitigation in Supplemental EIS Appendix N contains measures that serve to minimize potential impacts to resources from the project. Should the project be approved, the ROD will determine which mitigation measures are required.
32570	39b	Mitigation/monitoring	TCC and the Tribes also note that many of the mitigation measures listed involve substantial unpaid labor to be performed by Tribes, Tribal governments, and Tribal people in the service of industry.	Comment noted.
32570	39c	Mitigation/monitoring	In analyzing the likely effectiveness of potential mitigation measures, BLM should not assume that Tribes would be willing participants in assisting the development of a Project that would cause harm to their communities and to which they are opposed.	Comment noted.
32570	40	Alternatives	TCC and the Tribes disagree with the statement that The combined phasing option may result in more potential impacts from ice roads and ice pads due to winter construction access trails relative to the phased construction options. It is possible for construction timing to be designed so there are fewer ice roads and ice pads needed, thus mitigating additional impacts from combined phasing (including temporarily higher traffic, see p. 3-167), though such timing might require an additional summer construction season. It is critical to note, however, that even with the implementation of a combined phasing option, the mitigation measures would not be sufficient for BLM to reasonably or lawfully choose any of the Action Alternatives.	Comment noted.
32570	41	Socioeconomics and communities	TCC and the Tribes are greatly concerned that BLM did not address our major concern of missing, murdered, and/or sexually assaulted Indigenous women as a result of the proposed Ambler Road and associated mines either in Chapter 3s Socioeconomics and Communities section or in the Environmental Justice section. No one in the developed world is at greater risk of going missing, murdered, or sexually assaulted than an Indigenous woman in proximity to a resource extraction project.	See response to letter 34767, comment 94.
32570	42	Socioeconomics and communities	The only reference to such a risk in the Draft SEIS is buried in Table 22 of Appendix F which reads that there is a Likely risk associated with mixing with a typically young, single male road and mine worker crews, but limits on crew travel to local communities from their work sites is expected to limit the impact. Minimizing the most statistically significant established risk that women potentially would be raped, sex trafficked, murdered, or disappear to a tangential mention of mixing with single men is not only an affront to all women and Indigenous people, it is not the exhaustive examination of the potential for disproportionate and adverse effects on human health or the environment to the greatest extent practicable and permitted by law that Executive Order 12898 on Environmental Justice promises and demands.	See response to letter 34767, comment 94.
32570	43	Socioeconomics and communities	Data linking the trauma well-known to follow in the wake of resource development projects to the astronomical suicide rates among Indigenous peoples also are readily available, yet markedly absent from the Draft SEIS. Among other deficiencies, the Draft SEIS does not consider the mental health impacts sure to follow such attacks. Mental health is a significant human health issue and demands consideration.	See response to letter 34767, comment 94.
32570	44	Socioeconomics and communities	Another notable socioeconomic and environmental justice (EJ) impact is that of Alaska Native hire. The Draft SEIS states that even if the applicant is compliant with hiring requirements (which historically they have not been), road operations would provide a total of eight jobs to Northwest Arctic/Yukon-Kuskokwim Census Area communities. More jobs would go to local Alaska Natives during road construction, but only road operations positions are long term in nature.	AIDEA, as a state agency, cannot offer a hiring preference to residents of the NAB/YKCA. NANA Corporation, as the landowner for the proposed Bornite mine site, could negotiate training and hiring requirements for that mine, as it has done for the Red Dog Mine. As noted in Appendix N: Potential Mitigation Measures (Section 3.4.5), AIDEA would develop and implement a plan acceptable to the BLM and NPS that would identify and promote work opportunities for local residents and develop training programs for local residents so that they could be employed during construction and operations of the Ambler road.
32570	45	Socioeconomics and communities	Unemployment rates in EJ communities may be overstated for a number of reasons. Cultural communication issues can contribute to incorrect categorization of answers for example, a community resident may state he/she/they are looking for work meaning they are open to and actively seeking task-specific temporary work (e.g., wood cutting, project work, seasonal work), a common economic profile in rural Alaska. Active employment seeking is a requirement for some programs within the state and federal systems that offer rural assistance, which can create over-reporting of those looking for work. Though there is reason to suspect that unemployment data may be imperfect in EJ communities, there is no question that unemployment rates are higher than in urban Alaska. For this reason, existing and long term forms of employment are of major social importance. There is no evidence that either road construction or the mining operations reasonably assumed to follow would have an impact on employment rates in EJ communities. Inclusion of unemployment data infers a correlation between EJ community employment rates and extractive development that does not exist. When Indigenous people are employed in	Construction and maintenance activities associated with the proposed road would increase employment opportunities in the region. Unemployment rates would only go down if residents are hired to fill some of the jobs. Note that the EJ analysis does not rely on unemployment data.

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			extractive industries, they typically are underrepresented and generally relegated to low wage, short term work that exposes them to workplace hazards. Thus, such employment may be undesirable.	
32570	46	Socioeconomics and communities	Of the EJ communities studied for this project, none would be physically connected to the road. Only two, Kobuk and Shungnak, are located within a commutable distance to a proposed mine in the Ambler Mining District. This means that employment by the proposed road or associated mines is no more accessible or available to EJ community residents than employment located in any other place they could travel to daily, weekly, or monthly by air.	Acknowledged. The EJ analysis notes, "The construction and operation of the proposed road are expected to provide employment for residents of NAB/YKCA communities (see Section 3.4.5, Socioeconomics and Communities), most of which have predominately minority populations and large low-income populations. However, the minority and low-income populations in these 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." With respect to associated mining activities, proposed mines located on land owned by NANA (e.g., Bornite Mine) may be developed under an operating agreement specifying that NANA shareholders receive direct and meaningful benefits from development at the mine. In addition, the revenue the NAB and NANA would receive from mining development could be used to support public infrastructure and services in the region, which would be a long-term benefit to shareholders and local residents.
32570	47	Socioeconomics and communities	Recreational tourism, general ecotourism, guided hunting, outdoor outfitting, ecotourism guiding, small craft aviation, remote lodges, food service, aviation support, and the arts are common and enduring forms of employment in EJ communities. All of these existing forms of employment are directly threatened by the proposed Ambler Road. These adverse impacts would be permanent, irreversible, and unable to be mitigated (i.e., either eliminated or acceptably minimized). The economies of the regions EJ communities depend upon subsistence abundance, undeveloped expanses of wilderness, intact practice of culture, and the necessity of small bush airplanes for transportation. The proposed road could prove devastating to EJ communities. BLM must include this adverse information on existing economic opportunities in EJ communities in the Final SEIS. Unfortunately, BLMs failure to consider EJ at the most basic level permeates Chapter 3. By way of example, the Draft SEIS states that At the end of the Ambler Roads 50-year life span, the road would be closed and reclaimed. Effects of the road would be removed from the area This is akin to stating that the impacts of Indian Boarding Schools end the day they shuttered their doors. There is certain and absolute harm to EJ communities under every category under consideration review of relevant data or meaningful inclusion of Indigenous perspectives would demonstrate that.	See response to letter 26718, comment 27.
32570	48a	Mitigation/monitoring	In Table 1, TCC and the Tribes suggest a number of edits to the Potential BLM Mitigation Measures to address clear deficiencies in the Draft SEIS for use in development of the Final SEIS. These suggestions do not, however, imply that TCC and the Tribes believe that the Potential BLM Mitigation Measures would be sufficient for BLM to reasonably and lawfully choose any of the Action Alternatives. Rather, the overall ineffectiveness of the potential mitigation measures combined with the overwhelming harm that would be caused by the Project as proposed means that the proposed mitigation measures even if improved still would be woefully insufficient.	Comment noted.
32570	48b	Mitigation/monitoring	Table 1: Changes Needed to Potential BLM Mitigation Measures Potential BLM Change Needed 1.1: 5. Disturbance of existing facilities, objects, or properties Change Needed: ADD "Cultural and paleontological resource" to the list of "facilities, [objects], or properties" that AIDEA "would not disturb or destroy... on public lands." Additionally, CHANGE to "mostly effective." Rationale: The rationale for this change is to ensure that the list of objects and infrastructure which should not be harmed includes cultural and paleontological resources. [table continues in subsequent comments]	Cultural and paleontological resources are addressed under the PA (Appendix J) prepared pursuant to the NHPA.
32570	49	Mitigation/monitoring	Potential BLM Mitigation Measure: 1.1:10. - Monitoring Plan contents Change needed: LIST the specific monitoring programs that must be implemented here, not "Examples of monitoring programs" that may be included. Rationale: There is no reason not to require a monitoring plan with specific monitoring programs which will be itemized in the ROW grant. The plan should include and expand upon the examples provided, e.g. "water quality, air quality (dust control), slope stability, revegetation progress (during reclamation), noise levels, [permafrost,] and [fish and] wildlife mortality," See 3.2.1:3 (p.N-9) for discussion of the permafrost monitoring plan. Requiring a Monitoring Plan addressing these important monitoring programs ensures that future administrations and BLM do not have the discretion to no include them. This specificity is needed for the requirement to be "mostly effective."	Text has been revised as suggested.
32570	50	Mitigation/monitoring	Potential BLM mitigation measure: 1.1:14 Invasive plant species spread Change needed: ADD a required study by federal and state biologists on the potential impacts on fragile Arctic vegetation and ecosystems, including aquatic invasive plants and their potential impacts on fish, and identification of potential mitigation measures. Rationale: The current mitigation measure is insufficient to prevent invasive plant species spread.	See Appendix N, Section 3.3.1.1, Vegetation, and Section 3.3.1.3, Non-native and Invasive Species, for a comprehensive list of proposed mitigation.
32570	51	Mitigation/monitoring	Potential BLM Mitigation measure: 1.1:14 Invasive plant species spread Change needed: ADD measures that address invasive plant species spread by vehicles, by foot, and by wind along the road corridor. Rationale: The current mitigation measure is insufficient to prevent invasive plant species spread.	See Appendix N, Section 3.3.1.1, Vegetation, and Section 3.3.1.3, Non-native and Invasive Species, for a comprehensive list of proposed mitigation.
32570	52	Mitigation/monitoring	Potential BLM Mitigation Measure: 1.1: Summary of Effectiveness, General Measures Change needed: CHANGE to "mostly effective". Rationale: Since several of these mitigation measures are less than highly effective, this summary should be characterized as mostly effective.	Text revised as indicated.
32570	53	Mitigation/monitoring	Potential BLM mitigation measure: 1.2:4 – Incident and accident reporting Change needed: ADD "cause and how determined" after "nature of incident or accident". Rationale: Knowing causes is essential to prevent incidents and accidents in the future.	PMM revised as suggested.

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32570	54	Mitigation/monitoring	Potential BLM Mitigation Measure: 2.3 – Plan for explosives use Change needed: ADD that the plan for explosives use must include provisions to avoid impacting caribou Rationale: These provisions would minimize impacts on caribou from explosives.	Text revised as suggested.
32570	55	Mitigation/monitoring	Potential BLM Mitigation Measure: Use of foam insulation to prevent permafrost thawing Change Needed: CHANGE to “Foam must be used to insulate the permafrost from thermal degradation. It would be composed of closed-cell extruded polystyrene”...” Rationale: Use of foam to protect permafrost from thawing/degradation should not be discretionary.	The mitigation measure is sufficient as written.
32570	56	Mitigation/monitoring	Potential BLM Mitigation measure: 3.2.2:1 Removing gravel from sensitive surface water locations Change needed: DELETE unless the taking is approved by the Authorized Officer as per further site-specific analysis. Rationale: This deletion would make the provision consistent with the Corps 404 permit, requirement 10 (p. N-52) which applies to the entire route. If this mitigation measure is not adopted by all land owners, managers, or resource permitting agencies, those decisions would be inconsistent with the Corps 404 permit for the entire road.	Should the project be approved, the ROD will determine which mitigation measures are required. The USACE terms and conditions are included as PMM in Appendix N, Section 3.5.
32570	57	Mitigation/monitoring	Potential BLM Mitigation measure: 3.2.2:4 Stockpiling excavated materials in sensitive surface water locations Change needed: DELETE unless approved by the Authorized Officer. Rationale: No exceptions should be allowed to this requirement as they would result in unnecessary, adverse impacts to waterbodies, floodplains, and wetlands.	The mitigation measure is sufficient as written.
32570	58	Mitigation/monitoring	Potential BLM Mitigation measure: 3.2.2: Summary of Effectiveness, Sand and Gravel resources Change needed: CHANGE to partially effective. Rationale: Because of the potential for non-BLM land owners, managers, or resource permitting agencies to not adopt these mitigation measures, especially measures 1. and 4., these mitigation measures would not protect surface water, floodplains, and wetlands.	Text revised as suggested.
32570	59	Mitigation/monitoring	Potential BLM Mitigation measure: 3.2.3.1:3 Immediate spill reporting Change needed: DELETE but no later than 48 hours after occurrence. Rationale: Federal rules in 40 CFR 300.125 and 40 CFR 153.203 require immediate notification.	PMM revised as suggested.
32570	60	Mitigation/monitoring	Potential BLM mitigation measure: 3.2.3.2:5 Fuel storage/refueling within the 100-year floodplain Change needed: DELETE unless approved by the authorized officer. Rationale: No exceptions should be allowed to this requirement as that would result in unnecessary, adverse impacts to floodplains.	The mitigation measure is sufficient as written.
32570	61	Mitigation/monitoring	Potential BLM mitigation measure: 3.2.5.1: Summary of effectiveness, water general Change needed: CHANGE to partially effective. Rationale: Because of the potential for non-BLM land owners, managers, or resource permitting agencies to not adopt these mitigation measures, especially measure 5., these mitigation measures would not protect surface waters.	Text revised as suggested.
32570	62	Mitigation/monitoring	Potential BLM Mitigation Measure: 3.2.5.2: Summary of Effectiveness, Water quality Change needed: CHANGE to partially effective Rationale: Because of the potential for non-BLM land owners, managers, or resource permitting agencies to not adopt these mitigation measures, these mitigation measures would not protect surface water quality.	Text revised as suggested.
32570	63	Mitigation/monitoring	Potential BLM mitigation measure: 3.2.6:1. Acoustical Environment Change needed: ADD maximum decibel limits to the noise management plan, with noise levels exceeding that level requiring approval from the authorized officer. Rationale: Excess noise can adversely impact wildlife behavior.	Appendix N, Section 3.2.6.1, Acoustical Environment, PMM1, addresses this suggestion.
32570	64	Mitigation/monitoring	Potential BLM mitigation measure: 3.2.7:1 Dust control plan Change needed: ADD Tribes that practice subsistence in the project area for consultation regarding palliative options for dust control Rationale: Like federal and state agencies, Tribes represent governments and thus should be consulted to review dust control measures because the decisions made could impact Tribal members.	Text revised as suggested.
32570	65	Mitigation/monitoring	Potential BLM mitigation measure: 3.2.7: Summary of effectiveness, air quality and climate Change needed: CHANGE to mostly effective Rationale: All the mitigation measures in this section are mostly effective, so the summary should be characterized as mostly effective.	Text revised as suggested.
32570	66	Mitigation/monitoring	Potential BLM mitigation measure: 3.3.1.1 Vegetation (NEW) Change needed: ADD mitigation measure to limit vegetation clearing along the right-of-way to the minimum necessary for construction. Rationale: This mitigation measure minimizes impacts on vegetation within the right-of-way resulting in benefits to wildlife, water quality, and other ecosystem assets.	PMM included as suggested.
32570	67	Mitigation/monitoring	Potential BLM mitigation measure: 3.3.1.1:1 Baseline survey for rare plants Change needed: CHANGE to partially effective. Rationale: As stated, avoidance of rare plant species may not occur due to environmental and engineering considerations, and non-BLM land owners, managers, or resource permitting agencies not adopting this mitigation measure.	Text revised as suggested.
32570	68	Mitigation/monitoring	Potential BLM mitigation measure: 3.3.1.1:2 Restoration and revegetation Change needed: CHANGE to partially effective. Rationale: Avoidance of invasive species introduction during restoration and revegetation may not occur due to non-BLM land owners, managers, or resource permitting agencies not adopting this mitigation measure.	Text revised as suggested.
32570	69	Mitigation/monitoring	Potential BLM mitigation measure: 3.3.1.2:3- Groundwater-fed wetlands Change needed: CHANGE to partially effective Rationale: If non-BLM land owners, managers, or resource permitting agencies do not require use of permafrost stabilization measures, this mitigation measure would be partially effective.	Text revised as suggested.
32570	70	Mitigation/monitoring	Potential BLM mitigation measure: 3.3.1.2: 4. Disturbance to uncommon wetlands Change needed: CHANGE to partially effective. Rationale: If non-BLM land owners, managers, or resource permitting agencies do not avoid uncommon wetlands such as patterned fens and moss-lichen wetlands, this mitigation measure would be partially effective.	Text revised as suggested.

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32570	71	Mitigation/monitoring	Potential BLM mitigation measure: 3.3.1.2: Summary of Effectiveness, Wetlands Change needed: CHANGE to partially effective. Rationale: Because of the potential for non-BLM land owners, managers, or resource permitting agencies to not adopt these mitigation measures, these mitigation measures would not adequately protect wetlands.	Text revised as suggested.
32570	72	Mitigation/monitoring	Potential BLM mitigation measure: 3.3.1.3: 2. Invasive Species Prevention and Management Plan contents Change needed: CHANGE to partially effective. Rationale: If non-BLM land owners, managers, or resource permitting agencies do not require an Invasive Species Prevention and Management Plan, this mitigation measure would be partially effective.	Text revised as requested.
32570	73	Mitigation/monitoring	Potential BLM mitigation measure: 3.3.1.3: 3. Spreading of invasive plants Change needed: CHANGE to partially effective. Rationale: If non-BLM land owners, managers, or resource permitting agencies do not require compliance with this mitigation measure, the mitigation measure would be partially effective.	Text revised as requested.
32570	74	Mitigation/monitoring	Potential BLM mitigation measure: 3.3.1.3: 4. Weed-free sand and gravel Change needed: CHANGE to partially effective. Rationale: If non-BLM land owners, managers, or resource permitting agencies do not require compliance with this mitigation measure, the mitigation measure would be partially effective.	Text revised as suggested.
32570	75	Mitigation/monitoring	Potential BLM mitigation measure: 3.3.1.3: Summary of Effectiveness, Non- Native Invasive Species Change needed: CHANGE to partially effective. Rationale: If non-BLM land owners, managers, or resource permitting agencies do not prevent Non-Native Invasive Species spread, this mitigation measure would be partially effective.	Text revised as requested.
32570	76	Mitigation/monitoring	Potential BLM mitigation measure: 3.3.2: 1. Comprehensive Wildlife Interaction and Avoidance Plan Change needed: ADD Tribes that practice subsistence in the project area for consultation regarding the Comprehensive Wildlife Tribes have expert Indigenous knowledge on wildlife interactions and avoidance. Rationale: Tribes have expert indigenous knowledge on wildlife interactions and avoidance.	PMM revised as suggested.
32570	77	Mitigation/monitoring	Potential BLM mitigation measure: 3.3.2: 1. Comprehensive Wildlife Interaction and Avoidance Plan Change needed: ADD USFWS and ADF&G as additional consulting entities and designate them as leads in this effort. Rationale: These agencies have expert scientific knowledge of wildlife interactions and avoidance.	PMM revised as suggested.
32570	78	Mitigation/monitoring	Potential BLM mitigation measure: 3.3.2: 1. Comprehensive Wildlife Interaction and Avoidance Plan Change needed: ADD avoiding road maintenance during sensitive periods for wildlife and in areas of wildlife use (e.g., shortly before, during, and after parturition; during caribou migratory periods; near wildlife movement corridors, etc.), after potential for road closures. Rationale: This addition to the Comprehensive Wildlife Interaction and Avoidance Plan addresses a gap regarding road maintenances impacts on wildlife, including caribou.	The mitigation measure is sufficient as written.
32570	79	Mitigation/monitoring	Potential BLM mitigation measure: 3.3.2: 2. Comprehensive Wildlife Interaction and Avoidance Plan contents Change needed: ADD Tribes that practice subsistence in the project area for consultation regarding the Comprehensive Fish and Wildlife Monitoring Plan contents. Rationale: Tribes have expert Indigenous knowledge on fish, birds, and wildlife behavior and life cycles as they exist prior to road construction. Additionally, Tribes can help monitor and observe construction and road impacts on fish, birds, and wildlife, as well as help refine mitigation measures.	PMM revised as suggested.
32570	80	Mitigation/monitoring	Potential BLM mitigation measures: 3.3.2: 2. Comprehensive Wildlife Interaction and Avoidance Plan contents Change needed: ADD USFWS and ADF&G as additional consulting entities and designate them as leads in this effort. Rationale: These agencies have expert scientific knowledge of wildlife interactions and avoidance.	PMM revised as suggested.
32570	81	Mitigation/monitoring	Potential BLM mitigation measure: 3.3.2: 4. Reporting animal mortalities Change needed: CHANGE from 30 days to 24 hours. Rationale: To ensure that additional wildlife mortality does not occur, BLM needs rapid notification of animals killed during construction or operation of the road or associated facilities.	The PMM has been revised to 14 days.
32570	82	Mitigation/monitoring	Potential BLM mitigation measure: 3.3.2: 7. Construction timing Change needed: ADD Tribes that practice subsistence in the project area to identify construction timing windows to protect wildlife. Rationale: Tribes have expert Indigenous knowledge on wildlife behavior and life cycles.	PMM revised as indicated.
32570	83	Mitigation/monitoring	Potential BLM mitigation measure: 3.3.3 Fish and Aquatics (NEW) Change needed: ADD mitigation measure for vibratory hammer use over impact hammers whenever feasible, AIDEA also must utilize additional mitigation measures if impact hammers must be used. Rationale: This new mitigation measure would minimize sound pressure impacts on fish (see p. 3-92).	PMM included as suggested.
32570	84	Mitigation/monitoring	Potential BLM mitigation measure: 3.3.3 Fish and Aquatics (NEW) Change needed: ADD mitigation measure requiring that bridges and culverts include very visible signage if near or over any salmon bearing streams or habitats. Rationale: This new mitigation measure would alert road users to sensitive waterways with salmon.	PMM included as suggested.
32570	85	Mitigation/monitoring	Potential BLM mitigation measure: 3.3.3 Fish and Aquatics (NEW) Change needed: ADD mitigation measure requiring quantification of all dewatering activities from gravel pits, lakes or streams for ice roads, dust control, gravel washing, worker use, etc. and ensure there remains sufficient water in fish habitats to prevent harm. Rationale: This new mitigation measure would protect fish populations, including fish spawning and juvenile areas, from harm associated with road-related dewatering activities.	PMM included as suggested.

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32570	86	Mitigation/monitoring	Potential BLM mitigation measure: 3.3.3: 4. Natural channel designs Change needed: ADD mitigation measure for large rocks or other stabilizing structures to be added during construction to mimic more natural conditions. Rationale: Large rocks would aid young smolt out-migration (see p. 3.89).	Appendix N, Section 3.3.3, Fish and Aquatics, PMM 4, addresses this suggestion by following the USFWS standards.
32570	87	Mitigation/monitoring	Potential BLM mitigation measure: 3.3.3: 8. Materials harmful to aquatic organisms Change needed: CHANGE fish-bearing stream[s] to all fish-bearing waters, including lakes, ponds, and off-channel habitats Rationale: As noted in the Draft SEIS (p. N-35), this measure would be more effective if it were also to prohibit the use of dust control suppressants with potentially harmful ingredients to all fish-bearing waters, including lakes, ponds, and off-channel habitats.	PMM revised as suggested.
32570	88	Mitigation/monitoring	Potential BLM mitigation measure: 3.3.4: 1. Vegetation clearing timing Change needed: CHANGE to partially effective. Rationale: If non-BLM land owners, managers, or resource permitting agencies do not require compliance with this mitigation measure, the mitigation measure would be partially effective.	Text revised as suggested.
32570	89	Mitigation/monitoring	Potential BLM mitigation measure: 3.3.5 Mammals (NEW) Change needed: ADD mitigation measure that prohibits hunting with firearms for five miles from either side of the Ambler Road. Rationale: Hunters easily could avoid hunting on the narrow authorized ROW as required by mitigation measure 3.3.5: 8., resulting in reduced wildlife populations. The Dalton Highway Corridor Management Area,in contrast, extends for five miles from both sides of the highway and hunters are prohibited from using firearms in this area, a precedent that should be in place for the Ambler Road.	Appendix N, Section 3.3.5, Mammals, PMM 8, and Section 3.4.3, Recreation and Tourism, PMM 1 and 2, cover prohibition of hunting in the ROW.
32570	90	Mitigation/monitoring	Potential BLM mitigation measure: 3.3.5: 8. Hunting, fishing, etc. from the road ROW Change needed: CHANGE this mitigation measure to prohibit all, and not just authorized, users from hunting, fishing, etc. from the road ROW. Rationale: All users, including those using the road for subsistence access and recreation, need to be prohibited from activities within the authorized ROW. The ROW would provide a pathway for wildlife, especially during periods of deep snow, so this change must be made to protect wildlife populations.	This mitigation measure limits use of the road for the project proponent to the stated goal of the application. ANILCA Title VIII ensures access for rural residents to conduct subsistence activities.
32570	91	Mitigation/monitoring	Potential BLM mitigation measure: 3.4.2 Transportation and Access (NEW) Change needed: ADD a mitigation measure that specifies maximum vehicle levels per hour. This mitigation measure could differ by season, e.g., minimize traffic during sensitive wildlife periods (e.g., caribou migration and moose calving periods) and during subsistence hunting periods. Rationale: This new mitigation measure would reduce vehicle interference with caribou migration and moose calving. Additionally, the mitigation measure would reduce impacts on subsistence hunters from wildlife losses due to vehicle traffic. Latest research (2023) shows that caribou react to traffic more than 5 vehicles per hour.	Mitigation measure as proposed is too prescriptive and is potentially covered by Appendix N, Section 3.4.7, Subsistence, PMM 1.
32570	92	Mitigation/monitoring	Potential BLM mitigation measure: 3.4.2 Transportation and Access (NEW) Change needed: ADD a mitigation measure that addresses road closures to protect WAH caribou migration across and near the road. The road would remain closed until caribou leave the area. It is especially important to avoid disturbing the vanguard of caribou as they approach the road. Rationale: This new mitigation measure would require road closures for days or possibly weeks/months when a threshold number of WAH caribou are within a certain distance of the road. AIDEA needs to develop a cooperative agreement with ADF&G, NPS, USFWS, and BLM to monitor WAH caribou movements and distribution in the vicinity of the road using satellite telemetry.	See Section 3.3.2, Wildlife PMM 1, for road closure requirements in a Wildlife Interaction Plan.
32570	93	Mitigation/monitoring	Potential BLM mitigation measure: 3.4.2: 1. Access Plan Change needed: ADD Tribes that practice subsistence in the project area for consultation regarding the road Access Plan, including subsistence access, local over-snow travel, and preventing trespass from crossing sites, road and trail intersections, and other locations. Rationale: Tribes have expert Indigenous knowledge of human movements throughout the project area.	PMM revised as suggested.
32570	94	Mitigation/monitoring	Potential BLM mitigation measure: 3.4.2: Summary of Effectiveness, Transportation and Access Change needed: DELETE Considering the entrance to the road is on BLM-managed land, measures related to the control of access at the entry point would be effective along the entire length of the road. Rationale: TCC and the Tribes urge BLM to remove this sentence. Depending on the type of vehicle and location, the control of access at the entry point would not prevent access along the entire length of the road. For example, snowmachines could access the road without entering at the entry point.	Text has been revised as suggested.
32570	95	Mitigation/monitoring	Potential BLM mitigation measure: 3.4.3: Summary of Effectiveness, Recreation and Tourism Change needed: CHANGE to partially effective. Rationale: If non-BLM land owners, managers, or resource permitting agencies do not prevent road-related workers from using the area recreationally for hunting, fishing, etc., this mitigation measure would be partially effective.	Text revised as suggested.
32570	96	Mitigation/monitoring	Potential BLM mitigation measure: 3.5.4: Yedomas (NEW) Change needed: ADD a mitigation measure that requires identification and avoidance of road construction in yedoma deposit areas, icerich areas vulnerable to deep thawing. Rationale: This new mitigation would prevent potentially catastrophic infrastructure failures from ice rich soils and yedoma deposits. As stated on p. 3-12, Maximum potential for thaw settlement along Alternatives A and B ranges from 2 to 98 feet (Jorgenson et al. 2015).	Appendix N, Section 3.2.1, Geology and Soils, includes potential mitigation to address permafrost. Additionally, several measures included in Appendix N, Section 3.5, Proposed Mitigation Adopted from USACE's 404 Clean Water Act and Section 10 Rivers and Harbors Act Permit Special Conditions, address this concern.
32570	97	Environmental justice	Sand and Gravel Resources - Change DH&A Effects to Possible. EJ community members in the region frequently use gravel sources that are a significant distance away as sand and gravel are scarce in many communities. Infrastructure projects (e.g., landing pads, communication towers) can rely on remote gravel sources as AIDEA and mining companies have the funds to obtain those remote resources while EJ community members generally do not.	Appendix F, Table 22 has been revised.
32570	98	Environmental justice	Land Ownership, Use, Management, and Special Designations Change DH&A Effects to Likely. The land use and management changes are extreme and their impact on EJ communities would be extreme and potentially worse with state	According to Section 3.4.1, Land Ownership, Use, Management, and Special Designations in the Supplemental EIS, no change in the broad pattern of underlying land ownership is anticipated as

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			land ownership. As discussed in these comments on mitigation, the Draft SEIS mitigation measures only apply to, and are enforceable on, the less than 25% of the road under BLM jurisdiction for Alternatives A and or the nearly 83% of the road under federal jurisdiction for Alternative C. Should the State of Alaska not adopt or enforce key mitigation measures, e.g., for fisheries protection, EJ communities would be highly, adversely affected.	a result of the project because the project would not be a land conveyance but rather the entities would authorize use of their lands. That section notes that while state and federal management plans for the area do not specifically call for a road to the District, the plans do not disallow such activity in most areas, and ANILCA allows for a road at the GAAR Preserve. In addition, that section states that management relative to the proposed road, including mitigation measures, stipulations, terms and conditions required to minimize environmental impacts, would be the responsibility of each landowning entity.
32570	99	Environmental justice	Recreation and Tourism Change DH&A Effects to Likely. EJ community members engage in travel between EJ communities overland and by boat and engage in between village tourism, hiking, backpacking, floating, walking, animal observation, bird watching, recreational hunting/fishing, boating, and all other forms of recreational land use on a consistent basis and in much greater numbers than tourists. Impacts would be high and adverse, and disproportionate. Tribal member Wayne Musser of Evansville stated: we spend time on the river. We run up to gravel bars, and we hide from mosquitoes away from the willows, and we have picnics. Its usually a, um, a gathering of friends and family, you know. And its good time, you know, you have food, and the weathers usually fair, and youre getting out on the river, youre getting fresh air, and its just, um, getting out away from, you know, the development, and youre in the thick of the country. And you have, you know, you have no sounds, other than maybe the occasional aircraft.	Section 3.4.3, Recreation and Tourism, in the Supplemental EIS does not provide data to support the statement that local residents would be disproportionately affected by potential project impacts to recreational activities. The adverse lifestyle and cultural effects of the proposed project on environmental justice communities are addressed in the Subsistence Uses and Resources, Socioeconomics and Communities (Public Health), and Cultural Resources discussions in Section 3.4.6, Environmental Justice.
32570	100	Environmental justice	Visual Resources Change DH&A Effects to Likely. EJ community members travel significant distances to hunt, fish, and gather and utilize vantage points which are both functional and culturally significant. Local subsistence hunters are more likely to be present on the land, travel long overland distances following game, and utilize vantage points and would be disproportionately impacted. Altered visual resources might also harm hunting outcomes for residents of EJ communities. Sonya Knight, Tribal member of Evansville, stated regarding Eagle Rock, from which you can see the route for Alternatives A and B: [People used Eagle Rock for] hunting. They used that for a vantage point. Its beautiful up there. You can see all the country there that youre hunting.	Section 3.4.4, Visual Resources, in the Supplemental EIS does not provide data to support the statement that local residents would be disproportionately affected by potential project impacts to visual resources. However, based on information in Section 3.4.8, Cultural Resources in the Supplemental EIS, the EJ analysis determined that there is potential for impacts to ethnographic resources and cultural properties in the proposed road corridors, and these impacts would likely be felt most strongly by communities composed largely of environmental justice populations. Therefore, Section 3.4.6, Environmental Justice, has been revised to include additional text describing potential impacts to cultural resources, including visual impacts.
32570	101	Subsistence	BLM needs to define and differentiate between the terms subsistence use area and traditional use area. In Section 3.4.5 and Appendix L, a subsistence use area appears to be a type of traditional use area. These sections state that If residents stop using portions of the project area for subsistence purposes the opportunity to transmit traditional knowledge to younger generations about those traditional use areas would be diminished. In Section 3.4.8 on Cultural Resources, BLM includes traditional use areas as one type of cultural resource. Subsistence based economies are areas where wild food resources are available, and those change with time. More inclusive terms to use may be historic and contemporary use areas, or traditional land domains. Designated areas need to be based on lands that are important to individual Tribes, and these areas may overlap between Tribes. It is difficult to fathom places more significant to Tribes than the places where their members and ancestors sustained their ways of life over countless lifetimes (i.e., traditional use areas). A report for NPS in 2018 documented 605 traditional use areas. Discussing traditional use areas in the subsistence section, where they will receive less attention, is not appropriate. BLM needs to analyze traditional use areas in the cultural resources section.	See response to letter 32570, comment 111 for the letter 32570, 101 comment.
32570	102	Cultural resources	BLM has not included Indigenous knowledge anywhere in Section 3.4.8 beyond including Indigenous place names and seven important riverine travel routes TCC provided. Failure to include Indigenous knowledge has resulted in an incomplete cultural resource impacts analysis. In December 2022, President Biden recognized the importance of Indigenous knowledge and issued guidance for federal departments and agencies on considering, including, and applying Indigenous knowledge in Federal research, policies, and decision making. Additional guidance on utilizing Indigenous knowledge in agency decision making is available from: The White House Office of Science and Technology Policy and Council on Environmental Quality. 2021. Memorandum on Indigenous Traditional Ecological Knowledge and Federal Decision Making. Electronic document The White House Office of Science and Technology Policy and Council on Environmental Quality. 2022. Guidance for Federal Departments and Agencies on Indigenous knowledge. Electronic document, and The White House Office of Science and Technology Policy and Council on Environmental Quality. 2022. Implementation of Guidance for Federal document Departments and Agencies on Indigenous knowledge. Electronic document.	Text has been added to Supplemental EIS Chapter 3, Affected Environment and Environmental Consequences, Section 3.1 Introduction that discusses the use of Indigenous Knowledge and local knowledge within the EIS, including the DOI definition of Indigenous Knowledge per 301 DM 7 Departmental Responsibilities for Consideration and Inclusion of Indigenous Knowledge in Departmental Actions and Scientific Research.
32570	103	Cultural resources	BLM also needs to review and utilize the Bureau of Indian Affairs' (BIAs) Alaska Native Claims Settlement Act (ANCSA) historical place and cemetery site records archived in the BIA Regional Office in Anchorage. BIA has a significant repository of primary cultural data under federal management. Much of the primary cultural data is Indigenous knowledge BIA recorded, transcribed, and documented in oral interviews, maps, and field investigations. The Draft SEIS cultural resources analysis is incomplete without the integration of ANCSA cultural heritage data.	The BLM has included a potential mitigation measure to encompass additional cultural resource data sources that are not readily available and/or require concerted research efforts in order to incorporate into the cultural resource process.
32570	104	Cultural resources	The Ethnographic Overview in the cultural resources section would benefit greatly from including Tribes origin stories and their perspectives on the history of the project area. Traditional stories can inform predictive modeling on the types of cultural resources that can be identified in the Projects APE. The Final SEIS needs to include Tribes origin stories and ethnogeography of the project area.	See response to letter 32570, comment 103.
32570	105	Cultural resources	Tribes, TCC, and BLMs own staff repeatedly have recognized rivers and creeks as travel routes. Nevertheless, the Draft SEIS continues to focus on RS-2477 travel routes. RS-2477 designations do not make routes more culturally significant than travel routes without the designation. The State of Alaskas RS-2477 trails are biased designations some may be original Alaska Native trails that need to be identified as such for potential precontact site identification. As discussed in the following paragraphs, the cultural resources section needs to include the full spectrum of travel routes in the study area and not just the recently attributed RS-2477 designations.	The travel route analysis is not limited to RS-2477 trails. The RS-2477 trails are simply one of many data sets that was included in the cultural resources section. Additional data sets that address trails, portages, and travel routes include the AHRS, place names, and ethnographic interviews (see Skinner 2023).

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32570	106	Cultural resources	Traditional Trade Networks are one of the historic themes AIDEA uses to evaluate properties for National Register of Historic Places eligibility. The Traditional Trade Networks theme relates to the movement of goods, technology, and social and cultural patterns in the upper Kobuk and Koyukuk drainages. AIDEA further states that Trade routes through the Project area included flows of goods between the upper Koyukuk River to the Kobuk River and downstream to Kotzebue Sound. Field efforts focused on terrestrial travel routes with physical evidence despite scoping and consultation comments along with ethnographic data (e.g., Arundale and Jones, Smith, Watson, Watson et. al, Alaska Division of Subsistence Technical Reports) documenting that Tribes rely on rivers and creeks to traverse the region, just as their ancestors have done for countless generations. Despite ancestors traveling the rivers for centuries and Tribal members using them nearly year-round, BLM and AIDEA do not consider them traditional trails. The rivers and geographic features along river corridors are associated with Tribal identities.	The Supplemental EIS acknowledges the cultural importance and traditional uses of rivers for travel and transportation.
32570	107	Cultural resources	BLM and AIDEA appear to look only for trails with physical evidence. Tribes have cared for and stewarded the land for generations, and are careful to not leave physical evidence. The knowledge of trails is handed down. BLM and AIDEA need to do ethnographic work to get the whole picture because they are only looking at a small part by focusing on trails with physical evidence.	The BLM's ethnographic interviews, which are being collected pursuant to the Section 106 PA, include documentation of trails and travel routes
32570	108	Cultural resources	The Draft SEIS acknowledges that TCC identified the following rivers commonly traveled that would be affected by the proposed road. They include, but are not limited to, the Tlaakk'ol Neekk'e (North Fork of the Koyukuk River), El Tseeyh No' (John River), Aalaatne (Alatna River) and its Malamute Fork, Dodzen Beetno' (Wild River), Noye'e [No'] (Beaver Creek), and Kobuk River. In addition, TCC and the Tribes urge BLM to review BIAs 2017 report Supplemental Report For Niksiksugvik BLM F-22168 Nana Regional Corporation, Inc., which shows multiple travel routes relevant to the project. This report is on file at BIAs Regional Office in Anchorage.	See response to letter 32570, comment 103.
32570	109	Cultural resources	Map 3-27 in Volume 4 of the Draft SEIS shows 17b easements, Alaska Department of Natural Resources Trail Inventory trails, winter trails, and other routes that are cultural resources under NEPA. Almost all of these routes reflect use going back more than 50 years. The travel routes on Map 3-27 need to be in the travel routes analysis. Map 3-29 shows multiple "common river float routes" which are Tribal travel routes as well. All routes on these two maps should be considered ancestral travel routes that the proposed Ambler Road Project would impact.	See response to letter 32570, comment 103.
32570	111	Cultural resources	Lifetime use areas/traditional use areas are lands important to Tribes and must be analyzed in the Final EIS as cultural resources, not marginalized in the subsistence analysis.	See Supplemental EIS Chapter 3, Section 3.4.8, Cultural Resources, Impacts Common to All Action Alternatives.
32570	112	Cultural resources	Appendix K of the Final EIS indicates that NPS made AIDEA aware of existing cultural landscapes in the project area in 2018. None of AIDEAs documents since 2018 or this Draft SEIS have mentioned the statement from the 2018 report that Further research and consultation with the NPS is needed to determine the extent/boundary of the existing cultural landscapes on National Park Service lands. AIDEA has yet to address these cultural landscapes in any of it fieldwork or mention them in its cultural resources reports for the project. It is likely these cultural landscapes have ethnographic components that may predict site identification of the archaeological record. Regardless of whether these cultural landscapes are ethnographic, archaeological, or a combination of both, BLM must include these cultural landscapes that are crossed by Project alternatives in the Final SEIS cultural resources analysis.	The NPS provided a response to BLM that they do not have any documented cultural landscapes in GAAR in the Ambler project area at this time.
32570	113	Cultural resources	BLM needs to add olfactory impacts to the discussion on Impacts Common to All Action Alternatives. A gravel road and gravel pits would permanently change the natural smell of the area and cultural places through the introduction of vehicle traffic, gravel, and vegetation removal.	Agree and moved discussion of sensory impacts that was introduced under Alternative A to Impacts Common to All Action Alternatives.
32570	114	Cultural resources	On p. 3-246, BLM states that it used a 10-mile-wide study area to broadly encompass the APE, which is reinforced on page 3-241 where BLM states that The study area for cultural resources extends for 5 miles on either side of each Action Alternative. At the July 13, 2023 and October 20, 2023 quarterly meetings with TCC, however, BLM stated that it is considering creating a 20 mile wide APE, i.e., 10-miles on each side of the centerline for the project. BLM needs to expand the Final SEIS study area to match this 20 mile wide proposed APE.	See response to letter 34767, comment 36.
32570	115	Cultural resources	Additionally, from the start of the proposed project, BLM studied the Alternative A route more than Alternatives B and C. As a result, the Draft SEIS includes biased studies resulting in statements such as Alternative A could affect the greatest number of documented cultural resources. However, the higher number of documented cultural resources along this route is likely due to more archaeological investigations conducted along this route BLM needs to study all Action Alternatives equally; failing that, BLM must attach a similar qualifier to every table and analysis involving study and research of the different Action Alternatives throughout the Final SEIS. There are insufficient field investigations along Alternatives B and C to determine the relative impacts to cultural resources among the three Action Alternatives.	See response to letter 32570, comment 30.
32570	116	Cultural resources	Regarding reliable counts, NPS documented cultural landscapes, the full extent of documented travel routes, and the 605 lifetime use areas for communities relevant to the Ambler Road project. These are more reliable counts of the full range of cultural resources; notably, the researchers and agencies documented these places on a regional scale without a focus on a project alternative. BLM must similarly include in the Final SEIS reliable counts of cultural resources that utilize ethnographic data and compliment archaeological data.	There are no documented NPS cultural landscapes that are within the study area and travel routes that have been compiled are included in the counts. Not all data sets must be counted and the reader is referred to subsistence section for the discussion of lifetime use areas.
32570	117	Cultural resources	Finally, TCC and the Tribes are concerned that mining exploration has current impacts on communities in the region and on cultural resources. This exploration is occurring both within and outside the Ambler Mining District in places facilitated by the proposed road, and does not represent only reasonably foreseeable actions with indirect and cumulative effects. The Final	Mining exploration is listed in Appendix H, Sections 2.1 and 2.3.3. Additional text has been added to cultural resources section to acknowledge impacts from mining exploration.

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			SEIS must be clear that there are current cultural resources impacts both inside and outside of the Ambler Mining District that are linked to the proposed Project.	
32570	118	Cultural resources	Reminding us of the presence throughout the region of cultural resources including graves, sacred areas, and archaeological sites, Evansville Tribal resident Sheryl Meierotto stated: Like, its mindboggling. And so, especially in this area, you know that when people travel back and forth, I was mentioning before that they probably stayed to higher ground. So that they can see. And people traveled on the rivers, of course, but its a lot longer. So you have cultural sites all across here. You have graves. You have, um, old places where people camped. You have very spiritual areas, you know. Um, its there. Right [along the proposed Ambler road route]. Its all along there. I recall traveling with archeologists, a group of archeologists, when I worked for the Park Service, going out through the Brooks Range. And wherever they walked, they found something. You know, I didnt see it, of course, but any high area we went, so. Id be out there with them for weeks at a time, and it was like, just amazing. Where everywhere you went, there was something.	See response to letter 155, comment 1.
32570	119	Mammals	To understand how WAH caribou might respond to the proposed Ambler Road and associated mines, it is extremely helpful to look at how the herd has responded to the Red Dog mine and road. Information gained from the Red Dog mine and road needs to be included in Section 3.3.4 of the Draft SEIS.	Information on caribou response to the Red Dog Road (e.g., Wilson et al. 2016, Dau 2023) is cited extensively in Section 3.3.4 of the Supplemental EIS.
32570	120	Mammals	Despite Red Dogs modest amount of infrastructure by industrial mining standards, in every year during 2001-2015, when large numbers of caribou migrated near Red Dog, satellite collar data showed that tens of thousands of WAH caribou reacted to the road as they approached it. Some collared caribou reversed their direction of travel while up to ~30 miles away from the road. During the 2011 fall migration, for example, the WAH numbered ~325,000 caribou; 28% of them (~92,000 caribou) approached within 30 miles of the road and the rest of the herd bypassed that area to the east through areas containing no industrial development; and 86% (~78,000) of those caribou near the road were delayed and/or deflected by it. In that year, four of the collared caribou did not cross the road and all four died northwest of it that winter due to a winter icing event.	Information on caribou response to the Red Dog Road (e.g., Wilson et al. 2016, Dau 2023) is cited extensively in Section 3.3.4 of the Supplemental EIS.
32570	121	Mammals	Researchers found significant consequences to subsistence from the delays resulting from the Red Dog road: 1) The road affected caribou movement for days or weeks even after they crossed it. Collared individuals that had been delayed by the road traveled at least 1.5 times faster after crossing the road than individuals that had not been delayed as they attempted to catch up with the rest of the herd. This meant that hunters downstream of the road had a much shorter window of opportunity to harvest caribou. 2) The higher rate of travel for delayed caribou after they crossed the road did not compensate for being delayed up to two months. As a result, in some years caribou didnt reach subsistence hunting areas until freeze up when ice conditions prevented hunters from accessing them by boat or sno-go. Some hunters eventually harvested cows after ice conditions became safe, but many subsistence hunters harvested few or no caribou in those years. 3) In some years, delays meant that caribou had entered rut by the time they arrived in some hunting areas. Subsistence hunters do not harvest bulls after the onset of rut because the meat becomes unpalatable, so hunters take cows instead. Cows are smaller than bulls so hunters must take more of them to meet their subsistence needs. Harvesting cows has a much greater potential to affect population numbers than taking bulls and is especially problematic for a declining caribou herd.	Information on caribou response to the Red Dog Road (e.g., Wilson et al. 2016, Dau 2023) is cited extensively in Section 3.3.4 of the Supplemental EIS.
32570	122	Air quality and climate	The region crossed by Alternatives A and B is nearly entirely underlain by permafrost (see Figure 5). Some of the road route likely is underlain by extremely ice-rich areas known as yedoma deposits (50- 90% ice content by volume), which are not shown in the Draft SEISs maps and possibly are yet to be identified.	The challenges of constructing on permafrost, as well as thawing permafrost, are known and factored into the proposed project. AIDEA has committed to extensive geotechnical investigations to inform engineering design to identify appropriate materials, design, and insulation as part of the project. See Section 2.4.4 of the EIS. Potential mitigation measures in Appendix N would require AIDEA to adhere to maintenance and monitoring to address infrastructure issues that arise across the lifespan of the project, and restore the ROW to a condition that is approved in writing by the Authorized Officer when it is complete.
32570	123	Air quality and climate	Disturbingly, the Draft SEIS does not quantify road-related potential project contributions to accelerating local permafrost thaw which would result in generating GHGs such as CH4 and CO2. As shown in Map 3-01, above, Alternative A or B road construction and presence on the landscape are highly likely to contribute to permafrost thawing. With the road extending more than 200 miles, the Final SEIS needs to quantify and estimate the potentially significant impacts of greenhouse gas contributions from permafrost thawing.	Thawing permafrost may dry out overlying soils, which may release trapped methane and GHG. The description of the impact has been augmented to be more clear in Section 3.2.1 of the Supplemental EIS.
32570	124	Air quality and climate	Additionally, spur roads and associated mines likely would result in additional traffic as well as permafrost thawing because BLM mitigation measures would not apply. The greenhouse gas releases from these roads are not included in the Draft SEISs Appendix H.	Further development in the area would be subject to analysis and potential mitigation. Emissions from these activities are not yet established and therefore cannot be included in the Supplemental EIS.
32570	125	Air quality and climate	The Final SEIS must analyze and quantify the additional contribution of the ore concentrates trucks from the proposed mines to Fairbanks air pollution including the contribution from ore concentrates transfers to trains in Fairbanks.	GHG emissions associated with the construction of the road, estimated road traffic during mine production, and the transportation of product to Fairbanks (via the Dalton Highway) and rail transport to the Port of Alaska in Anchorage has been in the EIS (see Section 3.2.7 and Appendix D). GHG emissions from mining (exploration and operation) would likely be quantified and analyzed if a mining action is proposed.
32570	126	Wetlands	The Draft SEIS is greatly inadequate in determining an accurate baseline for aquatic resources, especially wetlands, for determining and evaluating the proposed Projects effects on wetlands, for mitigation planning, and for comparing the different alternatives. Aquatic resources including wetlands are the circulatory system of the region, evolved over millennia to produce and sustain the unique and valuable ecosystem that supports subsistence resources and practices, and the spiritual well-being and health of Indigenous people.	The Supplemental EIS discloses the extent of permanent wetland loss as does the USACE Section 404 wetland permit. Unavoidable impacts are addressed in the wetlands permit through a series of special conditions designed to avoid or minimize impacts. Special conditions are cited within the report text and provided in Appendix N, Potential Mitigation.

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32570	127	Wetlands	BLM and AIDEA cobbled together mostly outdated wetlands data and information compiled using different and not comparable methods utilized at different times, using varying terminologies, without a standard, regionwide wetlands functional assessment methodology. As a result, neither the BLM nor the Corps knows what the impacts to wetlands from the proposed Project would be, and whether those losses can or should be mitigated. Aquatic resource functions vary greatly across landscapes, so it is not meaningful to simply use acres of wetlands and lakes and linear feet of permanently or temporarily degraded streams to characterize impacts.	The Supplemental EIS uses the best available data and crosswalks vegetation and wetland types into a broad scale classification that can be used to compare all action alternatives. Desktop mapping is suitable for use in the Supplemental EIS and is also sufficient to determine the LEDPA. Wetland functions are discussed in general, but the Supplemental EIS discloses that wetland function cannot be adequately extrapolated to areas where no comprehensive functional assessment has been completed. A full functional assessment is not required for the Supplemental EIS or for USACE LEDPA determination.
32570	128	Wetlands	Lack of a science-based functional assessment in the Draft SEIS is a serious and perhaps fatal flaw. Tribes, agencies, interested parties, and the public have no idea what the actual wetlands losses would be for the Action Alternatives. In 2020, the Alaska District of the Corps authorized activities associated with the proposed road based on insufficient information and a flawed NEPA document. BLM needs to require AIDEA to produce a wetlands analysis which covers the entire Project using current professional standards so that in the Final SEIS, decisionmakers have the data and information they need to make legally defensible, science-based ROW and permit decisions.	The Supplemental EIS uses the best available data and crosswalks vegetation and wetland types into a broad-scale classification that can be used to compare all action alternatives. Desktop mapping is suitable for use in the Supplemental EIS and is also sufficient to determine the LEDPA. Wetland functions are discussed in general, but the Supplemental EIS discloses that wetland function cannot be adequately extrapolated to areas where no comprehensive functional assessment has been completed. A full functional assessment is not required for the Supplemental EIS or for USACE LEDPA determination.
32570	129	Funding and bonding	BLM needs to update project costs and repayment amounts in the Final SEIS. BLM must review and update the detailed cost items that went into the cost numbers presented on p. C-3 to address all significant design and construction decisions made since AIDEAs application. Fieldwork and Corps permit decisions require new bridge and culvert numbers and sizes, and BLM should use field data to ascertain the availability of gravel without excessive levels of asbestos, rather than assuming the availability of such gravel. Also, BLM must analyze and present the cost of mitigation measures using updated data (including project, labor, and materials costs) for both two-phase and three-phase construction plans.	See response to letter 22770, comment 15.
32570	131	Funding and bonding	There is a significant likelihood that the State of Alaska would not be repaid its full costs from the industrial users of the road who would pay road tolls, never mind Ambler Metals credit described above. The federal government estimates that the proposed roads Alternative A would cost the State of Alaska nearly \$700 million in total construction cost and nearly \$12 million annually to maintain the road, maintenance stations, and communications BLM estimates reclamation costs for Alternative A would be nearly \$80 million. Given changes since the application, construction costs likely would be higher at this time.	See response to letter 22770, comment 15.
32570	132	Funding and bonding	To properly determine the economic benefits and costs of the road to the state, BLM and/or the State of Alaska should commission an independent study of the projected road costs and likely financial returns, including sensitivity analyses of key variables such as labor and materials prices. This study should be completed before granting a road ROW and before Alaska Department of Natural Resources grants an easement (i.e., as soon as possible). Such a study was done prior to legislative approval of funding for the Red Dog mine. As discussed in an AIDEA retrospective report, AIDEA selected SRI International (SRI) to perform due diligence on the [Red Dog] project and its potential economics. SRI completed drafts of their report prior to the completion of the 1985 Legislative session and delivered their final report in July 1985. [O]nly after preparation of an acceptable financing plan would the Legislature authorize the construction financing for the project. AIDEA also hired R&M Consultants in 1985 to review the design and cost estimates for the [Delong Mountain Transportation System for Red Dog] plans. R&M validated the design and cost estimates for the full system (\$160 million). The estimated road costs were \$90 million, with the port infrastructure estimated to cost \$70 million. No independent economics analysis of this kind has occurred for the proposed Ambler Road, and the Final SEIS should state that.	Pursuant to Alaska Statutes Section 44.88.095, Bonding Limitations, prior to approving a project for which bonds would be required, AIDEA must determine the project is economically and financially feasible and able to produce revenue adequate to repay the bonds with which it is financed. This necessitates AIDEA having a study of project costs and revenues conducted.
32570	133	Proposed action	AIDEAs application states that, at the projects 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. This paragraph is contradictory. BLM should require any Reclamation Reserve Fund or similar bonding instrument to have guaranteed funding for the entire roads reclamation prior to BLM granting a ROW. AIDEA has committed to this approach in its application, as stated above.	See response to letter 25830, comment 26.
32570	135	Cumulative and indirect effects analysis	Even without a full mining proposal, BLM has done an inadequate analysis in the Draft SEIS using the information currently available about the Ambler Mining District and other mine developments made possible by the proposed road. Appendix H did not utilize the latest information available about the status of the proposed mines in the Ambler Mining District. The Final SEIS must utilize the following information: 1) Trilogy's 2023 Feasibility Study on the Arctic which provides a more refined estimate than the 2018 numbers used in the Draft SEIS. BLM should use the information in this document throughout the SEIS including in Appendix H and Chapter 3. 2) Trilogy's 2023 Technical Report on the Bornite mine, especially Tables 1-1 and 1-2. BLM should state in the Final SEIS that this report is not as advanced as a Feasibility Study and Mineral Resources do not equal Mineral Reserves. BLM should use the information in this document throughout the SEIS including in Appendix H and Chapter 3. The mineral resources numbers from these two reports mean that truck traffic, rail, and vessel projections in Appendix H in Tables 2-6, 2-7, and 2-8 all must be updated. Additionally, among other items, projected mining and transportation spills and other relevant analyses in the Draft SEIS based on earlier numbers in Trilogys 2018a and 2018b references also must be updated.	A statement was added to Appendix H, Section 2.1.3 to explain that mineral resource estimates for Bornite, Sun, and Smucker are not based on advanced feasibility studies, such as with the Arctic project, and a footnote has been added to Table 2-1 of Appendix H to explain that mineral resources are not the same as mineral reserves. Also see response to letter 29489, comment 91.
32570	136	Cumulative and indirect effects analysis	Contamination of surface waters and the groundwater table with the metals mined, with the selenium and asbestos released, and the harsh chemicals used to extract and process ores would likely poison this region for centuries to come. The Draft SEIS provides scant information on the potential mine handling and treatment options. Toxic pollutants likely would enter	The impacts of mining are analyzed to the extent that information is available to do so. No specific mining application/permit request for the District has been submitted to date. The BLM evaluated reasonably foreseeable mining development as indirect and cumulative impacts, using a

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			waters and environment, adversely affecting health, resilience, and sustainability. Tailings dam failures also have been a major issue and common occurrence worldwide. Additionally, mine dewatering operations can result in major environmental impacts. The Final SEIS must, at a minimum, include a more detailed discussion and analysis of these mine-related issues including tailings failure model scenarios.	hypothetical mining development scenario. When officially proposed, each mine would go through its own project-specific NEPA analysis and permitting process, which would provide further detail and analysis regarding the specific impacts of each mine operation.
32570	137	Cumulative and indirect effects analysis	The Draft SEIS did not sufficiently analyze nor use the latest information on the Roosevelt project, a Reasonably Foreseeable Mine Development with significant current and future impacts. The South32 Roosevelt project is not in the Ambler Mining District, nor is it small-scale. However, it is facilitated by the prospect of Alternatives A and B. According to trade media, “[T]he Ambler Road also makes other mineral projects in the area more compelling, such as the enormous Roosevelt project being explored by South32. South32 is a globally diversified mining and metals company with significant capitalization and a 50/50 joint venture with Trilogy Metals in Ambler Metals, the company developing mines in the District. The Roosevelt project is mentioned very briefly in Chapter and Appendix H. Neither mention provides sufficient analysis of the impacts of this enormous potential project, roughly the same areal extent as the entire Ambler Mining District (see Figure 4 including South 32s mining claims). The Final SEIS needs to fully analyze the potential impacts of the Roosevelt project as a Reasonably Foreseeable Mine Development, just as BLM modeled and analyzed mining within the Ambler Mining District.	See response to letter 26152, comment 1.
32570	138	Cumulative and indirect effects analysis	Additionally, in September 2023, Trilogy announced the findings of its exploratory fieldwork on its Helpmejack project, among several exploration projects located along the proposed route of the Ambler access road. This work is taking place between the Ambler Mining District and South32s Roosevelt project. The announcement states that Graphitic schists, calcareous shists, and mafic volcanics seen at Helpmejack resemble those seen in the Ambler Sequence in the western part of the belt. That same announcement also discusses exploration on its Malamute project, located immediately north of the west end of South32s Roosevelt project. Because of the ownership of these two projects, they are not small-scale mining operations even at the exploratory phase. Both projects are shown in Figure 6.	See response to letter 26152, comment 1.
32570	139	Cumulative and indirect effects analysis	Given the extensive and impactful (e.g., numerous helicopter flights that currently are occurring out of Coldfoot) mining exploration clearly associated with the expectation of construction of the proposed Ambler Road, the Final SEIS needs to include development of these major mining projects outside of the Ambler Mining District as Reasonably Foreseeable Mine Developments. Potential mines outside the District but nevertheless facilitated by the road have not undergone the level of analysis that mines in the Ambler Mining District have in the Draft SEIS, and they need to. The brief mention of Small-scale mineral exploration focusing on the District in Section 2.3.3 in Appendix H does not address or analyze these substantial future mines.	See response to letter 26152, comment 1.
32570	140	Fish and aquatics	The SEIS needs to consider and analyze Yukon River Chinook salmon's potential listing as a threatened or endangered species under the federal Endangered Species Act as a Reasonably Foreseeable Action. According to TCC's fisheries experts, many stakeholders are considering a listing request during the next few years. If this federal listing occurs, it could result in significant management impacts for the watersheds that feed the Yukon River such as the Koyukuk and Kobuk Rivers and their tributaries that cross the proposed Ambler Road (see Map 3-05 in Volume 4). Other salmon stocks in the Yukon River, e.g., summer and fall chum, also eventually may see listings.	The text has been updated to include the Wild Fish Conservancy petition filed with NOAA seeking a listing of threatened or endangered for Alaska Chinook salmon under the ESA (see Supplemental EIS Section 3.3.2, Fish and Aquatics - Special Status Species).
32570	141	Fish and aquatics	At the state level, Yukon River Chinook salmon have been a Stock of Concern (SOC) since 2000 and the Alaska Board of Fisheries reviewed that listing in 2022. There currently are efforts to make both Yukon River summer and fall chum, and even coho salmon, into SOC's because of sustained declines that are greatly impacting subsistence. In 2023: [Chinook salmon] passage was the second lowest ever recorded at the [Pilot Station sonar] project (2022 was the lowest) and about 33% of the average annual passage of 177,431 fish (2003-2022; Figure 3). The Eagle sonar operated from June 30 to October 6, with an estimated passage of 14,752 Chinook salmon, which is approximately 70% lower than the historical average and the second lowest season total estimate (2022 was the lowest). The Yukon River fall chum salmon run is the fifth lowest on record (1974-2022), while the coho salmon run is the second lowest (1995-2022). The fall chum salmon run size is approximately 290,000 fish compared to a historical run size of 948,000 fish. The coho salmon run size is approximately 65,000 fish compared to a historical run size of 222,000 fish.	Noted. The status of Pacific salmon stocks are discussed in the Affected Environment section under Pacific Salmon.
32570	142	Proposed action	First, AIDEA 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. Neither AIDEA nor BLM in Chapter 2 have provided a justification for that excessive ROW width which is many times larger than the width of most gravel roads in Alaska. Even during Phase 3, the proposed Ambler Road would only be 32 feet wide. BLM would be giving away far more public lands than necessary by approving a road with such a wide ROW.	Text has been added to Supplemental EIS Section 2.4.3, Features Common to All Action Alternatives, under Right-of-Way to explain that AIDEA requested a 250-foot-wide ROW to accommodate construction activities.
32570	143	Mitigation/monitoring	TCC and the Tribes recommend that BLM require AIDEA to demonstrate why such a wide ROW is necessary for the road length. BLM also should include a mitigation measure for vegetation allowing clearing only the minimum necessary for construction. The Section NHPA Section 106 Programmatic Agreement allows vegetation clearing throughout federal and state right of ways [sic], general language that can lead to excessive vegetation removal.	The BLM is required to analyze the proposed project as requested by the applicant through submission of SF299: Application for Transportation, Utility Systems, Telecommunications and Facilities on Federal Lands and Property. A new PMM has been crafted to address removal of the minimum amount of vegetation necessary for construction.
32570	144	Cumulative and indirect effects analysis	Second, BLM needs to include in Appendix H statewide and regional transportation plans from Alaska Department of Transportation and Public Facilities when discussing non-physical actions likely to influence human uses of land in northwest Alaska.	Appendix H includes a list of past, present, and reasonably foreseeable actions related to transportation improvements, many of which have been implemented or proposed by Alaska DOT&PF. The Alaska DOT&PF 2022 Northwest Alaska Transportation Plan was reviewed and is referenced in Appendix H. The commenter did not identify any specific deficiencies in the Appendix H list of RFAs for the BLM to address.

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32570	145	Subsistence	Third, on page 3-210, BLM lists the community of White Pass. This seems like a typo as the Draft SEIS does not mention this community elsewhere.	This was a typo. Changed to “White Mountain.”
32570	146	Cultural resources	Fourth, it is good that BLM has included Indigenous names for fish and birds which adds to the documents environmental understanding through traditional ecological knowledge. BLM needs to add the Indigenous names for plants and mammals along with additional place names obtained through further ethnographic inquiries. Some of these supplementary names may be readily available through oral interviews with traditional knowledge bearers. BLM also should provide the English translations of Indigenous names, when available, since it is widely known that Native place names often are geographically based and could assist understanding of the affected environment and the evaluation of impacts.	Translations for place names are provided in Table 34 of Appendix F. The BLM is unable to include Indigenous names for plant and animals given the linguistic diversity represented by the 66 communities discussed in the Supplemental EIS.
32570	147	Alternatives	Fifth, because the level of information and detail in the Draft SEIS for Alternative A is significantly more robust, it is impossible to compare this alternative with the other Action Alternatives, especially Alternative C, with the No Action Alternative. The Final SEIS should add more information regarding the non-A alternatives, including providing a robust presentation of the adverse impacts (e.g., environmental, social, cultural, economic) avoided by selecting the No Action Alternative.	See responses to letter 21015, comment 5 and letter 22855, comment 1.
32570	148	Decision process - general	Sixth, BLM needs to use active tense to increase readability and clarity (i.e., who would do what). The Final SEIS authors will want to review and follow the Department of Energy's 2005 guidance on increasing readability of NEPA documents	The BLM and NPS have prepared their respective analysis documents (EIS for BLM; EEA for NPS) in accordance with the applicable sections of ANILCA. The NPS is not the lead agency for the EIS because the decision about the route through GAAR is to be based upon an EEA and is not subject to NEPA.
32570	149	Cumulative and indirect effects analysis	The BLM has failed to adequately address reasonably foreseeable mine development as indirect and cumulative impacts of the proposed road as the anticipated development is based on limited available information about the District and on development of other similar mineral deposits. The BLM should be required to obtain further information to have a better understanding of the mine activity impacts on the road and surrounding areas. Habitat loss and alteration due to the reasonably foreseeable development of the District could equal or exceed that from the road itself. The likely road networks could increase the magnitude of impacts on caribou, and mining activities could result in a greater intensity of disturbance and displacement. Climate change would act synergistically along with other cumulative actions, and may increase wildfires, alter predator-prey dynamics, change browse availability and distribution, or increase the prevalence of extreme winter weather events.	See response to letter 23434, comment 13.
32570	150	Wetlands	Lack of accurate wetland and floodplain mapping means BLM & USACE cannot determine the LEDPA or how the required mitigation sequence would be applied; USEPA wrote in 2019 that the USACE documentation used to permit the proposed road fills was insufficient to support a reasonable judgement that the proposed discharges will comply with the Guidelines and that the project may result in substantial and unacceptable impacts to an ARNI (i.e., Kobuk River watershed)	Suitable high resolution and field ground truthed wetland mapping is available for Alternatives A and B, whereas mapping for Alternative C is based on a desktop analysis combining National Wetland Inventory data and existing vegetation mapping. The available mapping, both desktop and high-resolution mapping, are sufficient to determine significant differences to impacts from Alternative C and Alternatives A and B. The high-resolution wetland mapping for Alternatives A and B is suitable to compare those similar alternatives.
32570	151	ANCSA	Applicant does not own the land required for the road and recently an Alaska Native corporation, Doyon, plans to withdraw its permission to cross its lands, rendering the Action Alternatives unimplementable; the applicant can no longer affirm that property interests required for the road have been or would be acquired.	AIDEA would be required to show proof of access and the ability to construct the road to any required standards prior to the BLM issuing them a notice to proceed with construction.
32570	152	Government to government consultation	USEPA is on record with serious concerns about substantial, unacceptable adverse effects to aquatic resources (2019 3a Letter, per CWA 404q); serious 404(b)(1) Guidelines compliance issues; USACE consultation and communications with Tribes was infrequent, inadequate, not meaningful, and cursory as stated in Tribal resolutions, letters, technical comments, and emails, and in violation of the DOD and USACE Tribal consultation policies (and as affirmed by a Court for BLM and was the basis for the voluntary remand)	Tribal consultation carried out by the BLM is listed in Appendix I. While other federal agencies may have carried out Tribal consultation, the BLM is only accountable for consultation conducted under DOI and BLM regulations and policies.
32570	153	Proposed action	Information provided by the applicant and noted in the BLMs Draft SEIS is preliminary and lacking in the engineering details to ascertain whether future, post-approval designs of structures would comply with safety criteria	See responses to letter 21015, comment 5 and letter 22855, comment 1.
32570	154	Water resources	EO 11998, Floodplain Management, requires Federal agencies to avoid, to the extent possible, the short- and long-term adverse impacts associated with the occupancy and modification of floodplains, a requirement the proposed Ambler Road violates by its intrusion, and because the road is optional, not required for high priority National purpose/need such as National Security, protecting human health, or responding to a disaster; the road would bisect, block, and fill waters of the United States and cause significant degradation of critical functions and services; restoration and creation are impossible to accomplish, losses would be permanent and irreplaceable; only the No Action Alternative complies with applicable laws, regulations and Executive Orders	See response to letter 21015, comment 6.
32570	157	Water resources	Proposed road and associated activities are contrary to the 404(b)(1) Guidelines and the Clean Water Act purpose to restore and maintain the chemical, physical, and biological integrity of waters of the United States through control of discharges of dredged or fill material. The 2020 application, POA-2013-00396, should have been denied: -insufficient information to determine the LEDPA -Inaccurate, incomplete, outdated data/maps on waters, wetlands, and floodplains -Proposed road would significantly and permanently degrade the aquatic environment -Development of activity-specific minimization measures were mostly deferred until the post-authorization, construction phase -Neither the 2020 nor the 2023 NEPA documents or the Administrative record contain sufficient information to make a reasonable judgment on impacts to aquatic resources	See response to letter 20731, comment 1.

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32570	158	Decision process - general	Lack of a science-based functional assessment is a fatal flaw. Tribes, agencies, interested parties, and the public have no idea what the actual losses would be for the Action Alternatives, and what the costs to the nation would be, yet the Corps Alaska District authorized activities associated with the road based on insufficient information and a flawed NEPA document	The Supplemental EIS incorporates the best available science specific to the project to adequately present the potential impacts, which included the two functional assessments (ABR 2017; DOWL 2014) specific to the project area, as cited in Section 3.3.1 of the Supplemental EIS. DOWL (2019) mapping provided wetland delineation for Alternative Route C. The USACE reviewed the material provided by AIDEA (i.e. DOWL's reports) and determined that they were sufficient for a NEPA level of analysis. Additional wetland mapping and functional assessment is anticipated to be completed during final design and permitting. The References sections of Appendices E and O were updated to reflect that the desktop wetland mapping is complete (i.e., no longer in progress).
32570	159	Fish and aquatics	Fish, Crustaceans, Mollusks, and Other Aquatic Organisms in the Food Web (230.31): Major (Significant) because the proposed Ambler Industrial Mining Road Project would reduce and possibly eliminate food chain organisms, decreasing overall productivity throughout the ecoregion. Adult fish, juveniles, larvae, and eggs would be harmed by changes in water quality and circulation patterns, and by chemicals and increased sedimentation.	Potential impacts to invertebrates (and the subsequent impact to fish) is described in Supplemental EIS Section 3.3.2, Fish and Aquatics.
32570	160	Wetlands	Major (Significant) with over 2,000 acres destroyed; 11 million cubic yards of permanent fill; lack of accurate mapping means BLM & USACE cannot determine the LEDPA or how the required mitigation sequence would be applied; USEPA wrote in 2019 USACE documentation insufficient to support a reasonable judgement that the proposed discharges will comply with the Guidelines and that the project may result in substantial and unacceptable impacts to an ARNI (i.e., Kobuk River watershed); the proposed project would destroy/degrade important wetland-upland connectivity, the hydrological conditions that sustain fish and wildlife species and vegetation, and aquifer recharge capabilities	The Supplemental EIS uses the best available data and crosswalks vegetation and wetland types into a broad scale classification that can be used to compare all action alternatives. Desktop mapping is suitable for use in the Supplemental EIS and is also sufficient to determine the LEDPA. Wetland functions are discussed in general, but the Supplemental EIS discloses that wetland function cannot be adequately extrapolated to areas where no comprehensive functional assessment has been completed. A full functional assessment is not required for the Supplemental EIS or for USACE's LEDPA determination.
32570	161	Water resources	Major (Significant) because vegetation and the species that depend upon it along the 76 linear miles of streams, and bordering lakes and ponds would be adversely affected, reducing functions, food sources, and subsistence resources	See response to letter 23508, comment 17.
32570	162	Water resources	Municipal and Private Water Supplies (230.50): Major (Significant) because water essential for the survival of people, fish and wildlife species, and vegetation would be wasted; 1 million+ gallons of fresh water wasted for each mile of a 25-foot ice road; >250,000 gallons of water wasted on ice pads taken from streams and wetlands; the project would adversely affect groundwater discharge and recharge; 76 miles of stream would be destroyed or degraded along with over 2,000 acres of wetlands; ~61,000 truck trips/yr would result in pollution from spills, accidents; 11 million cubic yards of permanent fill, and both point and non-point source pollution would occur at predicted unacceptably high levels --- for Alaskan Native subsistence communities the regional landscape is their water supply and it would be irreversibly, substantially, permanently, and unacceptably harmed.	See response to letter 14123, comment 1. See response to letter 20731, comment 1. See response to letter 18334, comment 1.
32570	163	Mitigation/monitoring	First, potential environmental engineering and voluntary best management practices proposed (not promised) by the applicant are NOT acceptable mitigation. Mitigation cannot be speculative, caveated, or voluntary --- it must be certain, without caveats, and a requirement of any right-of-way or CWA 404 permit. The applicant has NOT proposed or described in any detail project-specific mitigation measures --- instead, the administrative record includes very general discussions of generic and potential measures. A fatal flaw thus far in the BLM real estate and USACE regulatory processes is that no compensatory mitigation measures have been proposed or required even though the proposed road would directly destroy/degrade 2,000 acres of wetlands and 76 linear miles of streams. The applicant is deferring all mitigation planning/design until AFTER all approvals are obtained --- the risk and uncertainty for 34 indigenous subsistence communities is unacceptably, and disproportionately high, as it is for all Alaskans and the nation. The USACE authorizations provided in 2020 were premature, based upon an inadequate administrative record and an extraordinarily flawed analysis by USACE Alaska District staff. The proposed road was then, and is even more so now, based on new information in BLMs revised September 2023 Draft SEIS and the Technical Subsistence Report, contrary to the public interest.	This comment is non-substantive because it does not address the Supplemental EIS.
32570	166	Proposed action	Reclamation of the industrial access road and support facilities would be undertaken at the end of the 50-year project. A detailed reclamation plan containing sufficient performance standards subject to land manager approval would be developed prior to issuance of the authorizations. This as a major problem, and a fatal flaw, due to the risk and uncertainty associated with relying on potentially unknown entities 50 years from now to properly and successfully implement the reclamation. The project-specific measures and costs are, at this point, completely unknown. It would not be a surprise if those responsible for reclamation don't claim that the work is cost prohibitive. Worse, the significant adverse impacts to indigenous people and natural and cultural resources will have occurred with no certainty whatsoever that the areas can be reclaimed. There is scant evidence in the large-scale mining industry that landscapes where mining roads and associated infrastructure, and mines, can be reclaimed. For the most part, once natural resources are destroyed and degraded, especially in Alaska, they are lost for many hundreds of years, or forever. Cultural resources and spiritual resources are non-renewable and irreplaceable. Further studies and analysis are required for inclusion in the Final SEIS to evaluate the reclamation issue, especially the lack of even a conceptual mitigation plan for public review.	See responses to letter 22770, comment 15 and letter 29489, comment 92.
32590	1	Mitigation/monitoring	We appreciate the information provided by the BLM in the DSEIS; however, we agree with the BLMs original 2019 assessment that the only effective mitigation is to avoid construction. The best management practices (BMPs) proposed by the Alaska Industrial Development and Export Authority (AIDEA) and the BLM in Appendix N may help to mitigate some Project impacts; however, permanent long-term impacts to the system will result from any action alternative currently proposed. For example, most of the BMPs are proposed by the BLM, and the BLM can only require their BMPs on lands they manage, which account for less than 12 percent of the Project Right of Way (ROW) for Alternatives A and B. In addition, any permit stipulations mandated by the USACE for the entire route are reserved for WOTUS only, leaving the remaining wetland	Comment noted.

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			and upland habitats unprotected and impacts unmitigated. Relying on terms that include when practicable, and potentially different State agency permitting stipulations on State lands, will not ensure minimization of resulting impacts. We provide examples below to support our argument that any action alternative as proposed in the DSEIS will result in substantial permanent multi-watershed wide impacts despite proposed minimization measures due to incomplete mitigation coverage, historical practices, noncommittal by state agencies to follow through with road closure and reclamation, incomplete analysis of impacts, and the widespread use of as practicable within permit stipulation language.	
32590	2	Public access	Potential Public Access and Use Beyond 50 Years: The Service is concerned the DSEIS does not fully consider the strong likelihood of eventual Ambler Road public access once the 50-year life of the road is completed. The AIDEAs stated purpose and need for the ROW is to pursue the construction of an industrial access road consistent with its mission to increase job opportunities and otherwise encourage the States economic growth, including development of natural resources. However, [t]he Alaska Department of Natural Resources (ADNR), in its role as a cooperating agency for the Project, has stated that it must separately evaluate questions related to use of the road and restrictions on use and cannot commit at this time regarding restrictions where the road would cross State of Alaska (State) lands. The State reiterates its position again in the DSEIS stating it must separately adjudicate an easement for state lands and during that process ADNR will address use of the road and restrictions on use. Since the State cannot commit to an industry-only access road and a 50-year limited life span with full restoration, and the BLM cannot provide unequivocal assurance to permanently deny access to State portions of the road after the 50-year life span (including land transfers to the State to accomplish this goal), the Service submits the BLM has not fully evaluated the potential impacts that public access may add to fish, wildlife, and their habitats. The Dalton Highway is an example of a road originally constructed to support industry that began with restricted access, and which was later opened to the public. The Service is troubled by the proposed Ambler Roads associated impacts that have been historically observed along the Dalton Hwy, including: Continued spread of invasive plant species along the Dalton Hwy despite monitoring and invasive species management efforts, including the associated chemical treatment to control invasives and their impacts to pollinators and aquatic organisms. Continued wildlife mortalities from road associated activities including collisions, and road and bridge maintenance during the bird breeding season. Continued vegetation impacts from associated road dust and long-term habitat alteration and fragmentation, including the associated chemical agents used to suppress/control dust, and their long-term impacts to vegetation and biota. Inadequate culvert maintenance as illustrated by reviewing the Alaska State Fish Passage Inventory Database (https://www.adfg.alaska.gov/index.cfm?adfg=fishpassage.database). A more detailed discussion is provided below in the Water Resources section. We, therefore, recommend not adopting any action alternative unless the proposed Ambler Road remains an industrial access only road, is closed after the stated 50-year life span, and effective rehabilitation measures after closure are employed and monitored until fish and wildlife habitat is restored and stabilized.	See response to letter 19418, comment 3.
32590	3	Geology and minerals	Permafrost: The Service agrees with the DSEISs assessment that Project [d]isturbances to the soil thermal regime would exacerbate permafrost thawing in the area. Although engineering design measures can reduce unintentional permafrost thaw, they should not be considered completely effective at avoiding changes to the soil regime. Because mitigation measures proposed in Appendix N are not certain due to using conditional language like may, if, and when practicable along uncertain portions of the ROW, the Service believes these measures will not be effectual in minimizing permafrost thaw in the Kobuk, Koyukuk and Kanuti river watersheds. For example, the USACE has required blueboard insulating foams be used during construction and maintenance through WOTUS-protected areas to minimize permafrost thaw. We surmise the remainder of the route containing thaw-unstable permafrost is in question, and the impacts are not fully assessed or mitigated. We recommend not adopting any action alternative until a full analysis of impacts to permafrost is completed, and effective mitigation measures are assured throughout the entire route.	Comment noted. The broad list of potential mitigation measures is provided to inform decision makers of the available options for mitigating impacts. The most-suitable mitigation measures will be determined based on site-specific characteristics to support the effectiveness and success of the measure(s).
32590	4	Fish and aquatics	Asbestos and Acid Rock: As stated in the DSEIS, deposits of asbestos and acid rock areas are known to occur within the proposed corridor for Alternatives A and B and are very likely to be encountered within gravel mine sites and incorporated into the materials used for road construction. While the DSEIS recognizes airborne asbestos is toxic to human health through inhalation, asbestos within the water column is also known to be toxic to aquatic fauna, including salmon (West and Metsker undated, Yasutake undated, Yasutake 1983, Belanger et al. 1986). The DSEIS does not provide any minimization measures to protect wildlife from asbestos and acid rock leachate in waterbodies. Although the histopathological changes observed in Yukon River fish were not definitely linked to asbestos exposure, Yasutake (1983) found the changes were more than were seen in control areas without asbestos. Further, Belanger et al. (1986) demonstrated that exposure to asbestos causes significant harmful effects in juvenile salmon. Acid rock leaching into waterways could also substantially alter water chemistry and degrade aquatic habitat, potentially affecting the health of fish and invertebrate populations. Important subsistence fish species such as sheefish and salmon would be vulnerable to decreases in pH levels caused by acid rock leaching into waterbodies. Because mitigation measures proposed in Appendix N are not certain due to using conditional language like may, if and when practicable along uncertain portions of the ROW, the Service believes these measures will not be effectual in minimizing asbestos and acid rock contamination in the Kobuk, Koyukuk and Kanuti river watersheds, resulting in long term contamination to habitat and trust resources. We recommend not adopting any action alternative until a full analysis of impacts from asbestos and acid rock contaminants to habitat and wildlife is completed and effective mitigation measures are assured throughout the entire route.	Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA, includes mitigation measures AIDEA has committed to in the design and operation of the proposed project to avoid or minimize environmental impacts. AIDEA has committed to the following measure to address NOA; this measure was also adopted as a special permit condition by USACE (see Supplemental EIS Appendix N, Section 3.5.12, Geotechnical Investigations). “AIDEA would avoid the use of materials containing NOA to the greatest extent feasible. For the purposes of this project, AIDEA has identified a threshold of 0.1 percent asbestos by mass as its definition of NOA materials (DOT&PF’s regulations are specified for materials above 0.25 percent NOA; however, AIDEA has committed to a lower threshold). If use of NOA materials cannot be avoided, AIDEA would follow DOT&PF measures as allowed under 17 AAC 97 and described in their May 14, 2015, regulations regarding the use of materials containing NOA.” Supplemental EIS Appendix N, Section 3.5.12, also includes the following USACE special permit condition (number 30): “The applicant shall submit a final project plan to the Corps for review prior to beginning any permitted work. This plan shall be based on the geotechnical investigations conducted to identify areas to be avoided due to the presence of naturally occurring asbestos and sulfide minerals that can cause acid drainage in cut and fill areas. The final plan shall incorporate all mitigation measures.”
32590	5	Air quality and climate	Fugitive Dust: The Service believes the 100-meter impact assessment distance for fugitive dust impacts is inadequate since multiple studies have found impacts beyond 100 meters (Walker and Everett 1987, Myers-Smith et al. 2006, and McGranahan et al. 2017). While the impacts may be reduced with increasing distance, they are still present and not	Supplemental EIS Section 3.2.7 recognized that during construction, operations, and decommissioning the anticipated main concern would be the generation of particulate matter from various sources. However, the development of an enforceable, comprehensive dust control plan

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			evaluated in the DSEIS. While we accept dust suppressant may be used to mitigate these fugitive dust impacts, chemical suppressants often contain chloride and introduce additional toxins into the environment. Elevated chloride concentrations have been found in waterbodies downstream of application areas (Demers and Sage 1990). The salts also contribute to shallow groundwater contamination (Heffner 1997). Foley et al. (1996) and Golden (1991) found chloride concentrations as low as 40 ppm to be toxic to trout, and concentrations up to 10,000 mg/L toxic to other fish species. The DSEIS does not evaluate the impacts to the environment from long-term use of chemical dust suppressants. While the USACE has stipulated avoiding dust suppressants with ingredients potentially harmful to aquatic organisms within 328 feet (100 meters) of any fish-bearing stream and higher-value wetlands (e.g., emergent wetlands, patterned fens, and shallow ponds) to minimize potentially degrading these important fish and wildlife habitats, these stipulations are for WOTUS areas only and do not provide minimization for the remainder of the proposed ROW. Also, these stipulations do not assess long-term buildup of salts in the system and their eventual migration into aquatic systems over a 50-year period. We recommend not adopting any action alternative until a full analysis of long-term fugitive dust impacts to habitat and wildlife is completed, and effective mitigation measures are assured throughout the entire route.	is proposed as a mitigation measure. This plan would be reviewed by multiple agencies and must be approved by the authorized officer prior to any surface disturbing activities (see Appendix N). The dust control plan, with appropriate methods and usage of palliatives, would mitigate much of the construction air quality impacts associated with fugitive dust. In addition, air quality permitting requirements for the proposed construction camps would ensure compliance with regulations and would help to ensure that construction emissions would not exceed the NAAQS or AAAQS. The method of dust control or type of palliative has not been decided and will be chosen with consideration of all environmental factors. In addition, Alaska's Air Quality Regulations includes the prohibition under 18 AAC 50.045(d) which requires that a person who causes or permits bulk materials to be handled, transported, or stored, or who engages in an industrial activity or construction project shall take reasonable precautions to prevent particulate matter from being emitted into the ambient air.
32590	6	Hazardous waste	Transportation of Ore Concentrates: Studies show ore concentrates can escape during transportation even with using minimization measures (e.g., hydraulically sealed lids, truck rinsing procedures), and were found in measurable concentrations up to 2.5 miles (4 kilometers) from the Red Dog Mine haul road, and sometimes much farther (Neitlich et al. 2017, Hasselbach et al. 2005). The Service is concerned ore concentrates can introduce hazardous products into the pristine environment far from the proposed road. The DSEIS provides mitigation measures to help contain these hazardous materials during transport. Since these measures were not entirely effective at Red Dog Mine, we recommend assessing long-term mine chemical contamination along the entire ROW and Dalton Hwy for a complete analysis of effects on fish, wildlife, and habitat.	The impacts of mining are analyzed to the extent that information is available to do so. No specific mining application/permit request for the District has been submitted to date. The BLM evaluated reasonably foreseeable mining development as indirect and cumulative impacts using a hypothetical mining development scenario. When officially proposed, each mine would go through its own project-specific NEPA analysis and permitting process, which would provide further detail and analysis regarding the specific impacts of each mine operation.
32590	7	Wetlands	Sand and Gravel Material Sites: The Service does not recommend locating material sources in floodplains because fish can become trapped in the excavated areas when flood flows recede. In addition, meandering channels will eventually intercept the excavation and possibly flush fine sediment and other contaminants from the excavated areas into flowing water and could adversely impact the critical spawning areas for sheefish in the Kobuk River and other whitefish downstream in the Kobuk, Alatna and Koyukuk rivers. Floodplain habitats are also some of the most productive bird habitats on the landscape, which could be adversely impacted by mining activities. The geographic information system data show material sites proposed in several floodplains, including floodplains of the Shungnak, Kogoluktuk, Mauneluk, Reed, Kobuk, Alatna, and John rivers and Beaver Creek. Avoiding material extraction from any active floodplain would minimize impacts to our fish and wildlife trust resources, and to our NWRs downstream. Because material site impacts are not fully assessed or mitigated in the DSEIS, we recommend not adopting any action alternative until a full analysis of impacts is completed, and effective mitigation measures are assured throughout the entire route.	See response to letter 10640 comment 5. The USACE CWA Section 404 permit authorized 15 material sites necessary for construction of maintenance stations, construction camps, and communication equipment. Additional material sites would have to be permitted on a case-by-case basis in accordance with mitigation measures described in Appendix N and permit stipulations. AIDEA has identified more material sites than are estimated to be needed to construct the proposed action alternatives so that site boundaries can be determined with respect to development constraints. Should the project be approved, the ROD will determine which mitigation measures will be required.
32590	8	Water resources	Floodplain and Sheet-flow Connectivity: The Service is concerned the provisions are inadequate for maintaining the floodplain integrity both up and downstream at all floodplain crossings, and road segments following hillside contours will bisect sheet flow (overland flow). Floodplains are an important component of the aquatic ecosystem with many benefits beyond enhancing fish and wildlife habitat, and wetland functions downgradient from roads can be adversely impacted by culverts, concentrating sheet flow that would normally spread across the wetland. The mitigation measure addressing this concern on its own, would be partially effective at reducing impacts associated with the roadway embankment on connectivity of wetlands and floodplains. However, the remaining adverse impacts to floodplains and wetlands are not evaluated or mitigated. Because floodplain and sheet-flow connectivity are not fully assessed or mitigated, we recommend not adopting any action alternative until a full analysis of floodplain and sheet-flow connectivity impacts are completed, and effective mitigation measures are assured throughout the entire route.	See response to letter 21015 comment 6. The importance of floodplains and need to minimize impacts on floodplains is discussed in Section 3.2.5 of the Supplemental EIS. The size of bridge girders that can be transported to river crossings (assumed to be 140 feet) creates a structural limit on free span across floodplains; multiple spans would be used as necessary to adequately minimize floodplain impacts. Proposed design features (Supplemental EIS Section 2.4.4) and proposed mitigation measures (Appendix N, Sections 3.2.5 and 3.5) provide multiple approaches to minimize impacts on floodplains, including avoiding floodplains when practicable; crossing floodplains perpendicularly to minimize fill in floodplains; designing bridges, major culverts, and moderate culverts to convey the 100-year flood; increasing bridge spans and culvert widths and adding overflow culverts to improve floodplain connectivity; and protecting and reestablishing riparian vegetation in the floodplain. Together these features are expected to be mostly effective at mitigating impacts on floodplains. Challenges with conveying sheet flow across the roadway are also acknowledged and discussed in Supplemental EIS Section 3.2.5. Numerous design features and mitigation methods have been included in Section 2.4.4 and Appendix N Sections 3.2.5 and 3.5 to minimize impacts on sheet-flow, including convergence of sheet-flow, and maintain hydrologic connectivity to the extent practicable; including minimizing collection of upstream runoff in ditches by using adequate number of cross culverts; use of porous fill in the embankment to facilitate surface and shallow groundwater movement across the road; final cross-drainage culvert locations shall be determined in the field during breakup and locations staked; culverts installed for sheet-flow connectivity would be marked so they can be easily inspected; and an Adaptive Management Plan (AMP) for monitoring, maintaining, and repairing culverts over the life of the road shall be developed in consultation with ADF&G and the USACE. Together, these features are considered to be mostly effective at mitigating impacts on sheet flow.
32590	9	Fish and aquatics	Culvert Maintenance: The Service cites the history of other areas (e.g., Dalton Highway) as an example of the potential effectiveness of the proposed culvert mitigation measures for retaining fish passage. The Dalton Highway undoubtedly has a culvert plan overseen by the Alaska Department of Transportation and Public Facilities (ADOT&PF) which includes maintenance and replacement. An analysis of the Alaska State Fish Passage Inventory Database of culverts located on the Dalton Highway and oil field roads indicates 227 culverts cross fish-bearing streams. The latest survey of culverts was in 2011 (more than 10 years ago) and indicates only 28% are deemed crossing assumed to be adequate for juvenile	The Dalton Highway, while similar in scale and location, is not an appropriate analogue for the proposed Ambler Road in terms of a maintenance outlook. The Dalton Highway is managed by DOT&PF, which is a publicly-funded State agency who's budget is determined by annual legislative appropriation. The Ambler Road would be operated under different financial structure. As described in Supplemental EIS Section 2.4.3, Features Common to All Action Alternatives, AIDEA would have legal and financial responsibility for managing the road from construction

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			salmonid/weak swimming fish passage. Based on this assessment, the Service is deeply concerned the same situation (e.g., culverts limited by debris clogging the inlet, becoming perched, or by the culverts subsiding below the land surface) will occur along the proposed Ambler Road. Floodplain and sheetflow equalization culverts will likely suffer a similar failure rate without adequate long-term maintenance. Based on a history of similar routes, the impacts associated with culvert maintenance and replacement are not fully assessed or mitigated in the DSEIS; therefore, we recommend not adopting any action alternative until a full analysis of failed culvert impacts on fish and wildlife habitat is completed, and effective mitigation measures are assured throughout the entire route.	through operations and maintenance. Prior to road development, AIDEA would submit to BLM a financing plan showing surety of the funding needed to build and operate the road according to their plan and commitments. As described in Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA, an adaptive management plan for monitoring, maintaining, and repairing culverts over the life of the project would be developed with input from ADF&G and the USACE. The plan would include documenting culvert locations using GPS, and regular monitoring during culvert installation and through road operation. The plan would identify corrective measures that would be taken if concerns are identified, and time frames for those measures to be implemented. Corrective measures may include additional culverts, increasing culvert size, adding thaw lines, adding dead-man anchors, or other appropriate measures. The proposed subsistence advisory committee would help in plan oversight and overall road operations and maintenance.
32590	10	Water resources	Water Quality: Quantifying the effects to water quality are important for assessing additive impacts from future mine development on the ecosystem. The cumulative impact section assessed impacts, [w]ater supply and usage for the mining of rock, processing of ore, and maintenance of facilities combined with potable water requirements, may impact water quantity of water sources and may require treatment of toxic mine water in perpetuity (Hughes et al. 2016; Limpinsel et al. 2017; Woody et al. 2010) The Service is concerned analysis has not included the impacts of degraded water quality on birds, aquatic species, and their habitats. The analysis will also provide useful information for future analyses of mine development impacts in the Ambler Mining District and mining operations along the ROW.	See response to letter 17876 comment 1. The Mining, Access, and Other Indirect and Cumulative Impacts portion of Sections 3.3.2 and 3.3.3 discuss cumulative impacts of mining activities on birds, fish, and aquatic species.
32590	11	Fish and aquatics	Fluvial Sediment Transport: Sediments and contaminants will be transported downstream to adversely impact fish and their habitats throughout the proposed life of the Project, 50 years and beyond, presenting a long-term watershed-wide impact. Further, fuel spills or other contaminants entering waterbodies from construction and use of the road could have a substantial adverse impact on fish and aquatic populations. The Service is concerned mitigations, discussed in Appendix N of the DSEIS, that may or may not be implemented along undefined portions of the ROW will not be effectual in minimizing the introduction of sediment and other contaminants (e.g., from asbestos and acid rock) into streams.	Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA, includes mitigation measures AIDEA has committed to in the design and operation of the proposed project to avoid or minimize environmental impacts. AIDEA has committed to the following measure to address NOA; this measure was also adopted as a special permit condition by USACE (see Supplemental EIS Appendix N, Section 3.5.12, Geotechnical Investigations). "AIDEA would avoid the use of materials containing NOA to the greatest extent feasible. For the purposes of this project, AIDEA has identified a threshold of 0.1 percent asbestos by mass as its definition of NOA materials (DOT&PF's regulations are specified for materials above 0.25 percent NOA; however, AIDEA has committed to a lower threshold). If use of NOA materials cannot be avoided, AIDEA would follow DOT&PF measures as allowed under 17 Alaska Administrative Code 97 and described in their May 14, 2015, regulations regarding the use of materials containing NOA." Supplemental EIS Appendix N, Section 3.5.12, also includes the following USACE special permit condition (number 30): "The applicant shall submit a final project plan to the Corps for review prior to beginning any permitted work. This plan shall be based on the geotechnical investigations conducted to identify areas to be avoided due to the presence of naturally occurring asbestos and sulfide minerals that can cause acid drainage in cut and fill areas. The final plan shall incorporate all mitigation measures."
32590	12	Wetlands	Wetland and Riparian Impacts: The Service is concerned the DSEIS has not adequately evaluated impacts to wetlands and vegetation beyond 100 meters of the proposed ROW. Wetlands (regardless of WOTUS designation) and riparian habitats are some of Alaskas richest bird habitats where the combination of water, diverse woody plant growth, high primary productivity, and associated insects and other invertebrates provide an abundant source of food and cover (Magoun and Dean 2000). Further, because proposed measures to mitigate impacts in Appendix N are not certain and may be, or if employed when practicable along uncertain portions of the ROW, and stipulations are for WOTUS areas only and do not provide minimization for the remainder of the proposed ROW, the Service believes these measures will not be effectual in minimizing impacts to the watershed. Therefore, we recommend not adopting any action alternative until a full analysis of impacts to wetlands and riparian habitat is completed, and mitigation measures are assured throughout the entire route (including compensation for unavoidable loss of wetland functions).	The primary effects to wetlands and vegetation from activities associated with the proposed road 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 dust deposition. The 10-meter standard for fugitive dust fallout is based on the best available science, see Walker and Everett 1987; Auerbach et al. (1997); Myers-Smith et al. (2006); McGanahan et al. (2017) as cited in Section 3.2.1. Geology and Soils of the Supplemental EIS.
32590	13	Wetlands	Uncommon Wetlands: In addition to patterned-fen wetlands, such as the Nutuvukti fen, wetlands dominated by moss and lichen are very uncommon in the area. Lichens are also an important winter forage for the WAH (Jolly et al. 2010). Although the National Wetlands Inventory (NWI) is incomplete for the Project area, based on the wetlands that were inventoried, only about 0.25 percent of the wetlands are moss-lichen wetlands or a mosaic of moss-lichen and other wetland types. Only a small percentage of the footprint for Alternatives A and B have NWI coverage, but both alternatives intersect at least one moss-lichen wetland (Mile 122.5 for Alternative A, and at the maintenance and material site south of Mile 143.7 for Alternative B). The wetland inventory conducted for the ROW2 did not detect these uncommon wetlands for Alternatives A and B; however, it identified over 100 moss-lichen wetlands for Alternative C. The Service recommends ground truthing the detailed ROW wetland inventory where the NWI suggests these uncommon moss-lichen wetlands may occur for Alternatives A and B, as well as reexamining the detailed ROW wetland inventory where moss-lichen wetlands may be found elsewhere along the proposed ROW to verify their presence or absence. Given that patterned-fen and moss-lichen wetlands are uncommon in the ROW area, and the importance of lichen for wintering caribou, we recommend not adopting any action alternative until a full analysis of impacts to uncommon wetlands is completed, and mitigation measures are assured throughout the entire route.	Given that the best available data layers used in the Supplemental EIS analysis come from a variety of sources, and some rely heavily on aerial imagery interpretation, the assumption can be made that the specificity to accurately detect moss/lichen dominant wetlands is poor. In this analysis, these wetlands were lumped into the palustrine emergent category (PEM), which is assumed to be a high-value wetland type overall. Lumping high-value wetland types into a broad category and conferring high functional value serves as a conservative approach to capturing wetlands that occur rarely on the landscape given the limitations of aerial imagery interpretation.

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32590	14	Proposed action	Revegetation and Restoration: The AIDEA requested a ROW authorization for 50 years, after which the road (we understand the entire road) would be closed and reclaimed. The Service is not convinced of such closure as the State of Alaska has stated twice it must separately evaluate road use. Since the State cannot commit to an industry-only access road with a 50-year limited life span with full restoration, and the BLM has not provided unequivocal assurance to permanently deny access to State portions of the road after the 50-year life span (including land transfers to the State to accomplish this goal), the Service submits the BLM has not fully evaluated the potential permanent impacts public access may add to fish, wildlife, and their habitats if the road is not removed after 50 years and successfully revegetated with native vegetation. Literature and public data searches have revealed little evidence of successful road remediation at this level in Alaska. Until that information can be obtained and assessed for the risk of failure, the Service is concerned restoration will not be required for the entire ROW, meet minimum restored function standards, and be monitored after the closure of the ROW. Due to this essential concern, we recommend not adopting any action alternative until a full analysis of road remediation after closure is completed, and effective mitigation measures are assured throughout the entire route.	Comment noted.
32590	15	Wetlands	Permanent Loss and Alteration of Wetland Functions: The Service submits the BLM has not fully evaluated the permanent economic loss in value of fish, wildlife, and their habitats due to the proposed Ambler Road. The total estimated wetland impacts within 100 meters of the proposed ROW is 17,895.8 acres (Alternative A), 19,834.2 acres (Alternative B), and 26,092.3 acres (Alternative C). The USACE has jurisdiction over WOTUS under Section 404 of the CWA (of which jurisdictional wetlands are a subset of all wetlands), and Section 10 of the Rivers and Harbors Act of 1899. In addition, the Service has authority to review project plans, and provide comments regarding the protection of fish and wildlife resources (including wetland habitat) under provisions of the CWA as well as the Fish and Wildlife Coordination Act. Under a 1990 Memorandum of Agreement, the U.S. Environmental Protection Agency and the U.S. Department of the Army agreed to seek appropriate and practicable compensatory mitigation for the temporal and permanent loss of wetland functions, including wildlife habitat, after all appropriate and practical avoidance and minimization measures (including restoration as a minimization measure). Compensatory mitigation for wetland functions should be recognized (EPA and DA 1990). The 2020 Joint ROD decision for this Project determined no compensatory mitigation would be required. The Service therefore suggests the BLM evaluate the permanent economic loss of environmental functions including fish and wildlife and their habitats. Executive Order 14072 established the first government-wide natural capital accounts that would measure the economic value that natural assets provide to society and connect changes in nature with changes in economic performance. The National Strategy to Develop Statistics for Environmental-Economic Decisions was released on January 19, 2023. ² The economic value of lost fish, wildlife, and habitat should be assessed to directly compare the values gained versus those lost. Further, in May 2023 the Service released in our Final Policies on Mitigating Impacts of Development to Further Conservation of Nations Wildlife and Their Habitats (Mitigation Policy). The Services final revised Mitigation Policy seeks to improve the design and placement of mitigation on the landscape and, by doing so, maintain the overall health of species and habitats at risk. The policy applies to all authorities under which the Service can require or recommend mitigation and intends to help promote the most effective and efficient mitigation measures to be implemented across the landscape. We recommend the BLM confer with the Service on compensatory mitigation prior to adopting any action alternative.	Although a comprehensive cost-benefit analysis has not been developed, the entire Supplemental EIS is an analysis of the impacts and benefits to physical, biological, and social resources described both quantitatively and qualitatively. Should the project be approved, the ROD would determine which mitigation measures will be required.
32590	16	Vegetation	Non-native Invasive Species: The Service is concerned the potential impacts of introduction and subsequent spread of invasive species into the proposed Ambler Road watersheds will be substantial and permanent, contributing to the alteration of habitat and species diversity. The BLM (e.g., Dalton HWY) and ADOT&PF (e.g., Chena Hot Spring Road 2021 - 2022 project) have examples of ineffectual management where the practices resulted in the spread of invasive species in Alaska. While management and monitoring plans may have the best intentions, enforcement, funding, and BMP terminology like may be, or if employed when practicable will not effectively prevent the introduction of invasive species into the terrestrial and aquatic systems of the nearly pristine foothills of the Brooks Range and downstream transport of invasive species along the waterways.	Section 3.3.1, Non-Native Invasive Plant Species Impacts, discloses that the introduction of NNIS would be ongoing throughout both the construction and operations phases of the project as follows: “The introduction and spread of NNIS would occur continuously throughout the project’s construction, operations and closure. If commitments by AIDEA in Chapter 2, Section 2.4.4, Design Features Proposed by AIDEA, and potential mitigation measures in Appendix N were consistently applied along the proposed alignment, NNIS infestations may remain localized and small enough to be eradicated during seasonal monitoring and removal efforts. The introduction and spread of NNIS is anticipated to be minimized through ROW stipulations, permit requirements, and construction and operations BMPs (BLM 2016a). Road closure and reclamation would result in an increased likelihood of NNIS spread the from the exposure and reseeding of soils”
32590	18	Birds	Migratory Bird Conservation / Management Plan: The Service is concerned with the level of commitment to bird conservation. The DSEIS offers one stipulation for bird conservation, and it is not clear if the stipulation is only for BLM managed lands or the entire proposed ROW. The DSEIS states Construction of the road would comply with possible restrictions during bird nesting periods in accordance with the Migratory Bird Treaty Act. An additional effective tool would be to develop and implement a Bird Management Plan, with mitigation measures to avoid, minimize, and mitigate impacts on migratory bird resources, including conservation efforts during maintenance activities and facility designs to deter bird use. For example: Design building structures and towers to prevent or reduce bird use (e.g., nesting and loafing). Schedule bridge maintenance activities outside the nesting season to minimize impacts to birds like cliff swallows nesting on structures. Remove carrion from roads and vicinity to reduce collisions. Conduct blasting activities for construction and operations outside the raptor-nesting season to minimize disturbance that could potentially result in nest abandonment. Develop a lighting plan to minimize attracting migrating birds at night (resulting in collision mortalities) and implement methods to mitigate the impacts of any above-ground powerlines and guy wires for communication towers (e.g., from electrocutions or collisions). Fill or cap vertical hollow pipes or tubes between 2 to 10-inches in diameter (e.g., survey markers, fence posts, signs, outbuilding vents, claim monuments, etc.) to prevent entrapping birds, unless they are horizontally mounted. The cap should be secured such that it does not become dislodged by wind or other disturbances and not pose a risk to perching birds, especially raptors with talons. For pipes that need to vent, screens or vented caps can be used as a cover, so long as they are securely attached. For additional information, refer to BLMs Instruction Memorandum No. 2016-023. ²	A new potential mitigation measure has been added to Appendix N, Section 3.3.4 (Birds). The BLM’s prior ROW grant has been suspended during the development of the Supplemental EIS. Should the project be approved, the ROD will determine which mitigation measures will be adopted. The ROW issued by the BLM would be applicable to BLM-managed lands only.

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32590	19	Birds	Full Life-cycle Conservation of Migratory Birds: In addition to conserving migratory bird breeding habitat, Rosenberg et al. (2016) recognizes the importance of understanding and addressing issues faced by migratory birds throughout their lives and during their full annual migratory cycles. Full life-cycle conservation of migratory birds requires actions that provide habitat and reduce mortality throughout the year and across their range (Spindler and Kessel 1980, Kessel 1998, BPIF Working Group 1999). The Service recommends the DSEIS assess impacts to migratory birds in relation to their complete life cycle, including impacts to breeding, wintering, and migratory habitat. The Service again submits the BLM has not fully evaluated the potential impacts on birds from the proposed Project (e.g., construction, maintenance, collisions, habitat alterations, prey source alterations, invasive species impacts to habitats and prey, and functions disturbed or lost after the 50-year term if road removal, revegetation, and restoration are not successfully restored).	The Supplemental EIS contains sufficient information for each of the action alternatives to adequately compare impacts among the alternatives and to make an informed decision on the ROW application.
32590	20	Fish and aquatics	Sheefish: Sheefish is not only a prized subsistence food and a dietary staple in much of the Northwest Arctic, but also a trust resource using the Selawik NWR. The DSEIS adequately documents the sheefish resources of the region. We agree with the DSEIS finding that Cumulatively, the project has the potential to cause substantial, long-term impacts to fish and aquatic life that could lead to substantial impacts on subsistence use practices in the region, even with mitigation measures in place. More specifically, the DSEIS states: Mining and further road development could have population-levels effects on certain fish species, particularly if mine activities result in contamination or impact to Kobuk River sheefish spawning grounds, which is the only sheefish spawning area in the Kobuk River drainage. The only other sheefish spawning grounds in the Northwest Arctic Borough is located on Selawik NWR. Both these sheefish populations intermingle in their wintering grounds in Hotham Inlet, where they are a vital subsistence resource to several nearby communities. Impacts to the Kobuk River sheefish population can be expected to ripple to the Selawik River sheefish population through increased harvest on their common wintering grounds. A decline in abundance can be expected to lead to subsistence harvest restrictions. If the proposed road were open to the public, increased access by non-local sport fishermen to Kobuk River sheefish could similarly lead to a decline in abundance of Selawik River sheefish and increased harvest restriction. With the decline in salmon harvest, sheefish are more heavily relied on for subsistence. While the AIDEA has committed to developing an adaptive management plan for monitoring, maintaining, and repairing culverts over the life of the road in consultation with ADF&G and the USACE, the Service is concerned fish passage will not be maintained based on the history of culvert maintenance and monitoring as discussed above in the Water Resources section. Therefore, the Service recommends not adopting any action alternative until a full analysis of impaired fish passage and habitat is completed, and the economic value of impacted subsistence resources is enumerated.	Should an action alternative be approved in the BLM's ROD, additional surveys and studies would be conducted as needed in support of other local, state, and federal permits. As described in Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA - Biological Resources, fish surveys would be conducted to assess fish presence in rivers in streams for all life history stages along the selected alignment. The scope of these surveys would be coordinated with ADF&G, the USFWS, and the National Marine Fisheries Service. Potential mitigation measures (Supplemental EIS Appendix N) include a requirement that AIDEA would create and fund a fish and wildlife monitoring program to document fish and wildlife conditions prior to construction to establish a baseline, monitor changes in habitat conditions and use during construction and operation of the road to characterize impacts, contract with subject matter experts as needed to further refine mitigation measures in real time; and serve as a point of contact for communities and fish and wildlife managers seeking and sharing information on area resource conditions.
32590	21	Mammals	Caribou: The DSEIS provides information on the WAH. This herd is of critical importance for both consumptive and non-consumptive uses, as well as of vital cultural and spiritual significance to many indigenous communities, particularly in the core of the herds range, which includes the upper Kobuk River and the Selawik NWR. As of 2023, the herd continues to decline. Alternative C bisects the range of the small, non-migratory Ray Mountains Caribou Herd, of which Kanuti NWR is part of its range. The Service is concerned the DSEIS does not provide sufficient information to evaluate impacts to this herd. The Service is not confident the DSEIS minimization measures will reduce fragmentation impacts as stated by Dyer et al. (2002): Each action alternative would fragment the WAH caribou range. The effects of this fragmentation could be pronounced because the range is currently largely unaltered from a natural state. If fragmentation limits caribou seasonal movements, it could result in large negative impacts on caribou survival and productivity. Fragmentation may result in reduced dispersion of individuals across the winter range and subsequent crowding in smaller habitat fragments. We are also concerned by the DSEIS statement that mitigation measures ... should be effective in reducing some of the behavioral disturbance and displacement impacts described above, [but the] available literature from the DMTS road [DeLong Mountain Transportation System at Red Dog Mine] (Wilson et al. 2016) suggests that the measures are not very effective, and therefore behavioral disturbance, and displacement should be anticipated. The DSEIS also acknowledges, and we agree, the cumulative effects of mining, road access (including secondary roads), other development in the herds range, and climate change could exponentially increase fragmentation of migratory and winter range. Any impacts of the proposed ROW to the WAH remain a serious concern for Selawik NWRs management goals given the recent declines in the WAH, its changing migration patterns, and its critical importance as a subsistence resource to more than 40 communities.	A map showing the seasonal ranges of the RMH has been added to the Supplemental EIS. Mitigation measures could improve crossing success and lower the level of displacement although the degree of success is difficult to predict. In addition to the DMTS, the Supplemental EIS also considered different herds that have roads through their range, including the Central Arctic, Fortymile, and Nelchina Herds. The Comprehensive Wildlife Interaction Plan, if implemented, will allow for mitigation measures to be assessed based on new information.
32590	22	Decision process - general	The DSEIS language suggests potential piecemealing (fragmented analysis and mitigation) where the impacts are not fully analyzed or disclosed rather than evaluating the whole Project impacts in one environmental document. Dividing the ROW into several pieces (permitted by various agencies at various times) risks minimizing the overall environmental impacts of the Project because the individual pieces may have a less-than-significant impact on the environment, but cumulatively may result in a significant impact. Segmenting the ROW analysis may also hinder developing comprehensive mitigation strategies and ignores impacts by omitting other potential developments facilitated by the proposed Ambler Road (e.g., the Ambler Mining District, Roosevelt Mining District, and Trilogy Metals claims like Helpmejack and Malamute shown in Figure 1 below).	See response to letter 18528, comment 9.
32590	23	Subsistence	Pg ES-6 states Alternative B would affect Alatna, Bettles, Coldfoot, Evansville, and Wiseman. (Alternative C would affect Allakaket and Alatna among others). Please clarify how Alternative B only affects Alatna, but not Allakaket, which is situated directly across river. Maps 11 & 12 (Vol 3) suggest their subsistence use areas are very similar (although not identical) in the areas where the two alternative routes diverge.	The sentence refers to communities with five or more resource uses affected; revised for clarity. The determination is based on overlap with documented subsistence use areas, and documented subsistence use areas are slightly different for Alatna and Allakaket.
32590	24	Wetlands	Pg 3-64: [Wetland] Functional assessments, to date, have not included Alternative C or the eastern 50 miles of Alternatives A and B. Given that Alternative C and the first 50 miles of Alternatives A & B would have the most bearing on Kanuti NWR, this seems like a major data need for proper evaluation of the road request. That same section goes on to say Areas at risk of permafrost thaw occur throughout the project area and the maintenance of existing permafrost conditions in the region may be the most important function performed by these wetlands. Thaw protective mitigation measures have been included by the	Comprehensive wetland functional assessments across all alternatives were not required for the Supplemental EIS nor for the process of determining the USACE's LEDPA. Mitigation for this project was addressed through numerous special conditions the USACE included in its Section 404 wetland permit, to which the applicant has committed. The intent of the special conditions are to avoid and minimize impacts to the extent possible. USACE permit special condition 15

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			applicant in proposed mitigation measures. Given the function of wetlands in the first 50 miles remains unknown, it is unclear how the Service can evaluate the proposed mitigation measures and their effectiveness in reducing impacts to subsistence resources.	specifically requires: "The permittee shall use insulation in the roadway where necessary to reduce impacts to permafrost soils (for example, in areas of thaw-sensitive permafrost soils). These areas shall be identified prior to construction and on-site changes made during construction as necessary to protect permafrost soils. These areas shall be identified in the final design and would be provided to the Corps for review 45 days prior to construction. If foam is used to insulate the permafrost from thermal degradation, it shall be composed of closed-cell extruded polystyrene or other closed cell foams (e.g., blueboard) rather than non-extruded expanded polystyrene foam."
32590	25	Mitigation/monitoring	Pg 3-65 states: Surveys along the preferred alternative would be necessary to confirm the presence or absence of rare plants in these areas and these could be done during design and permitting to avoid or mitigate for potential effects. A mitigation measure requiring such surveys appears in Appendix N. There is no specific rare plants section in Appendix N; however, this may be what is being referenced (N-24): 3.3.1.1 Vegetation General 1. Potential BLM Mitigation Measure: AIDEA would conduct baseline surveys to identify rare plants, prior to conducting surface disturbing activities to avoid impacts to rare plants species. Effectiveness: This mitigation measure, on its own, would be highly effective at eliminating impacts associated with rare plants. However, other environmental and engineering considerations may prevent shifting the road alignment to avoid identified rare plants... This suggests that the mitigation is entirely conditional, and that engineering could trump conservation. If such deference to engineering concerns exists, does that make the existence of the mitigation ineffective if only optional?	The effectiveness statements for each mitigation measure are presented to discuss the relative ability of the measure to minimize potential impacts. Should the project be approved, the ROD will determine which mitigation measures will be required.
32590	26	Vegetation	Pg 3-65: Highlighted section on invasives first mentions bird vetch as: Previous studies documented bird vetch (Vicia cracca), rated as highly invasive, within the area of Alternative C adjacent to the Dalton Highway... Do previous studies also mention white sweetclover (WSC) in vicinity of Alternatives A & B (if not C, too) near the Dalton? The paragraph later mentions WSC, but almost less importantly (in our opinion), even though the infestation of WSC in the Dalton is far more widespread than bird vetch. Invasives impact subsistence resources.	Section 3.3.1, Non-native Invasive Plants, cites the Carlson (2016) document and includes new NNIS species records on Map 3-11 and discussion highlights the current known infestation density on the Dalton Highway and the risks of NNIS spread through the region with the development of the proposed project. This section also mentions white sweetclover (among other species) as follows: "Dominant vascular species, mostly centered around the Dalton Highway include white sweetclover, narrowleaf hawksbeard, meadow foxtail, foxtail barley, pineapple weed, and bird vetch. Of the 32 invasive species found in the study area, quackgrass, orange hawkweed, and butter and eggs are prohibited or restricted for use in Alaska. Most documented species are weakly to modestly invasive with European bird cherry, orange hawkweed, Siberian peashrub, and white sweetclover rated as highly to extremely invasive by ACCS (Carlson et al. 2008, Appendix E Table 7). Map 3-11 displays all known NNIS observations and modeled invasiveness vulnerability ratings for watersheds within the study area. Vulnerability ratings were derived from modeled data, which are presented in Carlson et al. (2016)." New collection data for Elodea were also included in the same section and in Map 3-12 along with identification and discussion of the most vulnerable river corridors to expanding Elodea ranges.
32590	27	Vegetation	Pg 3-71 (rare plants): Inferences can be made on the likelihood of rare plant occurrences by comparing preferred habitat availability along each alternative route for the plants that are known to occur in the 50-mile buffer surrounding the footprints. This assumes the 50-mile buffer is well surveyed, which might be unlikely given the remoteness of the region and the general lack of surveys.	The Supplemental EIS discloses, "The lack of known collections does not indicate the lack of rare plant species but presence of rare plants can be estimated by identification of preferred habitats along the alternatives." The Supplemental EIS makes the broad assumption that knowledge of rare plants in the area is lacking. The applicant has committed to conducting rare plant surveys in advance of construction.
32590	28	Vegetation	On page 3-72 its stated that impacts from spread of non-native invasives could be minimized through baseline and periodic surveys, as well as implementation of ISPMP that includes vehicle cleaning and ongoing monitoring and eradication efforts. We strongly encourage requiring these suggested prevention efforts given its acknowledged the introduction and spread of Non-native Invasive Species (NNIS) is likely and would occur continuously throughout the projects construction, operations and closure.	The applicant is committed to procedures outlined in the ISPMP (Supplemental EIS Appendix N, Potential Mitigation) throughout the project's construction and operations.
32590	29	Vegetation	Pg 3-72: In discussion of spread of NNIS, the DSEIS references map 3-15. This map shows red areas of highly likely infestation, where the apparent borders of these areas are defined by GIS-made watersheds. The Service believes the spread of an NNIS infestation downstream will likely not stop at the downstream end of a watershed thats part of a larger watershed. Certainly, thats not how spread has happened on the Dalton Hwy (i.e., bird vetch and WSC Certainly, thats not how spread has happened on the Dalton Hwy (i.e., bird vetch and WSC are not constrained by downstream ends of watersheds). The Service believes the NNIS will likely follow the waterways downstream, regardless of topography, especially if spread by the downstream flow of seeds or simply by expanding downstream along shorelines (e.g., the Dalton Hwy roadside). Also, the map legend indicates that National Park Service (NPS) lands and NWRs are pictured but they are not. Further, we note this is perhaps the only map in Vol. 4 where Kanuti NWR and Gates of the Arctic National Park and Preserve (GAAR) are not illustrated. This omission is of particular concern for Kanuti NWR, since if the Refuge boundary was included, the map would show the Refuge surrounded by these red areas of high likely infestation vulnerability, but infestations stopping largely outside the Refuge (i.e., at downstream ends of watersheds), even though such behavior of NNIS seems unlikely.	Park and refuge boundaries were added to Map 3-15. The watershed boundaries represent a conservative estimate of areas at the most susceptible to large scale infestations. While some dispersal would be possible downstream beyond the watershed boundaries, it would be much slower and less intense. Based on available ACCS data, the highest densities of infestations are still mostly limited to the areas immediately adjacent to the Dalton Highway.
32590	30	Vegetation	Pg 3-77 states: More broadly, Past and present actions that have impacted wetlands and vegetation within this area include (1) construction of the Dalton Highway and other roads and airports in rural Alaska communities, which has resulted in fill within the footprints, alteration beyond the footprints, and the spread and establishment of NNIS near developments; (2) passage of ANILCA, resulting in establishment of the GAAR in the analysis area, which has allowed for the protection of wetlands and vegetation; (3) wildfires; (4) wildfire suppression; and (5) effects from climate change. First, wildfires are a natural phenomenon and thus arguably not an action in the NEPA/EIS sense (i.e., analysis of human-based interactions with the environment of interest as proposed by the development). Second, the argument that ANILCA is an action with impacts	Text has been revised for clarification

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			because it prohibits human impacts by protecting wetlands seems illogical or circular in reasoning, let alone non-analogous to typical human impacts analyzed in an EIS. The Service argues that laws, plans, etc., while created by humans, are not actions affecting wetlands and vegetation in the same NEPA sense as constructing the Dalton Highway, suppressing fires, burning fossil fuels leading to climate warming, etc.	
32590	31	Decision process - general	Pg 3-82: Fish and Aquatics section starts with a definition of the study area for this resource: The study area for fish includes large and small rivers, tributary streams, lakes, and other aquatic habitats within drainage basins intersected by the project alternatives... While pg 3-1 describes/defines the project area, it also mentions that for some resources, While pg 3-1 describes/defines the project area, it also mentions that for some resources, topics, threats, etc., the study area is specific to that resource or different from the total project area. Given the often-individualized nature of these study areas and the potential confusion, clarification of the study area (with fish in this case), is very helpful to the reader. To clarify resource-specific areas in the text at the beginning of each section, when different from the overall project area, would be a helpful addition to the document throughout.	See response to letter 32724, comment 82.
32590	32	Birds	Pg 3-113: To provide a more complete bird distribution picture, Kanuti NWR had also hosted the Kanuti Lake Breeding Bird Survey (BBS) route, which starts about 40 river-miles upriver of where the DSEIS-mentioned Kanuti Canyon route ends. Both routes data are submitted to the BBS program.	Revised sentence on p.3-113 to “The ACCS Wildlife Data Portal interactive range maps (ACCS 2019b), supplemented with species lists and survey reports from GAAR (DeGroot and McMillan 2012) and Kanuti NWR (Craig and Dillard 2012, 2013; Harwood 2023; Platte and Stehn 2011) and with nearby breeding bird survey routes (Caribou Mountain, Kanuti Canyon, Kanuti Lake, Manly Hot Springs, Moose Creek; see Pardieck et al. 2018), inform bird species occurrence in the study area.”
32590	33	Birds	Pg 3-114 states: Half of the expected larid species and 15 of 17 shorebird species are listed as rare by ACCS or Kanuti NWR. Assuming Kanuti NWRs checklist is used (published and kept up to date on our website), the Service does not attribute status/occurrence to any species on the list. It merely lists which species have been recorded on Kanuti NWR.	Sources listed in this sentence are from the 2020 Final EIS. Updated Appendix E-17 to list ACCS (2009) in addition to Harwood (2023) as data sources. Sentence is updated to read, “Half of the expected larid species and 15 of 17 shorebird species are listed as rare by ACCS or Kanuti NWR (see Appendix E, Table 17).”
32590	34	Birds	Pg 3-115: states: ... bald eagles and osprey, the primary tree-nesting species in the project area... Red-tailed Harlans hawk may more commonly nest in the project area than these two, but their nests are harder to find.	Changed sentence on to read, “Major river drainages (e.g., Alatna, Reed, Kogoluktuk, Jim, Koyukuk, Shungnak, and Mauneluk rivers and Beaver Creek) and some lakes provide riparian forest stands suitable for bald eagles and osprey, the primary tree-nesting species most commonly detected on surveys in the project area, as well as red-tailed hawks which were detected on Breeding Bird Surveys in Kanuti NWR during 2021 and 2022 (Ziolkowski et al. 2023).”
32590	35	Birds	Pg 3-117 states: The removal or alteration of uncommon habitat types would have a proportionately greater impact on the species that use them; however, the impact would be localized. This sentence seems illogical. If the habitats are uncommon to begin with, to say that the impact would be localized fails to recognize that impacts to uncommon habitats (and birds therein) represent most of the occurrence. When habitats are uncommon, impacts to them are far more severe than when a habitat is common, thus losing the local nature of the impact.	Agreed. Changed sentence on p. 3-117 to read, “The removal or alteration of uncommon habitat types would have a proportionately greater impact on the species that use them; however, the impact would be localized.”
32590	36	Mammals	Pg 3-124 states: The ADF&G, NPS, and BLM regularly monitor large terrestrial mammals such as caribou and moose (Dau 2015; Jandt 1998; Joly and Cameron 2017). We also recommend mentioning the Service (USFWS), since Kanuti NWR was an equal partner for decades (thru 2017) with moose monitoring and research and still contributes to survey efforts. While caribou incursions into the Refuge have historically been intermittent, and currently possibly more infrequent, Kanuti NWR as recently as 2012 (the last year WACH came down to Refuge) has studied caribou. See the following reports or publications: o https://ecos.fws.gov/ServCat/DownloadFile/222738 o https://ecos.fws.gov/ServCat/DownloadFile/222977 o https://doi.org/10.1016/j.actao.2017.11.004	This change was made.
32590	37	Land use/management	Pg 3-156: The text states Vol 4, Map 3-24 shows state-selected lands but there is no such map there; it goes from 3-23b to 3-25. Map 3-24 is referenced multiple times so its absence is notable.	Map 3-24 was included in the updated document.
32590	38	Land use/management	Pg 3-158: Under the heading National Wildlife Refuge System Units, if the context of this section isn’t clearly understood by the reader, the language as written implies there are no anticipated effects from the proposed project on Kanuti NWR, which is not the case. We suggest rewording as follows: This analysis does not describe these NWRs further because they lack special land management designations that would have anticipated effects from the proposed project.	Text revised as suggested.
32590	39	Land use/management	Page 3-160 Alternatives A & B Impacts: Alternatives A and B would cross through a corner of the GAAR park and Wilderness boundary described in ANILCA (near the Koyukuk River at approximately road mile 25, and approximately 10 miles northeast of Evansville; see Volume 4, Map 3-29) but would do so on a Doyon Limited inholding within the boundary, so there would be no effect on NPS-managed land. Where will Alternatives A and B be routed given Doyons recent announcement they are canceling land access for AIDEA, or will these alternatives be removed from consideration as not viable?	The BLM is required to analyze the proposed project as requested by the applicant through submission of SF299: Application for Transportation, Utility Systems, Telecommunications and Facilities on Federal Lands and Property. The Alternative A and B routes were submitted by AIDEA for analysis under NEPA. As stated in Section 1.4, Purpose and Need, the BLM’s decision will be limited to whether to grant, grant with modifications, or deny the applicant’s ROW application to cross BLM-managed lands. AIDEA is responsible for obtaining the relevant land authorizations across the various jurisdictions.
32590	40	Public access	Pg 3-171: While AIDEA has proposed locked gates to restrict access to the road, would there be similarly staffed and secure airstrips to prevent trespassing there (e.g., illegal airplane- based hunting)?	See response to letter 25461, comment 2.
32590	41	Decision process - general	The liberal use of uncertain/vague and often contradictory language throughout the document, such as: The road under this alternative would not likely overlap with the Native allotment parcel, and in final design, it likely would be possible to reduce or eliminate overlap with this Native allotment (<i>italic emphasis added</i>) is confusing. This kind of vague language leaves the	See response to letter 22855, comment 1 regarding uncertainty for proposed actions.

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			reader wondering what will really occur, and what the impacts/effects might really be. What are the implications, for example, if it turns out its not possible to reduce or eliminate overlap with the affected Native allotment?	
32590	42	Subsistence	App F, Table 23. Why is Alatnas community type SUB/FISH (no WAH) and yet they are a member of the WAH WG?	Alatna is not listed as a membership community in the WAH WG's most recent membership list.
32590	43	Water resources	Pg 3-178: last paragraph mentions: With multiple mines operating, traffic on the Dalton Highway would be harder to avoid. With Alternatives A and B, these statements suggest the increased Dalton Hwy traffic will cause more dust to enter intersecting rivers and the potential for toxic spills to enter intersecting rivers will increase. Waterways crossing the Dalton Hwy south of the Ambler Turnoff for Alternatives A & B that ultimately pass through Kanuti NWR include the Kanuti River, Fish Creek, Bonanza Creek, Prospect Creek, Jim River (crossings 1, 2, 3), and South Fork Koyukuk River. These potential threats to the Refuge water quality are not explored and should be assessed.	Predicted yearly dust emissions from the Dalton Highway (with and without dust control measures) are listed in Appendix D Table 24. Potential impacts from dust and spills are discussed in Sections 3.2.3, 3.2.5, and 3.2.7. Potential impacts and mitigation measures for waterways flowing through Kanuti NWR are the same as other waterways intersected by the proposed alternatives. Methods to mitigate for and minimize impacts from stormwater runoff, dust, and spills are well understood and included in the listed mitigation measures in Appendix N, Sections 3.2.3, 3.2.5, 3.2.7, and 3.5 (adopted special conditions from USACE CWA Section 404 permit).
32590	44	Socioeconomics and communities	Pg 3-187: An estimated 20 percent of the jobs directly supported by operation of the proposed road would be filled by NAB/YKCA residents (UA 2019). Does AIDEA have the ability to allocate positions equitably among the communities to be affected by the proposed Ambler Road? For example, the road will certainly affect subsistence lifestyle and resources (e.g., see pg 3-188 Rural Lifestyle section). What if some communities suffer the potential downsides from the road, but none of the potential benefits (e.g., jobs)?	See response to letter 32570, comment 44.
32590	46	Cumulative and indirect effects analysis	Pg H-57: Maps starting on this page depicting mineral potential, such as Map 3 (rare earth mineral potential) and Map 5 (platinum), fail to show the borders of the conservation system units (i.e., Refuges, Parks) with respect to mineral potential. While creating maps to avoid clutter and extraneous layers is often difficult, inclusion of the Conservation System Unit (CSU) borders is important for the reader to assess threats to the CSUs due to proximity (or not) of the alternatives. Omitting Kanuti NWR from a map of Rare Earth Element (REE) potential, especially where such a map would show the Refuge could be threatened along its southern and eastern borders from mining development as well as a road via Alternative C, does not facilitate an analysis of the juxtaposition of the REEs with respect to their proximity to the natural resources within the Refuge.	The mineral potential maps in Appendix H have been revised to include CSU borders. Only one CSU feature, the Beaver Creek WSR corridor, occurs within the scale of these figures and is now shown.
32590	47	Vegetation	Map 3-11 (Vol 4) shows records of invasives in the planning area, including a single record for the Kanuti River within Kanuti NWR. The Service cannot find any records in AKEPIC for invasives on Kanuti NWR, nor have we found invasives in any of our targeted surveys in the Refuge. This map should be corrected if indeed no record exists or include a citation if a record does exist.	The NNIS observation along the Kanuti River was obtained from a 2019 request for data from the AKEPIC database for the entire region shown in Maps 3-11 and 3-15 view. The record was not confirmed in 2023 because the updated request only included 50-mile corridors surrounding the proposed alternative alignments.
32644	1	Birds	The Ambler Road would harm areas that all hold rich habitat for migratory birds, particularly nesting shorebirds and waterfowl such as white-fronted geese. There is insufficient analysis in the context of rapidly declining migratory birds and changing habitats impacts by the DSEIS. This Arctic region of Alaska is already experiencing rapid warming and birds are especially stressed by climate change. Melting permafrost, river and stream erosion, changes to lakes and waterways and fish and wildlife habitats make the cumulative impacts of the Ambler Road and mine project difficult but necessary to quantify this needs further evaluation in the final SEIS.	The Supplemental EIS relied on the best available data on birds; however, extensive quantitative analysis is not possible using these data. NEPA requires the disclosure of all available pertinent baseline data, but it does not require the collection of new baseline data.
32644	2	Mammals	This area is also rich in resident species from moose to beaver and other fur-bearers to fish, including salmon, sheefish, whitefish, and more. Three caribou herds use the area during migration. The road bisects the north/south migration pattern of the Western Arctic Caribou Herd as they pass to their wintering grounds. This herd is declining and the cumulative effects from disturbance pose risks of significant long-term impacts to their routes and habitats which should be better analyzed.	Section 3.3.4 of the Supplemental EIS describes potential impacts to the WAH from the project and cumulative impacts from reasonably foreseeably impacts.
32644	3	Cumulative and indirect effects analysis	We are concerned that this proposed private road is to access mines that do not yet exist, and therefore public need is speculative. Nonetheless, the cumulative impacts of the mines and related infrastructure and activities (gravel mines, processing facilities, tailings disposal areas, ore/export terminals, gas lines, ports, and serious risks of acid rock drainage, spills, and other contamination from mining) need to be more fully evaluated for the Ambler Road project. The potential effects from a potential port on the Chukchi or Bering Sea coast to additional National Wildlife Refuges, National Parks and Preserves, and Wild and Scenic Rivers should be fully analyzed. The full past and future environmental and financial costs of the Ambler Road need to be evaluated for road planning, financing and debt liabilities, construction, maintenance, public safety, environmental and natural resource monitoring, restoration, rehabilitation, and removal. In the long view, the Ambler Road would be the beginning of opening many more road proposals and development schemes without a comprehensive plan for the future of the area. The final SEIS needs to address the cumulative effects of such future mining development costs to citizens of Alaska and the Nation, along with the environmental costs and financial costs for adequate future federal management of the Conservation System Units.	The Hypothetical Mining Scenario presented in Appendix H includes a description of typical mine infrastructure and access needs (see Appendix H, Section 2.1.4- Production). The potential cumulative and indirect effects of mining-related infrastructure and access roads are analyzed in Chapter 3 of the Supplemental EIS. See response to letter 32724, comment 141 regarding waste rock and tailings. Regarding the potential effects of new Ports, BLM did consider western alternatives in Appendix G that terminated at the existing DMTS Port, Port of Nome, and other areas where Ports do not currently exist and would need to be developed (e.g., Kiana, Cape Blossom, and Cape Darby). These alternatives were eliminated from detailed analysis in the Supplemental EIS due to one or more screening criteria not being met (see Appendix G). A statement demonstrating the financial and technical ability to construct, operate, maintain, and terminate a project is required pursuant to 43 CFR 2804.26(a)(5)(i) prior to approving a ROW application. The costs associated with potential post-mining use of the road are beyond the scope of the Supplemental EIS. Future financial commitments by the State of Alaska are also beyond the scope of the Supplemental EIS.
32644	4	Socioeconomics and communities	The Dalton Highway was originally a private industrial road but did not remain so for long. Who will ultimately pay the price for the private part? The full past and future costs of the Ambler Road to the public interest and the State of Alaska in these times	See responses to letter 26253, comment 4 and letter 23196, comment 8.

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			of declining budgets need to be evaluated for road planning, financing and debt liabilities, construction, maintenance, public safety, environmental and natural resource monitoring, restoration, rehabilitation, and removal;	
32651	1	Alternatives	When BLM proposed the preparation of the SEIS, they identified two issues to be addressed: subsistence uses in ANILCA and tribal consultation under Section 810 of the National Historic Preservation Act. However, the DSEIS included expanded and additional analyses on issues beyond the remand, including a new phasing option for the road. It is unclear why an additional alternative has been identified after the National Park Service (NPS) and the U.S. Army Corps of Engineers (USACE) selected alternative A as the preferred route. The alternative selected in the 2020 JROD was identified as the alternative with the least environmental impact. New alternatives should not be introduced in the SEIS.	NEPA requires the BLM to consider a reasonable range of alternatives.
32651	2	ANILCA 810 analysis	The DSEIS expands the ANILCA and Section 810 analysis from 27 to 66 communities with some of these hundreds of miles away from the road area being proposed. It also assumes without scientific evaluation that subsistence uses for all of these communities will be significantly restricted. The focus of the SEIS should remain on the 10 villages closest to the road, and BLM should take into consideration that decades of successful coexistence of other private industrial roads in Alaska like the Delong Mountain Transportation System (DMTS) at the Red Dog Mine and the road to the Pogo Mine. The DSEIS has also failed to acknowledge current successful structures of Subsistence Advisory Committees, particularly at the Red Dog Mine, in which communities have management authority in issues impacting subsistence uses.	See response to letter 23196, comment 6. The formation of the Ambler Road Subsistence Advisory Committee is discussed in the Supplemental EIS in Section 3.4.7, Subsistence Uses and Resources, and in Appendix M, ANILCA Section 810 Evaluation.
32664	1	Fish and aquatics	The Yukon River salmon are at the verge of extinction and the ambler road would further finish their spawning areas as well as kill unknown numbers of fish still living here.	The decline of Yukon River salmon is described in Supplemental EIS Section 3.3.2, Fish and Aquatics. Mitigation measures intended to minimize impacts to fish and aquatic habitat are described in Supplemental EIS Appendix N, Potential Mitigation, and project design features that would mitigate potential impacts are described in Section 2.4.4, Design Features Proposed by AIDEA.
32682	1	Fish and aquatics	Heavy metal contamination: A series of 5+ scientific publications from 2001-2022 have established that the nearby Red Dog Mine haul road has caused heavy metal contamination of soil and vegetation up to 5 km on either side of the road. The Ambler Road would result in similar contamination, because ore would also be trucked along this corridor, resulting in fugitive dust releases into the tundra and waterways. However, the Ambler Road would be a longer road, crossing major rivers such as the Kobuk, Alatna, John, Wild, and Koyukuk, so the impacts would be greater. The fish populations in these rivers would be susceptible to increased heavy metal contaminant loads, as metals originating from the road work their way through the aquatic food web, and downstream, in these river drainages. Sheefish, a species internationally recognized by recreational anglers for its uniqueness and fighting prowess, spawn downstream of the proposed Ambler Road crossing on the Kobuk and Alatna Rivers. Sheefish, Chinook salmon, chum salmon, and Arctic grayling that spawn around and downstream of the proposed route would likely take on higher contaminant loads, which would represent a health risk for subsistence and recreational anglers who commonly harvest and eat these species. In addition, increased traffic on the Dalton Highway from trucks going to and from the Ambler Road will cause more contamination, spills, and impacts to wildlife within this adjacent transportation corridor.	The Red Dog Mine operated for many years with haul trucks using only tarp covers until about 2008 when concentrate truck loads were covered and sealed. This open hauling is believed to have been the source of the contamination described by the commenter. As described in Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA: "Trucks hauling concentrate from the District to the Dalton Highway would be required to use covered sealed containers to prevent ore concentrate from escaping the haul trucks and minimize the potential for impacts on streams from concentrate transport. The operating requirement would be incorporated into the stipulations of the authorizations and carried through into AIDEA's permit requirements of any road user." Potential impacts to fish and fish habitat along the Dalton Highway from project traffic are described in Supplemental EIS Section 3.3.2, Fish and Aquatics - Mining, Access, and Other Indirect and Cumulative Effects.
32682	2	Fish and aquatics	Blocking of fish passage by unmaintained culverts: The Ambler Road would cross thousands of streams and wetlands, many of which support populations of anadromous fish. The freeze-thaw runoff cycle in northern Alaska commonly causes culverts to become impassable to fish after just a few seasons (culverts become perched or filled with sediment). Even if the stream crossings were initially constructed to acceptable standards, it is unlikely that the mining companies maintaining the road would monitor fish passage or rehabilitate impassable culverts in subsequent years. This will result in inability of salmon and other fish to access spawning and rearing habitat, resulting in lower production of juveniles. During these times of low salmon abundance, particularly in the Koyukuk-Yukon drainages where subsistence and recreational fishing is closed, we cannot afford to negatively affect salmon further.	As described in Supplemental EIS Section 2.4.3, Features Common to All Action Alternatives, AIDEA would have legal and financial responsibility for managing the road from construction through operations and maintenance. Prior to road development, AIDEA would submit to the BLM a financing plan showing surety of the funding needed to build and operate the road according to their plan and commitments. As described in Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA, an adaptive management plan for monitoring, maintaining, and repairing culverts over the life of the project would be developed with input from ADF&G and USACE. The plan would include documenting culvert locations using GPS, and regular monitoring during culvert installation and through road operation. The plan would identify corrective measures that would be taken if concerns are identified, and timeframes for those measures to be implemented. Corrective measures may include additional culverts, increasing culvert size, adding thaw lines, adding dead-man anchors, or other appropriate measures. The proposed subsistence advisory committee would help in plan oversight and overall road operations and maintenance.
32682	3	Fish and aquatics	Spills to waterways upstream of sheefish and chum salmon spawning areas: Truck rollovers and spills on the Dalton Highway occur commonly enough to warrant concern when thinking about the Ambler Road, where fuels and chemicals will be transported in a similar manner. Since 2006, according to the Alaska Department of Environmental Conservation, at least 8 diesel spills of over 2,000 gallons have occurred on the Dalton. If a similar spill occurred along the Ambler Road into an anadromous waterway upstream of the sheefish and salmon spawning areas shown in maps 3-17 and 3-18 of the SEIS, the consequences to sheefish and salmon could be devastating (mass mortality could occur).	Potential impacts to fish and aquatic habitat related to project traffic using the Dalton Highway is described in Supplemental EIS Section 3.2.2, Fish and Aquatics - Mining, Access, and Other Indirect and Cumulative Effects.
32682	4	Fish and aquatics	Sedimentation and asbestos affecting water quality and fish health: Map 3-02 in the SEIS shows the high asbestos content of soils that will potentially be used as material for the Ambler Road. If asbestos-rich soils are applied to the road, the fugitive dust and runoff from this would not only be a health risk to terrestrial mammals, but also to fish. Several studies have shown that salmon can be negatively affected by asbestos fibers in water, and that runoff from asbestos-rich soil can be a vehicle for metals contamination of streams and fish.	NOA and potential interactions with NOA are described throughout the Supplemental EIS. The presence of soils and materials with NOA, and the impacts of encountering NOA material, are disclosed in Chapter 3, Section 3.2.1. Supplemental EIS Appendix D, Table 3, discloses the asbestos potential for each action alternative, and Map 3-2 (Supplemental EIS Volume 2) shows the asbestos potential within the project area. Potential stipulations and mitigation measures to minimize impacts from NOA are described in Appendix N, Potential Mitigation.

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				Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA, describes project design features that AIDEA would apply to minimize impacts from the project, including NOA. AIDEA would avoid the use of materials containing NOA to the greatest extent feasible. For the purposes of this project, AIDEA has identified a threshold of 0.1 percent asbestos by mass as its definition of NOA materials (DOT&PF's regulations are specified for materials above 0.25 percent NOA; however, AIDEA has committed to a lower threshold). If use of NOA materials cannot be avoided, AIDEA would follow DOT&PF measures as allowed under 17 AAC 97 and described in their May 14, 2015, regulations regarding the use of materials containing NOA. Impacts to fish and their habitat from potential asbestos is described in Supplemental EIS Section 3.3.2, Fish and Aquatics - Impacts Common to All Action Alternatives.
32682	5	Fish and aquatics	Acid mine drainage: Scientific literature has strongly established the negative effects of sulfide metal mining (Arctic and other Ambler District prospects are sulfide deposits) on aquatic environments and fish. If the 4+ mines slated to be constructed at the end of the Ambler Road are constructed, it is likely that acid mine drainage into waterways will occur. In a 2022 scientific review of 3,000+ mines in Northwest North America by Chris Sergeant and coauthors, it was noted that “acid mine reactions in sulfide-bearing metal ores and coal deposits are common, largely unavoidable, and can persist for millennia.” This constitutes an additional risk to populations of sheefish, chum salmon, and other species in the Kobuk River drainage where the Ambler mines would be installed. Sheefish are important recreational angling species, and are also harvested by subsistence fishers (more than 20,000 annually in the Kotzebue Sound/Kobuk River region). Chum salmon are harvested in the region for human and sled dog sustenance, and also are the target of a small-scale commercial fishery in Kotzebue Sound. Sheefish and chum salmon represent an immense part of regional food security for Indigenous and rural residents of Northwest Alaska, and thus negative impacts to their populations should be avoided.	Any proposed mine project would be subject to environmental review (i.e., NEPA) and permitting, where project-specific impacts would be examined and mitigation measures would be considered. The potential development of mining prospects in the Ambler Mining District and their impacts on fish and aquatic habitat are described in Supplemental EIS Section 3.3.2, Fish and Aquatics - Mining, Access, and Other Cumulative Impacts, including the potential need to treat contaminated mine water in perpetuity. Supplemental EIS Section 3.2.5, Water Resources, provides additional discussion on long-term water treatment from mining operations. Fish as a subsistence resource in the project area is described in Supplemental EIS Section 3.4.7, Subsistence Uses and Resources.
32682	6	Fish and aquatics	Contamination of fish: Atmospheric exposure and milling of rock, as well as the use of chemicals such as cyanide, are unavoidable mining practices that can result in heavy metals and other harmful contaminants leaching into waterways, entering aquatic food webs, and bioaccumulation in fish. This represents a potential health hazard for people who harvest and consume fish in the Kobuk River drainage near the proposed mines.	The risks associated with the potential development of new mining prospects in the Ambler Mining District, including the potential for toxic/fugitive dust production and chemical use, and the potential impacts to fish and aquatic habitat are described in Supplemental EIS Section 3.3.2, Fish and Aquatics - Mining, Access, and Other Indirect and Cumulative Effects.
32682	7	Fish and aquatics	Risk of spill or tailings dam failure: Large-scale metal mines commonly store toxic water and rock in tailings piles or dams. If these piles and dams breach or drain to waterways, aquatic biota can be wiped out for dozens or hundreds of miles downstream. The 2014 Mount Polley Mine disaster in Canada is a stark reminder of the consequences of this possibility, which would be devastating to fish and communities along the Kobuk River. It is worth noting that the mining company advancing the Ambler District mining prospects is foreign-owned, as was Imperial Metals (responsible for Mount Polley), which does not instill confidence in the standards required of the potential developers of the Ambler District mines. In Alaska, foreign-owned mining companies have demonstrated that they cannot keep such events from happening, and often settle with environmental regulators for a monetary amount that does not recoup the damage of the breach. Red Dog, Pogo, and Fort Knox Mines have all breached environmental standards in the past ten years and are all foreign-owned large scale metal mining operations similar to those proposed in the Ambler Mining District.	Any future project that proposes the construction of dam (e.g., tailings dam) would require a review of the dam design and operation to receive state certification from ADNRS's Division of Mining, Land, and Water, Dam Safety and Construction Unit. The Supplemental EIS notes in Section 3.2.3, Hazardous Waste - Mining, Access, and Other Indirect and Cumulative Effects, “tailings dam failures occur and could have major adverse effects to water quality, fish and wildlife habitat, fish and wildlife mortality, and human mortality.” See response to letter 32724, comment 141.
32682	8	Socioeconomics and communities	Perpetual monitoring and treatment: As the Sergeant 2022 review paper notes, sulfide deposit metal mines often require monitoring and mitigation in perpetuity to avoid contamination and damage to the environment. Eventually these costs and worries become the responsibility of local communities and tribes, and potential costs and damages to the environment are borne by locals who may lose subsistence and outdoor recreation opportunities through degradation of the environment.	Acknowledged. The adverse impacts on recreational resources and subsistence activities are addressed in Sections 3.4.3 and 3.4.7, respectively. Appendix N, Sections 3.4.3 and 3.4.7, identify and discuss potential measures to mitigate adverse impacts on these resources. The costs associated with potential post-mining use of the road are beyond the scope of the Supplemental EIS.
32682	9	Recreation and tourism	Visual and sonic disruptions: Construction of the Ambler Road would take multiple years and would result in noise from heavy machinery, light pollution from night operations and vehicle headlights, dust plumes and sedimentation from earthmoving operations, and motor and generator noise. After construction, the estimated 168 truck trips per day along the Ambler Road would result in similar impacts. Additionally, bridges across larger rivers would be permanent visual blights. Through this, wilderness recreation users who seek solitude, quiet, escape from human impacts and noise, and unblemished landscapes and rivers would lose a large area of the Western Brooks Range where this type of recreation is possible.	See response to letter 22633, comment 4.
32682	11	Proposed action	Fate of the road: The permit applicant and BLM have asserted that the road would have a likely 50-year lifespan. Additionally, the possibility of removal or rehabilitation of the road after its proposed lifespan was touted. These possibilities are not likely, as development of mines and any projects that become feasible once the road is installed will take much longer than 50 years, and the highest likelihood is that the road will become permanent similar to the Dalton Highway.	See response to letter 22595, comment 13.
32682	13	Cumulative and indirect effects analysis	Number of mines and spur projects: The number and scale of potential mines and developments that would be facilitated by construction of the Ambler Road is uncertain. There are an infinite number of side developments and spur roads that could be advanced in the future, if the road is installed. Therefore, the impacts of the road when considering unknown future developments are much greater than acknowledged in the SEIS.	See responses to letter 23434, comment 13 and letter 32083, comment 1.
32682	14	Mitigation/monitoring	Mitigation measures: Typically, the applicants of large industrial projects that impact public lands, water, wildlife, and fish are required to offset these through initiatives or improvements that benefit or rehabilitate wildlife habitat, outdoor recreation, and fish habitat. In the Ambler Road application, there is no assurance that such benefits would be provided, despite the road representing a huge negative impact to public lands and wilderness recreation.	This comment is non-substantive because it does not address the Supplemental EIS.

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32684	1	Transportation and access	All of the materials used in construction of this road impact the entire community and it's wellbeing. When roads are made with toxic synthetic crumb rubber or recycled rubber materials- it leaches hundreds of toxic chemicals into local groundwater. Rhis has shown massive devastation to surrounding wildlife- I ask that you consider the materials used in the construction of the road, to ensure you avoid as much harm to wildlife as possible.	As described in Section 2.4.3 and Figure 2-1 of Appendix A, the proposed road would be a gravel road. The surface of the road would be crushed aggregate surface course (crushed and graded gravel). AIDEA is not proposing to pave the road with any sort of pavement including synthetic crumb rubber or recycled rubber materials.
32724	1	Proposed action	The continuing lack of key information about the Ambler Roads 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 AIDEAs 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.	See responses to letter 21015, comment 5 and letter 22855, comment 1.
32724	5	Remand of Final EIS	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 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.	See response to letter 22855, comment 1.
32724	6	Proposed action	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.	See response to letter 32724, comments 214 and 254.
32724	7	Proposed action	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 AIDEAs 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.	See responses to letter 21015, comment 5 and letter 22855, comment 1.
32724	8	Public and stakeholder involvement	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 agencies obligation to consider the no-action alternative. While BLM may only provide responses to substantive comments, this does not alter the agencies 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.	All comments received during the public comment period for the Draft Supplemental EIS were reviewed, as they must be to identify which comments are substantive and therefore must be responded to under 40 CFR 1503.4.
32724	9	Decision process - general	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 BLMs analysis and the potential impacts of the proposed road.	See response to comment 30027, letter 10.
32724	12	Proposed action	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.	See response to letter 32724, comments 214 and 254.
32724	13	Decision process - general	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 BLMs 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 AIDEAs proposal and adopt the no action alternative.	See response to letter 22855, comment 1.

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32724	14	Alternatives	Later changes to the road size, and changes to the sizes of culverts to account for AIDEAs 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.	See responses to letter 32570, comment 158 and letter 22855, comment 1.
32724	15	Sand and gravel resources	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 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.	Appendix N, Section 3.5 (Proposed Mitigation Adopted from USACE's 404 Clean Water Act and Section 10 Rivers and Harbors Act Permit Special Conditions, Section 3.5.4, mitigation number 15 addresses the type of insulation recommended for areas identified in the final design.
32724	16	Sand and gravel resources	AIDEAs 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 AIDEAs application identified potential gravel mine sites, it is clear from AIDEAs 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 BLMs 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.	The Supplemental EIS analyzes the impacts of the proposed gravel mines (e.g., Section 3.2.2, Sand and Gravel Resources). While the Supplemental EIS is based on preliminary design, it provides sufficient information to draw distinctions between the alternatives for consideration by the public and decision makers.
32724	17	Sand and gravel resources	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.	The road maintenance and associated material needs are addressed in Section 3.2.2 in the Supplemental EIS. Comment noted.
32724	18	Sand and gravel resources	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	See response to letter 30027, comment 25.
32724	19	Water resources	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.	See response to letter 18334, comment 1. P. 3-34 in Section 3.2.5 discusses approximate water use requirements for ice roads and ice pads. Ice roads would only be necessary to facilitate construction of the Phase 1 pioneer road or Phase 2 road under the Combined Phasing Option (estimated construction duration of 3 years or less).
32724	20	Transportation and access	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.	AIDEA is proposing to construct 3) airstrips for Alternatives A and B and five (5) airstrips for Alternative C; the airstrips would be located near maintenance stations proposed along the road. See Table 1 of Appendix C. Potential impacts from increased air traffic are discussed in Section 3.4.2; AIDEA estimates an additional 1 or 2 flights per week for each airstrip/maintenance station with additional temporary air traffic during construction. Potential impacts of increased air traffic are further analyzed in Appendix H, Indirect and Cumulative Scenarios.
32724	21	Transportation and access	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 Supplemental EIS utilizes the best available data, including available traffic projections provided by mining companies. Footnotes to Appendix H, Table 2-6 note sources and provides estimates for highway-legal traffic on the Dalton Highway (splitting ore loads for highway travel). As stated in Section 3.4.2, traffic volumes during construction and use of the winter construction access trails are expected to be similar to those listed in Appendix H, Table 2-6, for Phase 1 activities.
32724	23	Hazardous waste	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 critical information that should have been collected in a baseline assessment and considered in the prior EIS. ⁹⁴	See response to letter 32724, comment 141 regarding acid rock drainage. See response to letter 32724, comment 313 regarding NOA.
32724	24	Decision process - general	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.	See response to letter 22855, comment 1.
32724	25	Decision process - general	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 AIDEAs 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 AIDEAs fieldwork plans are completed and the agencies have sufficient baseline data and project design information to evaluate this project.	See response to letter 22855, comment 1.

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32724	26	Mitigation/monitoring	Mitigation measures, while necessary, were not alone sufficient to meet the BLMs 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	The Supplemental EIS incorporates the best available science specific to the project to adequately present the potential impacts. CEQ regulations require that EISs address direct, indirect (secondary), and cumulative impacts. The BLM's ROD will be made based on the information provided in the Supplemental EIS with full understanding of the data gaps. See response to letter 22855, comment 1.
32724	27	Decision process - general	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 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	See response to letter 22855, comment 1.
32724	28	Decision process - general	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; -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 -Site-specific information about the material sites that will be used for building the project.	See response to letter 22855, comment 1.
32724	29	Decision process - general	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.	Appendix R has been updated and added to the Supplemental EIS.
32724	30	Mitigation/monitoring	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.	According to 40 CFR 1502.22, when an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an EIS and there is incomplete or unavailable information, the agency will make clear that such information is lacking. A number of topics are called out within chapter 3 of the Supplemental EIS where information is incomplete or unavailable. The BLM evaluated the data to determine if any missing information would be relevant to determining reasonably foreseeable significant adverse impacts or essential to making a reasoned choice among alternatives and, if it was, whether the overall costs of obtaining it would not be exorbitant (see Appendix R). 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 Supplemental 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. The BLM has evaluated the impacts in the Supplemental EIS based upon research methods and theoretical approaches that are accepted in the scientific community. Based on a review of the data that are available, summarized, and cited in the Supplemental EIS and in accompanying appendices, sufficient data exists to allow the BLM to make a reasoned choice among the alternatives. If the project moves forward, additional studies and information would be generated during permitting. Some potential mitigation measures identified in Appendix N have provisions for data collection and monitoring.
32724	41	Decision process - general	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 BLMs 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 AIDEAs application, baseline information, and other information, BLM and the other agencies should rescind the prior authorizations and adopt the no action alternative.	See response to letter 22855, comment 1. Additionally, the Supplemental EIS is a site-specific analysis of the project impacts along the proposed route and action alternatives.
32724	42	Purpose and need	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 BLMs purpose is to respond to a ROW application under FLPMA for year-round industrial surface transportation access across BLM-managed lands to the District. 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. There are	Text has been revised in Section 1.4, Purpose and Need for Federal Action.

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			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.	
32724	44	Purpose and need	While economics are a consideration in the alternatives analysis, it should not be the main driver behind the BLMs purpose and need statement. Therefore, by removing economic practicability, the purpose and need statement better complies with applicable legal requirements. However, BLMs 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 SEISs purpose and need statement.	As explained in Chapter 2 (Alternatives) of the Supplemental EIS, the BLM did reconsider all alternatives concepts proposed during the previous EIS process and considered new alternatives concepts that could reduce overall potential impacts. As part of this process, the BLM considered each alternative's effectiveness at satisfying the purpose and need, its technical and economic feasibility, the practicality of the alternative, and whether the alternative substantially duplicated others already being analyzed in detail. For details on the alternatives examined and the reasons some were not carried forward for detailed analysis, see Supplemental EIS Appendix G.
32724	45	Purpose and need	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, BLMs 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.	The Supplemental EIS analyzes the proposed action to construct a road and associated facilities. Should the project be approved, gravel mines on BLM-managed lands would be approved in accordance with 43 CFR 3600.
32724	46	Purpose and need	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.	Text has been revised in Section 1.4, Purpose and Need for Federal Action.
32724	47	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 AIDEAs proposed action to build and maintain a seasonal pioneer road for an indeterminate amount of time prior to constructing Phase III can meet BLMs purpose and need for year-round industrial surface transportation access.	The combined air/road alternative concept was considered but determined not to meet the purpose and need for "surface transportation access in support of mining exploration and development" as described in ANILCA Section 201(4)(b), and was therefore removed from further consideration in an action alternative. Appendix G Section 6.3 explains the BLM's rationale for not analyzing this alternative concept.
32724	48	Purpose and need	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.	Text has been revised in Section 1.4, Purpose and Need for Federal Action.
32724	49	Alternatives	The range of alternatives in the final EIS was inadequate, and the SEIS repeats the same errors. The SEISs 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.	In accordance with the CEQ NEPA implementing regulations, 40 CFR 1502.14, the BLM has explored and evaluated all reasonable alternatives for this project and discussed reasons why other alternatives were determined not to be reasonable. To determine whether an alternative was reasonable, the BLM considered an alternative's effectiveness at satisfying the purpose and need, technical and economic feasibility, the practicality of the alternative, and whether he alternative duplicated others evaluated.
32724	50	Alternatives	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, BLMs alternative development process is fatally flawed and the only defensible option it can select is the no action alternative.	See response to letter 21015, comment 5.
32724	51	Alternatives	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, BLMs 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 alternatives in the SEIS and failed to address the prior deficiencies with its alternative analysis as part of this remand process.	The BLM reviewed the purpose and need for the Supplemental EIS and determined no changes were needed. Surface transportation access in support of mining exploration was part of the ROW application and is therefore a defining part of the purpose and need for the proposed action. See Volume 2 Appendix G Alternatives Development Memorandum for the detailed discussion regarding determining the range of alternatives.
32724	52	Alternatives	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 BLMs prior screening EIS remains valid. ¹⁸⁰ It is clear from BLMs 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	The information presented in Appendix G, Alternatives Development Memorandum, explains the methodology used by the BLM to screen proposed alternatives for inclusion as action alternatives to be carried forward for further detailed analysis.

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32724	53	Alternatives	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 AIDEAs Proposed Route. AIDEAs 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 projects impacts. The agency's failure to do so violates NEPA.	The BLM reviewed the purpose and need for the Supplemental EIS and determined no changes were needed. Surface transportation access in support of mining exploration was part of the ROW application and is therefore a defining part of the purpose and need for the proposed action. See Volume 2 Appendix G Alternatives Development Memorandum for the detailed discussion regarding determining the range of alternatives.
32724	54	Alternatives	In the original decision-making process and again in the SEIS, BLM failed to adequately consider alternatives to AIDEAs proposed routes and instead relied on outdated alternatives considered by the Alaska Department of Transportation and Public Facilities (DOT&PF) 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 BLMs 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 Rail187 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 AIDEAs proposed route. BLMs elimination of any westbound route led to the agencies considering three action alternatives that are nearly the same.	The BLM reviewed the purpose and need for the Supplemental EIS and determined no changes were needed. Surface transportation access in support of mining exploration was part of the ROW application and is therefore a defining part of the purpose and need for the proposed action. See Volume 2 Appendix G Alternatives Development Memorandum for the detailed discussion regarding determining the range of alternatives.
32724	55	Alternatives	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.	The Supplemental EIS incorporates the best available science specific to the project to adequately present the potential impacts, which included the 2 functional assessments (DOWL 2014; ABR 2017) specific to the project area, as cited in Section 3.3.1 of the Supplemental EIS. DOWL 2019 mapping provided wetland delineation for Alternative Route C. The USACE reviewed the material provided by AIDEA (i.e. Dowl's reports) and determined that they were sufficient for a NEPA level of analysis. Additional wetland mapping and functional assessment is anticipated to be completed during final design and permitting. The references sections of Appendix E and O were updated to reflect that the desktop wetland mapping is complete (i.e., no longer in progress).
32724	56	Alternatives	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 AIDEAs 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.	The Supplemental EIS analyzes impacts from the 3-phase construction approach as well as impacts from the combined phasing approach for all resources in the Supplemental EIS.
32724	57	Alternatives	In the SEISs 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.	The ROD will determine which mitigation measures will be adopted. The USACE terms and conditions are considered as proposed mitigation in the Supplemental EIS.
32724	58	Alternatives	Further, the SEISs 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 AIDEAs proposal to build and 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 AIDEAs phased approach could have severe adverse impacts to the hydrology of the region and thus significantly degrade the environment. 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.	In developing the Supplemental EIS the BLM reconsidered all previous alternatives from the 2020 EIS, including constructing the road in three phases, as well as new potential alternatives that could reduce environmental impacts to the resources of concern in the remand process (e.g., fish and caribou), such as the combined phasing option.
32724	59	Alternatives	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 AIDEAs proposed phased approach may yield significant environmental benefits. As recognized by one engineering expert,	In developing the Supplemental EIS the BLM reconsidered all previous alternatives from the 2020 EIS, including constructing the road in three phases, as well as new potential alternatives that

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			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.	could reduce environmental impacts to the resources of concern in the remand process (e.g., fish and caribou), such as the combined phasing option.
32724	60	Alternatives	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 NEPAs 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 TCCs tribal alternative; rail access; seasonal ice road access; aircraft access; barge access; and other alignments coming from the west.	In accordance with the CEQ NEPA implementing regulations, 40 CFR 1502.14, the BLM has explored and evaluated all reasonable alternatives for this project and discussed reasons why other alternatives were determined not to be reasonable. To determine whether an alternative was reasonable, the BLM considered an alternative's effectiveness at satisfying the purpose and need, technical and economic feasibility, the practicality of the alternative, and whether the alternative duplicated others evaluated. Alternatives dismissed from detailed analysis included the Tribal Alternative, various rail routes, a seasonal ice road, aircraft use, various barge routes, and various western routes.
32724	61	Alternatives	Groups support the inclusion of TCCs 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 810s procedural requirements, but such an explanation turns ANILCAs 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. Thus, Section 810 imposes procedural and substantive requirements on an agency to consider alternatives based on the mandate to protect subsistence. BLMs 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. 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 BLMs 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.	The text in Appendix G, Section 5.4 explains why the Tribal Alternative is not able to be analyzed beyond the discussion provided in Appendix G. Other alternatives were considered and eliminated from detailed analysis based on the screening criteria as presented in Appendix G.
32724	62	Alternatives	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. 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 Alaskas northern climate. In the recent feasibility study AIDEA commissioned to look at the full supply chain corridor for the Ambler Road, including the transportation of materials from the Ambler Road to a port for export, even AIDEA is exploring the use of rail. 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, AIDEAs 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.	In accordance with the CEQ NEPA implementing regulations, 40 CFR 1502.14, the BLM has explored and evaluated all reasonable alternatives for this project and discussed reasons why other alternatives were determined not to be reasonable. To determine whether an alternative was reasonable, the BLM considered an alternative's effectiveness at satisfying the purpose and need, technical and economic feasibility, the practicality of the alternative, and whether the alternative duplicated others evaluated. For details on the alternatives examined and the reasons some were not carried forward for detailed analysis, see Supplemental EIS Appendix G.
32724	63	Alternatives	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 BLMs 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 Railroads 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.	The information presented in Appendix G, Alternatives Development Memorandum explains the methodology used by the BLM to screen proposed alternatives for inclusion as action alternatives to be carried forward for further detailed analysis.
32724	64	Alternatives	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 regions 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.	Various rail routes were considered in Appendix G, Section 6.4 but were eliminated from detailed analysis due to practicality, feasibility, and/or environmental concerns.

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32724	65	Alternatives	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 AIDEAs proposed Phase I road would be seasonal.	An ice road alternative is discussed in Appendix G, Section 6.3 and was determined not to meet the purpose and need of the project, and was eliminated due to technical and economic feasibility and practicality.
32724	66	Mitigation/monitoring	The SEIS should also look at requiring mitigation measures to minimize impacts to permafrost, aquatic resources, and other resources up front. Under AIDEAs pioneer road, many such measures (such as proper road insulation) would not be implemented until later phases, leaving resources vulnerable to damage.	The proposed mitigation in the Supplemental EIS Appendix N contains measures that serve to minimize potential impacts to resources from the project. Should the project be approved, the ROD will determine which mitigation measures are required.
32724	67	Decision process - general	Despite the list of significant environmental impacts that can be expected to result from AIDEAs 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	The BLM took a hard look at the No Action Alternative. The affected environment in each resource section establishes a baseline against which the impacts of the alternatives are compared. In the absence of the road being built, those conditions are expected to continue (as is stated in the impact discussion). That affected environment discussion is essentially a description of what the environment would constitute if the project is not built. The BLM included baseline data to characterize the affected environment under each of the resource topics in Chapter 3.
32724	68	Subsistence	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, 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 No Action Alternative addresses the impacts that will continue to occur to subsistence under baseline conditions, not the relative impacts or benefits of not choosing one of the hypothetical Action Alternatives.
32724	69	Decision process - general	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.	See response to letter 32724, comment 67.
32724	70	Sand and gravel resources	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.	See response to letter 30027, comment 25.
32724	71	Sand and gravel resources	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 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.	See response to letter 30027, comment 25.
32724	72	Proposed action	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. 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.	See responses to letter 21015, comment 5 and letter 22855, comment 1.
32724	73	Sand and gravel resources	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 word “cumulative” is misused in the comment in the context of NEPA analysis. The materials sites are part of the action alternatives and are thus included in the analysis of impacts. See also response to letter 30027, comment 25.

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32724	74	Sand and gravel resources	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, theres no indication that the agency has in fact fixed those problems or addressed the impacts from the gravel mines and 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	The word “cumulative” is misused in the comment in the context of NEPA analysis. The materials sites are part of the action alternatives and are thus included in the analysis of impacts. See also response to letter 30027, comment 25.
32724	75	Cooperating agency involvement	To make matters worse, the Corps despite the EISs 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. That NEPA violation has also not been addressed as part of this remand process.	The Supplemental EIS analyzes the impacts of the proposed gravel mines (e.g., Section 3.2.2, Sand and Gravel Resources).
32724	76	Sand and gravel resources	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	See response to letter 30027, comment 25.
32724	77	Cooperating agency involvement	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. The Corps authorization of those project components was particularly problematic given AIDEAs failure to verify the locations of gravel mines and other components. EPA raised serious concerns with AIDEAs failure to conduct field sampling to verify the locations for any gravel mines. 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 determined. 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.	See response to letter 32724, comment 75.
32724	78	Decision process - general	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. Several of the Ambler Mining Districts 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 projects 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.	See response to letter 18528, comment 9.
32724	79	Decision process - general	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.	See response to letter 18528, comment 9.
32724	80	Decision process - general	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.	See response to letter 18528, comment 9.
32724	81	Decision process - general	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. 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. 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. Indeed, this is the sole purpose of the Ambler Road. As a result, BLMs 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.	See response to letter 18528, comment 9.
32724	82	Decision process - general	As an initial matter, BLM failed to clearly define the project area in the SEIS to allow the public to understand the agencys analysis. Clarity was needed because BLM provided an overly vague description of the project area in the FEIS, which was	To indicate scope of analysis, the BLM uses terms such as “project area” and “analysis area,” etc. The indirect and direct analysis area (i.e., the geographic extent where effects are anticipated)

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			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. 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 BLMs 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.	varies for each resource analyzed in Chapter 3 of the Supplemental EIS and on various maps in Volume 4. The spatial and temporal extent of anticipated effects for each resource are sometimes discussed at a general, qualitative level if more detailed information is unavailable (see response to letter 22855, comment 1 regarding the adequacy of baseline data). The information provided is sufficient to analyze and make a reasoned choice among alternatives. The Ambler Mining District is included in the cumulative and indirect effects analysis for all resources as a reasonably foreseeable future action analyzed through the Mining Development Scenario (see Appendix H). Map 1-1 is a large scale overview map. Additional maps in Volume 4 provide smaller-scale depictions of the proposed action and alternatives and associated facilities.
32724	83	Transportation and access	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.	Impacts from construction traffic are similar to those discussed for mine traffic, at traffic volumes similar to those listed for Phase 1 activities.
32724	84	Transportation and access	The SEIS states that mine operations would create increased 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. 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.	The Supplemental EIS does not state “that impacts cannot be predicted accurately.” The Supplemental EIS acknowledges that potential indirect and cumulative impacts would vary depending on the magnitude, duration, and spatial extent of mining activity resulting from the proposed project. The Supplemental EIS utilizes the best available data, including available traffic projections provided by mining companies, to estimate indirect and cumulative impacts on transportation infrastructure and operations.
32724	85	Transportation and access	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&PFs ability to fund other projects and would further strain already constrained road budgets. 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.	See response to letter 23769 comment 1.
32724	86	Transportation and access	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. 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. 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.	See response to letter 23769, comment 1. The Supplemental EIS acknowledges potential impacts to marine mammals as a result of the proposed action alternatives in Section 3.3.4.
32724	87	Public access	Regarding unauthorized or public use of the road, the SEIS fails to analyze impacts from unauthorized road use, relying on AIDEAs proposal to control access. 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.	See response to letter 23058, comment 8.
32724	88	Public access	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. 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.	See responses to letter 19418, comment 3 and letter 32386, comment 3.
32724	89	Decision process - general	In addition, the SEIS must provide information regarding the scope of BLMs 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 BLMs 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. BLMs failure to do so violated its NEPA obligations and frustrated NEPAs purpose of enabling public input and evaluation of the impacts of the proposed project.	See response to letter 32724, comment 82.
32724	90	Decision process - general	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 BLMs analysis in the SEIS mischaracterized or failed to fully explain how harmful and lasting the Ambler Roads 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	See response to letter 32724, comment 82.

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			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.	
32724	91	Alternatives	BLM has still not adequately analyzed the impacts from AIDEAs 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 identify 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.	In developing the Supplemental EIS the BLM reconsidered all previous alternatives from the 2020 EIS, including constructing the road in three phases, as well as new potential alternatives that could reduce environmental impacts to the resources of concern in the remand process (e.g., fish and caribou), such as the combined phasing option.
32724	93	Alternatives	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 AIDEAs phased proposal. Despite that, the SEIS still does not fully assess the differences between the phases to specific resources.	In developing the Supplemental EIS the BLM reconsidered all previous alternatives from the 2020 EIS, including constructing the road in three phases, as well as new potential alternatives that could reduce environmental impacts to the resources of concern in the remand process (e.g., fish and caribou), such as the combined phasing option.
32724	94	Alternatives	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 AIDEAs 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 AIDEAs 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.	The BLM and NPS ROWs have been suspended while the Supplemental EIS is being developed and new decisions are issued. Prior to initiating the 2020 EIS a consolidated application was submitted to all Federal authorizing agencies and deemed complete. The revised application to the USACE responded to feedback from that agency on the original application.
32724	95	Proposed action	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 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 AIDEAs 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	As described in Supplemental EIS Chapter 2, Alternatives, Section 2.4.3, Features Common to All Action Alternatives, construction will occur in phases, followed by operational periods.
32724	96	Sand and gravel resources	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.	The road maintenance and associated material needs are addressed in Section 3.2.2 in the Supplemental EIS. \ Comment noted.
32724	97	Cumulative and indirect effects analysis	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.	The Reasonably Foreseeable Mining Development Scenario in Appendix H (Section 2.1.4) already assumes that mining activities would commence after Phase 2 of the road is complete, and that some mining activity (associated with Arctic and Bornite) would be occurring concurrent with the construction of Phase 3.
32724	98	Proposed action	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. Given how little is known about the amount of mineral resources in the Ambler Mining District, this statement is meaningless. BLM's supplemental analysis should have provided an intelligible timeframe for road reclamation.	See response to letter 29489, comment 92.
32724	100	Proposed action	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.	See response to letter 22595, comment 13.

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			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. 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. 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 BLMs assumption that reclamation will ever occur the SEIS should have fully analyzed the projects 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.	
32724	101	Public access	BLMs analysis still largely relies on and points to AIDEAs claim that the Ambler Road would stay closed to the public and only be used as an industrial access road. ²⁹¹ BLMs 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 projects 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.	See responses to letter 19418, comment 3 and letter 32386, comment 3.
32724	102	Public access	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 roads footprint, directly impacting vegetation and wetlands, and the increase in traffic would result in increased fugitive dust generation and sediment transport into waterways. 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.	See response to letter 26067, comment 3.
32724	103	Air quality and climate	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.	Comment noted. There are no foreseeable alternate traffic assumed on the road as this would be highly speculative.
32724	104	Public access	Commenters previously noted concerns over AIDEAs 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.	See response to letter 26067, comment 3.
32724	105	Public access	The SEIS provides a stunted and confusing discussion of AIDEAs plans to use a vaguely conceived permit system for commercial deliveries. ²⁹⁸ This analysis, tucked away in Appendix H, is problematic. First, BLMs adoption of AIDEAs 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, AIDEAs proposed permit system is devoid of even basic details. The SEIS does not provide sufficient detail regarding AIDEAs potential permit system or address the highly likely scenario in which the road is eventually opened to public use. That is inadequate.	See responses to letter 19418, comment 3 and letter 32386, comment 3.
32724	106	Public access	The lack of information about these additional road uses needs to be addressed in the final SEIS. In addressing AIDEAs proposed commercial delivery system, BLM must explain which users would be granted road access and for what purposes. BLMs discussion of commercial access in the SEIS amounts to AIDEAs 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 management activities). ³⁰¹ Another slide from AIDEAs presentation apparently indicated that the road would have a limited access designation and listed state and federal	See responses to letter 19418, comment 3 and letter 32386, comment 3.

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			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 AIDEAs proposal and either provide AIDEAs presentation for public review or refrain from relying on or referencing these materials further.	
32724	107	Public access	One important aspect of AIDEAs 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 AIDEAs 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	See response to letter 19418, comment 3.
32724	108	Geology and minerals	The agencies conclusion that the yet-to-be-determined mitigation measures to address permafrost thaw were likely to be successful is also arbitrary. 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. Without that information, the agency could not know what impacts to mitigate, or whether the mitigation proposed would be adequate to offset damage. The agencies failure to take a hard look at the impacts to permafrost and ways to mitigate those impacts is contrary to NEPA.	The potential mitigation measures described in Appendix N are methods that have been implemented in Alaska across areas of continuous and discontinuous permafrost for decades to address possible impacts to permafrost and thaw-susceptible materials.
32724	109	Public access	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. 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 regions wildlife, water, wetlands, and communities none of which were adequately analyzed in the SEIS.	See response to letter 26067, comment 3.
32724	110	Public access	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.	See Supplemental EIS Appendix N, Section 3.4.2, Transportation and Access, Potential BLM Mitigation Measure 8.
32724	111	Geology and minerals	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: [images] 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 AIDEAs 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.	Chapter 2, Section 2.4.3 (Features Common to All Action Alternatives) describes the access trail as "...a snow trail or ice road, with ice bridges" that would be established during the first year. The access trail would be needed under the combined phasing approach. The access trail would be used during Phase I of construction of the road.
32724	112	Public access	The SEIS also fails to explain AIDEAs 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. 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. 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. 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	See response to letter 26067, comment 3.

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			these communities. 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.	
32724	113	Mitigation/monitoring	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 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 AIDEAs 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.	Several measures included in Appendix N Section 3.5 Proposed Mitigation Adopted from USACE’s 404 Clean Water Act and Section 10 Rivers and Harbors Act Permit Special Conditions address this concern.
32724	114	Public access	The final SEIS must also provide a robust discussion regarding AIDEAs 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.	See response to letter 26067, comment 3.
32724	115	Cumulative and indirect effects analysis	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.311The SEIS further notes that the road from Bettles/Evansville would require a large, expansive bridge of 600 feet or more312 over the Koyukuk River, a Wild and Scenic River. Construction of permanent, public roads313 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.	Per the BLM's NEPA Handbook (H-1790-1), reasonably foreseeable actions are those for which there are existing decisions, funding, formal proposals, or which are highly probable, based on known opportunities or trends. The commercial access scenario presented in Appendix H (Section 2.2.1) acknowledges that landowners and communities may pursue connecting roads or driveways for commercial deliveries separately from the proposed action and those connections would be subject to separate environmental analyses, public interest decisions, and access authorizations. Because no detailed proposals for connecting roads currently exist, the BLM considered and described anticipated impacts of the commercial access scenario qualitatively as cumulative impacts under each resource section in Chapter 3, where these impacts are discussed further.
32724	116	Vegetation	The Analysis of Rare Plants and the Risks from Invasive Plant Species Is Still Lacking. Currently, the natural vegetation in the roadways 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. BLMs 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	The 2023 ACCS citation refers to an updated request for data from the Rare Plants Database not a new study. The new data are presented on Map 3-10 and no new surveys were recorded since the Final EIS was first published. The current Supplemental EIS discloses that the lack of available data does not indicate that no rare plant species are present but in the absence of current field data more comprehensive data could be collected using a desktop habitat analysis. Further, the applicant is committed to conducting rare plant surveys prior to construction within the impacted corridor (see Appendix N, Potential Mitigation).

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			for the site-specific conditions and be able to establish robust and targeted mitigation measures. 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.	
32724	117	Cumulative and indirect effects analysis	BLMs 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.	The potential cumulative and indirect effects of mining-related activities and climate change on environmental resources are discussed and analyzed in Chapter 3 of the Supplemental EIS. See also responses to letter 24369, comment 9 and letter 32724, comment 177.
32724	118	Vegetation	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 BLMs 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 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.	The Supplemental EIS discloses that NNIS infestations are likely to occur based on the establishment and spread of NNIS along the Dalton Highway. However, the proposed operations will be closed to public vehicle traffic which would allow for better adherence to ISPMP procedures as developed specifically for the entire project prior to construction. Development of the ISPMP requires approval from all jurisdictional land managers prior to initiation which would allow stakeholder involvement in the process and consideration of specific challenges in various regions.
32724	119	Cumulative and indirect effects analysis	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 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.	See response to letter 29489, comment 91. Section 2.1.3 of Appendix H has been revised to disclose the larger size of the Sun deposit based on the increased number of claims.
32724	120	Air quality and climate	BLMS 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. 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	The Supplemental EIS examines the anticipated impacts associated with the construction and operation of the road on ambient air quality standards. The BLM did not find it necessary to conduct extensive baseline data studies within the corridor because regional air quality monitoring, as represented by community input and long-term NPS studies at Denali National Park and Preserve, indicate that air quality measures are good. Based on the estimated emissions, duration of the project, distances from sources to communities, winds, and operator committed measures, quantitative modeling was not considered necessary. The Supplemental EIS focuses on potential change factors, whether there may be incremental influences to local or regional air quality standards, and sufficient mitigation through the implementation of the fugitive

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			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	dust control plan. GHG emissions have been quantified for the road construction phase, estimated road traffic during production, and transport of product to Fairbanks and point of sale via rail to Port of Alaska. See Chapter 3, Section 3.2.7 and Appendix D. Regarding dust emissions, a Dust Control Plan has been added in Appendix N, Section 3.2.7, as a potential mitigation measure: AIDEA would prepare it before road construction would be authorized.
32724	120b	Air quality and climate	Further exacerbating this issue, BLMs 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]here 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. Understanding background concentrations of pollutants is important to determining whether a projects 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 Supplemental EIS examines the anticipated impacts associated with the construction and operation of the road on ambient air quality standards. The BLM did not find it necessary to conduct extensive baseline data studies within the corridor because regional air quality monitoring, as represented by community input and long-term NPS studies at Denali National Park and Preserve, indicate that air quality measures are good. Based on the estimated emissions, duration of the project, distances from sources to communities, winds, and operator committed measures, quantitative modeling was not considered necessary. The EIS focuses on potential change factors, whether there may be incremental influences to local or regional air quality standards, and sufficient mitigation through the implementation of the fugitive dust control plan. GHG emissions have been quantified for the road construction phase, estimated road traffic during production, and transport of product to Fairbanks and point of sale via rail to Port of Alaska. See Chapter 3, Section 3.2.7 and Appendix D. Regarding dust emissions, a Dust Control Plan has been added in Appendix N, Section 3.2.7, as a potential mitigation measure: AIDEA would prepare it before road construction would be authorized.
32724	120c	Air quality and climate	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 AIDEAs 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.	The Supplemental EIS examines the anticipated impacts associated with the construction and operation of the road on ambient air quality standards. The BLM did not find it necessary to conduct extensive baseline data studies within the corridor because regional air quality monitoring, as represented by community input and long term NPS studies at Denali National Park and Preserve, indicate that air quality measures are good. Based on the estimated emissions, duration of the project, distances from sources to communities, winds, and operator committed measures, quantitative modeling was not considered necessary. The Supplemental EIS focuses on potential change factors, whether there may be incremental influences to local or regional air quality standards, and sufficient mitigation through the implementation of the fugitive dust control plan. GHG emissions have been quantified for the road construction phase, estimated road traffic during production, and transport of product to Fairbanks and point of sale via rail to Port of Alaska. See Chapter 3, Section 3.2.7 and Appendix D. Regarding dust emissions, a Dust Control Plan has been added in Appendix N, Section 3.2.7, as a potential mitigation measure: AIDEA would prepare it before road construction would be authorized.
32724	121	Air quality and climate	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 projects 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 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. As explained further below, BLMs 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. To the extent the SEIS quantified a fraction of the projects emissions, 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 projects emissions and how they contribute to background pollutant concentrations is critical to determining whether a projects emissions would violate NAAQS. No such analysis occurred, but should be completed in the final SEIS.	Comment noted. As stated in the EIS, there is currently no specific construction and operations plan, and therefore it was not possible to quantify the criteria air pollutants for construction, or maintenance and operations activities. However, emissions were calculated for the activities with the potential to have the largest impact to the current particulate nonattainment status. The construction activities, aircraft traffic, gravel mining, camp use, and maintenance activities would still be subject to all EPA and ADEC rules and regulations to reduce and minimize air quality and climate change impacts.
32724	122	Cumulative and indirect effects analysis	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, 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	See response to letter 23145, comment 3.

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			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 Trilogys SEC filings, including the West Kobuk (23,680 acres), Helpmejack (19,250 acres), and Malamute claims (12,480 acres). According to the companys press release, All three claim 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). 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. 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.	
32724	123	Cumulative and indirect effects analysis	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). 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 deposits, 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.	See responses to letter 23145, comment 3 and letter 26152, comment 1 regarding mining prospects outside of the Ambler District. See response to letter 23434, comment 13 regarding the general adequacy of the reasonably foreseeable mining scenario analysis.
32724	124	Water resources	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.	See response to letter 17876, comment 1.
32724	125	Air quality and climate	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 BLMs 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.	Comment noted. The Supplemental EIS recognized that during construction, operations, and decommissioning the anticipated main concern would be the generation of particulate matter. However, the development of an enforceable, comprehensive dust control plan is proposed as a mitigation measure. This plan would be reviewed by multiple agencies and must be approved by the authorized officer prior to any surface disturbing activities (see Appendix N). The dust control plan, with appropriate methods and usage of palliatives, would mitigate much of the construction air quality impacts associated with fugitive dust. In addition, air quality permitting requirements for the proposed construction camps would ensure compliance with regulations and would help to ensure that construction emissions would not exceed the NAAQS or AAAQS. The method of dust control or type of palliative has not been decided and will be chosen with consideration of all environmental factors. In addition, Alaska's Air Quality Regulations includes the prohibition under 18 AAC 50.045(d) which requires that a person who causes or permits bulk materials to be handled, transported, or stored, or who engages in an industrial activity or construction project shall take reasonable precautions to prevent particulate matter from being emitted into the ambient air even in the absence of modeling.
32724	125b	Air quality and climate	The draft SEISs analysis of the qualitative impacts to air quality is also wildly deficient and falls far short of the agencies NEPA obligation to take a hard look at impacts. As an initial matter, the draft SEIS still entirely fails to consider AIDEAs 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.	Comment noted. Impacts to air quality were assessed by evaluating the type, duration, and potential magnitude of air pollutants that could be emitted by project related activities under each alternative. Estimated emissions were calculated for those activities where reasonably foreseeable data was available. Appendix D, Table 24, shows the activities that have the potential to generate emissions under construction conditions and under road operation conditions. The table helps to define the likelihood and magnitude of impact. In addition, the table show the types of pollutants potentially emitted from each activity and where data was available, the potential magnitude of those emissions.
32724	125c	Air quality and climate	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	Comment noted. The focus on particulate matter emissions is not to deny that there are potential exhaust emissions but to highlight the pollutant of concern in the project area since it has been designated as non-attainment for particulate matter less than 2.5 microns in diameter (PM2.5) for the 24-hour NAAQS (and AAAQS) due to its susceptibility to temperature inversions and local emissions sources.
32724	125d	Air quality and climate	Similar to the flaws with BLMs 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 postconstruction. 1156 For these reasons,	The potential impacts of construction are described for each phase, including the impact that construction disturbance will occur multiple times. The anticipated development schedule of AIDEA's phasing and the reasonably foreseeable mining development (and associated road traffic) are described in Appendix H, Tables 2-2, through 2-10. Impacts associated with this

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			the draft SEISs 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/AAQs 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 modeling the projects emissions. These flaws should be rectified in the final SEIS by way of BLM completing a quantitative analysis and modeling all of the Ambler Roads project emissions. Further, the draft SEISs 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.	scenario are summarized in Chapter 3 of the Supplemental EIS and detailed in Appendix H. Maintenance impacts are disclosed including the need for ongoing gravel placement. The Supplemental EIS does not indicate water quality or quantity impacts and other impacts would be the same during construction and operation. These impacts are specifically described separately. For a discussion of how direct, indirect, and cumulative impacts are defined see Section 3.1.
32724	126	Decision process - general	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.	See response to letter 22855, comment 1.
32724	127	Air quality and climate	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 sitespecific 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.	Appendix D Table 26 summarizes annual GHG emissions for the operational phase including transportation of mining ore from the Ambler Mining District to the Port of Alaska. These estimated emissions are based on traffic estimates developed as part of the mine development and production schedule scenario outlined in Appendix H and without additional detailed information no further calculations were made for other activities at this time. However, the EIS still expands on the air and climate change impacts from all phases of the project. Note, air pollutant emissions from the operational phase (postconstruction), would include particulate matter emissions (fugitive dust) from wind erosion and vehicle traffic as well as criteria pollutant and HAP emissions from fossil fuel combustion in vehicles, maintenance equipment and equipment used to produce heat and power. Air pollutant emissions from mobile sources and equipment would be subject to vehicle and generator regulations such as 40 CFR 80, 85, and 86 as well as emissions standards and air permitting requirements of ADEC included under 18 AAC 50. The mitigation measures for air quality included in Appendix N, including the requirement for a Dust Control Plan and air monitoring would be effective at ensuring that emissions do not cause an exceedance of ambient air quality standards.
32724	128	Mammals	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.	Potential impacts to wolverines are discussed in Section 3.3.4 of the Supplemental EIS.
32724	129	Air quality and climate	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 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 BLMs 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.	All current potential mitigation is discussed in the Supplemental EIS. During construction, the development of an enforceable, comprehensive dust control plan is proposed as a mitigation measure. This plan would be reviewed by multiple agencies and must be approved by the authorized officer prior to any surface disturbing activities (see Appendix N). The dust control plan, with appropriate methods and usage of palliatives, would mitigate much of the construction air quality impacts associated with fugitive dust. In addition, air quality permitting requirements for the proposed construction camps would ensure compliance with regulations and would help to ensure that construction emissions would not exceed the NAAQS or AAQs. During operations, air pollutant emissions from mobile sources and equipment would be subject to vehicle and generator regulations such as 40 CFR 80, 85, and 86 as well as emissions standards and air permitting requirements of ADEC included under 18 AAC 50. The mitigation measures for air quality included in Appendix N, including the requirement for a Dust Control Plan and air monitoring would be effective at ensuring that emissions do not cause an exceedance of ambient air quality standards. These are proposed mitigation measures that were analyzed for this project.
32724	130	Water 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. 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. USGS-led	See response to letter 22633, comment 6a.

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			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. The study found that the Yukon River and 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	
32724	131	Air quality and climate	THE SEIS DOES NOT ADEQUATELY ADDRESS AND DISCLOSE CLIMATE CHANGE RELATED IMPACTS. BLM must fully account for the projects 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 actions environmental effects, but also their significance. Therefore, in addition to accurately quantifying the GHG emissions consequences of the Ambler Road and associated mining, BLM must put the projects emissions in context. Because any projects emissions appear individually minor when compared against global (or even national) totals, quantifying emissions is only a first step; agencies must also explain the projects incremental impact on climate change. In other words, an agency must explain how a projects GHG emissions would move the planet closer or further away from unacceptably dangerous warming, or a tipping point at which catastrophic impacts would occur. In conducting this analysis, BLM must consider high quality and accurate climate science, including the most recent scientific information. 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 1.5C. 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 governments commitment to respond to the climate crisis by selecting the no action alternative.	Comment noted. See response to letter 132, comment 2.
32724	132	Fish and aquatics	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 (<i>Oncorhynchus tshawytscha</i>) 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	Supplemental EIS Section 3.2.2, Fish and Aquatics - Salmon Declines, describes recent trends in the declining Yukon River Chinook salmon, and Section 3.2.2, Fish and Aquatics - Mining, Access, and Other Indirect Effects, describes how climate change is likely to impact fish and aquatic habitat.
32724	134	Water resources	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 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.	See response to letter 17876, comment 1.
32724	135	Geology and minerals	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	Section 3.2.1 Geology and Soils states: “BLM’s <i>Central Yukon Resource Management Plan, Analysis of Management Situation</i> , summarizes soil resources and their current conditions in the Central Yukon area (see BLM 2016a: Section 2.1.2, Soil Resources) <u>and is incorporated here by reference.</u> ” [underline for emphasis added]. The incorporation by reference means the Central Yukon Resource Management Plan is included as part of the Supplemental EIS and information does not need to be restated.
32724	136	Geology and minerals	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. 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	Comment is in two parts: 1) concern is expressed about mass wasting and frozen debris lodes on the transportation corridors. Comment is noted. 2) Comment indicates an expectation to analyze “exploration and mining projects” as a direct impact in the context of this Supplemental EIS. Appendix H of the Supplemental EIS Section 2.1 addresses mining development as a reasonably foreseeable scenario and the analysis treats impacts of mining exploration and development as indirect cumulative effects.

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			mining projects that have potential indirect, direct, cumulative effects and are connected to, and furthered by, construction of the Ambler Road.	
32724	137	Fish and aquatics	...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. 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. 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. 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 tissue344 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 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 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.	Supplemental EIS Appendix H, Indirect and Cumulative Scenarios, describes the reasonably foreseeable future developments that may be caused by the road. Section 2, Reasonably Foreseeable Actions, describes the updates made to this appendix related to potential future projects in the project area.
32724	138	Cumulative and indirect effects analysis	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.	The impacts of mining are analyzed to the extent that information is available to do so. No specific mining application/permit request for the District has been submitted to date. The BLM evaluated reasonably foreseeable mining development as indirect and cumulative impacts, using a hypothetical mining development scenario. When officially proposed, each mine would go through its own project-specific NEPA analysis and permitting process, which would provide further detail and analysis regarding the specific impacts of each mine operation.
32724	139	Cumulative and indirect effects analysis	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.349The 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. 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.	The impacts of mining are analyzed to the extent that information is available to do so. No specific mining application/permit request for the District has been submitted to date. The BLM evaluated reasonably foreseeable mining development as indirect and cumulative impacts, using a hypothetical mining development scenario. When officially proposed, each mine would go through its own project-specific NEPA analysis and permitting process, which would provide further detail and analysis regarding the specific impacts of each mine operation.
32724	140	Water resources	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 20132018.351 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 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 EPAs 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	The impacts of mining are analyzed to the extent that information is available to do so. No specific mining application/permit request for the District has been submitted to date. The BLM evaluated reasonably foreseeable mining development as indirect and cumulative impacts, using a hypothetical mining development scenario. When officially proposed, each mine would go through its own project-specific NEPA analysis and permitting process, which would provide further detail and analysis regarding the specific impacts of each mine operation.

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			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 EISs 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. 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 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.	
32724	141	Cumulative and indirect effects analysis	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 hypothetical mining scenario presented in Appendix H includes a description of typical mine production activities, including the storage, treatment, and disposal of overburden, waste rock, and tailings, and discloses the potential for acid rock drainage to result from these activities (see Appendix H, Section 2.1.4, Production). The hypothetical mining scenario also discusses long-term water management and treatment requirements and potential pathways for surface or groundwater contamination during the life of the mines. The potential cumulative and indirect effects of mining-related acid rock drainage and water contamination are analyzed in Sections 3.2.3 (Hazardous Waste), 3.2.5 (Water Resources), 3.3.1 (Vegetation and Wetlands), 3.3.2 (Fish and Aquatics), 3.3.3 (Birds), 3.3.4 (Mammals), 3.4.5 (Socioeconomics and Communities), and 3.4.7 (Subsistence Uses and Resources). The potential health effects of mining-related water contamination are discussed in Section 3.4.5 (Socioeconomics and Communities), as informed by the health impact assessment conducted for the project in 2019 (NewFields 2019). The risk of tailings dam failures are discussed in the cumulative effects analysis for Fish and Aquatics (Section 3.3.2), which provides an overview of national and state trends in dam failures since the 1960s, and Alaska programs and laws that have been put in place to mitigate those risks. Similarly, the cumulative effects analysis for Water Resources (Section 3.2.5) discusses trends in water quality compliance for mines based on peer-reviewed literature.
32724	142	Air quality and climate	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 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 1.5C and will result in catastrophic damages in the U.S. and around the world. 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 Arctics average winter temperature has increased by 6F over the past 60 years, and the Arctic is expected to warm by an additional 10F to 12F this century. ¹¹⁷³ In	Comment noted. See response to letter 132, comment 2.

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			the Arctic, climate change is causing, and will continue to cause, sea-level rise, sea-ice melt, river flow changes, and permafrost thaw.1174 NOAAs 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 Programs 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 worlds 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. 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.	
32724	143	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 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.	See response to letter 17876, comment 1.
32724	144	Air quality and climate	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. 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 projects 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 BLMs legal mandates under NEPA.	Comment noted. See response to letter 132, comment 2.
32724	145	Air quality and climate	NEPA requires agencies to provide the necessary contextual information about [an actions] cumulative and incremental environmental impacts. For environmental impacts that have a tipping point, quantification of a projects pollutants is a necessary component of the agencies analysis but not a sufficient description of the actual environmental effects that can be expected [from the project]. 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. 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. BLM must look at the Ambler Road and other projects in combination with each other, to determine whether, or how, to alter the program to lessen cumulative impacts on climate change. The SEISs conclusory assertions that the Ambler Roads unquantified emissions would be too small to effect global climate are baseless and contrary to NEPA. The Council on Environmental Qualitys (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. The Guidance applies to all federal agency actions subject to NEPA, including land and resource management decisions. This guidance should be used by BLM in its reconsideration of the Ambler Road. Further, various methodologies exist that are generally	Comment noted. Appendix D, Tables 25 and 26, contains the quantified GHG emissions, with the estimated GHG emissions also presented in a relatable context, comparing potential emissions to common activities that generate GHG emissions, expressing the potential average year GHG emissions to the number of homes annual energy use. Appendix D Table 27 translates the climate impacts, and metric tons of greenhouse gasses in particular, into dollars, showing the social cost of carbon per the comment.

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			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. 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. 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 Roads 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 CO2 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 projects 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 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.	
32724	146	Air quality and climate	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 Roads 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.	Comment noted. All current potential mitigation is discussed in the EIS. During construction, the development of an enforceable, comprehensive dust control plan is proposed as a mitigation measure. This plan would be reviewed by multiple agencies and must be approved by the authorized officer prior to any surface disturbing activities (see Appendix N). The dust control plan, with appropriate methods and usage of palliatives, would mitigate much of the construction air quality impacts associated with fugitive dust. In addition, air quality permitting requirements for the proposed construction camps would ensure compliance with regulations and would help to ensure that construction emissions would not exceed the NAAQS or AAAQS. During operations, air pollutant emissions from mobile sources and equipment would be subject to vehicle and generator regulations such as 40 CFR 80, 85, and 86 as well as emissions standards and air permitting requirements of ADEC included under 18 AAC 50. The mitigation measures for air quality included in Appendix N, including the requirement for a Dust Control Plan and air monitoring would be effective at ensuring that emissions do not cause an exceedance of ambient air quality standards. These are proposed mitigation measures that were analyzed for this project.
32724	147	Hazardous waste	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 ADECs 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 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	Lubetkin 2022 Table 8.5 shows the over 60 percent of spills are less than 10 gallons in size and 92.2 percent of spills are less than 100 gallons. The BLM acknowledges that larger spills have happened at other mines, and could occur. See Appendix N Section 3.2.3.1 (1) Spill Prevention and Response regarding the potential requirement for AIDEA to prepare a Spill Prevention Control and Countermeasures Plan (SPCCP).
32724	147	Hazardous waste	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	Lubetkin 2022 Table 8.5 shows the over 60 percent of spills are less than 10 gallons in size and the majority of spills are less than 100 gallons (92.2 percent).

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			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 ADECs 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 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	
32724	148	Air quality and climate	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.	It is discussed in Supplemental EIS Section 3.2.7 that cumulatively, potential impacts on air quality would result from the proposed project, recreational use, mineral exploration and development activities, construction of other roads, and transport along roadways. 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. Increased vehicle traffic through Fairbanks would contribute emissions, potentially increasing PM2.5 concentrations and furthering the non-attainment status of the area for that pollutant. The sources of emission in the area have been discussed and that remote activities such as on- and off-road travel result in air quality impacts that are comparatively less than fugitive emissions from fires in the area. An analysis compliant with NEPA and CEQ has been completed for the project.
32724	149	Hazardous waste	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.	Appendix D, Table 5 discusses spill characteristics on tundra based on season.
32724	150	Air quality and climate	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 Qualitys (CEQ) guidance.	Comment noted. See response to letter 132, comment 2.
32724	151	Hazardous waste	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 mines tailings pond to land and fresh water in August 2021. ³⁷⁵ The State of Alaskas 2022 annual SPAR report, the most recent available, finds that mining was responsible for 77% of Alaskas 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	See response to letter 32724, comment 141.
32724	152	Geology and minerals	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 Supplemental EIS addressed potential thawing of the permafrost with or without the road and identified climate change as a reasonably foreseeable condition and evaluated under cumulative effects. (from Final EIS responses, Appendix Q).
32724	153	Hazardous waste	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 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	See response to letter 32724, comment 141.

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			allowed for that discharge point. extensive releases of untreated sewage from the Pogo Mine resulted in water quality violations for e coli. 378	
32724	154	Air quality and climate	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 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 roads useful life?	Comment noted. See response to letter 132, comment 2.
32724	155	Air quality and climate	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 roads 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.	Comment noted. Alaska is on the front lines of climate change and is among the fastest warming regions on Earth. It is warming faster than any other state, and it faces a myriad of issues associated with a changing climate. Global climate models project more warming in the Arctic and interior areas than in the southern areas of Alaska. In the RCP8.5 scenario, interior and northern areas of the state are projected to warm by 10° to 16°F, southern portions by 2.5° to 8°F. Climate models suggest that Arctic waters will be virtually ice-free by late summer before 2050 and near-surface permafrost will likely disappear on 16 percent to 24 percent of the landscape by the end of the twenty-first century. Average precipitation is projected to increase in all seasons during the twenty-first century, with the greatest increases expected in winter and spring. By the middle of the twenty-first century, annual precipitation increases are projected to exceed 10 percent over most of the state, with greater increases in the Arctic and interior and the largest increases in the northeastern interior. Climatic extremes are expected to change with the changing climate. Under a higher scenario (RCP8.5), by mid-century (2046–2065) the highest daily maximum temperature (the hottest temperature one might expect on a given summer day) is projected to increase 4° to 8°F compared to the average for 1981–2000. For the same future period (2046–2065), the lowest daily maximum temperature (the highest temperature of the coldest day of the year) throughout most of the state is projected to increase by more than 10°F, with smaller projected changes in the Aleutian Islands and southeastern Alaska. Additionally, the lowest daily minium temperatures (the coldest nights of the year) are projected to increase by more than 12°F. The number of nights below freezing would likely decrease by at least 20 nights per year statewide, and by greater than 45 nights annually in coastal areas of the North Slope, Seward Peninsula, Yukon–Kuskokwim Delta, Alaska Peninsula, and Southcentral Alaska. Annual maximum one-day precipitation is projected to increase by 5 percent to 10 percent in southeastern Alaska and by more than 15 percent in the rest of the state, although the longest dry and wet spells are not expected to change over most of the state. Growing season length (the time between last and first frosts in a given year) is expected to increase by at least 20 days and perhaps more than 40 days compared to the 1982–2010 average. Whether or not this increased growing potential is realized will largely depend on soil conditions and precipitation. The area burned by wildfires may increase further under a warming climate. Projections of burned area for 2006–2100 are 98 million acres under a lower scenario (RCP4.5) and 120 million acres under a higher scenario (RCP8.5).
32724	156	Geology and minerals	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	Appendix H of the Supplemental EIS, Section 2.3.2 (Past and Present Actions) lists actions that have shaped the baseline conditions of the affected environment, including past and present surface mining operations (first bulleted statement in Section 2.3.2). Appendix H, Section 2.3.3 (Other Reasonably Foreseeable Actions, second bulleted statement) discusses small-scale mineral exploration and states the activity is expected to increase over time. Specifically, the text states: "This projection is further supported by recent increases in the number of mining claims in the District." The text acknowledges that if the proposed Ambler road is constructed, mineral exploration (including ongoing and future activity) will likely increase. Appendix H, Table 3-1 (Effect of reasonably foreseeable actions on project area resources for all alternatives), under

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			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-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	Geology and Soils, lists the possible localized effects of small-scale mineral exploration as "...soil disturbance, permafrost degradation, increased erosion and sedimentation,..." Therefore, the Supplemental EIS does address small-scale mining as part of the affected environment and as a past, present, and reasonably foreseeable action under indirect and cumulative impacts. No change has been made to the Supplemental EIS.
32724	157	Socioeconomics and communities	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.	See response to letter 26100, comment 1. The types of public health effects mentioned by the commenter are addressed in Section 3.4.5 of the Supplemental EIS (Socioeconomics and Communities) and in the HIA. The BLM further discusses impacts to subsistence in Section 3.4.7 of the Supplemental EIS, in Appendix L, the Subsistence Technical Report, and in Appendix M, the ANILCA Section 810 Evaluation.
32724	158	Cumulative and indirect effects analysis	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 process, given that the Corps and BLM should be evaluating all of the impacts to wetlands from the road and future mining together.	See response to letter 34767, comment 154. The Supplemental EIS incorporates the best available science specific to the project to adequately present the potential impacts, which included the 2 functional assessments (DOWL 2014; ABR 2017) specific to the project area, as cited in Section 3.3.1 of the Supplemental EIS. DOWL 2019 mapping provided wetland delineation for Alternative Route C. The USACE reviewed the material provided by AIDEA (i.e. Dowl's reports) and determined that they were sufficient for a NEPA level of analysis.
32724	159	Cumulative and indirect effects analysis	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.	The impacts of mining are analyzed to the extent that information is available to do so. No specific mining application/permit request for the District has been submitted to date. The BLM evaluated reasonably foreseeable mining development as indirect and cumulative impacts, using a hypothetical mining development scenario. When officially proposed, each mine would go through its own project-specific NEPA analysis and permitting process, which would provide further detail and analysis regarding the specific impacts of each mine operation.
32724	160	Socioeconomics and communities	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 Roads 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 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.	See response to letter 26100, comment 1. The BLM discusses impacts to subsistence in Section 3.4.7 of the Supplemental EIS, in Appendix L, the Subsistence Technical Report, and in Appendix M, the ANILCA Section 810 Evaluation. Impacts to other resources (air quality, wildlife, water quality) are discussed in Section 3 of the Supplemental EIS. Transportation EISs typically are based on preliminary design. It is not practical to develop a full design for hundreds of miles of road and for multiple alternatives. An EIS develops sufficient information for comment by the public and consideration by the decision makers. If a single action alternative is selected, then final design commences. While the Supplemental EIS is based on preliminary design, it provides sufficient information to draw distinctions between the alternatives for consideration by the public and decision makers. Some information may be presented in brief, but the BLM does not believe the Supplemental EIS was "vague." Comments on the Supplemental EIS have helped the BLM to clarify several points throughout the Supplemental EIS.
32724	161	Air quality and climate	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 EPAs 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 EPAs 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	Comment noted. Per letter 31764, comment 28, the language regarding EPA and ADEC regulations for permitted and nonpermitted activities has been expanded. This should make it clear that if an activity is not deemed to need a permit to operate, they will still need to implement precautions to protect to the air quality in the area. The indirect and cumulative discussion is sufficient. While this project itself likely would not substantially affect air quality in the project area, with other emissions and other projects nationally and globally, it would contribute incrementally to far-reaching effects, including ecological and socioeconomic effects of climate change in the project area (as discussed in other sections of this Supplemental EIS).

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			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.	
32724	162	Air quality and climate	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.	Comment noted. Each specific reasonably foreseeable project was discussed including from North Slope oil and gas development, the expansion of Red Dog Mine for its operating life through closure, and Dalton Highway construction. Impacts from each of these actions may be substantive in their localized areas, but they are far enough away from the proposed road and indirect mine development that they are not anticipated to be additive within the project area. The Supplemental EIS states that while the air quality impacts of any action alternative would be highly localized and often short term, and would not be predicted to be above applicable air quality standards, cumulatively the project would contribute GHGs to the atmosphere. While this project itself likely would not substantially affect air quality in the project area, with other emissions and other projects nationally and globally, it would contribute incrementally to far-reaching effects, including ecological and socioeconomic effects of climate change in the project area (as discussed in other sections of this Supplemental EIS).
32724	163	Mammals	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.	The Supplemental EIS looks at potential impacts of reasonably foreseeable actions, but these potential future developments do not have project plans. If these development plans proceed, they will be subject to the requirements of NEPA.
32724	164	Socioeconomics and communities	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 AIDEAs 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 BLM's prior ROW grant has been suspended during the development of the Supplemental EIS. The Supplemental EIS contains sufficient information for each of the action alternatives to adequately compare impacts among the alternatives and to make an informed decision on the ROW application.
32724	165	Air quality and climate	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 SEISs 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	Comment noted. It is discussed in the Supplemental EIS that cumulatively, potential impacts on air quality would result from the proposed project, recreational use, mineral exploration and development activities, construction of other roads, and transport along roadways. 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. Increased vehicle traffic through Fairbanks would contribute emissions, potentially increasing PM2.5 concentrations and furthering the non-attainment status of the area for that pollutant. The sources of emission in the area have been discussed and that remote activities such as on- and off-road travel result in air quality impacts that are comparatively less than fugitive emissions from fires in the area. An analysis compliant with NEPA and CEQ has been completed for the project.
32724	166	Air quality and climate	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 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	Comment noted. It is discussed in the Supplemental EIS that cumulatively, potential impacts on air quality would result from the proposed project, recreational use, mineral exploration and development activities, construction of other roads, and transport along roadways. 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. Increased vehicle traffic through Fairbanks would contribute emissions, potentially increasing PM2.5 concentrations and furthering the non-attainment status of the area

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			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.	for that pollutant. The sources of emission in the area have been discussed and that remote activities such as on- and off-road travel result in air quality impacts that are comparatively less than fugitive emissions from fires in the area. An analysis compliant with NEPA and CEQ has been completed for the project.
32724	167	Socioeconomics and 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 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 asbestosladen 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 AIDEAs 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.	The presence and potential impacts of NOA are discussed in Sections 3.2.2 and 3.4.5 of the Supplemental EIS as well as in the HIA. Potential material sites would be investigated and tested to determine if asbestos is present according to DOT&PF guidelines. If sufficient material sites without asbestos are not available, AIDEA has committed to complying with DOT&PF's <i>Interim Guidance and Standards for Naturally Occurring Asbestos (NOA) Material Use</i> . The Air Quality component of the monitoring plan discussed in Section 1.1 of Appendix N would include, at a minimum, methods for monitoring dust production during all activities that involve disturbance of NOA materials. Additionally, Section 3.2.7 of Appendix N includes a potential mitigation measure that would require AIDEA to submit for approval to the Authorized Officer a comprehensive plan for dealing with and minimizing human exposure to NOA.
32724	168	Socioeconomics and communities	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 activitys 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.	See responses to letter 26100, comment 1 and letter 34767, comment 94. The Subsistence Technical Report (Appendix L) incorporates Indigenous knowledge derived from public scoping testimony. In addition, Ethnographic studies, such as Watson (2018), incorporate village-scale use area data into the Subsistence Technical Report (Appendix L). Appendix L, Section 6.4, provides a detailed analysis of the project impact on subsistence use, including possible long-term or permanent effects on the spiritual, cultural, and physical well-being of affected communities. Public scoping comments. and referenced ethnographic studies and subsistence technical reports provide sufficient information to analyze impacts for the Supplemental EIS.
32724	169	Cumulative and indirect effects analysis	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 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.	Appendix H (Section 2.3) discusses how past and present actions have contributed to climate change effects in the analysis area, and how future actions which further contribute to climate change or are implemented in response to climate change are reasonably foreseeable to occur within the analysis area. The resource analyses presented in Chapter 3 of the Supplemental EIS analyze the potential effects of climate change within the context of cumulative and indirect effects. The cumulative and indirect effects analyses for the majority of resources in Chapter 3 discuss either the synergistic or additive effects of climate change when combined with other reasonably foreseeable actions.
32724	170	Water resources	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.	Small-scale mineral exploration and potential impacts are discussed in Appendix H. Placer and small-scale mining operations would be responsible for permitting proposed activities with ANDR; ADNRR would facilitate permitting with other state and federal agencies as appropriate. For claims on BLM-managed public lands, the State of Alaska Bonding Pool provides a financial guarantee of reclamation. Existing state and federal regulations for placer and small-scale mining mitigate for potential water quality impacts. As discussed in Appendix H Section 2.2.2 “Modifying a restricted access industrial road to one capable of supporting public access would require a new ROW application and authorization process and renegotiation of easements, financing, and insurance. Such a road would have a different purpose and need. Any application to convert an approved, restricted industrial access road to a public road across federal public lands would require additional NEPA, ANILCA (1980) Section 810, and National Historic Preservation Act analyses, including appropriate public involvement and consultation with federal, tribal, state, and local government entities.” If an application to convert the road to public access is made, impacts from small-scale mineral exploration under a public road would be evaluated at that time.
32724	171	Socioeconomics and communities	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 murdered Indigenous women and the subsequent strain on judicial systems.1219 The introduction of extractive industries often creates man camps, temporary	See response to letter 34767, comment 94.

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			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.	
32724	172	Socioeconomics and communities	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 developments 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.	The impacts of mining are analyzed to the extent that information is available to do so. No specific mining application/permit request for the District has been submitted to date. The BLM evaluated reasonably foreseeable mining development as indirect and cumulative impacts, using a hypothetical mining development scenario. When officially proposed, each mine would go through its own project-specific NEPA analysis and permitting process, which would provide further detail and analysis regarding the specific impacts of each mine operation.
32724	173	Cumulative and indirect effects analysis	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 potential impacts on a myriad of resources from access roads for mineral exploration and development in the Project Area.	Map 10 in Appendix H has been updated to reflect the most recent Arctic Feasibility Study and its proposed access route to connect with the proposed road. For all other mines which are included in the mining scenario, details concerning the proposed access routes are unknown at this time and therefore reasonable assumptions have to be made in Appendix H regarding their approximate locations (as shown on Appendix H, Map 10). See response to letter 23434, comment 13 regarding uncertainty and reasonable assumptions made in the mining scenario.
32724	174	Socioeconomics and communities	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 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.	The HIA is a technical report that presents impact analysis. Potential mitigation measures associated with the proposed road are located in Appendix N. Because health-related effects would primarily be associated with mining development, each mine application and subsequent NEPA analysis would identify specific mitigation that could serve to minimize the health-related impacts identified.
32724	175	Cumulative and indirect effects analysis	The SEIS Failed to Consider the Cumulative Effects of Changes to BLMs 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 BLMs 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 BLMs 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 areas flow regime and would negatively affect egg survival. The report emphasized that this habitat is 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 unique427 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	RMP revisions are already included in the list of reasonably foreseeable actions (see Section 2.3.3 of Appendix H); however, the potential cumulative effects of future RMP revisions are not analyzed in detail because, as stated in Appendix H, “While these plans would affect how people may use the lands for recreation, subsistence, hunting and fishing, transportation, and commercial ventures, it is not reasonably foreseeable how land management will change based on those updates at this point in time.”

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			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	
32724	176	ANILCA 810 analysis	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, BLMs 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.	The subsistence use area maps represent all subsistence use area data that were available at the time of Supplemental EIS preparation, including both contemporary and historic/lifetime subsistence use areas. See Table 2 of Appendix L. The cumulative section has been revised to address potential development of mining claims along the road corridor outside of the Ambler Mining District. A map of lichen top cover based on remote sensing data (Macander et al. 2022) has been added to the Supplemental EIS, along with additional text on comparisons among alternatives.
32724	177	Cumulative and indirect effects analysis	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.	ANCSA 17(d)(1) withdrawals and RMP revisions are already included in the list of reasonably foreseeable actions (see Section 2.3.3 of Appendix H). Potential cumulative effects of ANCSA 17(d)(1) withdrawals are analyzed in table 3-1 of Appendix H, as well as in Chapter 3. The potential cumulative effects of future RMP revisions are not analyzed in detail because, as stated in Appendix H, “While these plans would affect how people may use the lands for recreation, subsistence, hunting and fishing, transportation, and commercial ventures, it is not reasonably foreseeable how land management will change based on those updates at this point in time.”
32724	178	ANILCA 810 analysis	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.	The Supplemental EIS contains sufficient information for each of the action alternatives to adequately compare impacts among the alternatives and to make an informed decision on the ROW application. According to Title 40 of the Code of Federal Regulations (CFR), Section 1502.22, when an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an EIS and there is incomplete or unavailable information, the agency will make clear that such information is lacking. A number of topics are called out within chapter 3 of the Supplemental EIS where information is incomplete or unavailable. The BLM evaluated the data to determine if any missing information would be relevant to determining reasonably foreseeable significant adverse impacts or essential to making a reasoned choice among alternatives and, if it was, whether the overall costs of obtaining it would not be exorbitant (see Appendix R). 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 Supplemental 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. The BLM has evaluated the impacts in the Supplemental EIS based upon research methods and theoretical approaches that are accepted in the scientific community. Based on a review of the data that are available, summarized, and cited in the Supplemental EIS and in accompanying appendices, sufficient data exists to allow the BLM to make a reasoned choice among the alternatives. If the project moves forward, additional studies and information would be generated during permitting. Some potential mitigation measures identified in Appendix N have provisions for data collection and monitoring.
32724	179	Cumulative and indirect effects analysis	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. 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	See responses to letter 26152, comment 1 and letter 23145, comment 3, regarding mine exploration and development prospects outside of the District and along the proposed road. The reasonably foreseeable mining development scenario presented in Appendix H does include a description of spur/access roads that would be constructed from the proposed Ambler road to work camps, airstrips, and the overall mining facilities, and the locations of approximate access roads are shown in Appendix H Map 10. The cumulative effects of increased mining-related traffic along the proposed road and Dalton Highway are analyzed as part of the mining development scenario (see Table 2-5 and 2-6 in Appendix H). Appendix H includes a reasonably foreseeable assumption that “After the road is constructed, efforts may be made to convert the road to a public road. This would require a new application, additional NEPA analysis, and the issuance of new authorizations. The road would need to be constructed to appropriate standards for public health and safety.” However, the BLM does not, as the commenter suggests, include any reasonably foreseeable assumptions where control of the road would revert to mining companies in perpetuity.

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			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.	
32724	180	Transportation and access	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 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.	See response to letter 23769, comment 1.
32724	181	Cumulative and indirect effects analysis	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	The BLM identified reasonably foreseeable actions in Appendix H, in accordance with methods outlined in <i>Considering Cumulative Effects under the National Environmental Policy Act</i> (CEQ 1997) and Chapter 6.8.3 (Cumulative Effects) of the BLM NEPA Handbook (BLM 2008a). Per the BLM's NEPA Handbook (H-1790-1), reasonably foreseeable actions are those for which there are existing decisions, funding, formal proposals, or which are highly probable, based on known opportunities or trends. Although the Supplemental EIS acknowledges the potential for the proposed road to facilitate additional development in the broader region down the line (see Appendix H, Section 2.1.3), the BLM is not required to speculate about future actions which lack detailed studies or proposals. See response to letter 32570, comment 144 regarding transportation-related RFAs. See also response to letter 26152, comment 1 and letter 23145, comment 3 regarding mining-related RFAs outside of the Ambler Mining District.
32724	182	Cumulative and indirect effects analysis	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 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.	Chapter 3 of the Supplemental EIS includes a cumulative and indirect effects analysis for each of the resources analyzed, based on the descriptions of past, present, and reasonably foreseeable actions presented in Appendix H. The commenter has not identified any specific deficiencies in the Supplemental EIS's cumulative and indirect effects analysis for the BLM to address.
32724	183	Cumulative and indirect effects analysis	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 BLM did analyze past, present, and reasonably future actions in a broad geographic area. See Section 2.3 of Appendix H for details on the past present and reasonably foreseeable actions considered. Regarding the commenter's suggestion related to contaminated sites, the BLM reviewed Alaska DEC databases to identify potential contaminated sites that could contribute to cumulative impacts (See Chapter 3, Section 3.2.3 and Table 4 in Appendix D for information. The BLM considered the cumulative impact of hazardous waste (including asbestos) in detail in Sections 3.3.1 and 3.3.3 in Appendix H.
32724	184	Cumulative and indirect effects analysis	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.	The Willow project is included in the list of RFAs; the project is mentioned within the context of ongoing "North Slope Development" in Section 2.3.3. The proposed road to Umiat is no longer an active proposal and therefore is not considered a reasonably foreseeable action.
32724	185	Mitigation/monitoring	. 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.195F	Potential mitigation measures for all resources are discussed in Appendix N of the Supplemental EIS. Each potential mitigation measure is followed by a summary of its effectiveness at mitigating

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			462 Accordingly, an EIS must discuss appropriate mitigation measures.196F 463 Specifically, agencies must include appropriate mitigation measures not already included in the proposed action or alternatives.197F 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.198F 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.46619F In addition, CEQ has instructed that the possibility of mitigation should not be relied upon to avoid further environmental analysis.20F467 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.	impacts ranging from “highly effective” to “minimally effective” based on the criteria described therein.
32724	186	Mitigation/monitoring	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	The BLM is considering a full range of mitigation measures to prevent unnecessary and undue degradation of BLM-managed land as required by FLPMA. See Appendix N. Should the project be approved, the ROD will determine which mitigation measures are required.
32724	187	Mitigation/monitoring	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.	Comment noted. Should the project be approved, the ROD will determine which mitigation measures are required.
32724	188	Proposed action	BLMs 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 projects construction and design. This is largely due to AIDEAs 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 AIDEAs 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 NEPAs requirements to conduct a site-specific analysis of a projects impacts and renders it nearly impossible to require meaningful and enforceable mitigation measures.	See responses to letter 21015, comment 5 and letter 22855, comment 1.
32724	189	Mitigation/monitoring	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 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, . . . BLMs 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 BLMs 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 projects 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 BLMs vague statements that	The BLM and NPS ROWs have been suspended while the Supplemental EIS is being developed and new decisions are issued. Prior to initiating the 2020 EIS a consolidated application was submitted to all federal authorizing agencies and deemed complete. The revised application to the USACE responded to feedback from that agency on the original application. The BLM has analyzed a combined phased alternative that could be included with each action alternative. Also see Appendix N, Section 3.5 Proposed Mitigation Adopted from USACE’s 404 Clean Water Act and Section 10 Rivers and Harbors Act Permit Special Conditions. Each land manager that issues a ROW or some other right of access is responsible for ensuring compliance with the terms of the grant for access. Should the project be approved, the BLM’s ROD will determine which mitigation measures are required.

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			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.	
32724	190	Mitigation/monitoring	Regarding the projects 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 97 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. 333), 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	The proposed mitigation in the Supplemental EIS Appendix N contains measures that serve to minimize potential impacts to resources from the project. Should the project be approved, the ROD will determine which mitigation measures are required. See Appendix N Section 3.5 Proposed Mitigation Adopted from USACE's 404 Clean Water Act and Section 10 Rivers and Harbors Act Permit Special Conditions. The USACE terms and conditions are considered as proposed mitigation in the Supplemental EIS, and include culvert monitoring provisions.
32724	191	Mitigation/monitoring	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.	The proposed mitigation in the Supplemental EIS Appendix N contains measures that serve to minimize potential impacts to resources from the project. Should the project be approved, the ROD will determine which mitigation measures are required.
32724	192	Mitigation/monitoring	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 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 proposed mitigation in the Supplemental EIS Appendix N contains measures that serve to minimize potential impacts to resources from the project. Should the project be approved, the ROD will determine which mitigation measures are required. See Appendix N Section 3.5 Proposed Mitigation Adopted from USACE's 404 Clean Water Act and Section 10 Rivers and Harbors Act Permit Special Conditions. The USACE terms and conditions are considered as proposed mitigation in the Supplemental EIS, and include culvert monitoring provisions.
32724	193	Mitigation/monitoring	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 AIDEAs 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.	This comment is non-substantive because it does not address the Supplemental EIS.
32724	194	Alternatives	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 BLMs 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 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. BLMs failure to analyze other reasonable alternatives contravenes NEPA and ANILCA 810, and this leaves the no action alternative as the only viable path forward.	See response to letter 23145, comment 6.
32724	195	Cooperating agency involvement	. 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 projects impacts to aquatic resources.476 The Federal Defendants made no commitment	The Supplemental EIS analyzes the impacts to wetlands and waters of the United States in Section 3.2.5, Water Resources.

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			to address the Corps legal violations in their remand motion. The draft SEIS seemingly sets the stage for the Corps repeat the same legal violations underlying its existing 404 permit.	
32724	196	ANILCA 810 analysis	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. 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. 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. 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. As Dr. Watsons analysis indicates, gathering and mapping subsistence harvest data using a lifetime temporal scale would have revealed extensive and overlapping ranges for subsistence 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, singleyear subsistence harvest data in the draft SEIS is woefully inadequate.	The subsistence analysis incorporates various types of available subsistence data, including multiple years of ADF&G harvest data for most study communities, subsistence use area data as collected by the ADF&G and in ethnographic reports such as those prepared by Dr. Watson, and Indigenous knowledge provided by residents in the potentially affected communities. Contrary to the comment, the subsistence use area maps represent all subsistence use area data that were available at the time of Supplemental EIS preparation, including both contemporary and historic/lifetime subsistence use areas. See Table 2 of Appendix L.
32724	198	ANILCA 810 analysis	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. Marys, and Pitkas 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. The only harvest data available for Koyukuk relates to sheefish. 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. BLMs 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. 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. Atqasuk 2006 (17 years ago) Kotlik 1980 (43 years ago) Nulato 2010 (13 years ago) St. Michael 2006 (17 years ago) Even worse, the harvest data for fish study communities is vaguely identified as coming from available study years. 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. 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.	The Supplemental EIS and ANILCA 810 evaluation rely on the best available data for subsistence. While harvest data are sometimes outdated, they are generally reflective of the types of species harvested by a community and the relative contribution of different species to that community's harvest. Where recent data indicate those harvests have changed (e.g., decline in salmon populations), the analysis incorporates relevant information or Indigenous knowledge for context. For fish and caribou study communities, the harvest data include all harvest data for fish and/or caribou species that are available through the ADF&G's Community Subsistence Information System.
32724	199	Subsistence	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. 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 BLMs 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: [map] In stark contrast, BLMs 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: [map] Other maps throughout the draft SEIS repeat this glaring omission, including maps of subsistence use areas, caribou ranges, salmon habitat, and sheefish and whitefish habitat. As a result, the draft SEIS	Map 3-25 Mining Claims has been updated. Reviewed Cumulative Impacts section and revised to address additional mining developments outside the district that could be accessed along the road alternatives.

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			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).	
32724	200	Subsistence	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, 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. 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.	The impacts of mining are analyzed to the extent that information is available to do so. No specific mining application/permit request for the District has been submitted to date. The BLM evaluated reasonably foreseeable mining development as indirect and cumulative impacts, using a hypothetical mining development scenario. When officially proposed, each mine would go through its own project-specific NEPA analysis and permitting process, which would provide further detail and analysis regarding the specific impacts of each mine operation. Revised Cumulative Impacts section to ensure cumulative impacts of mining activities on subsistence are adequately addressed. Added discussion of other potential mining along the road corridor outside the District.
32724	201	Subsistence	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 longdistance migration than any single road.¹²⁴⁴ If the full extent of the mining-related industrialization along the Ambler Road corridor were fully depicted and analyzedi.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.	Cumulative Impacts section revised to address additional mining developments outside the district that could be accessed along the road alternatives.
32724	202	Subsistence	Even more importantly, the loss of caribou, salmon, sheefish, and other subsistence resources would destroy extensive sharing networks that are central to Athabascan and Lupiat 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. The draft SEIS recognizes that: 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. 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.	The potential impacts to the 66 subsistence study communities are addressed in Section 3.4.7, including impacts to spiritual and cultural well-being.
32724	203	Subsistence	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	See Supplemental EIS Chapter 3, Section 3.4.2, Transportation and Access, for a discussion of cumulative impacts related to spur roads, trespass, and construction machinery, among other topics.

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			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 FEISs 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 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.	
32724	204	ANILCA 810 analysis	Overall, for Athabascan and lupiat 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 810s substantive standards compel BLM to choose the no action alternative.	The final ANILCA 810 is included as Appendix M of the Supplemental EIS.
32724	205	ANILCA 810 analysis	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 lichendominated vegetation types would result in disproportionately greater impacts on the WAH than reduction of other vegetation types. 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 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. 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 BLMs obligations under NEPA and ANILCA 810. In the absence of such information, BLM must select the no action alternative.	The subsistence use area maps represent all subsistence use area data available at the time of Supplemental EIS preparation, including both contemporary and historic/lifetime subsistence use areas, and includes sufficient information to adequately compare impacts among the alternatives. See Table 2 of Appendix L. A map of lichen top cover based on remote sensing data (Macander et al. 2022) has been added to the Supplemental EIS, along with additional text on comparisons among alternatives.
32724	206	Subsistence	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. 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. 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. 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 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 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,	Supplemental EIS Appendix N, Potential Mitigation discusses numerous potential measures to mitigate adverse impacts from the project. Should the project be approved, the ROD will determine which mitigation measures will be required. Reviewed subsistence section and ANILCA 810 analysis to ensure consistency with one another and with the findings of the terrestrial mammals analysis.

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			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 movement1258 and that the overall migratory routes are expected to remain intact. 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. 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. 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 projects impacts to caribou and subsistence.	
32724	207	Mitigation/monitoring	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. 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. By contrast, BLM lands constitute only 11%-12% of the route for these alternatives. The Alaska Department of Natural Resources (DNR) has made it pretty clear that it does not feel bound to adopt or implement BLMs 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. 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. 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 BLMs proposed mitigation measures for the road segments that cross their lands, which comprise 13%-15% of the route depending on the alternative. There is no indication that they have committed to implementing BLMs proposed mitigation on their lands either.	Each land manager that issues a ROW or some other right of access is responsible for ensuring compliance with the terms of the grant for access.
32724	209	Subsistence	In short, BLMs 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.	Each land manager that issues a ROW or some other right of access is responsible for ensuring compliance with the terms of the grant for access.
32724	210	Section 106 consultation	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.	See response to letter 34767, comment 136.
32724	211	Proposed action	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. 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 AIDEAs 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. 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. Nonetheless, the SEIS continues to represent that AIDEA would build the road in phases, up to completion of Phase III. 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. Problematically, Chapter 2 of the SEIS does not disclose the number of anticipated material sites; rather it points the reader to maps buried in appendices. 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 4146 mines are anticipated,	See responses to letter 32724, comments 214 and 254. The Supplemental EIS analyzes all three phases of the proposed road and all identified associated facilities, including material sources, consistent with AIDEA's application for a ROW.

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			depending on the alternative. 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.	
32724	212	Section 106 consultation	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 governments 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.	See response to letter 34767, comment 136.
32724	213	Section 106 consultation	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 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 datagathering 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 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, 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, BLMs only feasible and legal option is to choose the no action alternative.	See response to letter 34767, comment 136.
32724	214	Cooperating agency involvement	The Corps determined that the revised version of the project was the least environmentally damaging practicable alternative, and approved the project as described in AIDEAs revised permit application. 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.	Prior to initiating the 2020 EIS a consolidated application was submitted to all federal authorizing agencies and deemed complete. The revised application to the USACE responded to feedback from that agency on the original application.
32724	215	Section 106 consultation	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). 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	See response to letter 26067, comment 14.

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			different study areas based on this unworkable and arbitrary distinction. 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, then shifts to the term right-of-way (ROW) when discussing documented archaeological resources, then shifts to the 10-mile-wide study area with respect to the potential sensory impacts from construction activities, 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). 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.	
32724	216	Proposed action	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 constructability 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 dont 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 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. 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 AIDEAs application.	See responses to letter 21015, comment 5 and letter 22855, comment 1.
32724	217	Cultural resources	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. 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.	The BLM has complied with the National Historic Preservation Act through execution of a Programmatic Agreement (Appendix J) which outlines how historic properties will be taken into account through a phased process. The PA is being executed pursuant to 36 CFR 800.4(b)(2) and 800.14(b), which states: “Where alternatives under consideration consist of corridors or large land areas, or where access to properties is restricted, the agency official may use a phased process to conduct identification and evaluation efforts. The agency official may also defer final identification and evaluation of historic properties if it is specifically provided for in a...programmatic agreement executed pursuant to 36 CFR 800.14(b).”
32724	219	Wetlands	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. It would require 29 bridges, with 11 large bridges crossing major rivers, including the Kobuk Wild and Scenic River. The project would discharge between 1522 million cubic yards of fill into wetlands permanently, and over 47 miles (250,000 feet) of stream channels would be permanently impacted. 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.	Suitable high resolution and field ground-truthed wetland mapping is available for Alternatives A and B, whereas mapping for Alternative C is based on a desktop analysis combining National Wetland Inventory data and existing vegetation mapping. The available mapping, both desktop and high resolution mapping, are sufficient to determine significant differences to impacts from Alternative C and Alternatives A and B. The high resolution wetland mapping for Alternatives A and B is suitable to compare those similar alternatives.
32724	220	Cultural resources	At the same time, however, BLMs 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	See response to letter 32724, comment 217.

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			probability modeling suggests that the Alternative A APE contains extensive high and medium probability zones for cultural resources. Iupiat, 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. 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. 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 CWA, NEPA, and NHPA Section 106 obligations. Likewise, the same would be true for NPS with respect to NHPA Section 106.	
32724	221	Wetlands	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). Those reports focus[] on different sized study areas, and each reports different wetland extents, making comparisons difficult. There is also no delineation for Alternative C, which precludes a complete assessment of the alternatives. 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 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. 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. 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. 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.	Suitable high resolution and field ground-truthed wetland mapping is available for Alternatives A and B, whereas mapping for Alternative C is based on a desktop analysis combining National Wetland Inventory data and existing vegetation mapping. The available mapping, both desktop and high-resolution mapping, are sufficient to determine significant differences to impacts from Alternative C and Alternatives A and B. The high-resolution wetland mapping for Alternatives A and B is suitable to compare those similar alternatives. A similar assumption was made when considering functional losses where some information was available for portions of Alternatives A and B, but not for Alternative C. Because Alternative C is much longer than both Alternatives A and B, the assumption is that functional losses overall would be greater.
32724	222	Wetlands	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 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. 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. 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. 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. 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.	Supplemental EIS Chapter 3, Section 3.3.1, Vegetation and Wetlands describes the Nutuvukti Fen, potential project impacts to the fen, and mitigation measures intended to minimize impacts to the fen.
32724	224	Alternatives	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 projects gravel footprint. These deficiencies must be addressed and the missing information contained and 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.	See response to letter 68, comment 4.
32724	225a	Environmental justice	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 projects 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	As stated in Appendix N of the Supplemental EIS, effects of the project on environmental justice populations would be addressed through implementation of mitigation measures related to subsistence resources (Section 3.4.7), and socioeconomics and public health (Section 3.4.5). Any residual adverse impacts to local communities noted in these areas would likely

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			and adverse human health or environmental effects of [agency] programs, policies, and activities on minority populations and low-income populations.1311 President Bidens 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.	disproportionately affect low-income and minority populations. See also Chapter 3, Section 3.4.6, Environmental Justice.
32724	225b	Environmental justice	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. BLMs 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 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.	Regarding subsistence and public health issues, the Supplemental EIS as a whole must be considered and not just the EJ section. Supplemental EIS Sections 3.4.5 (Socioeconomics and Communities) and 3.4.7 (Subsistence Uses and Resources) further discuss and analyze potential effects to human health and safety and subsistence communities. In addition, a Health Impact Assessment was completed for the project and is referenced in the Socioeconomics subsection on Public Health (see Section 3.4.5). The HIA is available for review on the BLM's ePlanning website for the Ambler Road Project. See also response to letter 32724, comment 225a regarding proposed mitigation for potential effects.
32724	226	Water resources	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. 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.	See response to letter 20731, comment 1. See response to letter 20215, comment 1. Section 3.3.1 and Appendix E, Section 1.1 summarize estimated impacts on wetlands.
32724	227	Water resources	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. Dr. Fennessy also explained that, because the Ambler Road would run perpendicular to the Brooks Ranges 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.	See response to letter 20731, comment 1. See response to letter 20215, comment 1. See response to letter 32590, comment 8.
32724	228	Environmental justice	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. 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 agencys finding would differ if the road is eventually opened to the public. In addition, BLMs 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 projects 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. 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 peoples lives in these communities. This is an important dynamic to	See response to letter 25185, comment 5.

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			recognize since, unlike the projects adverse impacts, employment opportunities associated with the project would not disproportionately fall to EJ communities.	
32724	229	Environmental justice	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 communities. 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. AIDEA also intends to limit permits for supply deliveries and emergency transportation to less than 1 truck or bus per week. 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. 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. 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.	As noted in Section 2.3.1, AIDEA has proposed that communities would be allowed to use the road for commercial deliveries. Development of spur roads however would depend on the community's proximity to the proposed road and ability to find construction funding. The cost of constructing and maintaining these spur roads is likely to be high given the challenging soil conditions and other factors. Some communities farther away from the alignments, such as Allakaket or Alatna, may find it cost prohibitive to construct a connection to the proposed access road. The Commercial Access Scenario presented in Appendix H (Section 2.2.1) provides greater detail concerning the specific communities likely to be affected by connections to the proposed road, and acknowledges that those communities would be responsible for obtaining separate access authorizations and for covering maintenance costs. Appendix H also acknowledges that some of those permanent connecting roads could be authorized as public roads, and therefore might involve some public funding (see Section 2.2.1 of Appendix H). See also Section 3.4.5, Socioeconomics and Communities in the Draft Supplemental EIS for a description of the benefit of the proposed road due to commercial access for communities closest to the road.
32724	230	Water resources	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.	See response to letter 22633, comment 6a. See response to letter 32724, comment 382. The phase 1 pioneer road would have a short duration (2 years) as a means to facilitate construction of the full embankment phase 2 road, with construction of the phase 2 road occurring immediately after construction of the pioneer road. All culverts and bridges required for the phase 2 road would be constructed as part of the phase 1 pioneer road. Material mining would be completed in accordance with the ADEC Construction General Permit , which has requirements to minimize impacts of discharged water on the environment. Supplemental EIS Section 2.4.4 and Appendix N include multiple mitigation measures to minimize impacts of naturally occurring asbestos on the environment, including development and implementation of a Mineral Materials Mining and Reclamation Plan, to be approved by BLM, addressing asbestos-containing materials (Section 3.2.2, Proposed Mitigation 2).
32724	231	Sand and gravel resources	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.	The Nutuvukti Fen also states that AIDEA would be required to operate each gravel mine site under an approved SWPPP and incorporate measures to minimize potential impacts from erosion and sedimentation (see Chapter 2, Section 2.4.4, Design Features Proposed by AIDEA).
32724	232a	Environmental justice	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 possible benefits associated only with the mining development scenario in assessing environmental justice impacts.	Section 3.4.5, Socioeconomics and Communities explains how public health would be both beneficially and adversely affected by improved access, as well as future potential mining developments in the cumulative and indirect effects analysis. Cumulative and indirect effects are not always adverse and can be beneficial as well. See also response to letter 18528, comment 9 regarding connected actions.
32724	232b	Environmental justice	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 foodinsecure 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	See response to letter 25185, comment 5 regarding proposed mitigation measures. See response to letter 32724, comment 232a regarding public health and services. Potential mitigation measure 2 for subsistence resources (see Section 3.4.7 of Appendix N) specifies that "If monitoring studies identify a loss of subsistence resources to communities through a decrease in harvests or reduced access to traditional harvesting areas, AIDEA will engage with the affected communities to identify mechanisms for replacing lost subsistence harvests. Potential mechanisms would include providing impact funds to hunters to facilitate travel to alternative hunting areas, or providing funds to purchase nutritionally equivalent foods. "

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			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.	
32724	235	Socioeconomics and communities	THE SEIS DOES NOT ADEQUATELY ANALYZE IMPACTS TO SOCIOECONOMIC SYSTEMS. In the SEIS, BLMs socioeconomic analysis should have meaningfully discussed the projects 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 projects economic impacts without adequately addressing community concerns regarding public health, community cohesion, and lost traditions. 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. 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. Waving these concerns off, the SEIS simply states that opportunities for access and development change the lifestyle and culture of Alaska Native communities. 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. This statement sidesteps necessary analysis by presuming the projects negative impacts degradation of the regions 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 BLMs analysis of socioeconomic impacts. The SEIS failed to meaningfully incorporate those community concerns into its analysis.	The Nutuvukti Fen has described potential social and cultural impacts of the road and mineral development in Section 3.4, Social Systems. Consideration of changes to social health and the cultural environment of the area are detailed in several locations. Health impacts (including changes to social health) are summarized in Section 3.4.5 (Socioeconomics and Communities) as well as 3.4.6 (Environmental Justice). Additionally a Health Impact Assessment was commissioned to identify and disclose health impacts (NewFields 2019, available on the ePlanning page for the project). Impacts to the cultural environment are described in Sections 3.4.5, Socioeconomics and Communities; 3.4.7, Subsistence Uses and Resources; and 3.4.8, Cultural Resources. In addition, a detailed technical report on subsistence impacts (Appendix L) has considerable discussion of the importance of subsistence to the sociocultural environment and the potential impact thereon. The contribution of traditional and local knowledge has also been invaluable during the Supplemental EIS comment period.
32724	237	Cooperating agency involvement	The Corps also needs to accurately consider secondary effects from road dust. EPA questioned the scientific basis for limiting the EISs analysis of impacts to wetlands and waterways to 100 meters beyond the project footprint, noting impacts could extend up to 1,000 meters. Yet, the SEIS continues to limit the scope of its analysis of fugitive dust impacts to 100 meters (328 feet). The Corps itself undermined the SEISs 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. 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 projects 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, ADNRR, ADF&G) during permitting for the project. 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 Roads 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 AIDEAs proposal to construct the Ambler Road.	The 100-meter standard for fugitive dust fallout is based on the best available science; see Walker and Everett (1987); Auerbach et al. (1997); Myers-Smith et al. (2006); and McGanahan et al. (2017) as cited in Section 3.2.1, Geology and Soils of the Supplemental EIS.
32724	238	Cooperating agency involvement	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] permit would be required should be included in the same permit application. 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 SEISs 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. 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. 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. The Corps is required to consider the secondary and cumulative effects of the mine and other components of this	The Supplemental EIS analyzes the impacts of the proposed gravel mines (e.g., Section 3.2.2, Sand and Gravel Resources).

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			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.	
32724	239	Socioeconomics and communities	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. 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. 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. BLMs 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. 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.	See response to letter 26100, comment 1. Indigenous knowledge has been incorporated into Sections 3.3.4, 3.4.7, and 3.4.8, Appendix L, and Appendix M of the Supplemental EIS.
32724	240	Mitigation/monitoring	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. The mitigation sequence requires AIDEA to first avoid impacts to aquatic resources. For those impacts that cannot be avoided, AIDEA must take all appropriate and practicable steps to minimize impacts. For the remaining unavoidable impacts, AIDEA must use compensatory mitigation to replace the loss of wetland and aquatic resource functions in the watershed. The amount and quality of compensatory mitigation may not substitute for avoiding and minimizing impacts. 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. 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, 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. The Corps attempted to brush off the Ambler Roads significant direct and secondary impacts by asserting in its JROD that AIDEAs 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. 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 the regions 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 through the active layer to protect hydrologic inputs to the fen and lake. 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 AIDEAs 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. Additionally, as described above, the record demonstrates that significant and unavoidable adverse impacts would occur even if all mitigation measures are properly implemented.	This comment is non-substantive because it does not address the Supplemental EIS.
32724	241	Mitigation/monitoring	The Corps also cannot categorize impacts as being avoided or minimized when it anticipates permitting them later. For instance, the Corps cannot simply ignore impacts from AIDEAs 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, while admitting elsewhere in its JROD that additional mines may still be permitted later to supply sufficient quantities of gravel. 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;	This comment is non-substantive because it does not address the Supplemental EIS.

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			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 AIDEAs 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.	
32724	242	Socioeconomics and communities	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. However, both the SEIS and the HIA simply reiterate that the project may increase rates of substance abuse. Neither source provides regional baseline information about existing rates of substance abuse or existing sociocultural impacts from such abuse in affected communities. 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. The projects contribution to these socioeconomic issues cannot be assessed without adequate regional baseline data and analysis assessing the projects short-term economic benefits alongside potentially long-term or permanent negative impacts.	See response to letter 26100, comment 1. Section 3.5 of the HIA discusses baseline data for various health effect categories, including substance abuse and trauma. Section 3.5.1 of the HIA also discusses social determinants of health which can contribute to generational health effects.
32724	243	Mitigation/monitoring	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 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 BLMs ROW authorization prior to construction. Due to the lack of specificity regarding the measures, the SEISs conclusions that the mitigation measures are mostly or partially effective are unsupported. 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. 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.	Potential mitigation measures for all resources are discussed in Appendix N of the Supplemental EIS. Each potential mitigation measure is followed by a summary of its effectiveness at mitigating impacts ranging from “highly effective” to “minimally effective” based on the criteria described therein. Each land manager that issues a ROW or some other right of access is responsible for ensuring compliance with the terms of the grant for access.
32724	244	Proposed action	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.	Appendix N includes potential mitigation measures that would be implemented to avoid and minimize potential impacts to wetlands, waters, and other resources.
32724	245	Socioeconomics and communities	BLMs supplemental analysis also fails to fully evaluate all of the projects socioeconomic impacts. The socioeconomic section of the SEIS largely focuses on economic impacts and, where BLM draws conclusions regarding the projects 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. 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. 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 The shift of risk and responsibility away from workers 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 projects net socioeconomic impacts, and to develop and consider specific and enforceable mitigation measures to avoid or minimize such impacts.	The impacts of mining are analyzed to the extent that information is available to do so. No specific mining application/permit request for the District has been submitted to date. The BLM evaluated reasonably foreseeable mining development as indirect and cumulative impacts, using a hypothetical mining development scenario. When officially proposed, each mine would go through its own project-specific NEPA analysis and permitting process, which would provide further detail and analysis regarding the specific impacts of each mine operation.
32724	246	Mitigation/monitoring	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	This comment is non-substantive because it does not address the Supplemental EIS.

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			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 affect the reliability and practicability of a winter construction access trail, which is common to all features of the action alternatives. 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.	
32724	247	Mitigation/monitoring	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. 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. 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 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.	This comment is non-substantive because it does not address the Supplemental EIS.
32724	248	Socioeconomics and communities	In addition, BLMs 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 projects 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. 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. 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.	Section 3.4.5, Socioeconomics and Communities describes both potential short-term and long-term economic consequences of the proposed road project and future mining activities in the region. Other sections—Sections 3.2, 3.3, and 3.4—describe both short-term and long-term potential effects on the physical environment, biological resources, and other social systems such as cultural resources and subsistence use and resources. Section 3.6 discusses impact to or use of resources that cannot be reversed or recovered (irreversible and irretrievable commitments of resources).
32724	249	Socioeconomics and communities	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. 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. 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 pollution. This approach resulted in a lopsided analysis that downplayed the projects negative impacts.	See response to letter 32724, comment 248.
32724	250	Socioeconomics and communities	Finally, the socioeconomic sections 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. BLM is required to [d]iscuss each alternative considered in detail . . . so that reviewers may evaluate their comparative merits. A general list of potential impacts does not constitute a meaningful analysis.	See Chapter 3, Section 3.4.5 Socioeconomics and Communities, Environmental Consequences. BLM discusses the impacts specific to each action alternative, but where impacts are common across all action alternatives, as they are for public health impacts in the Supplemental EIS, they are described in Impacts Common to all Action Alternatives.
32724	253	Socioeconomics and communities	A 2021 independent study of Ambler Road financing and economic benefits puts many of AIDEAs claims regarding the roads 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	See response to letter 26253, comment 4.

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			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 AIDEAs 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.	
32724	254	Compliance with other laws	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. 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. 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. 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 AIDEAs application. The SEIS contains the same fundamental flaws as BLMs prior authorizations, and as such, BLM should rescind the prior approvals and deny the project application.	The BLM is processing the application pursuant to FLPMA and its implementing regulations found at 43 CFR 2800, as well as Title XI of ANILCA. This process included determining that the application submitted by AIDEA was complete.
32724	255	Socioeconomics and communities	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 region and technical challenges with the road proposal, the projects 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 AIDEAs credit rating and to state finances.	See response to letter 26253, comment 4.
32724	256	Socioeconomics and communities	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 AIDEAs 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 roads 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.	See response to letter 26253, comment 4.
32724	257	Proposed action	AIDEAs 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 AIDEAs application. The SEIS falls short of rectifying these omissions, rendering BLMs analysis insufficient under NEPA and making issuance of a right-of-way by BLM inappropriate. FLPMA and BLMs 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-ofway.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. BLMs 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 entitys 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 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. 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. 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. That is exactly the information required to be in the POD prior to issuance of the right-ofway.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. These necessary project components needed to be part of the complete POD. BLMs failure to require the submission of a complete POD prior to issuing the right-of-way violated FLPMA. 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. BLMs issuance of the ROW prior to	See responses to letter 21015, comment 5 and letter 22855, comment 1.

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			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.	
32724	258	Proposed action	AIDEA Failed to Provide an Adequate Description of the Project and the Scope of the Facilities. AIDEAs 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. Information such as where this steep terrain occurs and which areas of the ROW will need to be wider, is not included anywhere in AIDEAs application which isnt 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 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. 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.	See responses to letter 21015, comment 5 and letter 22855, comment 1.
32724	259	Proposed action	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. AIDEAs 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 AIDEAs 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 transportation capacity. 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. 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. AIDEAs 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. 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, AIDEAs 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 AIDEAs application. AIDEA provides essentially zero information about the plans for reclamation of this project. AIDEAs 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, 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: AIDEAs application states that, at the projects 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. 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.	See responses to letter 21015, comment 5 and letter 22855, comment 1.
32724	260	Proposed action	Other specific shortcomings in AIDEAs 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. By way of comparison, about 24 million cubic yards of gravel were used just to construct the Dalton Highway paralleling the Alaska pipeline. BLM itself acknowledged in the JROD that it did not have sufficient site-specific information to authorize the gravel mines at that time; but the gravel mines are a core, connected component of this	See responses to letter 21015, comment 5 and letter 22855, comment 1.

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			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 AIDEAs 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.	
32724	261	Socioeconomics and communities	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. 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 AIDEAs 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, may have to default on the bonds it sold to finance the building of the Ambler Access Road. 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. Ultimately, the SEIS should make clear that AIDEAs 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.	See response to letter 26253, comment 4.
32724	262	Funding and bonding	A Statement of AIDEAs 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 AIDEAs 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. As described above, BLM must have a complete POD now, while it considers whether to affirm AIDEAs ROW grant. This FLMPA mandate cannot be punted to some future time after ROW issuance. Of particular importance, BLM must carefully consider AIDEAs financial ability to reclaim the road, as described in the section immediately above. AIDEAs 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. 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. 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. 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. This is incompatible with FLMPAs 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.	A statement demonstrating the financial and technical ability to construct, operate, maintain, and terminate a project is required pursuant to 43 CFR 2804.26(a)(5)(i) prior to approving a ROW application. Reclamation is a component of the proposed action and considered in all action alternatives. In the event the project is reapproved, ROW rentals would be calculated in accordance with 43 CFR Subpart 2806.
32724	263	Socioeconomics and communities	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 roads 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 owners 1986 signed agreement to reimburse the state for the roads financing, construction, use, operation, and maintenance costs. 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	The Supplemental EIS uses revised cost estimates for construction, maintenance, and reclamation (see e.g., Appendix C, Table 1, Summary of major project components for each action alternative; and DOWL 2023). Pursuant to Alaska Statutes Section 44.88.095, Bonding Limitations, prior to approving a project for which bonds would be required, AIDEA must determine the project is economically and financially feasible and able to produce revenue adequate to repay the bonds with which it is financed. This necessitates AIDEA having a study of project costs and revenues conducted.

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			its investment in the Red Dog Mine when zinc prices dropped. On top of these optimistic assumptions, AIDEAs economic analysis also assumed an additional 20 years of road life without any basis. The SEIS analyzes a road with a fifty-year life, which was also authorized by the terms of BLMs right-of-way. In most previous analyses, the roads 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 AIDEAs 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. There is no basis for this assumption.	
32724	264	Funding and bonding	In addition, BLM must charge full costs for a reclamation and performance bond to cover the ROW. In particular, BLMs 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. This is especially important for AIDEAs 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, AIDEAs 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. Because there is no reclamation plan for this proposal, it is unclear how AIDEA and BLM will ensure compliance with BLMs bonding requirements. These substantial financial considerations are in addition to the rents and other fees required by FLPMA and the ROW regulations.	See response to letter 25830, comment 26.
32724	265	Socioeconomics and communities	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.	AIDEA has indicated they will not go forward with construction without having operations and maintenance agreements in place with potential road users. AIDEA's ongoing project development process will only be successful if the project is economically viable. Without any definite plans for mining activities to occur, the road project will not be pursued. See also response to letter 23434, comment 13 regarding the use of reasonable assumptions in developing the hypothetical mining development scenario.
32724	266	Proposed action	AIDEAs application, which should contain the requisite information for BLM to meet these FLPMA mandates, is woefully inadequate. In its application to BLM, AIDEA claimed AIDEAs 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 AIDEAs assertion with close scrutiny. The DeLong Mountain Road is a 52- mile haul road connecting the Red Dog Mine the worlds largest zinc mine to a port along the Chukchi Sea. Ambler would foremost be a copper mine, producing a small quantity of highquality copper ore. While this copper is economically valuable, it might annually produce less than of 1% of global supply. Ambler would secondly be a zinc mine, projected to produce around as much zinc per year as Red Dog, for a lifetime as long. Whereas Red Dog is one of the worlds 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 mines 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 Trilogys CEO for fifteen years, Rick Van Nieuwenhuysse, 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 Canadas class action laws. AIDEA itself is also a highly questionable project proponent. A recent report on AIDEA showed that AIDEAs project decisions are politically driven and that AIDEA has lost billions of dollars for the state. 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 AIDEAs 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 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 FLPMAs requirement. In addition to all of the above FLPMA requirements, because all of these financial considerations are necessarily part of BLMs review and approval of the ROW, they are subject to full public review under NEPA something the SEIS fails to provide.	See responses to letter 21015, comment 5 and letter 22855, comment 1.
32724	267	Compliance with other laws	BLMs Prior Right-of-Way Grant Did Not Comply with FLPMAs Substantive Requirements and the SEIS Does Not Address BLMs Errors. Important substantive requirements flow from FLPMAs ROW provisions. First, BLM must honor the requirement that the right-of-way grant do no unnecessary damage to the environment. 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. 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. Additionally, BLM must protect the interests of individuals	The BLM's prior ROW grant has been suspended during the development of the Supplemental EIS and will be revisited in the new ROD.

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			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. 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. 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 economic interests 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.	
32724	268	Compliance with other laws	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. 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. 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 projects 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. 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 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.	See response to letter 32724, comment 267.
32724	269	Compliance with other laws	Third, FLPMA requires that the right-of-way grant do no unnecessary damage to the environment and be consistent with . . . any other applicable laws. 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. Unnecessary or undue degradation is defined, in part, as [f]ail[ing] to comply with . . . Federal and state laws related to environmental protection, and includes applicable Federal and state air quality standards. 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. BLMs 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 BLMs finding that the project is in the public interest. 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.	The project's compliance with NAAQS is addressed Chapter 3, Section 3.2.7, Air Quality and Climate.
32724	270	Socioeconomics and communities	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. 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	See response to letter 26253, comment 4.

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			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 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. 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.	
32724	271	Compliance with other laws	Finally, FLPMA expressly requires that all land-use authorizations contain terms and conditions to protect resources and the environment. 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 public interest analysis and ensure there are measures that are adequate to protect the environment prior to making a new decision.	Supplemental EIS Appendix N, Potential Mitigation, discusses numerous potential measures to mitigate adverse impacts from the project. See also response to letter 32724, comment 267.
32724	272	Compliance with other laws	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. 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). The WSRA mandates that designated Wild rivers shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected. Wild rivers should be maintained free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. Free flowing is defined as existing or flowing in natural condition without impoundment, diversion, straightening, riprapping, or other modification of the waterway. This includes all rivers not yet designated, but available for inclusion in the system. 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. 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.	Supplemental EIS Section 3.2.5, Water Resource; Section 3.4.1, Land Ownership, Use, Management, and Special Designations; and Section 3.4.4, Visual Resources discuss impacts to the values of potentially affected wild and scenic rivers, including the Kobuk River.
32724	273	Funding and bonding	The SEIS Assumption that Road Construction Will Not Impact the States Budget or AIDEAs Credit Rating Is Not Justified. The SEIS states that AIDEA bonds will not impact the state of Alaskas 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. If the state does not provide that support in this case, AIDEAs 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 AIDEAs current estimate. If the state does not guarantee the bonds, AIDEA will likely have to, and AIDEAs 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. Any financial outlay by the state in the near future would have negative impacts as it would exacerbate the states fiscal problems and cause reductions in state expenditures in other areas. 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 AIDEAs 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. 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 AIDEAs 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 AIDEAs 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).	Future financial commitments by the State of Alaska are beyond the scope of the Supplemental EIS.
32724	274	Compliance with other laws	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 agencies prior	See response to letter 32724, comment 272.

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			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. Where the Wild and Scenic Rivers Act was discussed, the analysis was buried in other sections of the FEIS. Unlike the FEIS, the SEIS does not even purport to analyze the impacts to WSR values. In the SEIS, BLM again relies on NPSs analysis of the Wild and Scenic River impacts in the NPSs EEA. 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. BLM must analyze the proposed Amber Roads impacts on the Kobuk River, which would be impacted under alternatives A and B. BLM is obligated to consider all information before making an informed decision and should not merely assume NPSs 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. 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. BLM frustrated the publics 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 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 AIDEAs 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. 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.	
32724	275	Compliance with other laws	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 Rivers ORVs, 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. 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 Bone 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. 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. 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.	See response to letter 32724, comment 272.
32724	276	Compliance with other laws	BLM must also address several problems with its prior consideration of the Kobuks 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. 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. 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. 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. BLM must explain this conclusion, and frame its analysis in terms of the Wild and Scenic Rivers Act and Kobuk Rivers ORVs. Additionally, BLM must consider and incorporate issues from soundscape impacts on the Kobuk River, which wasnt done in the SEIS.	See response to letter 32724, comment 272.
32724	277	Socioeconomics and communities	In addition to the low projected returns to the state, the SEISs 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. 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	The estimates of potential economic benefits are as stated in the Supplemental EIS based on certain assumptions; these assumptions are stated in the economic studies cited in the Supplemental EIS. It is acknowledged that results could vary depending on assumptions. The Red Dog Mine experience is a valid basis for the assumptions used in the analysis.

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			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: 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. In other words, third-party economic analysis has determined that AIDEAs 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. The SEIS must fully consider this information rather than rely on AIDEAs unreasonable estimates of financial feasibility in order to take a hard look at the Ambler Roads economic impacts.	
32724	278	Compliance with other laws	BLM did not address AIDEAs 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 AIDEAs proposal. This must be analyzed for consistency with the WSRA.	See response to letter 32724, comment 272.
32724	279	Compliance with other laws	The contemplated use of riprap and other fill material is directly inconsistent with the WSRA. 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 Kobuks 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. 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. 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 Kobuks 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.	See response to letter 32724, comment 272.
32724	280	Recreation and tourism	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. 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. 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.	See response to letter 22633, comment 4.
32724	281	Water resources	BLM also did not consider Alternative Cs 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.	Impacts of Alternative C on the Kobuk River are considered and discussed consistent with other potential waterway crossings. Navigability of the Kobuk River, potential impacts on downstream water quality (e.g., City of Kobuk), proximity to sheefish spawning habitat, and larger bridge requirements from being lower in the basin are discussed in Section 3.2.5. Generally, potential impacts and mitigation measures are similar to other river crossings; impacts to Wild and Scenic River designation and Gates of the Arctic are not applicable to Alternative C.
32724	282	Compliance with other laws	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 rivers ORVs. BLM must address these deficiencies in the final SEIS.	See response to letter 32724, comment 272.
32724	283	Recreation and tourism	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.	See response to letter 22633, comment 4.
32724	284	Compliance with other laws	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	See response to letter 32724, comment 272.

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			Alatna, John, and Koyukuk Rivers below the area where they are officially designated Wild and Scenic. BLM must consider the impacts the road will have on their upriver status 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. 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. 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. 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. 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. 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.	
32724	285	Recreation and tourism	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. BLMs 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.	The BLM has added, “Additionally, if expanded recreation access occurs due to the road, it could reduce opportunities for solitude and may result in more organized recreational experiences, rather than remote backcountry experiences, in the vicinity.” Note that the BLM's prior ROW grant has been suspended during the development of the Supplemental EIS. Should the project be approved, the ROD will determine which mitigation measures will be adopted. Impacts to recreation are discussed in Supplemental EIS Chapter 3 Section 3.4.3 Recreation and Tourism. Each land manager that issues a ROW or some other right of access is responsible for ensuring compliance with the terms of the grant for access.
32724	286	Recreation and tourism	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.	To address road reclamation impacts, BLM added the following: “Road closure and reclamation impacts would likely be similar to those caused by construction of the road. Per Appendix H, closure and reclamation would take 2-5 years and would include removal of equipment and some roads and reclamation of the Project area. Section 2.4.1 further describes reclamation as including removal of all culverts and bridges and restoring natural waterway channels, restoring natural landform contours, and avoiding seed base or eroded areas. The removal of equipment, buildings, bridges and some roads would likely result in increased levels of traffic and noise and elevated dust levels in the vicinity of the reclamation work area, which would have impacts on recreation uses similar to those from construction activities. Removal of bridges would also likely have visual impacts on float trips and on fishing activities near such bridges, although once removed, the original visual characteristics of the waterways would begin to be restored. Actions such as natural landform contouring and re-seeding would also contribute over time to the restoration of natural characteristics, ultimately benefitting recreationists seeking remote and natural recreation experiences.” To add detail on level of traffic and mining activity, BLM has also added the following to the section: “...with project annual average daily traffic during peak production estimated to be around 168 trips per day.” and, “At least four separate mines are anticipated to be developed along the Ambler Road.”
32724	287	Recreation and tourism	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 highuse 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.	Appendix N, Section 3.4.5, includes discussion of a plan that would mitigate the overlap of construction activities and high-use tourist/recreation seasons, and that would time construction activities to mitigate impacts to local lodes and other businesses. According to 40 CFR 1502.22, when an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an EIS and there is incomplete or unavailable information, the agency will make clear that such information is lacking. A number of topics are called out within chapter 3 of the Supplemental EIS where information is incomplete or unavailable. The BLM evaluated the data to determine if any missing information would be relevant to determining reasonably foreseeable significant adverse impacts or essential to making a reasoned choice among alternatives and, if it was, whether the overall costs of obtaining it would not be exorbitant (see Appendix R). Where

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				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 Supplemental 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. The BLM has evaluated the impacts in the Supplemental EIS based upon research methods and theoretical approaches that are accepted in the scientific community. Based on a review of the data that are available, summarized, and cited in the Supplemental EIS and in accompanying appendices, sufficient data exists to allow the BLM to make a reasoned choice among the alternatives. If the project moves forward, additional studies and information would be generated during permitting. Some potential mitigation measures identified in Appendix N have provisions for data collection and monitoring.
32724	288	Noise	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 areas values. The SEIS identifies noise as a primary impact of the Ambler Road1375 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 roads 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 EISs 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 sounds 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, Utqiavik, 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. BLMs 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 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.	The Supplemental EIS uses the best available information regarding sounds in the study area to use as a baseline condition. As is described in Section 3.2.6, the study area is principally undeveloped with natural background sounds and sound types. The sounds made by construction equipment and by trucks and other vehicles on roads are well established, with examples presented in the Supplemental EIS. It is clear there would be new sounds generated, and impacts as a result, throughout the length of any of the alternative. The BLM coordinated with NPS which undertook noise modeling of the routes. This provided an analysis of sound propagation along the road corridors and illustrated that the topography along with alternative sea resulted, on average per mile of Rd. an effect to a larger land area from Rd. sounds than the topography along alternatives A&B. This is an adequate and appropriate baseline and analysis for the study area. Appendix D describes the noise modeling and presents the results and figures and tables.
32724	289	Noise	Second, the SEISs 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. 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. 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, and [i]f any vehicles travel faster than 45 miles per hour, these models will also underestimate impacts. 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 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	Comment noted. In Section 3.2.6 the increase in sound level is assessed cumulatively with effects of past and present activities and reasonably foreseeable developments from activities associated with mining and other Trilogy Metals and South32 exploratory work on mine claims near the Ambler Road that are outside the Ambler Mining District, road traffic, airplanes, community access traffic, telecommunication improvements along the Ambler Road corridor, and Dalton Highway improvements (see Appendix H). The Supplemental EIS uses the best available information regarding sounds in the study area. Appendix D describes the noise modeling and presents the results. The BLM believes that an assumption of an average speed of 45 mph on a road designed generally for 50 mph and expected to carry principally large trucks that do not accelerate quickly is a reasonable assumption for noise modeling purposes. While speeds may vary, they would be expected to be lower than those modeled. Thus, the model is conservative and discloses a noise level that would be higher than actual in some locations. The information is sufficient to help the public and decision makers understand noise impacts and for the decision makers to come to a reasoned decision regarding the alternatives.

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			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.	
32724	290	Noise	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, BLMs analysis of soundscape impacts and the noise disturbance boundary focus on roadway use but not the multi-year construction phase. AIDEAs 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). 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. Those noise impacts will be significant and localized in different areas depending on construction conditions and phases. For 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 2.5 miles was selected to define the study area and sensitive receptors for the acoustic environment and used the Red Dog Mine as a benchmark for establishing a reasonable corridor. As a 2.5-mile buffer from the edges of proposed development, the total area was 5 miles or more wide. As described in Attachment A of Appendix D of the Supplemental EIS, the area associated with sound attenuation averaged 3.7 miles total (1.85 mi. from centerline) for Alternatives A and B and 5.1 miles (2.55 mi. from centerline) miles for Alternative C, indicating the original buffer was approximately correct for seeking noise sensitive receptors. The BLM is confident no communities or similar noise sensitive receptors were overlooked. Section 3.2.6 contains information addressing timing and duration of construction activity, including helicopter operations, numbers of construction camps, and other information. The BLM believes that the EIS adequately describes the impacts of noise and that additional modeling is not necessary for the public and decision makers to assess the alternatives and for decision makers to come to a reasoned decision among the alternatives.
32724	291	Noise	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. 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. 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.	Section 3.2.6 includes analysis of noise impacts from maintenance activities. The existing aircraft noise in the area, as well as the reasonably foreseeable aircraft noise from project are also discussed in Section 3.2.6. There is currently no plan to reduce the number of air strips but will be taken into consideration.
32724	292	Noise	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 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 BLM has consulted with and held public hearings in all communities in the study area, based on the outreach, noise was not identified as a significant concern. Use of the areas that would be affected by noise is primarily related to subsistence and is described and mapped in Appendix L.
32724	293	Noise	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. 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.	Construction and operation noise would potentially cause local changes in wildlife movement and distribution patterns, but would be unlikely to affect wildlife populations. The wildlife effects from noise are elaborated on in Sections 3.3.3, Birds, and 3.3.4, Mammals.
32724	294	Noise	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 AIDEAs design features would reduce noise during construction and operation, such as keeping vehicles and mufflers in good operating condition. 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. 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. 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	Comment noted. The noise analysis has taken into account the features of the project that can be mitigated to reduce noise impacts. The Design features presented in Chapter 2, Section 2.4.4, Design Features Proposed by AIDEA, includes measures that would reduce noise during construction and operation, such as keeping vehicles and mufflers in good operating condition. Noise barriers are not considered practical over such long distances. Requirements such as good mufflers and limiting use of air brakes would reduce traffic sounds but would not completely stop the sound propagation from the road. Attachment A Predictive Noise Modeling of the Ambler Road shows noise impacts to all surrounding areas which would be further reduced when the noise reduction measures are enforced.

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			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.	
32724	295	Noise	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.	The Supplemental EIS does adequately discuss mitigation measures. As stated, "Design features presented in Chapter 2, Section 2.4.4, Design Features Proposed by AIDEA, includes measures that would reduce noise during construction and operation, such as keeping vehicles and mufflers in good operating condition. Noise barriers are not considered practical over such long distances. Requirements such as good mufflers and limiting use of air brakes would reduce traffic sounds but would not completely stop the sound propagation from the road." As such, noise barriers were deems not feasible for various reasons and all other potential mitigation measures were analyzed. The speeds anticipated on the roads are not yet known but will be enforced as necessary to reduce fugitive dust and noise as applicable.
32724	296	Cumulative and indirect effects analysis	Additionally, the SEISs 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.	Reasonably foreseeable public and non-industrial access scenarios are included in Appendix H (Section 2.2.2) and the potential effects of public and non-industrial access on resources are analyzed in Chapter 3 of the Supplemental EIS within the context of cumulative and indirect effects.
32724	297	Noise	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 alternatives corridors. BLM should perform a soundscape baseline and analysis that pertains to the conditions and alternatives of this proposed project.	The Supplemental EIS uses the best available information regarding sounds in the study area to use as a baseline condition. As is described in the Supplemental EIS, the study area is principally undeveloped with natural background sound levels and sound types, as stated in Section 3.2.6. Given the undeveloped nature of the soundscape, it was determined that the original noise measurements taken in GAAR would be adequate. The sounds made by construction equipment and by trucks and other vehicles on roads are well established, with examples presented in the Supplemental EIS. It is clear there will be new sounds generated, and impacts as a result, throughout the length of any of the alternatives. The BLM coordinated with NPS which undertook noise modeling of the routes. This was completed based on the reasonable alternatives in Chapter 2 and was updated for the traffic forecast presented in Appendix H. This provided an analysis of sound propagation along the road corridors and illustrated that the topography along Alternative C resulted, on average per mile of road, an effect to a larger land area from road sounds than the topography along Alternatives A and B. This is an adequate and appropriate baseline and analysis for the study area. Appendix D describes the noise modeling and presents the results.
32724	298	ANILCA 810 analysis	A. BLMs 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 BLMs 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 BLMs 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 Alaskafrom Nuiqsut on the North Slope to Russian Mission in the Yukon-Kuskokwim Delta to Point Hope on the Lisburne Peninsula. 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. BLMs 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 BLMs draft SEIS, NPS will not be able to rely on either BLMs Tier 1 subsistence review or Tier 2 determinations to satisfy its statutory duties. At this point, NPSS 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.	Using a conservative standard, the ANILCA 810 evaluation made positive "may significantly restrict" findings for 34 of the 66 study communities. The BLM held ANILCA 810 hearings at 12 locations in the vicinity of the areas involved. Impacts for the other 32 communities did not rise to the level of a potential significant restriction.
32724	299	ANILCA 810 analysis	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. A proper Tier 1 evaluation must also reflect ANILCAs 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. BLM has admitted that its prior Tier 1 evaluation under ANILCA 810 was deficient for multiple reasons. 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	The Section 810 analysis was expanded in order to include other potentially affected communities within the entire range of the WAH and downstream communities along the Yukon River, due to the potential for subsistence users in those communities to experience impacts to subsistence uses and needs based on the factors of reduced abundance and availability of caribou and fish. See Supplemental EIS Section 3.4.7, Subsistence Uses and Resources for an explanation of the relationship between the 66 study communities and the Ambler Road Project.

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			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 BLMs 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. 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. 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. 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. This cursory treatment of 38 communities affected by the projects 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, 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. With few exceptions, use of fish among the 32 study communities is high, with more than 50 percent of households in nearly all fish study communities using Chinook salmon, chum salmon, or sheefish. 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, and it reiterates that the project could cause population level impacts to the WAH. 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. 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 resourcesrather than directly from the Ambler Road project and associated miningeach 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. 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.	
32724	300	ANILCA 810 analysis	BLMs Tier 1 evaluation must also analyze the availability of other lands that could be used to serve the projects purpose as well as alternatives that would reduce or eliminate the projects 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, BLMs alternatives analysis in the draft SEIS is inadequate and fails to fulfill the agency's obligations under both NEPA and ANILCA 810. In particular, BLMs 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 alternativessuch 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 railthat 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	The text in Appendix G, Section 5.4 explains why the Tribal Alternative is not able to be analyzed beyond the discussion provided in Appendix G. Other alternatives were considered and eliminated from detailed analysis based on the screening criteria as presented in Appendix G. The proposed width of the corridor reflects the space needed to accommodate movement of machinery for construction of the road and associated facilities.

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			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 AIDEAs 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. 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. 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 AIDEAs 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.	
32724	301	ANILCA 810 analysis	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. The standard for carrying forward subsistence communities into Tier 2 is quite low. A threat of significant restriction is enough to mandate Tier 2 hearings and determinations, and the occurrence of the threat need not be likely. Despite BLMs 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. It is improper as a matter of law to require a showing that subsistence impacts are likely before proceeding to Tier 2. Instead, federal agencies must proceed to Tier 2 whenever there is a significant possibility of significant restrictions on subsistence. 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. Maintaining a low threshold for Tier 2 serves ANILCA 810s 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.	Using a conservative standard, the ANILCA 810 evaluation made positive “may significantly restrict” findings for 34 of the 66 study communities. The BLM held ANILCA 810 hearings at 12 locations in the vicinity of the areas involved. Impacts for the other 32 communities did not rise to the level of a potential significant restriction.
32724	302	ANILCA 810 analysis	It is also problematic that BLMs 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 BLMs qualitative 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 BLMs own data and criteria.	Using a conservative standard, the ANILCA 810 evaluation made positive “may significantly restrict” findings for 34 of the 66 study communities. The BLM held ANILCA 810 hearings at 12 locations in the vicinity of the areas involved. Impacts for the other 32 communities did not rise to the level of a potential significant restriction. The Supplemental EIS and ANILCA 810 evaluation incorporates multiple measures to help understand the potential impacts to subsistence uses and resources, including the importance of potentially impacted resources to the study communities and the likelihood of direct impacts (i.e., level of overlap with community use areas).
32724	303	ANILCA 810 analysis	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 fish overall (sheefish included, but not broken out). Community located within 50 miles of road corridor, and subsistence use areas within 30 miles of road corridor. 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). Community located within 50 miles of road corridor, and subsistence use areas within 30 miles of road corridor. 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). Subsistence use areas within 30 miles of road corridor. Tanana (primary, fish) Ranked high for chum salmon (70% of households use), moderate for Chinook salmon (92% of households use), and moderate for sheefish	Notwithstanding their heavy reliance on fish (in these eight communities), the ANILCA 810 evaluation did not find that fish-related impacts would rise to a potential significant restriction of subsistence uses or needs for these particular communities.

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			(36% of households use), and high for fish overall. Community located within 50 miles of road corridor, subsistence use areas overlap the project and within 30 miles of road corridor. 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). Subsistence use areas within 30 miles of road corridor. 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). Subsistence use areas overlap the project and within 30 miles of road corridor. Rampart (primary, fish) Ranked high for chum salmon (57% of households use), low for sheefish (29% of households use), and high for fish overall. Community located within 50 miles of road corridor, subsistence use areas overlap the project and within 30 miles of road corridor. 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, 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. BLM did not provide and, under these circumstances could not have provided, any valid justification for excluding these communities. BLMs 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. These findings were unsupported because BLM has no subsistence data for Livengood. 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.	
32724	304	ANILCA 810 analysis	BLMs 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 nonprimary communities, it appears that the remaining communities relative distance from the Ambler Road corridor played a role in BLMs determinations despite BLMs 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 BLMs 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). 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). 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. 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). Atkasuk (caribou) Ranked high for caribou (96% of households use). Brevig Mission (caribou) Ranked moderate for caribou (44% of households use). St. Michael (caribou) Ranked high for caribou (68% of households use). Teller (caribou) Ranked moderate for caribou (34% of households use). 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. 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. 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. 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. 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. 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. 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. 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. 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. 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. 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. Using BLMs 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.	Notwithstanding the considerable reliance on caribou and/or fish in these 23 communities, the ANILCA 810 evaluation did not find that caribou- or fish-related impacts would rise to a potential significant restriction of subsistence uses or needs for these particular communities.
32724	305	ANILCA 810 analysis	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. Marys and Pitkas 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.	Harvest-level data for St. Mary’s and Pitkas Point are unnecessary to determine that the proposed alternatives would not impact the fish resources that these communities use. Positive

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			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. Marys and Pitkas 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, BLMs 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.	significant restriction findings were not made for Stebbins and Wales due to their low reliance on caribou.
32724	306	ANILCA 810 analysis	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 ANILCAs substantive standards. 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. With respect to the first determination, the term utilization refers to the array of multiple uses within the federal land managers purview, and the purpose of ANILCA 810 is to reconcile its goal of subsistence protection with these other uses. In other words, the statute calls upon the agency to balance subsistence against other competing interests. The Ambler Roads significant restrictions on subsistence are far from necessary. The main purpose of the road is to enrich for-profit mining companies, including foreign companies. BLMs 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.	See response to letter 31764, comment 14.
32724	307	ANILCA 810 analysis	The federal permitting agencies previously failed to follow Title XIs procedures to permit a TSU through Gates of the Arctic and those problems have not been addressed as part of this remand process. 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. AIDEA revised its application in 2016. Although AIDEA was still missing significant information about the project and project area, NPS began its EEA process and the other agencies began their NEPA process. 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. 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. 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. AIDEA explained that it made the revisions to reduce impacts. 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. This violated Title XI, which mandates a consolidated application and outlines the process to be followed very specifically. The agencies failed to adhere to this mandatory process by considering and approving different applications and versions of AIDEAs project. This renders those prior approvals without any force or effect. 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 XIs procedural requirements.	The BLM and NPS ROWs have been suspended while the Supplemental EIS is being developed and new decisions are issued. Prior to initiating the 2020 EIS a consolidated application was submitted to all federal authorizing agencies and deemed complete. The revised application to the USACE responded to feedback from that agency on the original application.

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32724	308	ANILCA 810 analysis	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. 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. 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. NPS indicated the constructed road corridor would be 100-feet wide and located somewhere within the Conceptual Alignment. NPS also authorized all three phases of the road, even though AIDEA amended its application to the Corps to eliminate Phase III for the road. NPSS authorization of an extremely wide conceptual right-of-way corridor did not meet ANILCAs 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. NPSS 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. Gates purposes include maintaining wilderness values, providing for continuing recreation opportunities, and protecting habitat for fish and wildlife. 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. 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. This illustrates AIDEA had yet to complete its project designs or gather baseline information for permafrost, stream crossings, asbestos, air quality, and more. 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. 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 ANILCAs 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 Arctics purposes. Despite the seriousness of these problems with NPSS 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 ANILCAs mandates.	The NPS ROW was analyzed in that agency's EEA.
32724	309	Compliance with other laws	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, as did NPSS EEA and ROD. The maps depicting alternative B also indicate there would be both an access road and a maintenance station within the boundaries of the Preserve. 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. 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. 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.	ANILCA Section 1102(4) allows for related structures and facilities (both temporary and permanent) along the route of the system as may be minimally necessary for the construction, operation, and maintenance of the system.
32724	310	Cooperating agency involvement	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 currents⁸⁴⁵ 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. 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 AIDEAs 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. 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 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	The USCG determined that it does not have regulatory jurisdiction over the project and thus is no longer a cooperating agency.

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			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. 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 Guards 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 Guards failure to make its requisite joint decision with the other permitting agencies. The Coast Guards 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 Guards 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 Guards role also relate directly to the information gaps in the NEPA process more broadly and to the lack of an adequate basis for BLMs 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 since they do not have complete information on which to base their analyses and comply with the law.	
32724	311	Compliance with other laws	B. Authorizing the Gravel Mines Would be Contrary to the Materials Act and the Public Interest. Any gravel mine approvals must be conducted under BLMs 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. 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. 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. 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.	Future mineral materials authorizations by the BLM would be processed under the regulations found at 43 CFR 3600 et seq.
32724	312	Sand and gravel resources	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 devastating 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. The resulting overburden stockpile disturbs tundra, and the gravel pit itself causes permanent changes to the areas thermal regime due to thaw bulbs forming in the permafrost around the unfrozen water during flooding. 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.	Similar to letter 32724, comment 71. See response to letter 30027, comment 25.
32724	313	Geology and minerals	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. 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. 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	The Supplemental EIS identifies the occurrence of minerals bearing Naturally Occurring Asbestos (NOA) in the project area (see Section 3.2.1). As noted in Section 3.2.1, asbestos-containing material is proposed to be used in the construction of the proposed road and its facilities if suitable clean materials (i.e., in which there are no detectable levels of NOA) are not available. Per AIDEA's design stipulations, the road would not be surfaced with any materials containing more than 0.1 percent NOA (the State of Alaska threshold is 0.25 percent, which is the same as the State of California). This would prevent measurable amounts of dust laden with NOA to spread.

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			asbestos contamination beyond the road footprint. 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. 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. The FEISs 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. Yet, the admitted significant potential for asbestos to be released was essential to BLMs 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 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. Worse, BLM noted that contamination from NOA could have disproportionately high and adverse public health effects to [Environmental Justice] communities. 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.	
32724	314	Sand and gravel resources	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. BLMs 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 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.	See response to letter 30027, comment 25.
32724	316	Water resources	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 EISs analysis of the potential impacts to the aquatic ecosystem and its analysis of ways to address those impacts was completely inadequate. The EISs 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. 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 AIDEAs 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. The Corps also raised concerns that AIDEAs application did not address [h]ow roads cross and are parallel to major river crossings. 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. 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. 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 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 of which would be crossed by the Ambler Road. 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. 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. 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. 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. 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. EPA also questioned the Corps decision to defer its analysis of culvert impacts at specified locations. Indeed,	According to 40 CFR 1502.22, when an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an EIS and there is incomplete or unavailable information, the agency will make clear that such information is lacking. A number of topics are called out within chapter 3 of the Supplemental EIS where information is incomplete or unavailable. The BLM evaluated the data to determine if any missing information would be relevant to determining reasonably foreseeable significant adverse impacts or essential to making a reasoned choice among alternatives and, if it was, whether the overall costs of obtaining it would not be exorbitant (see Appendix R). 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 Supplemental 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. The BLM has evaluated the impacts in the Supplemental EIS based upon research methods and theoretical approaches that are accepted in the scientific community. Based on a review of the data that are available, summarized, and cited in the Supplemental EIS and in accompanying appendices, sufficient data exists to allow the BLM to make a reasoned choice among the alternatives. If the project moves forward, additional studies and information would be generated during permitting. Some potential mitigation measures identified in Appendix N have provisions for data collection and monitoring.

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			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. 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. It is inconceivable that the agencies would re-approve the ROW, 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.	
32724	317	Water resources	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 Roads 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 roads design. 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. 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. These omissions have not been rectified. 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. 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.	Prior to initiating the 2020 EIS a consolidated application was submitted to all Federal authorizing agencies and deemed complete. The BLM is required to analyze the proposed project as requested by the applicant through submission of Standard Form 299: Application for Transportation, Utility Systems, Telecommunications and Facilities on Federal Lands and Property. The revised application to the USACE responded to feedback from that agency on the original application. Specific comments from Dr. Fennessy's reports are addressed in response to letter 32724, with any revisions to the Supplemental EIS documented for that specific comment.
32724	318	Water resources	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 impacts to the project area and downstream waters. Further, it is clear that the Ambler Roads impacts would extend beyond the corridor, but the impacts of roads numerous hydrological alterations are not quantitatively addressed in the SEIS. 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. This information is critical to determine the nature and degree of impacts, but was not considered in the SEIS.	See response to letter 20731 comment 1. Potential impacts to hydrology, water quality, and wetlands are proportional to the length of proposed road, area or proposed disturbance, and number of stream/river crossings. Appendix C Table 1 quantifies length of road, number and size of material sites and supporting infrastructure, number of culverts, and number of bridges for each alternative. Appendix C Table 2 quantifies estimated impacts to floodplains for each alternative. Appendix D Table 16 quantifies the number of known or assumed fish passage crossings impacts to fish habitat for each alternative.
32724	319	Fish and aquatics	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, 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. 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.	Impacts to water resources are described in Supplemental EIS Section 3.2.5, Water Resources - Environmental Consequences. Additionally, changes to water resources and the associated impacts on fish and their habitat is described in Supplemental EIS Section 3.3.2, Fish and Aquatics.
32724	320	Water resources	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. 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. 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.	See response to letter 20731, comment 1. The Supplemental EIS acknowledges that potential impacts from dust and other pollutants could have a large spatial distribution. Assumptions made to account for limited data, including extents of potential impacts near the road, were necessary to provide a quantitative method of comparing the proposed action alternatives.
32724	321	Decision process - general	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. 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. This is despite the fact that Alternative B would require fewer bridges and would not pass within one-quarter mile of Walker Lake or Nutuvukti Fen and those important hydrological resources. Without specific, quantitative and site-specific information about the anticipated impacts, there is insufficient information on which to base conclusions about alternatives.	See response to letter 22855, comment 1. Additionally, the Supplemental EIS is a site-specific analysis of the project impacts along the proposed route and action alternatives. The resource analyses presented in Chapter 3 of the Supplemental EIS compare the potential effects of action alternatives to each other using resource-specific indicators; these comparisons are not solely based on the length of each alternative. For example, the potential effects of action alternatives may differ based on the types of resources which intersect each alternative route.
32724	322	Water resources	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	See response to letter 20731, comment 1. See response to letter 17876, comment 1. Design features listed in Section 2.4.4., the Environmental Consequences sections for Sections 3.2.3 and 3.2.5 within the Supplemental EIS, and Appendix N, Sections 3.2.5, 3.3.3, and 3.5 list

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			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 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 SEISs discussion of water quality discussed in the report by Dr. Fennessy. Roads are known to increase issues with soil erosion and sedimentation. The SEIS reports without any basis that increased sediment will be similar to that which occurs naturally during high flow events. It also assumes, without basis, that properly implemented mitigation measures will preclude these impacts. Increased sediment levels can have substantial impacts on fish, eggs, and spawning habitat. These impacts must be fully analyzed in the SEIS.	stipulations developed to minimize impacts from proposed activities on water quality and aquatic resources. Together these measures are expected to be mostly effective at mitigating impacts on water quality, fish, and aquatics. Section 3.2.1 discusses potential impacts of NOA. Appendix N Section 3.2.1 discuss mitigation measures to minimize impacts from NOA, including education regarding risk, development of a Mineral Materials Mining and Reclamation Plan, citing of camps, sampling methods, and avoidance of use of material containing NOA. Further, AIDEA has identified substantially more material sources than are needed to construct and maintain the road; this will provide opportunity to avoid using material sources where NOA is detected.
32724	323	Water resources	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.	See response to letter 20731, comment 1. See response to letter 20215, comment 1. See response to letter 32590, comment 8. Reasonable assumptions were made for the purpose of comparing impacts associated with the proposed action alternatives given limited data for some resources. The Supplemental EIS acknowledges that direct, indirect, and cumulative impacts could have extensive spatial distributions.
32724	324	Geology and minerals	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 mining activities are likely to have serious impacts to fish and water resources. 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.	See response to letter 32724, comment 156.
32724	325	Wetlands	The SEIS also fails to adequately assess or document the full extent of the Ambler Roads 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. 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. 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.	Suitable high resolution and field ground-truthed wetland mapping is available for Alternatives A and B, whereas mapping for Alternative C is based on a desktop analysis combining National Wetland Inventory data and existing vegetation mapping. The available mapping, both desktop and high-resolution mapping, are sufficient to determine significant differences to impacts from Alternative C and Alternatives A and B. The high-resolution wetland mapping for Alternatives A and B is suitable to compare those similar alternatives. A similar assumption was made when considering functional losses where some information was available for portions of Alternatives A and B, but not for Alternative C. Because Alternative C is much longer than both Alternatives A and B, the assumption is that functional losses overall would be greater.
32724	326	Water resources	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. 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.	See response to letter 17876, comment 1. See response to letter 20215, comment 1. See response to letter 32724, comment 170.
32724	327	Water resources	The SEISs 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 Alaskas 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 AIDEAs proposed reclamation activities should be included in the SEIS, in order to comply NEPA and other applicable laws.	See response to letter 22633, comment 6e. AIDEA's proposed reclamation activities would be developed and evaluated by BLM and other regulatory agencies in accordance with stipulations listed in Appendix N Sections 1.4 and 3.5.
32724	328	Mitigation/monitoring	As discussed elsewhere in these comments, the SEISs 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. AIDEAs	Potential mitigation measures for all resources are discussed in Appendix N of the Supplemental EIS. Each potential mitigation measure is followed by a summary of its effectiveness at mitigating impacts ranging from “highly effective” to “minimally effective” based on the criteria described therein.

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			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.	
32724	329	Fish and aquatics	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 projects 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.	Discrepancies in the culvert numbers presented throughout the Supplemental EIS have been corrected where commenters have noted such discrepancies or they have been found during general Supplemental EIS revisions and updates. Impacts to water resources from culvert installation are described in Supplemental EIS Section 3.2.5, Water Resources – Environmental Consequences. Impacts to fish and their habitat from culvert installation is described in Supplemental EIS Section 3.3.2, Fish and Aquatics, including a description of the anticipated impacts from implementation of the combined phasing option and the cumulative impacts of culverts in the region. Mitigation to reduce the overall impact of culverts on the environment are described in Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA, where descriptions of commitments by AIDEA (e.g., development of an adaptive management plan, culvert sizing, fish passage) are provided. Supplemental EIS Appendix N, Potential Mitigation, describes mitigation under consideration for the project, including culverts.
32724	330	Water resources	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.	See response to letter 32724, comment 322.
32724	331	Fish and aquatics	BLMS 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. Specifically, BLM acknowledged that it failed make any mention of dewaterings potentially significant impacts on fish, spawning areas, and subsistence, even though fish provide interior Alaskas greatest quantity of subsistence resources. BLM also indicated that these analytical deficiencies were compounded by new information showing that Yukon River salmon runs plunged in 2021 to historic lows. On remand, DOI committed to reconsidering these issues contained in its 810 analysis. Despite recognizing these significant flaws and making these commitments, the SEIS fails to fully account for the Ambler Roads 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. 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. AIDEAs 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. BLMs 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 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 sedimentations impact/loss of values from its delivery into the waterways for specific areas. 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.	Should an action alternative be approved in the BLM's ROD, additional surveys and studies would be conducted as needed in support of other local, state, and federal permits. As described in Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA - Biological Resources, fish surveys would be conducted to assess fish presence in rivers in streams for all life history stages along the selected alignment. The scope of these surveys would be coordinated with ADF&G, USFWS, and the National Marine Fisheries Service. The Supplemental EIS includes a description of design features and mitigation measures that are intended to reduce impacts to waterways, fish, and aquatic habitat from road construction and the installation of bridges and culverts (see Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA - Physical Environment; Section 3.2.5, Water Resources - Impacts Common to All Action Alternatives; and Appendix N, Potential Mitigation).
32724	332	Water resources	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 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	See response to letter 17876, comment 1.

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			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.	
32724	333	Fish and aquatics	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. 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. 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. Between 2020 and 2022, the Yukons chum populations declined by around 80 percent, and Chinook populations dropped by nearly two-thirds. 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). 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 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. 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. 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.	Supplemental EIS Section 3.3.2, Fish and Aquatics, describes fish and their aquatic habitat in the project area and anticipated impacts from the construction of the road, as well as the potential cumulative impacts related to potential mine construction. This Supplemental EIS section also includes discussion on the recent trends associated with regional salmon populations (see Supplemental EIS Section 3.3.2 - Salmon Declines). Supplemental EIS Section 3.3.2 also describes the two important sheefish spawning grounds noted by the commenter (Kobuk River and Alatna River) and these areas are identified in Supplemental EIS Map 3-18 (Supplemental EIS Volume 4).
32724	334	Wetlands	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.	The primary effects to wetlands and vegetation from activities associated with the proposed road 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 dust deposition. The 100-meter standard for fugitive dust fallout is based on the best available science, see Walker and Everett 1987; Auerbach et al. 1997; Myers-Smith et al. 2006; McGanahan et al. 2017 as cited in Section 3.2.1 Geology and Soils of the Supplemental EIS.
32724	335	Wetlands	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 reports have differing study areas mapped and Alternative C does not have any detailed wetland mapping, however, various fine-scale wetland and vegetation types were crosswalked into a broad-scale classification system so that the mosaic of various map resources could be compared. The acreages calculated in the Environmental Consequences section were based on the actual road design footprints, which was used to calculate direct and indirect impact areas.
32724	336	Fish and aquatics	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. 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. 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? 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 Supplemental EIS acknowledges the limited data available throughout the project area (see Supplemental EIS Section 3.1, Introduction - Data Limitations). Should an action alternative be approved in the BLM's ROD, additional surveys and studies would be conducted as needed in support of other local, state, and federal permits. As described in Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA - Biological Resources, fish surveys would be conducted to assess fish presence in rivers in streams for all life history stages along the selected alignment. The scope of these surveys would be coordinated with ADF&G, USFWS, and the National Marine Fisheries Service.
32724	337	Wetlands	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 Supplemental EIS uses the best available data and crosswalks vegetation and wetland types into a broad scale classification that can be used to compare all action alternatives. Desktop mapping is suitable for use in the Supplemental EIS and is also sufficient to determine the Least Environmentally Damaging Practicable Alternative (LEDPA). Wetland functions are discussed in general, but the Supplemental EIS discloses that wetland function cannot be adequately extrapolated to areas where no comprehensive functional assessment has been completed. A full functional assessment is not required for the Supplemental EIS or for USACE's LEDPA determination.

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32724	338	Cumulative and indirect effects analysis	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).	The indirect and direct analysis area varies for each resource analyzed in Chapter 3 of the Supplemental EIS. Although the area affected by fugitive dust is approximately 328 feet from the roadway edge, the Supplemental EIS acknowledges that many other types of indirect effects may occur at much greater differences. For example, Section 3.2.5 (Water Resources) and 3.3.2 (Fish and Aquatics) evaluated potential effects to water quality and hydrology by evaluating the mileage of roads for each of the action alternatives within 1,000 feet of mapped floodplains and within 500 feet of fish-bearing streams.
32724	339	Fish and aquatics	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 BLMs 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 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.	As noted in Supplemental EIS Section 3.3.2, Fish and Aquatics: “The effects of noise on individual fish depends on many factors, such as species and size; vertical location of fish and proximity to sound source; water current and depth; substrate composition and texture; peak noise level; noise frequency and rise time; and the presence or absence of predators since injured fish are more susceptible to predation (Limpinsel et al. 2017). Fish response ranges from avoidance to acute and sometimes fatal effects (damage to auditory receptors and rupture of the swim bladder to chronic effects; behavioral changes and long-term stress; Hastings and Popper 2005).”
32724	340	Fish and aquatics	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 AIDEAs 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. 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. - 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, therefore guaranteeing mitigation measures will be impossible. BLM must consider the practicality	The Supplemental EIS acknowledges the limited data available throughout the project area (see Supplemental EIS Section 3.1, Introduction - Data Limitations). The Supplemental EIS includes proposed mitigation (Appendix N) and a description of the anticipated effectiveness of the proposed mitigation measures. Should an action alternative be approved in the BLM's ROD, additional surveys and studies would be conducted as needed in support of other local, state, and federal permits. As described in Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA - Biological Resources, fish surveys would be conducted to assess fish presence in rivers in streams for all life history stages along the selected alignment. The scope of these surveys would be coordinated with ADF&G, USFWS, and the National Marine Fisheries Service.
32724	341	Water resources	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	See response to letter 17876, comment 1.
32724	342	Water resources	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.	Text revised in Supplemental EIS Chapter 3, Section 3.2.5, Water Resources revised under Mining, Access, and Other Indirect and Cumulative Impacts.
32724	343	Decision process - general	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.	See response to letter 22855, comment 1. Additionally, the Supplemental EIS is a site-specific analysis of the project impacts along the proposed route and action alternatives. The resource analyses presented in Chapter 3 of the Supplemental EIS compare the potential effects of action alternatives to each other using resource-specific indicators; these comparisons are not solely based on the length of each alternative. For example, the potential effects of action alternatives may differ based on the types of resources which intersect each alternative route.
32724	344a	Mitigation/monitoring	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	Potential mitigation measures for all resources are discussed in Appendix N of the Supplemental EIS. Each potential mitigation measure is followed by a summary of its effectiveness at mitigating impacts ranging from “highly effective” to “minimally effective” based on the criteria described therein.
32724	344b	Mitigation/monitoring	- Dust abatement. AIDEAs 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	Appendix N Section 3.2.7 Air Quality and Climate discusses a potential BLM mitigation measure which would require AIDEA to submit a Dust Control Plan which would be subject to approval by the Authorized Officer and review by ADEC. At a minimum, this plan would include a literature review of the effectiveness and environmental effects of palliative options, documentation of

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			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.	consultation regarding palliative selection, and rationale for selection of palliatives that includes consideration for minimizing effects on fish, wildlife, vegetation, and water quality.
32724	344c	Mitigation/monitoring	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 rather says that total avoidance of impacts on fisheries from toxins may not be possible.951	The impacts of mining are analyzed to the extent that information is available to do so. No specific mining application/permit request for the District has been submitted to date. The BLM evaluated reasonably foreseeable mining development as indirect and cumulative impacts, using a hypothetical mining development scenario. When officially proposed, each mine would go through its own project-specific NEPA analysis and permitting process, which would provide further detail and analysis regarding the specific impacts of each mine operation.
32724	344d	Mitigation/monitoring	- Spills. BLMs 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.	Section 2.4.3, Features Common to All Alternatives, discusses the proposed design and operating speeds. Appendix N, Section 3.2.3 includes a potential BLM mitigation measure that would require AIDEA to prepare a Spill Prevention Control and Countermeasure Plan for construction phases, including material site operation, and for operations and maintenance of the road.
32724	344e	Mitigation/monitoring	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 A954, 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 AIDEAs 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.	The Supplemental EIS analyzes the proposed action to construct a road and associated facilities. Should the project be approved, gravel mines on BLM-managed lands would be approved in accordance with 43 CFR 3600.
32724	344f	Mitigation/monitoring	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	See Appendix N, Section 3.5, Proposed Mitigation Adopted from USACE's 404 Clean Water Act and Section 10 Rivers and Harbors Act Permit Special Conditions.
32724	344f	Mitigation/monitoring	-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. 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.	Comment noted.
32724	345	Fish and aquatics	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. 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. 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. Climate change alters the applicability of all mitigation measures, increasing risks so all measures should be adjusted accordingly. 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. There will be significant cumulative effects from mining in the Ambler District that will increase the Ambler Roads 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. 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. 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 Supplemental EIS includes proposed mitigation (Appendix N) and a description of the anticipated effectiveness of the proposed mitigation measures. Should an action alternative be approved in the BLM's ROD, additional surveys and studies would be conducted as needed in support of other local, state, and federal permits. As described in Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA - Biological Resources, fish surveys would be conducted to assess fish presence in rivers in streams for all life history stages along the selected alignment. The scope of these surveys would be coordinated with ADF&G, USFWS, and the National Marine Fisheries Service. USACE permit special condition number 18 (see Supplemental EIS Appendix N, Section 3.5.6, Floodplains) would require "A 100-year flood standard (or larger) shall be used for conveyance of all stream simulation and other moderate and major culverts and bridges." Supplemental EIS Appendix N includes measures to minimize erosion, including its impacts to water quality, including a description of the anticipated effectiveness of each mitigation measure. Supplemental EIS Appendix H, Indirect and Cumulative Scenarios, describes cumulative scenarios and assumptions based on reasonably foreseeable development caused by the Ambler Road. Supplemental EIS Section 3.3.2, Fish and Aquatics - Mining, Access, and Indirect and Cumulative Impacts, describes anticipated cumulative impacts using the best current available information. Ambler Metals has revised its proposal and is no longer considering using a mixing zone (see Supplemental EIS Section 3.3.2, Fish and Aquatics - Mining, Access, and Other Indirect and

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				Cumulative Impacts); Ambler Metals final proposal may continue to evolve but should the project apply for permits, it would receive additional scrutiny and environmental review specific to the proposed project
32724	346	Mitigation/monitoring	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.	Potential mitigation measures for all resources are discussed in Appendix N of the Supplemental EIS. Each potential mitigation measure is followed by a summary of its effectiveness at mitigating impacts ranging from “highly effective” to “minimally effective” based on the criteria described therein.
32724	347	Water resources	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.	See response to letter 32590, comment 8. See response to letter 20215, comment 1.
32724	348	Fish and aquatics	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). 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. 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-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.	The Supplemental EIS uses the best available information to develop the anticipated impacts the project would have to environmental resources, including future mines that may be proposes should the road be constructed (See Appendix H, Indirect and Cumulative Scenarios. The Supplemental EIS acknowledges the limited data available throughout the project area (see Supplemental EIS Section 3.1, Introduction - Data Limitations). However, AIDEA has committed to completing fish surveys of rivers in streams, in coordination with ADF&G, USFWS, and the National marine Fisheries Service (see Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA).
32724	349	Mammals	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. 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. 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. 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 disturbance. 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., 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. The maximum displacement distance mentioned in the final SEIS should be increased to reflect the information from these studies.	Changed “only” to “the predominant factor”. Caribou of the Central Arctic Herd preferentially use roads and pads for fly relief habitat during mid-summer (Pollard et al. 1996, Prichard et al. 2020). Measured displacement distances vary by seasons, human activity type and location, habitat, and method of analysis. Plante et al. (2018) also found very large interannual differences in the zone of influence.
32724	350	Mammals	The draft SEIS indicates that the WAH has exhibited the same general movement patterns for the last 50 years. 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. Such changes have altered scientific practices, leading to helicopter-based captures in spring for collaring caribou, rather than boat-based captures at	The Draft Supplemental EIS described and mapped changes in winter distribution of the WAH based on more than 40 years of telemetry data. Reference to Joly and Cameron (2022) was added. The Central Arctic Herd has continued to be displaced from roads (Johnson et al. 2020, Prichard et al. 2020), even with roads with low levels of traffic (Prichard et al. 2022), during

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			Onion Portage. 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. The draft SEIS acknowledges that even relatively low traffic levels can have detrimental effects on caribou movement patterns. This is an important recognition that aligns with the best available science. Recent work not cited in the draft SEIS also found behavioral responses of caribou at low traffic levels. In some cases, caribou rarely crossed winter roads with any level of traffic. 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. 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. 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. This information should be incorporated and the text of the final SEIS altered to better reflect the best available scientific information.	calving, but the project does not intersect calving grounds for the WAH. Displacement levels vary by season (Johnson et al. 2020, Prichard et al. 2020, 2022).
32724	352	Mammals	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. 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. 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 creates a barrier to movement and that the overall migratory routes are expected to remain intact. The same statement is made, without the reference to ADF&G, in Appendix M. 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. 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	Prichard et al. (2022) studied the effect of convoying on caribou displacement during calving, but those results have limited applicability to the effect of convoying on crossing success during winter. Smith and Johnson (2023) found that caribou were more likely to cross a winter road during periods of low traffic levels and recommended that there are “options for mitigation that could include less traffic, scheduled gaps, or a shorter hauling season.”
32724	353	Water resources	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.	See response to letter 20731 comment 1.
32724	354	Water resources	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 arent 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 dont 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. Its 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.	See response to letter 20731 comment 1. No mapped regulatory floodplains are crossed by the proposed action alternatives (e.g., FEMA has not published floodplain/floodway maps or denoted base flood 100-year flood flows or elevations for any rivers crossing by the proposed road alternatives). Additional design would be performed for any bridge and culvert crossings; standard practice for bridge and culvert structures is to complete a hydrologic and hydraulic analysis/report for each structure, which would include hydrologic calculations to estimate the 100-year flow based on best available data and practices, including consideration to climate change impacts. USACE and USCG have jurisdiction over navigability, as discussed in Section 3.2.5 under Impacts Common to All Action Alternatives of the Supplemental EIS. AIDEA's application to the USCG committing to providing at least 12 feet of vertical clearance at large bridges to maintain navigability. Navigability is also discussed under Section 3.4.2 under Impacts Common to All Action Alternatives. Footnote 32 in Section 3.3.2 under Impacts Common to All Action Alternatives acknowledges that based on the best available data at the time of analysis, vegetation and available aerial imagery may not have been adequate to identify all stream crossing for each proposed action alternative. Appendix N Section 3.5 mitigation measure 5 requires that final cross-drainage culvert locations shall be determined in the field during breakup. AIDEA would be responsible for completing all necessary hydrologic and hydraulic calculations to size drainage structures in accordance with design features listed in Section 2.4.4 and mitigation measures listed in Appendix N.
32724	355	Mammals	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. However, the three	See response to letter 30842, comment 33.

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			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, 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. 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. 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. is an industry report on caribou monitoring for the Endicott Development Project. It does say that humans on foot and vehicles on the road elicited the strongest reactions 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 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, while humans on foot in the study area were rare, making up about 5% of events. 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. 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. 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. 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. Joly et al.1008 would be a more appropriate reference for this.	
32724	357	Mammals	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 mammals in the project area. 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 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.	It is not clear which statement this comment is referencing. The Supplemental EIS says “For example, new oil and gas development in the NPR-A, expansion of the Red Dog Mine, development of a graphite mine north of Nome, and small-scale development (e.g., placer mines) in communities of the North Slope and Northwest Alaska boroughs could affect WAH caribou outside of the project area. In addition, expansion of the Port of Nome and construction of a road and deep-water port near Kotzebue could result in an increase the amount of new development occurring in these areas and could lead to increased interest in connecting the west coast to the Ambler Road in the future.”
32724	358	Water resources	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 doesnt 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 ongoing 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 culverts 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.	See response to letter 20731, comment 1. See response to letter 27369, comment 6. Proposed design features (Supplemental EIS Section 2.4.4) and proposed mitigation measures (Appendix N, Sections 3.2.5 and 3.5) provide multiple approaches to minimize impacts on floodplains, including avoiding floodplains when practicable; crossing floodplains perpendicularly to minimize fill in floodplains; designing bridges, major culverts, and moderate culverts to convey the 100-year flood; and increasing bridge spans and culvert widths and adding overflow culverts to improve floodplain connectivity. Together these features are expected to be mostly effective at mitigating impacts from overbank flow. The statement in Section 3.3.2 under Impacts Common to All Action Alternatives refers to cleaning out culverts providing fish passage; as shown on Table 16 in Appendix E, the number of fish stream crossings ranges from 40 (Alternative A) to 270 (Alternative C), so complying with this statement would not require cleaning thousands of culverts on a yearly basis. Designing culverts and bridges to convey the 100-year flood reduces the likelihood of plugging due to debris. Additionally, special condition 12 of the USACE CWA Section 404 permit (adopted as proposed mitigation under Appendix N Section 3.5), which requires an Adaptive Management Plan for culverts that will require regular monitoring, maintenance, repair, and reporting on culvert

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				performance for the life of the project; compliance with this stipulation would require AIDEA to be proactive to addressing plugged culverts and timely with repairs and cleanup in the event of a wash-out.
32724	359	Mammals	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. 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, dust deposition around other industrial roads has led to environmental impacts stretching between 100 1000 m on either side of roads. 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. It should be recognized and duly considered in the final SEIS 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 itselfand exponentially increase fragmentation of migratory and winter range 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. 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.	See response to letter 30842, comment 29.
32724	360	Mammals	Climate change is a pressing concern around the globe, with high levels of warming being experienced in the Arctic. 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 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 lichens1022 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. 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%. Such events may become more common under climate change and their consideration should be included in the final SEIS.	Information on the potential for the increased threat of disease as a result of climate change has been added.
32724	361	Water resources	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 ft3/sec, compared to only 2,980 ft3/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 arent 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.	See response to letter 32724, comment 354. The majority of proposed culverts will not require fish passage design. As shown on Table 16 in Appendix E, the number of fish stream crossings ranges from 40 (Alternative A) to 270 (Alternative C). All moderate and major culverts are assumed to be fish passage culverts and will be designed using stream simulation methodology. In general, minor culverts are not anticipated to be located on fish-bearing streams; if fish passage is required at a crossing currently assumed to be a minor culvert, a larger culvert meeting stream simulation fish passage design will be used per mitigation measure 4 from Appendix N Section 3.3.3. In accordance with mitigation measure 3 from Appendix N Section 3.3.3, any culvert designed for fish passage will also be designed to convey the 100-year peak flood. AIDEA would be responsible for completing all necessary site-specific data collection on stream geomorphology, bed mobility, channel dimensions, etc. and complete necessary hydrologic and hydraulic analysis in accordance with fish passage criteria and ADF&G fish habitat permit requirements.
32724	362	Fish and aquatics	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.	Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA - Physical Environment, describes commitments made by AIDEA to reduce impacts from the installation of culverts. AIDEA's commitments include: -Bridges and culverts would be installed at all identified drainage crossings, including rills and ephemeral channels, to maintain hydrologic connectivity, minimize changes to watershed basin areas, and reduce the likelihood of water impoundment degrading permafrost. An adequate number of culverts and/or bridges would be installed to maintain hydrologic continuity and existing drainage patterns within wetland complexes, ephemeral channels, and perennial stream channels. AIDEA would evaluate the use of bridges versus culverts on braided streams to reduce impacts to the stream and allow natural stream channel movement. -Culverts and bridges would be sized to adequately span (at a minimum) the bankfull width of the natural channel to minimize changes to stream flow velocities during base and flood flows and to

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				maintain natural channel functions, such as sediment/debris transport and wildlife passage. Stream banks would be stabilized at road crossings to minimize the potential for erosion and downstream sedimentation. -An adaptive management plan for monitoring, maintaining, and repairing culverts over the life of the road would be developed, with ADF&G and USACE input. The plan would include documentation of culvert locations using a global positioning system, and regular monitoring during culvert installation and through road operations. The plan would identify corrective measures that would be taken if concerns are identified, and timeframes for those measures to be implemented. Corrective measures may include additional culverts, increasing culvert sizes, adding thaw lines, adding dead-man anchors, or other appropriate measures. The proposed subsistence advisory committee (see design feature under Social Systems) would help in the oversight of the plan and overall road operations and maintenance.
32724	363	Fish and aquatics	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.	The impacts to fish and aquatic habitat from the culverts, including under phased construction are described in Supplemental EIS Section 3.3.2, Fish and Aquatics - Impacts Common to All Action Alternatives, and Combined Phasing Option. Installation of Phase 3 culverts is not anticipated to have greater impacts to fish and aquatic habitat than the initial installation (Phase 1 or combined Phase 1/2), as the existing culverts, if in good condition, may be extended, and if in poor conditions, may be repaired or replaced at that time.
32724	364	Mitigation/monitoring	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).	Potential mitigation measures for all resources are discussed in Appendix N of the Supplemental EIS. Each potential mitigation measure is followed by a summary of its effectiveness at mitigating impacts ranging from “highly effective” to “minimally effective” based on the criteria described therein.
32724	365	Mammals	We appreciate that the draft SEIS acknowledges that habituation to development and human activity during calving does not appear to occur. This statement aligns well with the 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. 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, with a similar statement in Appendix C. 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.	Text on habituation was added. Johnson et al. (2020) did not test for habituation of the Central Arctic Herd, they inferred a lack of habituation because some displacement (based on modeled expected values) occurred after decades of development. There is strong evidence from Alaska herds that caribou do not habituate to roads and traffic during calving but there is little scientific consensus for whether or not habituation to development occurs during other seasons.
32724	366	Fish and aquatics	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.	The Supplemental EIS uses the best available information to develop the anticipated impacts the project would have to environmental resources, including future mines that may be proposes should the road be constructed (See Appendix H, Indirect and Cumulative Scenario. Cumulative impacts to fish and aquatic habitat are described in Supplemental EIS Section 3.3.2, Fish and Aquatics - Mining, Access, and Other Indirect and Cumulative Effects. The Supplemental EIS acknowledges the limited site-specific baseline data in Section 3.1, Introduction - Data Limitations.

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32724	367	Mammals	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 Highway1030 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 impacts of mining are analyzed to the extent that information is available to do so. No specific mining application/permit request for the District has been submitted to date. The BLM evaluated reasonably foreseeable mining development as indirect and cumulative impacts, using a hypothetical mining development scenario. When officially proposed, each mine would go through its own project-specific NEPA analysis and permitting process, which would provide further detail and analysis regarding the specific impacts of each mine operation.
32724	368a	Mammals	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.	A map showing the top cover of lichens in 2020 based on remote sensing (Macander et al. 2022) has been added.
32724	368b	Mammals	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 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 Supplemental EIS does show a map of the number of years different areas were used for wintering range or high-density winter range (Map 3-23b).
32724	368c	Mammals	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.	An additional figure showing the seasonal distribution of the RMH and the HHH based on recent GPS data has been added and discussed.
32724	368d	Cumulative and indirect effects analysis	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.	Appendix H has been revised to reference the correct map; Map 1 of Appendix H shows the locations of additional mining prospects outside of the Ambler Mining District.
32724	369	Mammals	Chapter 3 indicates that Alternative B would affectless 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.	The statement about half as much winter habitat in Alternative B compared to Alternative A is incorrect and was corrected.
32724	370	Water resources	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.	See response to letter 20731, comment 1. AIDEA would be responsible for obtaining all necessary water quality baseline data in accordance with mitigation measures listed in Appendix N, ROW grant stipulations, and permit stipulations.
32724	371	Cultural resources	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.	Point 196 has now been labeled on Map 3-33.

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32724	372	Mammals	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.	Map symbology was updated.
32724	373	Mammals	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 3s final two-lane construction, if that is authorized at all.	Comment noted.
32724	374	Fish and aquatics	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 m2) 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.	Additional discussion of water quality impacts at culvert crossings, and associated effects to fish, has been added in Section 3.3.2, Fish and Aquatics.
32724	375	Hazardous waste	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.	Appendix N includes mitigation measures for preparing a comprehensive plan for dealing with and minimizing human exposure to NOA. Mitigation adopted from the USACE 404 permit includes avoiding the use of NOA materials to the greatest extent practicable by following 17 AAC 97 (May 14, 2015).
32724	376	Mammals	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 work1049 and unpublished analyses by experienced caribou scientists1050 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 AIDEAs proposal also constrains the potential for traffic cessation and road closure to times of caribou herd seasonal migration.1054	Should the project be approved, the ROD will determine which mitigation measures will be adopted.

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			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.	
32724	377	Mitigation/monitoring	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.	Potential mitigation measures for all resources are discussed in Appendix N of the Supplemental EIS. Each potential mitigation measure is followed by a summary of its effectiveness at mitigating impacts ranging from "highly effective" to "minimally effective" based on the criteria described therein.
32724	380	Hazardous waste	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).	Appendix N includes mitigation measures for spill response procedures no mater the size of the hazardous materials spilled.
32724	381	Mitigation/monitoring	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 AIDEAs 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. 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.	PMMs revised as suggested. For any potential mitigation measures that require AIDEA to provide information to the BLM, that information would also be available to the public upon request.
32724	382	Water resources	The SDEIS raises serious concerns about AIDEAs 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 wont 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.	See response to letter 10640 comment 5. Special condition 10 of the USACE CWA Section 404 permit (adopted as proposed mitigation under Appendix N Section 3.5) states "Gravel and other construction materials shall not be taken from streambeds, riverbeds, active floodplains, lakeshore or outlets of lakes. Material sites shall be located outside of active channels and active floodplains. A 500' buffer around all streams shall be maintained, within which no material site or access road to a material site shall be located." The USACE CWA Section 404 permit authorized 15 material sites necessary for construction of maintenance stations, construction camps, and communication equipment. Additional material sites will have to be permitted on a case-by-case basis in accordance with mitigation measures described in Appendix N and permit stipulations. AIDEA has identified more material sites than are estimated to be needed to construct the proposed action alternatives so that site boundaries can bd determined with respect to development constraints.
32724	383	Mitigation/monitoring	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	Supplemental EIS Appendix N Potential Mitigation, Section 1.4 General Completion of Use (Restoration/Reclamation), Potential Mitigation Measure 4 would require AIDEA to submit a

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			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).	closure and reclamation plan for approval prior to receiving a Notice to Proceed for construction on BLM-managed lands, and would require the plan to be updated at 5 year intervals.
32724	384	Mitigation/monitoring	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 AIDEAs plans. While the land manager should be informed about plans and operations on their land, information alone 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.	Supplemental EIS Appendix N, Potential Mitigation, Section 1.4, General Completion of Use (Restoration/Reclamation), Potential Mitigation Measure 4 would require AIDEA to submit a closure and reclamation plan for approval prior to receiving a Notice to Proceed for construction on BLM-managed lands, and would require the plan to be updated at 5 year intervals.
32724	385	Mitigation/monitoring	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.	Comment noted.
32724	386	Mitigation/monitoring	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.	PMM has been revised as suggested.
32724	387	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 lowering the downslope water table (Forman and Alexander 1998). Thus, roads act as a lateral dam, fragmenting wetlands,	The commenter has misconstrued how project impacts are calculated in the Supplemental EIS. From Supplemental EIS Section 2.4.3, Features Common to All Action Alternatives: “Footprints used to calculate impacts in Chapter 3 (Affected Environment and Environmental Consequences) include areas of cuts and fills for the project elements plus a 10-foot buffer around those limits for construction access, clearing, and other temporary effects. A 10-foot buffer is a common buffer applied to road projects in Alaska. It represents an area of sufficient width for construction equipment to operate. The buffer is not typically used along the entire alignment; therefore, it represents a conservative estimate of the potential impacts. The impacts to the construction area are generally considered temporary.” As to the commenter's concern of inconsistencies in the Supplemental EIS (Appendix E): “The bridge length was assumed to be an average of 50 feet for small bridges, 120 feet for medium bridges, and the actual length for the large bridges. Assuming that the stream/floodplain would be impacted by the bridge crossings up to five times the bridge width plus a roadway embankment at a 4:1 slope for Phase 3 width both upstream and downstream allowed an estimate of the area of floodplain impacts due to the bridges.” “The culvert width was assumed to be an average of 3 feet for minor culverts, 10 feet for moderate culverts, and 20 feet for major culverts. Assuming that the stream/floodplain would be impacted by the culvert crossings up to five times the culvert width plus a roadway embankment at a 4:1 slope for Phase 3 width both upstream and downstream allowed an estimate of the area of floodplain impacts due to culverts.”

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			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.	Direct and indirect impacts were calculated using the design footprint for each alternative alignment, plus the 10-foot buffer described above. As there are no proposals for mine development at this time, potential impacts from possible future mines are described qualitatively under each resource sections cumulative effects analysis subsection.
32724	388	Mitigation/monitoring	. 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 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 BLMs 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.	PMMs revised as suggested. Scientists who work for state and federal agencies are hired due to their expertise regarding the resources found within their jurisdiction; they also have the best understanding of the management parameters and actions authorized.
32724	389	Mitigation/monitoring	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 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.	Comment noted. Should the project be approved, the ROD will determine which mitigation measures are required.
32724	390	Birds	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	According to 40 CFR 1502.22, when an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an EIS and there is incomplete or unavailable

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			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 analysis of the impacts in more than just a generalized way when it is still missing this key baseline information necessary to do so.	information, the agency will make clear that such information is lacking. A number of topics are called out within chapter 3 of the Supplemental EIS where information is incomplete or unavailable. The BLM evaluated the data to determine if any missing information would be relevant to determining reasonably foreseeable significant adverse impacts or essential to making a reasoned choice among alternatives and, if it was, whether the overall costs of obtaining it would not be exorbitant (see Appendix R). 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 Supplemental 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. The BLM has evaluated the impacts in the Supplemental EIS based upon research methods and theoretical approaches that are accepted in the scientific community. Based on a review of the data that are available, summarized, and cited in the Supplemental EIS and in accompanying appendices, sufficient data exists to allow the BLM to make a reasoned choice among the alternatives. If the project moves forward, additional studies and information would be generated during permitting. Some potential mitigation measures identified in Appendix N have provisions for data collection and monitoring.
32724	391	Birds	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,1067the 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.	Supplemental EIS Appendix N, Section 3.3.4, Birds, includes Potential Mitigation Measure (PMM) 3, and Hazardous and Solid Waste PMMs 1 and 2 which include measures to reduce predation. Additionally, PMMs under Water Resources, Water Quality, Vegetation and Wetlands, and Wildlife all serve to also minimize potential impacts to birds.
32724	393	Wetlands	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.	The Supplemental EIS uses the best available data and crosswalks vegetation and wetland types into a broad scale classification that can be used to compare all action alternatives. Desktop mapping is suitable for use in the Supplemental EIS and is also sufficient to determine the Least Environmentally Damaging Practicable Alternative (LEDPA). Wetland functions are discussed in general, but the Supplemental EIS discloses that wetland function cannot be adequately extrapolated to areas where no comprehensive functional assessment has been completed. A full functional assessment is not required for the Supplemental EIS or for USACE's LEDPA determination.
32724	394	Wetlands	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	The reports have differing study areas mapped and Alternative C does not have any detailed wetland mapping, however, various fine-scale wetland and vegetation types were crosswalked into a broad-scale classification system so that the mosaic of various map resources could be compared. The acreages calculated in the Environmental Consequences section were based on the actual road design footprints, which was used to calculate direct and indirect impact areas.

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			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 hasnt 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 isnt possible to make an informed assessment or comparison of the impacts of the three alternative Road alignments.	
32724	395	Birds	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.	See response to letter 17542, comment 1. Added a paragraph on light pollution to Section 3.3.3, Injury and Mortality, “ <i>Anthropogenic light has been shown to alter the behavior and flight paths of birds that migrate at night (Day et al. 2015, Watson et al. 2016) and may result in collisions with lighted structures, particularly during inclement weather. Artificial light can disorient migrating birds by altering their perception of the horizon; disorientation can cause them to expend additional energy during migration (Watson et al. 2016 and references cited within). Collision risk could be minimized by shielding lights downward on towers and buildings, using monopole (as opposed to open lattice) communication towers, and using white (preferable) or red strobe lights. Non-flashing lights on structures are associated with increased numbers of bird fatalities (Gauthreaux and Belser 2006; Gehring et al. 2009) and should be avoided wherever possible.</i> ”
32724	396	Birds	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 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.	The most important factors in predicting the impact of the project on birds are road length and the proportions of available habitats, both of which are described for each alternative. The specific example of cliff nesting habitat that was provided by the commenter would require a map of cliff habitat extent and locations in the project area, combined with known locations of cliff-dwelling birds or information about the suitability of available cliff habitats in the project area for the species that might use them. None of these are available for cliff nesting species or other bird species that may be found in the project area, nor were they part of the scope of Supplemental EIS revisions for the bird section.
32724	397	Wetlands	For comparison, the wetland delineations and the SDEIS report the following: Wetland acreages reported: DOWL 2014. Preliminary Wetland Delineation and Functions and Values Assessment: o Study area was a 2,000 foot-wide corridor centered on the proposed Road alignment (includes proposals for maintenance stations, etc.). o 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. o The report doesnt 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): o Study area was 1,000 foot-wide corridor centered on the proposed Road alignment o The study area is comprised of 3,752 acres of wetlands, 58 acres of open water, and 2,717 acres of uplands. o The report doesnt give an estimate of the acres that will be impacted by any of the road alignments. The BLM SDEIS 2023: o 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 o 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 o 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: o Alternative A: 130.6 acres of wetland fill and 225.6 Waters of the US impacts o 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.	The Supplemental EIS uses the best available data and crosswalks vegetation and wetland types into a broad scale classification that can be used to compare all action alternatives. Desktop mapping is suitable for use in the Supplemental EIS and is also sufficient to determine the Least Environmentally Damaging Practicable Alternative (LEDPA). Wetland functions are discussed in general, but the Supplemental EIS discloses that wetland function cannot be adequately extrapolated to areas where no comprehensive functional assessment has been completed. A full functional assessment is not required for the Supplemental EIS or for USACE’s LEDPA determination. Wetland delineation reports do not require a standard study area (e.g., corridor). Project proponents will often choose wider corridors in preliminary project phases and narrow the scope as project design advances. Additionally, wetland delineation reports are not concerned with project design, they are surveying and collecting the baseline (i.e., existing conditions) and reporting those conditions. The Supplemental EIS uses the designed project footprint for each alternative to calculate direct and indirect impacts.
32724	398	Wetlands	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.	The Supplemental EIS uses the best available data and crosswalks vegetation and wetland types into a broad scale classification that can be used to compare all action alternatives. Desktop mapping is suitable for use in the Supplemental EIS and is also sufficient to determine the LEDPA. Wetland functions are discussed in general, but the Supplemental EIS discloses that wetland function cannot be adequately extrapolated to areas where no comprehensive functional assessment has been completed. A full functional assessment is not required for the Supplemental EIS or for USACE’s LEDPA determination.
32724	399	Sand and gravel resources	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	See response to letter 30027, comment 25.

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			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 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.	
32724	400	Sand and gravel resources	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 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.	See response to letter 30027, comment 25.
32724	401a	Wetlands	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	The Supplemental EIS uses the best available data and crosswalks vegetation and wetland types into a broad scale classification that can be used to compare all action alternatives. Desktop mapping is suitable for use in the Supplemental EIS and is also sufficient to determine the Least Environmentally Damaging Practicable Alternative (LEDPA). Wetland functions are discussed in general, but the Supplemental EIS discloses that wetland function cannot be adequately extrapolated to areas where no comprehensive functional assessment has been completed. A full

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			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.	functional assessment is not required for the Supplemental EIS or for USACE's LEDPA determination. The Supplemental EIS also discloses that significant permanent wetland impacts would occur. Mitigation for wetland loss will largely be accomplished through special conditions of the USACE Section 404 wetland permit (see Supplemental EIS Appendix N, Potential Mitigation).
32724	403	Geology and minerals	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 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.1096That 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 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.	See response to letter 32724, comment 156 regarding baseline data. Appendix G addresses Alternatives Analysis and includes consideration of other routes and use of rail. Ice road access is not practical for the purpose of the road and was not considered a viable alternative.
32724	404	Geology and minerals	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	See response to letter 30027, comment 25.

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			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.	
32724	406	Geology and minerals	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 environmental analyses.1099 The information must be of high quality because [a]ccurate scientific analysis . . . and public scrutiny are essential to implementing NEPA.1100 BLMs 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.	See response to letter 30027, comment 25.
32724	407	Geology and minerals	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.	The Supplemental EIS addresses reasonably foreseeable mine development as indirect and cumulative impacts. See Appendix H, Indirect and Cumulative Scenarios, for a detailed description of the reasonably foreseeable mining scenario. No change made to Supplemental EIS.
32724	408	Alternatives	The Analysis of AIDEAs 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 AIDEAs 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 SEISs 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 AIDEAs phased approach. While groups appreciate the additional consideration of an alternative that would eliminate the highly damaging Phase 1 stage, BLMs analysis of both AIDEAs original proposal and the combined phasing action are still lacking in the SEIS. The SEIS still includes very little detail on the roads phases or how they would be constructed largely because of the lack of project designs and detailed construction plans.1102One 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	AIDEA proposed in its application a phased approach to the construction, and the BLM is required to respond to that application. The BLM has disclosed the potential impact of AIDEA's phased approach, including Phase 1's potential to accelerate permafrost melting and impacts associated with that approach.
32724	409	Subsistence	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 12,300this 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 Citydevelopment 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	Using a conservative standard, the ANILCA 810 evaluation made positive “may significantly restrict” findings for 34 of the 66 study communities. Impacts for the other 32 communities did not rise to the level of a potential significant restriction.

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			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 Ill specify below, this finding of a significant restriction should be applied to all 65 communities (minus Fairbanks) and their subsistence way of life.	
32724	411	Subsistence	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 parally 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 peripheryeven 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/Betles 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 coexist 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.	The findings of the Supplemental EIS are not based solely on quantitative metrics, but on the entirety of the data and discussion (including Indigenous knowledge) presented in the subsistence section. The quantitative metrics being cited represented a small part of the overall analysis and help inform the subsistence conclusions and differentiate between communities in terms of the potential extent and magnitude of impacts. The analysis also acknowledges that subsistence use areas are not static and that “protection of these areas is key to maintaining cultural identity and the ability to adapt to future changes.”
32724	412	Subsistence	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.	Reviewed impact discussion to ensure that future trends in climate and other impacts are accounted for when discussing cumulative impacts of the road.
32724	413	Public access	The qualitative description of the road acknowledges that the road may some day be open to the public (Appendix H, Secon 2.2.2), yet the final methodology determining risks are not accounting for that future when the corridor will become public. Even if its 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.	Section 2.3 of Appendix H describes the temporal scale used for the cumulative effects analysis, which is 50 years.
32724	414	Subsistence	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 methods 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 economyand the quantitative method assumes that people will not move between communities. This couldnt 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	The Supplemental EIS incorporates multiple quantitative measures to help understand the potential magnitude of impacts to communities, including the material/cultural importance of potentially impacted resources to the study communities, and the likelihood of direct impacts (i.e., level of overlap with community use areas). It is important to be able to provide measures to distinguish the magnitude and extent of impacts between communities, as it is fundamentally true that some communities will experience greater impacts than others; the larger impacts on these communities should not be dismissed or diluted because other communities will also experience indirect effects of the project. Impacts to a community include impacts to any resident of that community in any given point of time (i.e., residents who may not live in the community impacted at this time, but visit or move to that community at a later point in time). Furthermore, the conclusions of the Supplemental EIS sections are not based solely on the quantitative measures. The conclusions are also based on the conclusions of other resource

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			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 opportunitiesthese patterns of social movements are well documented in the ethnographic literature. Some move between communities for a season, or a year, or a few yearsor less, with the advent of air travel. Sometimes these movements are major and long lastingfor marriage, for examplewhile 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 lifetimeespecially 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 Kaltagvillages 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.	sections in the Supplemental EIS and Indigenous knowledge. The Supplemental EIS acknowledges the importance of sharing networks to the communities and addresses the potential impacts on sharing networks resulting from the road. The impact analysis must be based on currently available data, and cannot predict impacts based on hypothetical future residents and scenarios. Reviewed the Cumulative Impacts section to ensure that the social and kinship ties between communities across the region are adequately described and addressed and that the potential for changes in future trends is also addressed.
32724	415	Government to government consultation	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.	See response to letter 26718, comment 5.
32724	417	Public and stakeholder involvement	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 me of reclamaon. 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)	See response to letter 33781, comment 3.

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			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.	
32724	418	Public and stakeholder involvement	Each tribes and communitys perspective needs to inform the BLMs 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 generaon 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 AIDEAs 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.	See response to letter 33781, comment 3.
32724	419	Mitigation/monitoring	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 corridors 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 doesnt 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.	Each land manager that issues a ROW or some other right of access is responsible for ensuring compliance with the terms of the grant for access.
32724	420	Mitigation/monitoring	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 dont 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 Protecon 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, secon 3.4.2 on Transportation and access, point 1 is asking for a Comprehensive Access Planand 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 boards consideration, there are experts that can offer all these boards robust studies that engage the Indigenous knowledges of the region.	Appendix N, Section 3.4.7 discusses the potential mitigation measure which would require AIDEA to consult directly and regularly with affected subsistence communities and ensure that affected communities are represented on the subsistence working group (see Chapter 2, Section 2.4.4 of the Supplemental EIS). This mitigation measure would require that representatives be nominated and approved by the Tribal Council for the community that they represent.
32724	421	Public and stakeholder involvement	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,	Comment noted.

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			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 thingassuring 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 managementincluding 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 corridorthrough ensuring that community participation is adequately administered, as I just noted, and through transparency on costs/benefits as I articulated in the prior section.	
32724	422	Mitigation/monitoring	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 cant 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.	Comment noted. Each land manager that issues a ROW or some other right of access is responsible for ensuring compliance with the terms of the grant for access.
32724	423	Mitigation/monitoring	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 shareholdersNANA 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?	Comment noted.
32724	424	Subsistence	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 benefited 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 operationhow 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 projecta whole generation or moreand 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.	Supplemental EIS Section 3.4.7 acknowledges that jobs directly associated with road construction and operation will be limited in number and temporary. It does not state that the potential increase in income will provide a substitute for subsistence economies.

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32724	425	Section 106 consultation	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.	See response to letter 26067, comment 14.
32868	1	Subsistence	Subsistence District: The project activities will take place in the Subsistence District, where subsistence use of lands and waters has traditionally been the primary and highest priority. The Subsistence Conservation (SC) district encompasses undeveloped areas of high importance for subsistence resources or activities. SC districts are recognized as foundational for the health, social, and cultural well-being of borough residents. If this project is to move forward, we will need to discuss rezoning to Transportation Corridor.	Subsistence districts are analyzed in Section 3.4.1 (Land Ownership, Use, Management, and Special Designations), and the need for a rezoning or conditional use permit are discussed.
33021	2	Subsistence	Our fish and wildlife are already facing increased and known stress with the collapse of the Yukon River wild salmon fisheries, most critically impacting our daily livelihood and distinct cultural as Indigenous People in Alaska. More specifically, our fish and wildlife are facing: increased impacts from a rapidly changing warming climate; a complex and poor state-federal management systems that not only fragmentizes our local land but also our watersheds, coastlines and ocean waters; the unchecked by-catch of salmon in the Bering Sea that is wasted and goes against our traditional values of utilizing everything that is caught; and the on-going uncoordinated proposed mining for critical and rare minerals across the Yukon River Watershed and boreal ecosystem including coordination with Canada. For the record, Deloy Ges, Inc. opposes the Ambler Industrial Road Project and supports the No Action Alternative since the proposed project would further threaten and directly impact our current and future lifeways as Indigenous People of Alaska, and all that we rely on.	The cumulative impacts of the road project on subsistence are discussed in Section 3.4.7.
33068	1	Fish and aquatics	Our salmon fishery is a big part of why I'm against the Ambler Road. I worry about what the Road and mines would mean for our fishery. We all share the Kobuk River. The salmon, sheefish, trout, grayling, and everybody between Kobuk and Kotzebue shares the water. We would all be hurting if something happened at those mines. From what I understand its not a matter of if tailings ponds will break and send toxic sludge downriver, but when.	Supplemental EIS Section 3.3.2, Fish and Aquatics, describes fish and aquatic habitat within the project area and anticipated impacts from development of the road, including potential cumulative impacts from the development of specific mine projects. Any future project that proposes the construction of dam (e.g., tailings dam) would require a review of the dam design and operation to receive state certification from ADNRR's Division of Mining, Land, and Water, Dam Safety and Construction Unit. The Supplemental EIS notes in Section 3.2.3, Hazardous Waste - Mining, Access, and Other Indirect and Cumulative Effects, "tailings dam failures occur and could have major adverse effects to water quality, fish and wildlife habitat, fish and wildlife mortality, and human mortality."
33151	1	Subsistence	The health of the region's people is directly linked to the health of the land and wildlife. Any changes to abundance, availability, and ease of access to resources directly affect the health of the people who depend on them. Increased substance use can occur when workers from outside bring drugs and alcohol into communities. If subsistence resources are lost, community members are even more dependent on incredibly expensive, limited, and often less nutritious food from the village store. Copper, the most abundant resource in the Ambler Mining District is not a critical resource, but fish and caribou are.	The potential impacts of the road on subsistence are addressed in Section 3.4.7, and Socioeconomics (including the potential increase in drug and alcohol abuse) are addressed in Section 3.4.5. Edited section to ensure potential negative economic impacts associated with reduced subsistence resource availability is adequately addressed.
33151	3	Air quality and climate	The road will fragment an ecosystem already adversely impacted by climate change, and expose sensitive permafrost to increased thaw. This thaw would cause irreversible damage to the natural topography of the landscape and alter vegetation patterns and the flow of water.	Comment noted. Permafrost and climate change is discussed in Section 3.2.7 of the Supplemental EIS and each alternative's footprint is discussed in relation to permafrost impacts. The Supplemental EIS notes, road project effects and mining project effects of the types discussed in this Supplemental EIS that can hasten permafrost thaw, coupled with the effects of a generally warming climate on permafrost, could cumulatively release CH4 and further contribute to climate change. The Supplemental EIS states such impacts to permafrost are anticipated in Section 3.2.1. The applicant's estimate of construction costs includes the anticipated construction costs associated with thicker embankments, or additional insulation, to preserve the existing soil thermal regime as much as possible and the necessary maintenance to keep the road functional and useful for its users. Impacts to water quality from the thawing of permafrost are addressed in Section 3.2.5.
33273	1	Socioeconomics and communities	The man camps are a big concern to me. Missing murdered indigenous women is one of the most vile epidemics in this country in Kotzebue alone there are lupiaq women whose deaths have never been looked into. We do not need to be connected to the road system with an influx of men from outside the region (no guarantee those hired will be from these regions/tribes, as we know) and this is a huge concern.	See response to letter 34767, comment 94.
33273	2	Socioeconomics and communities	Along with this concern is the influx of drugs and alcohol in the region, which is already struggling with these issues. Again, there is no benefit of men and roads in general region which will only enhance social problems, as well as environmental.	Sections 3.4.5 (Socioeconomics and Communities) and 3.4.6 (Environmental Justice) of the Supplemental EIS discuss the societal issues that come with an influx of outsiders such as sexual assault, increased availability of drugs and alcohol, food security, and degradation of cultural resources. The health impact assessment available on the BLM ePlanning website for the project also discusses these issues.

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				A potential mitigation measure would require AIDEA to prohibit its employees, contractors, subcontractors, and their employees from visiting local communities while on duty or while staying at project facilities except for the conduct of official business. When communities are visited for conduct of official business, AIDEA would keep records of purpose, date, location, and participants, and would make such records available to BLM or law enforcement agencies on demand (Appendix N, Section 3.4.5.1).
33460	1	Subsistence	Such a road would have have devastating impacts to subsistence and the local, primarily Alaska Native, residents who depend on wild food resources for their food security and culture. The area the road would intersect contains critical habitat and migration routes, especially for caribou and salmon.	Section 3.4.7 addresses impacts to subsistence.
33460	2	Recreation and tourism	The road would also have irreversible impacts to what is currently one of the last vast, wild, roadless areas in the State. The Central Brooks Range is an iconic landscape with world renowned backcountry recreation opportunities. A road does not belong in the Brooks Range and is not needed because there are no mines in the Ambler District.	See response to letter 23434, comment 4.
33477	1	Subsistence	The caribou of the Western Arctic Herd are in serious decline from a variety of external forces: increasing ice coverage due to wetter fall seasons is preventing the caribou from reaching their primary food source, lichen; hotter and longer summers increase mosquito infestations which torment and stress the caribou; a steady northward growth of sub-arctic foliage supplanting native species to the arctic; changes in the caribou migration patterns; and increasing mining and infrastructure development. The communities of the northwest arctic rely heavily on the WAH caribou for food security and while the decline is placing increasing and unpopular pressure on wildlife management agencies to restrict hunting practices, little is being done to restrict mining and development practices to protect the caribou. With so much at stake for the caribou, now is not the time nor place for a road that will further imperil the future of this caribou herd.	The potential impacts of the road on caribou are addressed in Section 3.3.4, and subsistence uses of caribou are addressed in Section 3.4.7.
33513	1	Socioeconomics and communities	The SEIS inadequately addresses the heightened vulnerability of Indigenous women and girls to violence and disappearance resulting from the commodification of their lands and resources, necessitating a more thorough consideration.	See response to letter 34767, comment 94.
33519	2	Alternatives	How come more alternatives were not explored? If this is about one mine why cant there be a rail to a nearby port? There is a deep water port approved for Nome. Nearly all the impacts could be avoided with that route. I am not advocating for that route or for the existence of a mine at all, simply pointing out that you only considered the longest most harmful routes which exposes the obvious this is not about a mine it is about an industry road to access all of the arctic and have a free for all.	See response to letter 280, comment 2.
33519	3	Alternatives	Drones would make it possible to ship ore out of the Ambler area. It seems like these outsiders want a road for more than one reason. ALL feasible alternatives should have been considered in the EIS. That includes air, rail, and so on. I think that any EIS would find the mining impacts are still to harmful to withstand but there is a foundation of insincerity in a report that does not consider alternate ideas.	The combined air/road alternative concept was considered but determined not to meet the purpose and need for “surface transportation access in support of mining exploration and development” as described in ANILCA Section 201(4)(b), and is therefore removed from further consideration in an action alternative. Appendix G Section 6.3 explains the BLM's rationale for not analyzing this alternative concept.
33519	6	Recreation and tourism	Many hard working Alaskans depend on the bush plane tourism industry and the Ambler road would destroy it.	This section of the Supplemental EIS discusses potential impacts of the Proposed Action to nature-based tourism resources.
33519	9	Birds	Noise from the proposed Ambler road would be particularly devastating for animal species that rely on acoustic communication, such as birds and amphibians. T	See response to letter 17542, comment 1.
33519	10	Fish and aquatics	The disturbance of soil and vegetation caused by mining roads can lead to an increased risk of water-based disease outbreaks, putting animal populations at risk. Ambler is no exception and the risk to caribou and fish via disease is not examined in the SEIS.	Noted, but no references provided. Commentor is anonymous. We prefer to focus in direct and indirect impacts related to changes in water quality as discussed throughout the AE.
33519	11	Mammals	Road development can disrupt the delicate balance between predator and prey species. A robust SEIS would consider this. These types of effects of mining roads on wildlife can be difficult to predict, as they may exhibit complex, nonlinear responses to environmental disturbances. There is not enough known to risk the Ambler road.	Section 3.3.4 of the Supplemental EIS discusses potential impacts of the proposed alternatives on both predators and prey and how changes in predators could change predator-prey dynamics.
33519	12	Vegetation	Generally speaking the soil and vegetation disturbances caused by roads can introduce new species to areas, leading to biological invasions and further impacts on native wildlife. The SEIS gives insufficient consideration to this problem.	Supplemental EIS Section 3.3.1, Vegetation and Wetlands, discloses that NNIS infestations are likely to occur based on the establishment and spread of NNIS along the Dalton Highway. The development of the Invasive Species Prevention and Management Plan (ISPMP) prior to construction will include input from all jurisdictional landowners. While infestations are likely to occur, the Supplemental EIS suggests that mitigation measures defined in the ISPMP will be sufficient to control intensive infestations and reduce spread to neighboring undisturbed areas.
33519	13	Socioeconomics and communities	The current SEIS fails to adequately address the concerns and rights of Indigenous communities surrounding the MMIW crisis. Historically push for resource extraction has resulted in an influx of non-Indigenous men in Indigenous communities, who have been responsible for much of the violence against Indigenous women and girls. The current Ambler industrial mining road project looks like its predecessors and would bring harm to the region. Please do not allow such a project to continue. The commodification of Indigenous lands and resources has dehumanized Indigenous women and girls, making them more vulnerable to violence and disappearance. This risk is understated in the SEIS and deserves to be considered more deeply.	See response to letter 34767, comment 94.
33519	14	Socioeconomics and communities	As resource extraction continues to expand, so does the MMIW crisis. This is because resource extraction creates an environment of lawlessness and impunity for those who commit violence against Indigenous women and girls. There is no	See response to letter 34767, comment 94.

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			plan to combat this offered by any proponent of the Ambler industrial mining road and no existing resources available to Interior villages. This alone justifies a no action alternative.	
33543	1	Land use/management	The EIS makes reference to potential impacts along the shared boundary with designated Wilderness, but does not adequately address long term biological impacts to Wilderness Character. Actions taken adjacent to Wilderness can and do influence Wilderness Character. The EIS states that each of the proposed action alternatives will also negatively impact adjacent lands with identified Wilderness Characteristics. It is clear from the EIS that there is no alternative which will protect designated Wilderness and lands with Wilderness Characteristics - except the no Action alternative. Displacement of Wildlife, impact to waters soil disturbances- and a multitude of environmental justice concerns - will have cascading impacts within Wilderness and adjacent lands with Wilderness Characteristics. The Congressional mandate of the Wilderness Act is to preserve an area's Wilderness Character. This is Law. All proposed alternatives will negatively impact Wilderness Character beyond the scope of analysis of this EIS. Thus this entire EIS acknowledges but ultimately minimizes impacts to Wilderness.	Designated wilderness, wilderness study areas, and wilderness characteristics are discussed in Chapter 3.4.1 (Land Ownership, Use, Management, and Special Designations). Much of the project area is undeveloped and natural, which people may view as wilderness. However, only part of the study area is designated federal "Wilderness" as defined the Wilderness Act and the Alaska National Interest Lands Conservation Act. The Supplemental EIS acknowledges that there is designated federal Wilderness within Gates of the Arctic National Park, but none of the alternatives use lands designated under the Act and there would be no anticipated effects to wilderness lands in GAAR from the proposed project. The BLM has inventoried its lands for wilderness characteristics; while the BLM acknowledges these characteristics, it does not manage for them. State lands also have these characteristics and are generally natural. The Supplemental EIS discloses impacts that would occur to such characteristics if the Ambler Road were built. The Supplemental EIS discloses that, while Alternative A would run close to the designated Wilderness boundary and that Alternatives A and B would cross the designated Kobuk Wild and Scenic River, no alternative would cross designated Wilderness. See Section 3.4.1, Land Ownership, Management, and Use, and Special Designations, and Section 3.4.3, Recreation and Tourism.
33579	1	Remand of Final EIS	The scope of the Remand as outlined in Deputy Secretary of the Department of Interior Tommy Beaudreaus February 22, 2022 declaration (the Declaration) to the court was to renew evaluation of ANILCA Section 810 process in relation to (1) caribou forage and (2) water impacts in connection to the Ambler Road (the Road) and to mining operations. The Remand said deficiencies in the programmatic agreement (PA) relating to the NHPA 106 process necessitate revisiting whether the Tribes should be included as invited signatories to the PA. The Declaration also said it intends to supplement the applicable environmental impact statement to more thoroughly assess the impacts and resources identified as areas of concern in the litigation. The draft SEIS (DSEIS) issued on October 13, 2023 covers much more scope than what the Declaration outlined. For example, the DSEIS analyzes three route alternates that were previously evaluated in the 2020 environmental analysis. Route A was selected then, and that route is still the only economically viable route for the Road with the least environmental impact.	See responses to letter 58, comment 3 and letter 31764, comment 1.
33579	2	ANILCA 810 analysis	Furthermore, the DSEIS unnecessarily expands the ANILCA 810 analysis from 27 communities to 66 communities that BLM believes would be impacted by the Road. This overstates the Roads subsistence impacts on communities because (1) most of those communities are far away from the Road and (2) impacts are exaggerated without substantiation or comparable historical evidence.	See response to letter 23196, comment 6.
33579	3	Public access	The DSEIS also says that public use of the Road is reasonably foreseeable, even though the permit request for the Road, by the project proponent, is for industrial use only. The DSEIS discards the project proponent's concrete plans to control access to the Road; it would be limited to industrial use by toll paying mining companies only. Any other use is not reasonably foreseeable. The unnecessary and legally incorrect characterization of trespass as a foreseeable public use of the Road is a major deficiency in the DSEIS and must be corrected.	See response to letter 23058, comment 8.
33579	4	Public access	Access is a crucial issue for the proposed Ambler Access Project (AAP). Local residents in the NANA and Doyon region continuously voice their concerns about outsiders coming into their region via AAP and harvesting their subsistence resources, or otherwise causing harm to their local communities. Those concerns have been heard loud and clear from the outset of the project. As a consequence, controlled industrial only access has been front and center for the project proponent AIDEA. Controlled access will be achieved in several ways. First, the National Environmental Policy Act action being analyzed by the BLM is for restricted access industrial road only. There is no alternative being discussed allowing public access; only approved industrial use would be allowed. Allowing public access would require a changed decision by BLM and a new NEPA analysis (likely EIS). The SEIS should say this clearly since it leaves the reader with the impression that the road could be opened up to the public by the stroke of a pen. Second, there are numerous landholders who would be able to control access across their lands, including the BLM, Doyon, the State of Alaska, the National Park Service, and the NANA Regional Corporation. All of these landholders support only industrial access and would have to change their minds and unanimously agree to allow public access. That is extremely unlikely and something that is not reasonably foreseeable.	See responses to letter 19418, comment 3 and letter 32386, comment 3.
33579	6	Public access	Local Use of the Road: The DSEIS incorrectly identifies the allowed use to cross AAP by local residents as trespass. Under AIDEAs plan, outlined in Volume 1, Sec. 2.4.4 it states: AIDEA would form a subsistence working group for communication and knowledge sharing. The group would help determine where subsistence users would need to cross the Road. The number and extent of these crossings would be negotiated with the group. Ramps would be constructed in select areas to aid such crossings if the subsistence working group determines that such construction is warranted to mitigate impacts to subsistence. This statement is later ignored and lumped in with unauthorized trespass by outsiders. Access to cross the Road at road crossings by residents who live in the vicinity of the Road should not be identified as trespass. This allowed use is only likely for residents already living in these communities and the BLM must acknowledge and differentiate between local resident authorized use and outsider trespass, the latter which is not reasonably foreseeable (discussed below).	See response to letter 26067, comment 3.
33579	7	Public access	Trespass Use by the General Public: In considering trespass use by the general public, the first fact that must be highlighted is that there will be a gate on the Road with security at the gate and security patrols on the Road itself. To	See response to letter 26067, comment 3.

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			assume that a security gate, staffed 24 hours a day 7 days a week 365 days a year, will routinely fail ignores logic and all of the evidence to the contrary. It is not reasonably foreseeable to conclude that a vehicle or ATV from an outsider will be on the Road. If it were to occur at all (unlikely), the use would be at such low levels such that it would be immaterial for purposes of the analysis required in this DSEIS. To bolster this conclusion, BLM should cite trespass data from other existing roads protected by security. The best example is the Pogo Mine Road, which has a gate and, as a consequence, sees no trespass. Other relevant examples include the DeLong Mountain Transportation System (Red Dog Road), the Greens Creek Mine Road, and the Spine Road on the North Slope. The DSEIS must account for the difficulty for the public of using a road that is secured by a gate and security. This potential use is not reasonably foreseeable. The SDEIS should identify this potential issue and characterize it as such and not identify it further in the DSEIS.	
33579	8	Public access	Change in Legal Status: The third type of access discussed in the DSEIS is AAP eventually being opened to the general public. This category of use is not reasonably foreseeable. First, this type of access is not included in AIDEAs application, which states that AAP will be reclaimed after 50 years or upon completion of its industrial use. Second, any change by BLM in its authorization for the Road would require a new or modified Right of Way (ROW). That would be a major federal action and require a new NEPA analysis (likely an EIS). Last, as noted above, there are numerous landowners and every one of them would have to simultaneously agree to change their decisions (and open their lands) to allow full public access to the Road. This is not reasonably foreseeable under any set of circumstances. The SEIS should acknowledge the possibility that the legal status of the Road could change at some future date and discuss the circumstances that would have to fall into place (outlined above) for that to occur. It should conclude that (1) general public use is not reasonably foreseeable and will not be analyzed in the SEIS, and (2) if the Road were to be opened to the public it would require a new and separate NEPA action and the impacts would be analyzed at that time in that document.	See responses to letter 23058, comment 8 and letter 32386, comment 3.
33579	9	Subsistence	The DSEIS correctly points out the integral role that cash plays in subsistence participation stating that Subsistence is part of a rural economic system called a mixed, subsistence-market economy, wherein families invest money into small-scale, efficient technologies to harvest wild foods (Wolfe 2000). Without cash, modern subsistence involving snow machines, ATVs, boats, gasoline, guns, bullets, or other non-handmade items is impossible. Thus, subsistence today requires cash, and thus employment or some other reliable means to acquire that cash. The fact that in todays world subsistence requires cash must be more strongly stated in the SEIS.	Added text to Section 3.4.7, Sociocultural Impacts, reiterating the importance of cash in supporting subsistence activities.
33579	10	Subsistence	The DSEIS states Indirect and cumulative impacts of Alternatives A and B related to resource abundance and availability would likely be greater than those under Alternative C, as they would be more likely to affect resource availability of migrating caribou to the subsistence study communities, particularly during fall, and are more likely to adversely affect sheefish and whitefish, key subsistence species among the study communities.. This is factually incorrect. The negative impacts to subsistence for Kobuk and Shungnak under Alternative C would potentially be devastating, whereas Alternatives A and B would be minimal or non-existent for all communities including Kobuk and Shungnak. Alternative C would pass 1.3 miles from Kobuk, and 5 miles from Shungnak, utilizing the Kobuk to Bornite Mine Road, a well-documented subsistence use area, for hauling concentrate to the Dalton Highway. The noise and sheer proximity to the communities would impact caribou and other subsistence resources to a far greater extent than Alternatives A or B, which would be located over 10 miles away and on the other side of a mountain range (Cosmos Hills). The DSEIS is materially flawed in ignoring this obvious fact and drawing this inaccurate conclusion. It should be stated clearly in the DSEIS that Alternative C will have far greater impacts to subsistence than Alternatives A or B. The DSEIS and ANILCA 810 Analysis casts the net for possible impacts so broadly as to have limited usefulness by the general public to actually determine likely impacts to subsistence resources or access to those resources, which is the whole point of the analysis. To simply state that because the proposed road crosses a river and therefore will impact all subsistence users downstream is overbroad and defies common sense. There are dozens if not hundreds of rivers in Alaska that are crossed by roads with no measurable impacts including the Yukon River, Kenai, Kasilof, Koyukuk, Twenty Mile, Placer, Thorne, Susitna, Matanuska, Nenana, and countless others. Where is the documented harm from these roads, which encounter orders of magnitude more traffic, after decades of operation by both industrial operations and the general public? Simply identifying communities located downstream of a bridge crossing and then assuming impacts to them is unfounded.	All action alternatives would cause impacts to subsistence, although the types and magnitude of impacts vary by alternative, and these differences are discussed. The alternatives discussion does not “simply state” that “all subsistence users downstream” will be affected by the project.
33579	11	Subsistence	Conversely, while a small percentage of the caribou in the Western Arctic Herd (WAH) migrate and winter near and within the AAP corridor, there is no factual and scientific basis to assume that all communities that harvest WAH caribou will be impacted by AAP. That is again too broad and doesnt factor in likelihood and severity of these impacts. As a single example of the nature of the unfounded conclusions (there are many), the DSEIS concludes that Shishmaref, an island in the Chukchi Sea hundreds of miles from the project, will be severely impacted by AAP. This defies common sense, is way off the mark, and a long way from presenting a rational discussion of impacts that are reasonably foreseeable. Painting subsistence impacts with such a broad brush, while ignoring the obvious and real impacts that would be caused to Kobuk and Shungnak if Alternative C were to be developed, does a disservice to the communities and their subsistence way of life.	The selection of study communities was broad to capture potential direct, indirect, and cumulative impacts to subsistence resource abundance and availability. If population-level impacts to migratory resources such as caribou and fish occur, then any users of those resources stocks (e.g., WAH, Kobuk River sheefish) could be affected. The BLM's conclusions are that the Ambler Road could cause population-level effects on the WAH, and therefore any user of the WAH (e.g., Shishmaref, located on a barrier island to the southwest of the road where nearly 100 percent of households use caribou) could be affected.
33579	12	Compliance with other laws	The DSEIS, as the FEIS before it, makes it clear that Alternative A, being the shortest alternative, would result in the least overall impacts to wildlife habitat and wetlands, as well as most other resources. The 2020 Joint (USACE and BLM) Record of Decision (JROD) correctly stated that Alternative A is the most direct route and therefore has the smallest footprint in wildlife habitat, wetlands, and fish habitat and is also the most economically feasible to construct, operate, maintain, and eventually reclaim. It further stated that the Project footprint is less for Alternative A than Alternative B, and significantly less than Alternative C. Significantly, the USACE concluded that Alternative A is the Least Environmentally Damaging Practicable Alternative (LEDPA). That means it is the only alternative that is permissible under federal law. Given the history and work on alternatives in the FEIS, the USACEs finding that Alternative A is the LEDPA, and the limited scope of	See response to letter 29489, comment 52. The USACE identification of a LEDPA does not constrain the selection of a route by the BLM or NPS.

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			the remand (which was not focused on developing or re-instating prior alternatives), we are at a loss why BLM is attempting to breathe new life into an alternative which was rigorously analyzed and determined to be suboptimal on every front.	
33579	13	Alternatives	Moreover, Alternative C would also have significantly greater construction and operation and maintenance costs, making it infeasible from an economic standpoint. The project would not be built if Alternative C were selected, it is un-economic, and for this additional reason, it must be rejected as not reasonable for purposes of the NEPA analysis. Ambler Metals strongly encourages the BLM to take a much more focused, thoughtful discussion of Alternative C in the Final SEIS, and choose Alternative A as its preferred alternative, for the same reasons that it chose Alternative A in the original 2020 JROD.	Comment noted.
33579	14	Compliance with other laws	BLM does not legally have the option to select Alternative C in the ROD. Congress, through ANILCA, already determined that if a project proponent AIDEA in this case seeks to permit a road through the Gates of the Arctic Preserve, the federal agencies shall permit that route. There is no discretion with BLM or other agencies to force AIDEA to accept an alternative route. ANILCA 201(4)(b) says the Secretary shall permit such access in accordance with the provisions of this subsection. (emphasis added); ANILCA 4(c) says Upon the filing of an application pursuant to section 1104 (b), and (c) of this Act for a right-of-way across the Western (Kobuk River) unit of the preserve, including the Kobuk Wild and Scenic River, the Secretary shall give notice in the Federal Register of a thirty-day period for other applicants to apply for access. (emphasis added); ANILCA 4(d) says the Secretaries of Interior and Transportation shall jointly prepare an environmental and economic analysis solely for the purpose of determining the most desirable route for the right-of-way and terms and conditions which may be required for the issuance of that right-of-way. This analysis shall be completed within one year and the draft thereof within nine months of the receipt of the application and shall be prepared in lieu of an environmental impact statement which would otherwise be required under [NEPA] shall be deemed to satisfy all requirements of that Act and shall not be subject to judicial review. Such environmental and economic analysis shall be prepared in accordance with the procedural requirements of section 1104(e). (emphasis added); and ANILCA 4(e) says Within 60 days of the completion of the environmental and economic analysis, the Secretaries shall jointly agree upon a route for issuance of the right-of-way across the preserve. Such right-of-way shall be issued in accordance with the provisions of section 1107 of this Act. (emphasis added); A statutes use of the word shall in a statutory directive to an agency signals mandatory action. Nat. Res. Def. Council v. Reilly, 983 F.2d 259, 266 (D.C. Cir. 1993) (internal quotation marks and citation omitted); Am. Forest Res. Council v. Hammond, 422 F. Supp. 3d 184, 190 (D.D.C. 2019) (resource management plans violated mandatory directives from Congress by excluding portions of O&C timberland from sustained yield timber harvest). Congressional intent is clear in ANILCA, and BLM should step back from any attempt to resuscitate an alternative (Alternative C) which has a greater environmental impact than Alternative A, is uneconomic, and which clearly violates ANILCA.	See response to letter 23310, comment 1.
33579	15	Alternatives	The DSEIS significantly down-plays the economic benefits and opportunities if development were to take place: in the 1,200+ page document, the term is only mentioned 11 times. This project holds the potential for the creation of thousands of direct AND indirect, quality jobs, especially for those living closest to the project through construction and operation phases. Alaskas mining industry provided for 11,400 direct and indirect jobs in 2022, with an average annual wage of over \$130,000.	See response to letter 27727, comment 7.
33579	16	Alternatives	The 2020 USACE permit (POA-2013-00396) already requires that the Road be constructed directly to Phase 2 criteria at thaw sensitive permafrost soils and emergent wetlands areas (to be determined by further geotechnical investigations). The combined phasing alternative will only be applicable to less sensitive wetland and permafrost areas and result in marginal changes to impacts. Without a pioneer road, construction activities would have to be more reliant on aircraft through the entire Phase 2 construction effort, resulting in increased air traffic along the road corridor along with increased noise impacts and visual impacts to area users and wildlife. The lack of a pioneer road would also make it more difficult and more costly to respond to spills, wildfires, and emergencies along the road corridor. Without continuous surface access to the Dalton Highway; emergency response would be more heavily reliant on aircraft to access the road corridor and would be more likely impacted or delayed by inclement weather. Ambler Metals strongly recommends that BLM consult with transportation design and rural road construction subject matter experts to fully analyze the combined phasing alternative, taking into consideration constructability issues and logistics related to construction sequencing in such a remote area of Alaska.	The combined phased option was developed in light of AIDEAs amended application to the USACE which proposes to build the road to Phase II standards in sensitive permafrost and wetland areas.
33579	17	Alternatives	The original AAP FEIS and JROD, and the DSEIS make it clear that Alternative C (332-miles) would result in much greater environmental impacts than Alternative A (211-miles). Furthermore, given the additional construction costs for an additional 121-miles of road under Alternative C, Ambler Metals believes its highly unlikely to ever get constructed. For this reason, we would argue that Alternative C likely does not meet the NEPA definition of a reasonable alternative. The Council on Environmental Quality (CEQ) NEPA regulations define a reasonable alternative as a reasonable range of alternatives that are technically and economically feasible and meet the purpose and need for the proposed action (40 CFR Part 1508). It should be noted that the CEQ specifically stated in its April 2022 final rulemaking that Both the development of purpose and need statements and the identification of alternatives are governed by a rule of reason; the range of alternatives should be reasonable, practical, and not boundless. Ambler Metals strongly believes that BLM must take a hard look at Alternative C, and it should conclude the alternative does not meet the NEPA definition of a reasonable alternative. This finding and rationale should be discussed in the Final SEIS.	Comment noted.
33579	18	Alternatives	Even in the unlikely event that it was determined to meet the NEPA definition of a reasonable alternative, Alternative C should be dismissed from further consideration for the following reasons: 1. It has the greatest impact, by far, on wildlife habitat, subsistence, wetlands, as well as other natural resources. Because of the much greater impacts, specifically on wetlands and other Waters of the U.S., Alternative C does not meet the USACE Section 404 standards, which require the USACE to permit the Least Environmentally Damaging Practicable Alternative (LEDPA). 2. The Alternative C alignment would have substantial impacts on the communities of Kobuk and Shungnak, given their close proximity to that route. We	Comment noted.

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			would question whether the communities would be in favor of this route given the noise, among other things. 3. Impacts on Barge / River Access The location proposed in the DSEIS for crossing the Kobuk and Koyukuk Rivers is described in a positive light, because the river crossings would be 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. However, Alternative C would impact barge service to Kobuk and would certainly impact small boat traffic in those locations, which is orders of magnitude more impactful than the small amount of recreational boating that occurs at the Alternative A river crossings. We request that Alternative C be further analyzed for the potential impacts to both barge traffic and small craft that use the areas proposed for crossing of the Kobuk and Koyukuk Rivers, to put things into perspective, and that this be clearly disclosed in the Final SEIS. 4. As noted above, Alternative C would likely never be built, due to the much higher construction costs	
33579	19	Alternatives	We request that the BLM and USACE take a hard look at the pervasive theme throughout the DSEIS, where the impacts for Alternative C are understated, and sometimes even described as similar to impacts from Alternatives A and B when they are, in fact, clearly much greater. Minor differences seem to be inappropriately amplified in some instances, where a case is seemingly being made that impacts from Alternatives A and B are actually greater than Alternative C. The way that some of these statements are worded makes it very difficult for the general public to understand the simple reality that Alternative C has significantly greater impacts than Alternative A (cited from the original JROD, and still true today). We suggest the Final SEIS should add clarity on these facts.	The Supplemental EIS contains sufficient information for each of the action alternatives to adequately compare impacts among the alternatives and to make an informed decision on the ROW application.
33579	20	Transportation and access	One example of the way impacts is over-exaggerated for Alternatives A and B are potential Dalton Highway improvements that might be needed. Rather than clearly stating that Alternatives A and B minimize impacts by using the existing Dalton Highway to the extent possible (which is how this would normally be described), the DSEIS assumes and emphasizes Alternative A and B would have impacts to wetlands and waterways from major upgrades to the Dalton Highway that could be needed (e.g. widening or realigning highway curves requiring new culverts or lengthening existing culverts). It seems to imply that these impacts could be substantial, and its not at all clear where this assumption came from, as the Dalton Highway already accommodates large haul trucks that use this road every day for trips to the North Slope oil fields. We suggest that BLM provide further analysis and appropriate context on the likelihood and extent of upgrades that would be necessary to the Dalton Highway. The Dalton Highway is a road whose primary purpose is to service the North Slope oil fields. We do not believe major upgrades would be required, and its surprising that this is even mentioned as a potential impact of Alternatives A and B, when were quite certain that the USACE and other permitting agencies would normally consider the use of an existing highway (that already accommodates heavy industrial truck traffic) to be a major avoidance and minimization measure, as opposed to construction of an additional 121-miles of new roadway (Alternative C) across undeveloped wildlife habitat and wetlands. This fact is not clearly stated in the DSEIS, and we request this be made very clear in the Final SEIS.	See Supplemental EIS Appendix H, Section 2.3.3, Other Reasonably Foreseeable Actions. Improvements to the Dalton Highway are reasonably foreseeable.
33579	21	Socioeconomics and communities	Lastly, it is stated in Volume 1, 3-204 of the DSEIS that As a distinction between alternatives, Alternatives A and B would be likely to affect public health in Hughes while Alternative C would not. This is a typo, Alternative C passes much nearer to Hughes than Alternatives A or B and would obviously be more likely to have impacts to Hughes.	The text has been revised to correct the error.
33579	22	Environmental justice	The DSEIS grossly underestimates the economic benefits to the region and to the communities close to the Road. The DSEIS, for example, states that impacts to employment would occur but would not be expected to disproportionately benefit low-income and minority populations. This couldnt be further from the truth, as evidenced by the substantial economic benefits the Red Dog Mine, comparable to potential mine developments along the Road, brought to the Northwest Arctic Borough (NAB) region. For more than 30 years, the Red Dog Mine has been the regions largest employer. It provides 370 direct year-round jobs and 90% of the Boroughs operating funds. The Red Dog Mine also contributes \$8 million each year to the Village Improvement Fund. Jobs will go to all economic levels of relevant communities, unskilled or under-skilled potential workers will be trained to work on future mines and on the AAP Road project.	See response to letter 25185, comment 5.
33579	23	Socioeconomics and communities	The DSEIS also states: benefits associated with increased employment and income would be most likely to occur for NANA shareholders and communities due to agreements between mining companies on NANA lands regarding local hire policies. Thus, interior communities such as Alatna, Allakaket, Bettles, and Evansville may experience subsistence impacts (e.g., reduced resource availability and access to traditional harvesting areas) without the counter benefits of increased income and employment associated with mine development. Whereas it is true the Ambler Mining District is the NANA region, the Road traverses lands in both Interior (Doyon) and NANA regions. Benefits from the Road, and to some extent from the Ambler Mining District, will also benefit Interior communities in terms of good paying jobs, relevant service contracts, and community improvement projects. The new jobs will go hand in hand with maintaining the subsistence way of life in the communities. In fact, without the impetus of development brought about by the Road, it is likely that Interior communities will, sadly, continue to lose population and experience further economic decline.	Section 3.4.5, Socioeconomics and Communities of the Supplemental EIS, discusses potential economic effects on employment and income, cost of living, and other effects of road access to the local communities in the region.
33579	24	Compliance with other laws	The No-Action Alternative is not acceptable for various reasons (1) it is counter to the ANILCA congressionally approved bill mandating surface access from the Dalton highway to the Ambler Mining District; (2) assumes Fly-in Fly-out exploration activities will continue in the region, ignoring the fact that mining companies will not spend money on exploration activities if there will be no surface access to develop the mines; (3) it will decrease jobs and vocational training available to the local underserved environmental justice populations when exploration activities cease; (4) it leaves valuable critical mineral resources in the Ambler Mining District stranded with no viable option to extract the minerals without surface access. Please see our discussion above which provides a summary of the key provisions from ANILCA that obligate the federal government to permit a road through Gates of the Arctic Preserve. The no action alternative is not on the table in this case Congress has already decided that there shall be a road if a project development proponent, such as AIDEA, presents an application to the federal agencies.	See response to letter 29489, comment 9.

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33579	25	Fish and aquatics	It is stated in Volume 1, Sec. 3-107 of the DSEIS that: As of 2018, Ambler Metals (formerly Trilogy) proposed to manage selenium by discharging the combined effluent directly into the Shungnak River via an 11-kilometer (6.8-mile) pipeline (Trilogy 2018a). Trilogy (2018a) predicted that water quality in Shungnak Creek below the discharge point would meet water quality criteria after a mixing zone, although the length of the mixing zone or levels of selenium concentrations are not identified. Discharging high levels of selenium into the Shungnak River could have detrimental effects to aquatic life. Ambler Metals has stated that obtaining a permit to approve the discharge of selenium into the Shungnak River is a regulatory risk for their project (Trilogy 2018a). Ambler Metals recommended several additional studies be conducted at the potential Arctic Mine site (Trilogy 2018a). Among these is evaluating the size of the mixing zone that would be necessary on the Shungnak River to meet stream selenium water quality limits (Trilogy 2018a). This statement does not accurately reflect the water management strategy for Amble Metals Arctic Project, which does not use a mixing zone to meet Alaska Water Quality Standards. Please review the updated 43-101 compliant Feasibility study for the Arctic Project, available at https://trilogymetals.com/properties/arctic/ for project details including water management and treatment strategy.	The text has been revised to eliminate the discussion on the Arctic Project using a mixing zone and now reflects planned water treatment in perpetuity.
33579	26	Fish and aquatics	The DSEIS states in Vol. 1, Sec 3.3.2 that While there is a series of rapids in a canyon just upstream from this point, ADF&G has indicated that the rapids are not necessarily a barrier, and chum salmon may occur farther upstream (Giefer 2018). This contradicts numerous public reports by ADF&G as well as the Anadromous Waters Catalog maintained by ADF&G. It is incorrect to speculate about the presence of salmon without presenting any evidence to support that claim. This DSEIS statement should be removed from the SEIS.	On August 13, 2018, an ADF&G biologist visited the Shungnak River as part of an AWC survey. The biologist submitted an AWC Fish Survey Nomination Form Anadromous Waters Catalog with the following comments: "Started sampling right below a lengthy canyon section with some significant 'necked down' rapids. Spotted chum salmon trying to swim up rapids in reach of habitat station where we landed to start. Substrate good throughout sample reaches. Chum may migrate higher in system but timing would coincide with project window. Don't think the canyon rapids can be assumed to be a (hydraulic) barrier." The ADF&G AWC Nomination form is available at: https://www.adfg.alaska.gov/FDDDOCS/NOM_PDFs/ARC/18-186.PDF.
33579	27	Mammals	The DSEIS states in Vol. 1 Sec. 3.3.4 that The BLM designated the arctic ground squirrel, northern bog lemming, and little brown bat, each of which occurs in the project area, as watch list species (BLM 2019), and the state lists 16 mammal species as Species of Greatest Conservation Need (ADF&G 2015; see Appendix E, Table 18). However, two paragraphs above that the DSEIS states that "Little brown bat is the most widely distributed bat in Alaska; however, its presence within the project area is unknown." Please clarify if the little brown bat is located within the project area or not. Contradictory statements such as this one should be removed from the SEIS.	See response to letter 29556, comment 30.
33579	28	Mammals	The perceived impacts to caribou herd migration are confusing and contradictory. In Volume 1 Sec. 3-137 of the DSEIS, it states that As described above, local residents indicate that the historical caribou distribution in the project area shifted following the construction of TAPS and the Dalton Highway. Prior to construction of the pipeline and road, caribou migrated through the eastern portions of the project area, near Bettles, Alatna, and Allakaket. Following construction, residents say that the caribou stopped coming through this area (WAH WG 2015, 2016). Earlier in the document, in Vol. 1, Sec. 3-127 the DSEIS states that Residents of Huslia recounted high caribou availability in that area 30 years ago, but very few today. The Dalton and TAPS had been around for about 50 years when there was high caribou availability in that area. These confusing statements must be clarified in the Final SEIS. Further, in Vol. 1 Sec. 3-138, the DSEIS states 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. Although caribou generally do not use specific migratory or seasonal movement paths every year, in many recent years, the majority of WAH caribou migrate west of the proposed action alternatives (Dau 2015). Impacts to WAH caribou during winter movements would be localized and limited as movement rates are lowest during mid to late winter (Dau 2015; Joly 2011). What is the reader to make of these seemingly contradictory statements: that caribou herds no longer use areas due to the Dalton Highway and TAPS except for Huslia several decades after TAPS and the Dalton were constructed, while ADF&G maintains that the migratory patterns of the WAH as a whole would likely remain intact? The DSEIS and ANILCA 810 Analysis should provide context as to the likelihood of the impacts to caribou migration and subsistence in light of the analysis by ADF&G. A dizzying array of distances are used in the DSEIS for caribou impacts and avoidance due to infrastructure. From 0.6 miles, 1.2 miles, and 3.1 miles (Johnson 2020), to 2.5 miles (Cameron et al. 1992) to a staggering 30 miles (Dau 2023), a notable outlier. Of these, the findings from Dau reflect a very specific circumstance: migrating caribou that interact with deflected caribou and they all wander off together. This specific and rare circumstance and deflection distance is then incorrectly ascribed to all caribou at all times for impacts, including non-migrating overwintering caribou though there is no scientific basis to do so. A more agreed upon impact distance that is supported by multiple studies; between 1 and 3 miles, is much more realistic and predictive of caribou behaviour and should be used throughout the SEIS document when analyzing potential impacts.	See response to letter 29556, comment 31.
33579	30	Cultural resources	Reminding us of the presence throughout the region of cultural resources including graves, sacred areas, and archaeological sites, Evansville Tribal resident Sheryl Meierotto stated: Like, its mindboggling. And so, especially in this area, you know that when people travel back and forth, I was mentioning before that they probably stayed to higher ground. So that they can see. And people traveled on the rivers, of course, but its a lot longer. So you have cultural sites all across here. You have graves. You have, um, old places where people camped. You have very spiritual areas, you know. Um, its there. Right [along the proposed Ambler road route]. Its all along there. I recall traveling with archeologists, a group of archeologists, when I worked for the Park Service, going out through the Brooks Range. And wherever they walked, they found something. You know, I didnt see it, of course, but any high area we went, so. Id be out there with them for weeks at a time, and it was like, just amazing. Where everywhere you went, there was something.	See response to letter 155, comment 1.

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33579	32	Geology and minerals	The NOA risks discussed throughout the DSEIS document (primarily Section 3.2.1) are overstated and ignore agreed upon mitigation measures. The discussion, maps, and tables misinterpret the factual NOA data. The source of the NOA data is from the Alaska Division of Geological & Geophysical Surveys, Miscellaneous Publication 157, Preliminary Evaluation of Bedrock Potential for Naturally Occurring Asbestos in Alaska by D. Solie and J. Athey. In their section entitled Limitations of the Data the authors specifically state Asbestos will not actually be present in many areas displayed as having NOA potential and There is a very good chance that asbestos exists in significant quantities in areas indicated as having zero-to-low potential for NOA. This advice is ignored, however, in Appendix D of Chapter 3, Physical Environment Tables & Supplemental Information, Geology and soils Table 3 (p. D-2) of the DSEIS, where the acreage of high and low potential NOA are taken simplistically to represent the risk along each route. This designation is a disingenuous use of the NOA potential map and ignores actual observed NOA. This matter should be made clear in the SEIS. The known occurrences of asbestos (facts) should be shown separately from areas where potential is estimated (postulated). Presumably the known occurrences should be at least as concerning as the high probability areas. Observed NOA is noted in the document for the Ambler-Shungnak area, but there are several known occurrences of asbestos along the Dalton Highway and in the Ray Mountains along Route C that are not mentioned in the DSEIS. Specifically, the known occurrences in the Ray Mountains very closely straddle Route C, see the figure below.	GIS edits have been made to Map 3-02 to add the known NOA occurrence locations. Notes have been added to the bottom of Appendix D, Table 3 to provide context for the data.
33579	33	Cumulative and indirect effects analysis	The DSEIS mining scenario assumes the 4 leading prospects in the Ambler Mining District Arctic, Bornite, Sun, and Smuckeraall develop with a combination of open pit and underground mining. The DSEIS also mentions South32s Roosevelt prospect and other potential future mining developments but says it is too speculative to do a detailed analysis on those in the DSEIS. When one considers all of Alaska currently has 6 operating mines in the State and that situation has not changed in the past 15 years, it stands to reason to expect realization of potential mineral deposits along the Road will be phased in a logical manner and will only proceed when potential mines make economic, timing, and environmentally acceptable impact sense to develop.	See response to letter 29849, comment 57.
33579	34	Geology and minerals	The risk of creating acid rock drainage (ARD) is overstated and lacks context as stated in the DSEIS. In Section 3.2.2, p. 68, the DSEIS states a concern that exposure of subsurface iron sulfide minerals to air and water could result in the creation and leaching of acidic drainage into water bodies. Throughout Alaska and this region, there are currently iron sulfide minerals exposed at surface that are creating and leaching some amount of local acidic drainage into water bodies. The SEIS does not directly acknowledge this existing process, nor mention any concern around this naturally occurring phenomenon. This naturally occurring process is unwittingly highlighted, however, in Section 3.2.1, p. 71 of the DSEIS, which states oxidized metals commonly create yellow, orange, and red colors in the bedrock; aerial imagery identified areas exhibiting this characteristic staining in multiple locations along all action alternatives, indicating the potential for ARD (DOWL 2011a). This observation shows explicitly that there are already iron sulfide minerals naturally exposed on surface and ARD is already occurring naturally in multiple locations along all routes according to aerial imagery and the ecosystem is working with its presence and has not been destroyed. Weathering of sulfide-bearing rocks is a natural process and any enhancement of this process by road development must be contextualized within the existing natural processes to fairly assess the potential risk.	Section 3.2.1 has been revised to clearly explain that ARD and ML are naturally occurring processes in the affected environment. Section 3.2.2 has been revised to explain potential impact could include increased ARD and ML because of the project exposing bedrock containing iron sulfide minerals (e.g., excavation/blasting at some material sites) to air and water.
33579	35	Cumulative and indirect effects analysis	The maps showing Alaska state claims are all out of date. In addition to the state claims held by Ambler Metals, Teck, and Valhalla, there are 200 claims held by 995 (Trilogy) covering 32,000 acres and 1648 claims covering 263,680 acres held by South32. All of these state claims are along Route A.	See response to letter 29839, comment 16.
33607	1	Subsistence	The proposed Ambler industrial road would be bad for all subsistence needs in the region sheefish, caribou, salmon, other land mammals.	Potential impacts to subsistence are addressed in Section 3.4.7.
33607	4	Air quality and climate	Why is climate change not discussed enough in the SEIS? The Arctic is melting the last thing it can sustain is a massive 20-mile road.	Comment noted. See response to letter 132, comment 2.
33607	5	Public access	Prior to the Dalton coming through people were promised two things the road would remain public and caribou would not be impacted. The public road serves everyone except the residents of the region and no one has seen the annual massive caribou herd migration since. Data backs that yet is not present in the SEIS.	See response to letter 26067, comment 3.
33607	6	Fish and aquatics	Yukon River king salmon are on the verge of extinction. Any development that kills of the fish or interrupts natural spawning is absolutely not acceptable. The Ambler road would destroy fish and spawning areas.	Supplemental EIS Section 3.3.2, Fish and Aquatics - Salmon Decline, describes the recent trends to salmon populations in the regions, and anticipated impacts to fish from road development are described in Draft Supplemental EIS Sections 3.3.2, Fish and Aquatics - Impacts Common to All Action Alternatives and Mining, Access, and Other Indirect and Cumulative Effects.
33623	1	Environmental justice	Key Environmental Justice Concerns and Recommendations: Address the disproportionate impacts identified in the DSEIS in accordance with Executive Order 14096, Revitalizing Our Nations Commitment to Environmental Justice for All and the Council on Environmental Qualitys guidance, Environmental Justice: Guidance Under the National Environmental Policy Act. Ensure the FSEIS follows the Office of Science and Technology Policy and the CEQ November 2022 Guidance for Federal Departments and Agencies on Indigenous Knowledge by clarifying the collection and use of traditional knowledge in the NEPA process. Implement subsistence mitigation measures developed in cooperation with affected subsistence communities to address the high-likelihood, high-magnitude, and long- or permanent-duration subsistence impacts. Consistent with EO 14096, identify the full range of cumulative impacts from the proposed road, future mining projects, and climate change that could affect communities w	As stated in Appendix N of the Supplemental EIS, effects of the project on environmental justice populations would be addressed through implementation of mitigation measures related to subsistence resources (Section 3.4.7), and socioeconomics and public health (Section 3.4.5). Any residual adverse impacts to local communities noted in these areas would likely disproportionately affect low-income and minority populations. Section 3.4.6, Environmental Justice in the Supplemental EIS, together with Section 3.4.5, Socioeconomics and Communities, Section 3.4.7, Subsistence Uses and Resources, and Section 3.4.8, Cultural Resources, identify the full range of cumulative impacts from the proposed road, future mining projects, and climate change that could affect communities.

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33623	2a	Air quality and climate	Key Climate Change and Greenhouse Gas Emission Concerns and Recommendations: Estimate additional emissions associated with the reasonably foreseeable indirect effects consistent with CEQs 2023 NEPA Guidance on Consideration of GHG Emissions and Climate Change. The DSEIS omits several sources of reasonably foreseeable GHG emissions, including from mining operations and permafrost damage, and presents an incomplete estimate of impacts, including the social cost of greenhouse gases (SC-GHGs) from the loss of permafrost.	See response to letter 33623, comment 26.
33623	2b	Mitigation/monitoring	Consider mitigation measures to address permafrost thaw in the short term (e.g., during construction) and long term (e.g., resiliency of project to withstand large changes in permafrost conditions in the years following construction).	Appendix N Section 3.2.1, Geology and Soils, includes potential mitigation to address permafrost. Additionally, several measures included in Appendix N, Section 3.5, Proposed Mitigation Adopted from USACE’s 404 Clean Water Act and Section 10 Rivers and Harbors Act Permit Special Conditions, address this concern.
33623	3	Alternatives	Option to Continue Exploration via Air and Begin Road Construction with Viable Mining Project The EPA continues to strongly recommend that the FSEIS include a phased option that could apply to any action alternative whereby exploration activities would continue via air support as is currently being conducted; and that the Ambler Road be built only after a viable mining operation in the Ambler Mining District is proposed. Other exploration activities could be supported by the road once constructed. This phased option would avoid the many significant impacts identified in the DSEIS associated with road construction until the road is needed to support a viable proposed mine. In addition, delaying construction until a mine plan is developed would allow future mining applicants the flexibility to include pipelines or other infrastructure adjacent to the road corridor during construction of the road itself, instead of after the fact. Some modern mining projects incorporate pipelines for fuels and/or concentrates to reduce traffic, dust, greenhouse gas emissions, subsistence impacts, and operating costs during long term operations. If the road is already built there would be limited incentives for mining operators to include pipelines to reduce impacts.	The purpose of the project is to support mining exploration, development, and operations, not simply mineral exploration. The BLM did find that surface access was an important aspect of the purpose and need. In fact, the need for surface access is recognized by Congress in Section 201(4)(b) which states: “Congress finds that there is a need for access for surface transportation purposes across the Western (Kobuk River) unit of the Gates of the Arctic National Preserve (from the Ambler Mining District to the Alaska Pipeline Haul Road) and the Secretary shall permit such access in accordance with the provisions of this subsection.” Regarding suggestion that the “need” for mineral development is a moot point unless exploration indicates resources or proven reserves: BLM obtained feedback from the public, industry experts and AIDEA about their experience and opinions and used that information, combined with BLM's own knowledge and experience, to develop a reasonably foreseeable mining scenario. The BLM has described reasonably foreseeable mineral development and has disclosed the impacts from those reasonably foreseeable actions in Appendix H.
33623	4	Alternatives	The DSEIS states Therefore, while the suggested alternative would reduce operational traffic and air emissions, it would do so at the expense of increased physical disturbance to wildlife habitat, permafrost soils, and wetlands. 1 The DSEIS conducted a cursory screening analysis of the road/pipeline option and did not include this option in the detailed alternatives evaluation. The DSEISs screening evaluation did not assess the recreation, subsistence, public health, or EJ impacts of this alternative. It is beneficial to these resources to have significantly fewer trucks and truck drivers brought into the region. If it is determined that this road/pipeline option would not be fully evaluated, we strongly recommend that the FSEIS include the following statement to ensure this NEPA analysis does not foreclose the consideration of pipelines in future mining EISs: The pipeline/road option was not fully evaluated to determine if it could reduce impacts to subsistence, health, and some of the other resources. It is unknown whether future mining operators would propose to utilize pipelines to transport fuel and/or mineral concentrates. The feasibility and use of pipelines are more appropriately determined by mining applicants, rather than by AIDEA. Therefore, it is possible that future mine proposals could consider pipelines for fuel or concentrate transport, in addition to the Ambler Road or pipelines may be considered alternatives in future mining EISs.	In developing the Supplemental EIS the BLM reconsidered all previous alternatives from the 2020 EIS as well as new potential alternatives that could reduce environmental impacts to the resources of concern in the remand process (e.g., fish and caribou). See Volume 2 Appendix G Alternatives Development Memorandum for the detailed discussion regarding determining the range of alternatives.
33623	5	Transportation and access	Reduced Truck Traffic Benefits The DSEIS states: Therefore, an approximate maximum of 342 daily trips could be avoided with this alternative,Given the connection between wildlife habitat and subsistence uses, which are the focus of the remand, the benefits of this alternative would not outweigh the drawbacks associated with the increased habitat disturbance and movement barriers.2 The DSEIS does not provide analysis or evidence to support that the benefit of reducing truck traffic of up to 342 daily trips would outweigh the drawbacks associated with a wider infrastructure corridor. The sections on caribou and subsistence discussed that impacts to caribou movements are due to both road presence and the amount of traffic. Therefore, reducing one (traffic) should reduce changes to caribou movements. In addition, reducing traffic would result in less human-traffic interactions over the 50+ years of operations. Other Alaska mining EISs document the benefit of pipelines and reduction of truck traffic to reduce wildlife and human interactions (e.g., Red Dog Aqqaluk, Donlin, Pebble). Unless further analysis is provided in the FSEIS to support the highlighted sentences, the EPA strongly recommends that the text be revised as follows: Therefore an approximate maximum of 342 daily trips could be avoided with this alternative Despite the connection between wildlife habitat and subsistence uses, which are the focus of the remand, this alternative was not evaluated. This does not prohibit future mining operations from considering pipelines as a means to transport fuel and concentrates.	Revised as recommended.
33623	6	Alternatives	Costs The DSEIS states that In terms of economic feasibility, one of the BLMs alternative screening criteria, construction of a pipeline in addition to the road, would also significantly increase the cost of construction, which would make this alternative less economically feasible compared to the proposed action.3 The DSEIS did not provide costs of a combined pipeline corridor/road alternative compared to other alternatives or identify BLMs economic feasibility threshold. In addition, the DSEIS focused on construction costs only and did not appear to calculate and consider the long-term costs of operations and maintenance over the expected lifetime of a pipeline/road option. For example, there would be lower road O&M costs due to significantly less traffic and lower transportation O&M costs for the mines that utilize pipelines vs some trucks during the 50+ year operating life. Without an analysis of operating costs or an understanding of the economic feasibility threshold, EPA recommends that the text be revised to just note the high construction costs but not opine on feasibility as follows: In terms of economic feasibility, one of the BLMs alternative screening criteria, construction of a pipeline in addition to the road, would also significantly increase the cost of construction.	In developing the Supplemental EIS, the BLM reconsidered all previous alternatives from the 2020 EIS as well as new potential alternatives that could reduce environmental impacts to the resources of concern in the remand process (e.g., fish and caribou). See Volume 2 Appendix G Alternatives Development Memorandum for the detailed discussion regarding determining the range of alternatives.
33623	7	Environmental justice	The DSEIS identifies disproportionate impacts to communities within and near the project area for all action alternatives. In accordance with Executive Order 14096, Revitalizing Our Nations Commitment to Environmental Justice for All and the	See response to letter 33623, comment 1.

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			Council on Environmental Quality (CEQ)s guidance, Environmental Justice: Guidance Under the National Environmental Policy Act (CEQ EJ Guidance), the EPA recommends the FSEIS address the disproportionate impacts identified in the DSEIS.	
33623	8	Environmental justice	The EPA has concerns that while efforts have been made to inform the public, the publics feedback has not been fully incorporated into the decision-making process and/or addressed in the NEPA process. The EPA recommends the FSEIS detail how input from impacted communities is considered in this process, including the selection of the preferred alternative and development of mitigation measures. Ensuring public input is fully considered and responded to in the decision-making process is a critical component of federal decision making. The magnitude of disproportionate impacts to communities will vary based on the selected alternative. Consider the views of the impacted communities, consistent with CEQ EJ Guidance, when selecting the preferred alternative. The EPA appreciates the efforts to inform the public and has recommendations to involve the public more meaningfully and ensure community feedback is fully reflected in the decision-making process. This involvement helps inform the selection of the preferred alternative and identify mitigation measures for disproportionate impacts on communities with EJ concerns. EO 14096 highlights the need to provide opportunities for the meaningful engagement of persons and communities with environmental justice concerns who are potentially affected by Federal activities including by providing timely opportunities for members of the public to share information or concerns and participate in decision-making processes, fully considering public input provided as part of decision-making processes, and providing notice of and engaging in outreach to communities or groups of people who are potentially affected and who are not regular participants in Federal decision-making. The EPA recommends: Designing robust community engagement practices to maximize participation opportunities for communities that would be affected by the project, such as community-based workshops to facilitate discussion and issue resolution. Creating community advisory committees with representatives from impacted communities to help facilitate guidance and feedback from community members. Hosting focus group discussions regarding mitigation that is appropriate for each impacted community. Advertising these engagement opportunities through a wide range of communication channels representing trusted sources of information by the affected communities (e.g., websites, radio, phone calls, flyers, letters) to ensure the broader community is represented in the decision-making process.	See Supplemental EIS Section 1.5, Collaboration and Coordination; Appendix I: Preparers, Consultation, and Collaboration; and Appendix S: Response to Comments.
33623	9	Alternatives	The EPA recommends also considering the Tribal Alternative as an alternative in the FSEIS, as mentioned in the DSEIS,6 if additional information about the route becomes available through additional public outreach and comments. A Tribal Alternative could provide an option that minimizes impacts to affected Tribes and utilizes traditional knowledge to inform the alternative.	The Tribal Alternative is discussed in detail in Appendix G, Section 5.4.
33623	10	Subsistence	In November 2022, the Office of Science and Technology Policy (OSTP) and the CEQ released Guidance for Federal Departments and Agencies on Indigenous Knowledge (OSTP and CEQ Indigenous Knowledge Guidance)7 on considering, including, and applying indigenous knowledge in federal decision-making. The EPA recommends that the SFEIS reference this guidance and describe how it informed the collection of traditional knowledge for the project. The EPA appreciates that the DSEIS summarizes how existing traditional knowledge was collected and used, such as ethnographic studies, during public scoping meetings, EIS public comment periods, government-to-government consultations, and in meetings with resource working groups. While these methods add valuable information, they may not be equivalent to current guidance for collecting traditional knowledge from collective or individual meetings with knowledge holders. Additionally, it is not clear if traditional knowledge was collected in all the potentially impacted communities or whether it followed organized methodologies such as those described in the OSTP and CEQ Indigenous Knowledge Guidance. The EPA recommends the FSEIS identify the communities that provided traditional knowledge and identify the communities where traditional knowledge was not provided. This may help identify gaps associated with the collection of indigenous knowledge. Additionally, the EPA recommends the FSEIS summarize efforts to collect traditional knowledge since the publishing of the DSEIS, describe plans to collect traditional knowledge prior to the publishing of the FSEIS, and include efforts to continue to inform the project with traditional knowledge after the federal decision/project implementation.	Reference added as requested. Text has been added to Supplemental EIS Chapter 3, Affected Environment and Environmental Consequences, Section 3.1, Introduction, that discusses the use of Indigenous knowledge and local knowledge within the EIS, including the USDOl definition of Indigenous knowledge per 301 DM 7 Departmental Responsibilities for Consideration and Inclusion of Indigenous Knowledge in Departmental Actions and Scientific Research.
33623	11	Environmental justice	The summary of EJ impacts for Alternatives A, B, and C indicate that there will be effects that would disproportionately fall on communities with EJ concerns, particularly for Ambler, Evansville, Kobuk, Shungnak, and Hughes.8 The DSEIS does not describe whether any interviews or surveys were conducted in these communities to ascertain specific community preferences associated with the road alternatives. The exception is one sentence in Appendix G relative to Alternative C that states Public comments during scoping meetings in Shungnak, Kobuk, and Hughes showed some public support for the road and potential benefits to communities that could be derived from it. Understanding communities perspectives of the project and road route alternatives, especially those with EJ concerns, is important since these communities will bear the brunt of both the short- and long-term impacts and benefits. CEQ EJ guidance directs agencies to identify and give heighten attention to ...alternatives (including alternative sites), mitigation strategies, monitoring needs, and preferences expressed by the affected community or population. EPA strongly recommends that the FSEIS clearly identify and describe whether communities with EJ concerns have expressed preferences and/or concerns for certain alternatives in ensuring effective community engagement as detailed in EO 14096 and CEQs EJ Guidance. If communities with EJ concerns have not been meaningfully engaged regarding their preferences/concerns, EPA recommends that additional outreach be performed to ensure the impacted communities are meaningfully engaged throughout the NEPA process. Further, we recommend that the FSEIS and ROD describe how the EIS substantially weighed community preferences and concerns in deciding on the selected alternative.	As described in Section 1.5.3, Government-to-Government and National Historic Preservation Act Section 106 Consultation with Tribes in the Supplemental EIS, the BLM conducted consultation meetings and other outreach during the previous and current EIS processes. See Appendix I for a summary of the dates, locations, and attending agencies and other entities involved in government-to-government consultation meetings associated with the current Supplemental EIS and Section 106. In addition, BLM conducted a series of talking circle workshops in communities associated with the current Supplemental EIS public meetings. A report on these workshops has been included in Appendix Q of the Supplemental EIS. Section 3.4.6, Environmental Justice in the Supplemental EIS incorporated many of the topics discussed in these public scoping and public review meetings, including the societal issues that come with an influx of outsiders such as sexual assault, increased availability of drugs and alcohol, food security, and degradation of cultural resources.
33623	12	Subsistence	There are a number of mitigation measures to address subsistence impacts that the DSEIS predicts will be high-likelihood, high-magnitude, long- or permanent-duration impacts over an expansive area for all alternatives.10 The five potential mitigation measures described in the DSEIS would strengthen the existing planned mitigation. We therefore encourage describing commitments to all potential mitigation measures in the FSEIS and ROD. Even with the addition of the potential	Supplemental EIS Appendix N, Potential Mitigation, discusses numerous potential measures to mitigate adverse impacts from the project. Should the project be approved, the ROD will determine which mitigation measures will be required.

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			mitigation measures described in the DSEIS, the summary of effectiveness indicates that they would be only partially effective at reducing impacts to subsistence and that there are uncertainties. ¹¹ Uncertainties related to the predictions of subsistence impacts are also mentioned in the DSEIS and in the Subsistence Technical Report. For example, regarding the subsistence impact indicators, These tables do not account for the potential for larger indirect effects that could occur, particularly for resource availability impacts, which are more uncertain and for which systematic, quantifiable impact indicators are not readily available ¹² and The magnitude of resource availability and abundance impacts to fish, caribou, and other food sources is not as clear because of uncertainties about the populations in the area and whether and how they would react to a road and whether or not substantial spills ever occurred; magnitude of impact to wildlife could be small, medium, or large. ¹³ Uncertainties can result in an underprediction or overprediction of impacts.	
33623	13	Subsistence	Given the very high value of subsistence to the local communities and its linkages to health, culture, and way of life, the EPA strongly recommends that the BLM work closely with the impacted communities to identify additional mitigation measures to minimize the anticipated impacts to subsistence practices.	Comment noted.
33623	14	Subsistence	Inclusion of wildlife observers: Inclusion of independent wildlife observers in trucks, particularly observers with local knowledge, will better ensure compliance with wildlife interaction protocols. While the DSEIS describes proposed on-the-ground observers near the impacted communities, the impact to subsistence resources and practices may occur at many other parts of the road, so land-based observers would be only partially effective. EPA notes impacted communities may support this mitigation measure as the use of in-truck observers was identified and recommended in traditional knowledge surveys conducted during development of the Red Dog Aqqaqut SEIS. In developing that SEIS, knowledge bearers had direct experience with a similar type of road, in a similar area, with similar wildlife protocols. Because Ambler Road would be longer and cover more diverse terrain than the Red Dog Road, it may require more observers.	See Appendix N, Section 3.4.7, Potential Mitigation Measure 2.
33623	15	Subsistence	Regular monitoring and reporting of Subsistence Resource availability and food security: The Health Impact Assessment (HIA) recommended regular monitoring of subsistence uses and food security in the communities where high impacts are predicted. The EPA recommends engaging with the impacted communities to consider this as a mitigation measure for inclusion in the FSEIS and ROD. The proposed mitigation measure #2 calls for subsistence monitoring representatives in communities closest to the road corridor. EPA recommends engaging with impacted communities and expanding the measure to include subsistence monitoring representatives from any community that is potentially impacted, including those farther from the road corridor. EPA recommends engaging with the impacted communities about developing regular harvest and food security surveys to identify the magnitude and extent of impact on subsistence practices. If data are collected regarding harvest and food security, EPA recommends this be described in the FSEIS and include regular (e.g., annual) report that documents the results of subsistence and food security monitoring, identifies changes or trends in subsistence use and food security, and identifies any changes to road operations or protocols to address subsistence impacts. We recommend engaging with impacted communities to identify the best methods of sharing any reports or data regarding impacts to subsistence use and/or food security to ensure the communities can successfully access the information.	See Appendix N, Section 3.4.7, Potential Mitigation Measure 2.
33623	16	Subsistence	Lost Subsistence Resources: EPA recommends engaging with impacted communities to identify mitigation measure to address lost subsistence resources. Communities that rely on subsistence harvesting have few options to replace foods that are lost due to project-related disturbances. Specifically, we recommend that the FSEIS include describing mechanisms to develop a plan with the communities to address lost subsistence resources. This plan could address lost resources by engaging impacted communities to identify mechanisms for providing nutritionally equivalent foods or resources that would allow subsistence users to hunt or gather in new/farther areas and/or do so more effectively.	See Appendix N, Section 3.4.7, Potential Mitigation Measure 2.
33623	17	Subsistence	Subsistence Advisory Group: The DSEIS discusses the formation of a Subsistence Advisory Group for knowledge sharing, and to help inform where subsistence users would cross the road. ¹⁴ The EPA recommends the FSEIS include information from the Subsistence Advisory Group regarding crossing locations, how each alternative will affect those locations, and what will be done to mitigate any potential impacts. Include additional information regarding the Subsistence Advisory Group composition, coordination with Tribes, and incorporation of traditional knowledge where feasible in the identification of crossing locations. The EPA recommends the FSEIS clarify how the Subsistence Advisory Groups role differs from the Subsistence Advisory Committee and subsistence working group referenced in the DSEIS, or if these are unintentionally used interchangeably in the DSEIS. The DSEIS identifies a mitigation measure for AIDEA to consult directly and regularly with affected subsistence communities and ensure that the communities are represented on the subsistence working group. ¹⁵ The EPA recommends updating this mitigation measure to include additional proactive measures to inform pre-construction activities and road design.	See Appendix N, Section 3.4.7, Potential Mitigation Measure 2.
33623	19	Socioeconomics and communities	The potential impacts of violence in indigenous women can have direct and indirect impact to health. In its Cumulative Impact Research Report, EPA state that while not all stressors fall under the purview of EPA, such as community violence, because EPA actions and decisions to protect human health and the environment interact with or are affected by the cumulative impacts of both chemical and non-chemical stressors, both must be assessed to understand the full impact of a decision or action ^[4] . The EPA recommends adding supplemental information from the HIA to the FSEIS regarding public health impacts from possible increases in violence and sex trafficking. Collaborate with impacted communities to develop mitigation measures to these identified potential harms to communities with EJ concerns.	See response to letter 34767, comment 94.
33623	20	Mitigation/monitoring	The EPA notes Appendix N identifies a mitigation measure to prohibit employees from visiting local communities unless for official business. As noted in the effectiveness discussion, this measure may only be effective on BLM-managed lands. ¹⁷ Depending on the selected alternative, the EPA has concerns that this mitigation measure would not apply on most of the corridor and recommends continued collaboration with the impacted communities outside BLM-managed land to develop	Each land manager that issues a ROW or some other right of access is responsible for ensuring compliance with the terms of the grant for access. Should the project be approved, the ROD will determine which mitigation measures are required.

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			additional mitigation measures. These may include suggestions on management practices from the HIA, such as those listed in Table 64.18 The EPA notes the AIDEA would establish an authorization and training process for those accessing the road, including a safety training. ¹⁹ The EPA recommends including a training on violence prevention and reporting regarding violence towards indigenous women for all individuals accessing the road as a potential mitigation measure.	
33623	21	Socioeconomics and communities	The DSEIS states that Increased interaction between community members and industrial road traffic could result in serious accidents and injuries. ²⁰ This is the only mention of accidents involving people in the DSEIS. The DSEIS implies that accidents and injuries would be the same for all alternatives but does not provide evidence to support this conclusion. Alternatives A and B travel longer distances on the Dalton Highway so there is the potential for more interactions with Dalton Highway traffic as compared to Alternative C. The hazardous waste section provides estimated accident rates involving spills, and it is not clear why an equivalent analysis is not provided for accidents involving other vehicles and people. Given the large amount of traffic proposed and the HIA information related to the potential for increased unintentional accidents and injuries involving people, EPA recommends that the FSEIS also describe the potential likelihood and magnitude/severity of accidents involving people for each alternative. We recommend a comparison across alternatives of potential accidents involving other vehicles (cars, ATVs, snowmachines) and community members for each alternative including the Dalton Highway segments. This does not necessarily need to be quantitative estimates as was done for spills but could be a qualitative comparison. The public health section in Table 2 does not include information on the significance of the impacts summarized. ²¹ In addition, there are impacts identified in the HIA that are not disclosed in the DSEIS such as an increase in unanticipated injuries and accidents that could impact health from increased traffic. The EPA recommends that the FSEIS add this information to Table 2 along with a severity description.	Additional discussion has been added to Chapter 3 Section 3.4.5 Socioeconomics and Communities regarding the potential for traffic accidents.
33623	22	Cumulative and indirect effects analysis	The EPA recommends the indirect and cumulative scenarios topic be analyzed further in Chapter 3 of the FSEIS as its own section, rather than in Appendix H, to highlight the indirect and cumulative impacts on communities with EJ concerns from the proposed project. Consistent with EO 14096, the EPA recommends the FSEIS include an update to the cumulative impact analysis from any changes to the reasonably foreseeable actions. Based on the identified cumulative impacts, describe mitigation measures to address these. The EPA also recommends considering cumulative impacts before selecting the preferred alternative.	The indirect and cumulative effects analysis are included in Chapter 3 for each resource. Updates to reasonably foreseeable actions are found in Appendix H Section 2.3, Past, Present, and Other Reasonably Foreseeable Actions.
33623	23	Environmental justice	The DSEIS notes that as opportunities for access and development increase in remote regions of Alaska, the lifestyle and culture of Alaskan Native communities in those regions also change. The isolated communities will continue to experience encroachment in areas that they have relied on for cultural and traditional practices. ²² The changes from the road and future mining development will drastically impact the livelihoods and cultural practices of Alaska Native communities. The EPA recommends the FSEIS identify the disproportionate impacts to these communities, consider the magnitude and duration of the impacts, and identify mitigation measures to minimize impacts to cultural practices and livelihoods of these communities.	As stated in Section 3.4.6, Environmental Justice in the Supplemental EIS, the overall conclusion among the alternatives regarding the relative impact to EJ communities is that some disproportionately high and adverse effects on minority and low-income populations would occur, including potential reductions in subsistence resource abundance and availability, increased exposure to public health risks, and damage to ethnographic resources and cultural properties. This conclusion is based on impacts to resources discussed in their respective sections, as summarized in the environmental justice analysis. However, based on the analysis in Section 3.4.5, Socioeconomics and Communities, additional text regarding the potential adverse impacts of the proposed project on the rural lifestyle of environmental justice communities has been added to the environmental justice analysis. As stated in Appendix N of the Supplemental EIS, effects of the project on environmental justice populations would be addressed through implementation of mitigation measures related to subsistence resources (Section 3.4.7), socioeconomics (Section 3.4.5), and public health (Section 3.4.5). Any residual impacts to local communities noted in these areas would disproportionately affect low-income and minority populations.
33623	24	Government to government consultation	BLMs Tribal Co-Stewardship policy states BLM will identify opportunities for co-stewardship as part of Tribal consultation and engagement during land use planning and implementation decisions, including for activity-level plans and projects. ²³ The EPA recommends considering tribal co-stewardship agreements with the tribes who will be directly impacted by the proposed project. This could help establish a monitoring and mitigation regime to support subsistence practices. Co-stewardship agreements could focus on both the hunting practices and availability of the subsistence resource (e.g., caribou habitats and migration corridors within the project area which may be protected as a mitigation measure of the proposed project). The Joint Secretarial Order on Fulfilling the Trust Responsibility to Indian Tribes in the Stewardship of Federal Lands and Waters affirms that co-stewardship achieves several important goals relevant to minimizing some of the potentially significant adverse impacts to subsistence resources; most importantly that these agreements ensure that all decisions include consideration of how to safeguard tribal interests (e.g., subsistence resources). ²⁴ CEQ and BLM both emphasize how co-stewardship agreements fulfill the United States unique trust obligation to federally recognized Indian Tribes and their citizens.	Upon project approval, the BLM would consider opportunities for Tribal co-stewardship for the construction and operational phases.
33623	25a	Cumulative and indirect effects analysis	Reasonably Foreseeable Actions Mineral Exploration and Development Potential The stated purpose of Ambler Road is to access the Ambler Mining District. The roadway itself provides access points for the development of additional mines along the roadway. The DSEIS makes qualitative statements that the development of these mines would also contribute to the indirect and cumulative impacts: Construction and operation of an all-season, industrial access road to the District is intended to and would open the area to mining activities. ²⁵ Although the DSEIS indicates indirect and cumulative impacts that the development of additional mines along the roadway would be a reasonably foreseeable action, the DSEIS does not provide any discussion of impacts that would be expected to occur. Furthermore, while half (22 of 44 deposit locations) described in the Map Data (i.e., SEIS GIS Data) lie outside of the Ambler Mining District, the focus of the qualitative impact discussion focuses on future mine development within the Ambler Mining District. While an understanding of how much traffic and road use is appropriate to be made using the four most advanced projects within the Ambler Mining District, the potential for	See responses to letter 26152, comment 1 and letter 23145, comment 3.

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			exploration and development of other mineral deposits would increase exponentially upon completion of the Ambler Road. For example, a few mining exploration sites are not included as potential future mines in the DSEIS. Specifically, Trilogy Metals (one of the members of the 50:50 joint venture that formed Ambler Metals) also owns Helpmejack and Malamute projects in the Eastern Ambler Schist Belt that would also be located along the route of the Ambler Access Road. ²⁶ Neither the Helpmejack nor Malamute mining sites are included in the DSEIS. The EPA recommends the FSEIS consider more of these 44 deposits as reasonably foreseeable actions. We recommend the FSEIS evaluate the impacts associated with developing both the deposits and access to the areas to sufficiently disclose the indirect and cumulative effects of completing the Ambler Road.	
33623	26	Geology and minerals	According to Chapter 29 of the Fifth National Climate Assessment (2023)a chapter dedicated to Alaska80% of Alaska is underlain by permafrost. The infrastructure in the region has generally been built assuming a stable climate that maintains the permafrost. ³¹ Permafrost degradation, potentially caused by the construction of an access road can damage road and other infrastructure, including bridges, leading to higher maintenance and costs to repair and support the road and surrounding projects. Hence, EPA recommends that the FSEIS discuss how any permafrost thawing and potential damage may impact the proposed road and associated infrastructure. Given the potential thawing of permafrost from each project alternative, the FSEIS should include an estimate of GHG emissions from the loss of permafrost due to construction of the proposed road and associated infrastructure. These emissions should also be included in the SC-GHG assessment. Under the combined phasing option, consider how this changes the timeline for project completion and accounts for the resulting increase in operational emissions. Estimate the emissions of criteria pollutants for the construction phase, as was done for GHG emissions.	Thermal insulation is discussed in Supplemental EIS Chapter 3 Section 3.2.1, and is included in the applicant's cost to construct and maintain the road. Design features and mitigation related to permafrost, including geotechnical testing, thermal modeling, and specific measures to control permafrost thaw would be identified in the design and permitting stage. See Section 2.4.4 of the Supplemental EIS for design features and Appendix N, Section 3.2 for potential mitigation measures to minimize impacts to permafrost. Chapter 3 Section 3.2.7 discusses how thawing permafrost may accelerate climate change impacts.
33623	26a	Air quality and climate	The EPA recommends the FSEIS include all reasonably foreseeable effects when assessing climate impacts. BLMs DSEIS acknowledges that increased mining is a reasonably foreseeable outcome of construction of the proposed road, therefore, the effects from those increased future mining operations contribute to the total potential indirect effects from BLMs proposed action. NEPA requires agencies to consider the reasonably foreseeable direct and indirect effects of their proposed actions and reasonable alternatives, including all direct and indirect effects. ³⁰ As stated in CEQs January 2023 Interim Guidance National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change, indirect effects generally include reasonably foreseeable emissions related to a proposed action that are upstream or downstream of the activity resulting from the proposed action. The DSEIS currently only includes emissions estimates from road construction and the transportation of mining products. This calculation omits several crucial sources of emissions and therefore presents an incomplete estimate. The EPA provides the following recommendations for the FSEIS: Estimate the emissions associated with the reasonably foreseeable mining operations facilitated by this project. The DSEIS includes estimated tonnage of materials expected to be transported using the road and Appendix H provides details on potential mine development configurations made possible through construction of the road. The construction and operation of mines associated with the DSEISs mining development scenario represent significant sources of emissions that would not happen without the access road and should be considered reasonably foreseeable indirect emissions of the project.	Mining developments within the Ambler Mining District are not currently proposed (i.e. are not ripe for decision) and, therefore, are not treated as connected actions in this EIS. As a result, the BLM has analyzed the effects of reasonably foreseeable mining developments within the district as indirect and cumulative effects (see Appendix H). Because no detailed mining permit in the Ambler Mining District has been applied for, the kinds of details identified by the commenter are not known (greenhouse gases).To try to compute more quantitative details on proposals that do not exist was determined to be too speculative. Specific mining proposals would be subject to NEPA analysis as they are proposed.
33623	27	Air quality and climate	The DSEIS states Appendix D, Table 26, summarizes GHG emissions in the form of tons of carbon dioxide equivalent (CO ₂ e) per year for the transportation associated with moving the ore to the Port of Alaska in Anchorage. Note that although the Port of Alaska in Anchorage was used for the basis of the GHG emissions due to indication from Ambler Metals of its likely port location, a port location has not been declared, and rail transport could potentially occur at any of the 4 export terminals in consideration: Port MacKenzie in the Mat-Su Borough, the Port of Alaska in Anchorage, Seward, and Whittier (AIDEA 2022). The difference would be in the spatial area that could be affected by new fugitive dust emissions along the alternative routes and the lengths of construction of those routes and infrastructure associated with the length, such as the number of maintenance stations. ³² Since the transport could potentially occur at any of the four port terminals, the EPA recommends the FSEIS provide an estimate of GHG emissions and the SC-GHG of those emissions for transportation to each port to show decision makers and the public the impacts associated with moving ore to the different locations.	Comment noted. The Appendix D summarizes GHG emissions in the form of tons of carbon dioxide equivalent (CO ₂ e) per year for the transportation associated with moving the ore to the Port of Alaska in Anchorage, the reasonably foreseeable scenario at this time. There are no current plans to include an analysis of the other ports, and it can be assumed that emissions and impacts would be similar.
33623	28	Cumulative and indirect effects analysis	The EPA recommends the FSEIS include price impacts from the expected increased production from the mines. These mines represent a notable increase in production, increasing supply and affecting domestic and international prices. This likely has additional impacts on emissions and consumption behavior.	The impacts of mining are analyzed to the extent that information is available to do so. No specific mining application/permit request for the District has been submitted to date. The BLM evaluated reasonably foreseeable mining development as indirect and cumulative impacts, using a hypothetical mining development scenario. When officially proposed, each mine would go through its own project-specific NEPA analysis and permitting process, which would provide further detail and analysis regarding the specific impacts of each mine operation.
33623	29	Air quality and climate	The EPA recommends the FSEIS report GHG emissions from each individual gas. CEQs January 2023 Interim Guidance National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change states agencies generally should: quantify gross emissions increases or reductions (including both direct and indirect emissions) individually by GHG; and as aggregated in terms of total CO ₂ equivalence (CO ₂ e). To align with evaluation with CEQs guidance, EPA recommends the FEIS report GHG emissions for each individual gas (CO ₂ , CH ₄ , and N ₂ O) in Tables 25 and 26 in Appendix D, in addition to reporting in CO ₂ e.	Comment noted. The Final Supplemental EIS reports GHG emissions for each individual gas (CO ₂ , CH ₄ , and N ₂ O) in Tables 25 and 26 in Appendix D.
33623	30	Air quality and climate	The EPA recommends the FSEIS properly monetize the climate damages using the SC-GHG. Estimate climate benefits using a new set of SC-GHG estimates. In the regulatory impact analysis of the EPAs December 2023 Final Rulemaking, Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review, the EPA estimated climate benefits using a new set of SC-GHG estimates that reflect the state-of-the-science and address recommendations from the National Academies of Science, Engineering, and Medicine (NASEM) on estimating the SC-GHG. ³⁴ The EPA recommends monetizing the climate damages of the alternatives	Comment noted. The calculator utilized to estimate the social cost of carbon was generated by the BLM and has yet to be updated per the December 2023 guidance. The social cost of carbon values presented in Appendix D are associated with estimated emissions from construction and operations therefore the differences between the alternatives in Table 27 are reflective of the differences in construction and operation assumptions.

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			using the EPA estimates of SC-GHG, which incorporate the most recent scientific advances on climate change and its economic impacts, in the FSEIS. These values have undergone an expert peer review and are consistent with the recommendations of the NASEM. Refer to impacts as damages instead of costs. As the DSEIS indicates, the SC-GHG's associated with estimated emissions from construction and operations represent the present value of future market and nonmarket costs, associated with CO2, CH4, and N2O emissions. ³⁵ However, the SC-GHG values represent the future market and nonmarket damages, not costs, associated with climate change. Clarify the aggregate SC-GHG estimates in Table 27 in order to compare alternatives. Table 27 (Appendix D) presents the monetized climate damages from the expected GHG emissions for each project alternatives. One number is presented that does not differentiate by time, emission type, or emissions source. To clarify for decision makers and the public how the DSEIS calculated the monetized climate change damages for each alternative, EPA recommends the FSEIS include tables that report the monetized climate change damages separately for each GHG and for both construction and operation emissions. Additionally, EPA recommends the FSEIS provide sufficient descriptions of data and methods on computing the monetize climate damages to allow them to be reproduced by a qualified individual as it was not fully explained in the DSEIS. o Explain extrapolation methods. The February 2021 TSD provides SC-GHG estimates through emissions year 2050. The EPA recommends the FSEIS clarify if the IWG methods, assumptions, and parameters identical to the 2020-2050 estimates. For transparency and replicability, explain how the analysis extended the SC-GHG estimates beyond 2050. o Clarify what the numbers represent and how they were calculated in the presentation. For example, the EPA recommends the FSEIS indicate whether the GHG emissions are annual emissions and over what time frame the construction emissions are evaluated. Assess emissions for all years of construction and project lifetime instead of only for 2038. Include other details necessary for transparency.	
33623	31	Geology and minerals	The DSEIS states The BLM developed this [combined phasing] option based on public comments, new information, and cooperating agency input. This option would eliminate Phase 1 and would initially build the entire road to Phase 2 standards. This option was developed to address impacts on permafrost, water quality, and fish and to reduce noise and disturbance impacts from staging and operating construction equipment for 2 separate phases. It is estimated that construction of the route to Phase 2 requirements would require a single mobilization of construction equipment and construction time of approximately 2 to 3 years (compared to 3 to 4 years for separate construction of Phase 1 and Phase 2 roads). ³⁶ EPA notes that it is possible that permafrost conditions may vary significantly, even within the shorter 2- to 3-year time span of the combined phasing. The University of Alaska Fairbanks Northern Climate Reports for Bettles and Kobuk demonstrates that in these locations, permafrost is expected to be discontinuous or sporadic by 2039, further demonstrating that permafrost changes are likely in this area of Alaska. ³⁷ Given the potential for rapidly changing permafrost conditions, the EPA recommends the FSEIS explain what additional mitigation measures will be taken to address permafrost thaw during construction and how resilient the project is expected to be to large changes in permafrost conditions in the years following construction.	Appendix N describes potential mitigation measures to address possible permafrost disturbance during construction and operation. Combined mitigation measures would likely be implemented to best address issues early on and through the life of the project. Mitigation included implementing a permafrost monitoring plan to detect and respond to permafrost disturbance. There are no "additional" mitigation measures as mentioned in the comment.
33623	32	Mitigation/monitoring	The DSEIS states that The permittee shall use insulation in the roadway where necessary to reduce impacts to permafrost soils (for example, in areas of thaw-sensitive permafrost soils). ³⁸ While mitigation to protect permafrost is necessary, the DSEIS does not include what material the insulation is made from that will be used to protect areas of thaw-sensitive permafrost soils. For example, some insulation can leach contaminants as the material becomes saturated or due to natural degradation. The EPA recommends the FSEIS identify the amount of insulation that will need to be added and disclose the potential effects that the insulation material can have on the surrounding environment.	Appendix N Section 3.2.1 Geology and Soils PMM 4 states that if foam is used to insulate the permafrost from thermal degradation, it would be composed of closed-cell extruded polystyrene or other closed cell foams (e.g. blueboard). Should the project be approved, the ROD will determine which mitigation measures will be required.
33623	33	Geology and minerals	It appears the DSEIS assertion that continuous permafrost underlies Alternatives A and B is based on the Ferrians (1965) study, per the footnote in Appendix D, Table 2.39 As noted in the recently released Fifth National Climate Assessment and in the 2017 Arctic Monitoring and Assessment Programme report, climate impacts including permafrost thaw are occurring rapidly in Alaska. Therefore, it seems unlikely that permafrost conditions developed using 1965 data would be representative of current conditions. For example, the University of Alaska Fairbanks SNAP program community permafrost data website lists Kobuk as having mostly unfrozen soils with isolated patches of permafrost, ⁴⁰ which calls into question whether Alternatives A and B are 100% underlain by continuous permafrost. The EPA recommends the FSEIS update this assertion and other similar language throughout the document, as appropriate, and the analysis of current permafrost conditions for all three Alternatives using more current permafrost data, including Appendix D Table 2. The University of Alaska Fairbanks Permafrost Laboratory is a good resource for identifying the best dataset on current permafrost extent and conditions.	Detailed permafrost and subsurface investigations have not been performed along the entirety of the proposed alignment to fully identify the extents of permafrost thaw within the project corridor. While there are likely areas of thaw due to bodies of water and climate change-driven forces, the regions is generally underlain by continuous permafrost (defined as at least 90% frozen soils) and the impacts from the proposed alternatives consider that information. Kobuk is a developed community along a river and the thawing of soils in that environment will be different from those in the area of study.
33623	34	Wetlands	This project will result in the permanent and direct loss of wetlands, which will subsequently and directly and indirectly affect other natural resources, including waterbodies and fish and aquatic life. The DSEIS states that [t]he 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). ⁴² The EIS analysis could further expand on the anticipated impacts from the road on wetlands and the effects those impacts will have on other natural resources. For example, whereas the DSEIS references Appendix E, Tables 11 through 13 to find wetland impact acreages, the acreages and impacts are not described in the body of the DSEIS. The DSEIS also does not differentiate between acres that would be permanently lost as compared to impacted wetlands that would remain in a degraded condition because of their proximity to the road. 43 Additionally, the DSEIS does not succinctly summarize the impacts from the permanent loss of vegetation types within the project footprint or the impact of this loss on wildlife and aquatic organisms.	Wetland and vegetation impacts per specific wetland and vegetation classes are quantified in text in the "Vegetation Impacts" and "Wetlands Impacts" section under each Alternative section in Supplemental EIS Section 3.3.1, Vegetation and Wetlands. Additional text added to each of the above mentioned sections to include acreage values in the dust shadow as shown in Appendix E, Tables 11 through 13, with additional text tying specific impacts back to the Impacts Common to All Action Alternatives section.
33623	35	Wetlands	Given the difference between the short- and long-term wetland impacts and its direct and indirect relationship to other natural resources, EPA recommends this be clarified and further described within the text of the FSEIS. For example, quantitative information located in the appendices could be included in the Environmental Consequences sections for wetlands (3.3.1), surface waterbodies (3.2.5) and fish and aquatic life (3.3.2). Key concepts of wetland loss and degradation to describe in Environmental Consequences include: impacts to wildlife and aquatic organisms survival rates; impacts to habitat quality for	Wetland and vegetation impacts per specific wetland and vegetation classes are quantified in text in the "Vegetation Impacts" and "Wetlands Impacts" sections under each Alternative section in Supplemental EIS Section 3.3.1, Vegetation and Wetlands. Additional text added to each of the above mentioned sections to include acreage values in the

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			wildlife and aquatic organisms, including anadromous fish; and impacts to watershed ecology. EPA also recommends that further description of the direct and indirect impacts of wetland loss and degradation be included in each Alternative.	dust shadow as shown in Appendix E, Tables 11 through 13, with additional text tying specific impacts back to the Impacts Common to All Action Alternatives section.
33623	36	Mitigation/monitoring	The 2020 Joint ROD includes a statement However, the final design phase would include obtaining LiDAR on the easternmost 50 miles of the corridor and conducting further field studies to identify additional drainages and to avoid and minimize the impacts to wetlands and aquatic resources to the extent practicable. ⁴⁵ The requirement to obtain LiDAR and conduct field-verified mapping for wetlands and streams on the easternmost 50 miles of Alternative A and B routes is not stated as a requirement in the DSEIS, although included in Appendix F of the JROD. EPA recommends the FSEIS add a mitigation measure to reflect this requirement along with all assumptions indicated in Appendix F of the JROD.	The requirement for obtaining LiDAR is a condition of the Corps permit. The text referenced from the Joint ROD Appendix F is the United States (U.S.) Department of the Army (DA), Corps of Engineers' (Corps) consideration of comments received on the DA permit application, compliance determination with the U.S. Environmental Protection Agency's (EPA) Section 404(b)(1) Guidelines (40 CFR 230; Guidelines), and the public interest review, for the Ambler Road project, under the authority delegated to the District Commander by 33 CFR 325.8, pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899.
33623	37	Water resources	The impacts discussed in Chapter 3 of the DSEIS rely heavily on the presumed application of proposed mitigation measures that are not sufficiently reflected in the activities proposed elsewhere in the DSEIS. ⁴⁶ More specifically, the commitments made by AIDEA ⁴⁷ and adopted from the Clean Water Act 404 permit ⁴⁸ are not reflected in the proposed project activities and thus impacts to fish, wetlands, and the aquatic environment are not accurately disclosed in the DSEIS. The DSEIS also identifies a wide range of flood events that culverts and bridges could be designed to accommodate, and it is unclear which design approach would apply, whether the size/design would be large enough to support expected flood events, and whether the design incorporates climate change. The EPA provides recommendations for the FSEIS below.	Relevant AIDEA design commitments (listed in Section 2.4.4) and stipulations from the CWA Section 404 permit are listed under Environmental Consequences in Section 3.2.5. WA Section 404 permit stipulations are also included in Appendix N Section 3.5, as mitigation measures adopted by the BLM. Supplemental EIS Sections 2.4.4 and 3.2.5 were revised to clarify design criteria applicable to bridges and culverts, in compliance with the CWA Section 404 permit stipulations: All bridges shall convey at a minimum the 100-year flood. All culverts greater than 3 feet in diameter, including moderate culverts, major culverts, and fish passage culverts, shall convey at a minimum the 100-year flood. All minor culverts (3-foot diameter) shall convey the 50- or 100-year flood, as determined on a case-by-case basis. All culverts on channels with defined stream features (banks and bed) shall be sized to meet or exceed bankfull width; flood conveyance criteria also applies and may result in a larger structure exceeding bankfull width. All fish passage culverts shall be sized to a minimum width of 1.2 times the bankfull width; the 100-year flood conveyance criteria also applies and may result in a larger structure than based solely on the bankfull width.
33623	38	Water resources	The AIDEA and existing permits (e.g., CWA 404 permit) include information and design approaches specific to stream crossings not reflected in the DSEIS. EPA recommends including a summary of this information in the FSEISs Environmental Consequences section, including the design criteria for culverts and crossings to demonstrate the design measures that will be applied to reduce the projects impacts to fish habitat. In describing the design approaches for crossing and culverts, EPA also recommends the FSEIS include considerations of climate change on flow regime and incorporate these climate change impacts into the design of bridges and culverts, including anticipated flood frequency (e.g., 100-year flood events).	See response to letter 33623, comment 37. Summary of design criteria for stream crossings added under Environmental Consequence, Road Impacts (with the first occurrence of bridge/culvert sizing discussion). Climate change implications on design approach are discussed under Supplemental EIS Chapter 3 Section 3.2.5 Water Resources: Impacts Common to All Action Alternatives.
33623	40	Water resources	EPA recommends the FSEIS identify how the specific design target will be determined for the different sizing requirements for culverts and bridges based on the options listed in chapter 3, chapter 2, and Appendix N (i.e., 100-year flood, 50-year flood, or bankfull width plus 20% and plus 2 ft). For example, the current text indicates that action alternatives would result in culverts installed in more than 1,000 mapped streams, 54 many of which are either known or assumed by AIDEA to provide habitat for anadromous and/or resident fish, ⁵⁵ Table 14 in Appendix E indicates that Alternative A would install 1,520 culverts in (field-verified) riverine wetland environments, which are streams by definition. Footnote 32 on Page 3-90 indicates [a]dditional field data collection would be necessary to document all streams. All these sources indicate that accurate data on stream locations, channel dimensions, discharge, and fish use is not yet available for all streams that the road would cross.	See response to letter 33623 comment 37. Additional discussion on how the applicant will apply design criteria to size culverts/bridges added to Section 3.2.5 under Road Impacts. The Supplemental EIS utilizes the best available data, including data collected by the applicant. Alternatives A and B were realigned on the east end of the corridor during the permit application process at request of regional Tribes and communities; as such, less data has been collected for the realigned segments. Similarly, Alternative C was developed in the course of the EIS process, so again less specific data has been collected for that alternative. Data on all stream locations, channel dimensions, discharge, and fish use is not available for all streams the proposed road alternatives would cross. Culvert and bridge quantities, stream crossings quantities, and fish presence are based on available data and assumptions, as described, to compare impacts of the proposed action alternatives.
33623	41	Fish and aquatics	The Environmental Consequences section of the DSEIS states that AIDEA has committed to installing fish passage culverts using stream simulation design in all fish-bearing streams crossed by the road. ⁵⁶ This language may be confusing to the public as to whether installation of culverts for fish passage is contingent on the documented presence of fish. To help fill the data gaps, AIDEA has committed to conducting fish surveys in coordination with ADF&G, USFWS, and NMFS to document fish presence in a subset of the streams that currently lack data. The DSEIS also notes that AIDEA is assuming that all streams with well-defined channels provide fish habitat, ⁵⁷ which does not appear to have been applied to all of the streams that have been identified in the DSEIS, e.g., riverine wetlands listed in Table 14 of Appendix E. To ensure that the Environmental Consequences section is clear on the installation of fish passage, EPA recommends that the FSEIS clarify this section.	As stated in Section 3.3.2, Fish and Aquatics, AIDEA assumes that all perennial rivers and streams, or well-defined ephemeral streams, provide fish habitat and would therefore require fish passage (SF299). Table 14 of Appendix E shows the estimated number of culverts in wetlands and is not specific to fish-bearing streams. Additionally, the culvert data used in Table 14 is based on BLM's mapping exercise from the 2020 Final EIS to estimate crossing locations and are not exact; culvert counts in Table 14 differ from the culvert counts in Appendix E, Table 16 and Appendix C, Table 1, which are based on AIDEA's Section 404 permit issued from USACE in 2020 and are more accurate. Table footnotes have been added to explain these differences.

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33623	42	Fish and aquatics	Appendix E, Chapter 3, Table 16 of the DSEIS includes estimates of the culverts to be used. In describing the Environmental Consequences, EPA recommends the FSEIS revise information regarding the proposed work and the anticipated impacts to fish and aquatics and water resources to reflect how these stream crossing designs will be executed across the project in entirety.	Comment noted.
33623	43	Water resources	The EPA has the following additional comments and recommendations for the FSEIS: Regarding the sentence The total number of culverts (2,883) would be the least of all the alternatives, and therefore would be expected to have fewer impacts associated with flow constrictions, such as increased stream velocities at culvert inlets and outlets, increased depths upstream of culverts, potential streambed scour and bank erosion at culvert outlets, and sediment deposition downstream of culvert outlets.58 EPA recommends clarifying in the FSEIS if impacts take into account the site-specific features of the culvert installation (e.g., slope, channel substrate, stream size, upslope sediment loading, etc) and to include a quantitative report on the site-specific impacts of local condition on water quality response to proposed culverts and bridges. If site-specific impacts on water quality from proposed culverts and bridges are unavailable, EPA recommends the FSEIS describe adaptive management techniques to be applied to further assess and mitigate impacts during construction. Regarding the sentence AIDEAs commitments in Chapter 2, Section 2.4.4, Design Features Proposed by AIDEA, state that culverts would be sized to match or exceed existing bankfull widths to maintain existing flow depths and velocities at typical flows and would be sized to have adequate hydraulic capacity to convey flood flows.59 As stated earlier: EPA recommends the FSEIS incorporate climate change impacts on flow regime and incorporate these considerations into the culvert and bridge design. Please provide support for this statement to demonstrate that culverts sized to bankfull width (i.e., 1.5 to 2-year floods) would provide adequate hydraulic capacity to convey flood flows.	See response to letter 33623, comment 37. Site-specific features of the culvert installation (e.g., slope, channel substrate, stream size, upslope sediment loading, etc.) are not available. Numerous adaptive management techniques to be applied to further assess and mitigate impacts during construction are listed in Appendix N and discussed under Environmental Consequences in Section 3.2.5, including the CWA Section 404 permit stipulations; examples include: -Special condition number 6 requires drainage culvert locations should be determined and staked in the field during breakup. -Special condition number 12 requires the development of an Adaptive Management Plan for monitoring, maintaining, and repairing culverts over the life of the road. Corrective measures may include additional culverts, increasing culvert sizes, adding thaw lines, adding dead-man anchors, or other appropriate measures. -Additional culverts would be included during the detailed design process if needed to adequately capture and convey existing drainage pathways. All culverts are subject to previously state criteria requiring conveyance of the 50- or 100-year flood; if culvert width based on bankfull widths is not adequate to convey the flood criteria, larger culverts would be installed. In Section 3.2.5, clarified on available (or lack thereof) site-specific information and applicable mitigation measures and in Section 2.4.4, clarified that design for hydraulic capacity would take into account climate change.
33623	44	Water resources	The DSEIS identifies project requirements that may impact the applicability of minor culvert as part of the project. For example, CWA 404 permit includes minimum culvert sizing requirements (e.g., a 1-foot-wide stream channel requires a culvert larger than 3 feet in diameter), and there may be challenges in placing substrate material within a 3-foot diameter culvert. Additionally, as stated in the text, stream simulation design often results in a larger culvert and may preclude the use of minor culverts. EPA recommends reviewing the description of where minor culverts for stream crossing may apply in the project proposal and aligning with the other sections of the EIS.	Minor culverts are not intended to provide fish passage. AIDEA proposed moderate culverts, major culverts, or bridges at crossings where fish passage was known or assumed. If fish passage is required, culvert size will be dictated by the 100-year flood conveyance requirements and the minimum width of 1.2 times bankfull width plus two feet requirement, whichever is larger.
33623	45	Fish and aquatics	The EPA also recommends footnote f of Table 16, which states In some cases minor culverts may not be large enough to adequately pass fish, particularly using stream simulation principles, and therefore, some culverts in fish-bearing habitat may be resized through coordination with ADF&G prior to construction, during permitting. be incorporated into the main text of the Environmental Consequences section of the FSEIS.	The text has been revised as suggested.
33623	46	Water resources	EPA recommends that the Environmental Consequence section include updated information about the number of culverts associated with the proposed project. Information in the DSEIS is inconsistent regarding the number and type of culvert installations. For example, conflicting information exists in the DSEIS between Appendix E Table 14 (Alternative A would install 1,520 culverts in riverine environments); Table 16 (Alternative A would only install a total of 63 bridges or culverts that would have a width of 4 feet or greater); and the Map Data (identifies 55 locations where bridges or culverts that would have a width of 4 feet or greater). The information in these tables and the provided Map Data information suggests that approximately 1,500 field-verified streams would be crossed using a minor culvert that would be 3 feet or less in diameter (per footnote f on Table 16). Better clarification and quantification of the number and type of culverts anticipated by the proposed project is important in describing the direct and indirect impacts on water quality, habitat and wildlife.	The culvert and bridge quantities in Appendix C Table 1 from the 2020 Final EIS for Alternatives A and B were taken from AIDEA's SF299/404 permit application; quantities for Alternative C values were prepared by AIDEA by request during the EIS process when Alternative C was developed. During permit negotiations with USACE in 2020, just prior to issuance of the CWA Section 404 permit, USACE requested that several culverts get upsized as part of on-site mitigation. AIDEA agreed to increase the structure size of 24 structures for Alternative A. The agreed-to changes were included in Appendix F to the ROD (page F-32) and appended to the CWA Section 404 permit. These changes have been reflected in Appendix C Table 1 for the Supplemental EIS; changes for Alternative A that would be applicable Alternative B were changed under Alternative B quantities. The permit changes did not affect culvert and bridge quantities for Alternative C. In the Supplemental EIS, culvert and bridge quantities listed in Appendix D Table 17, Appendix E Table 14, and Appendix E Table 16 have been revised to be in agreement with Appendix C Table 1 (matching final values in the CWA Section 404 permit).
33623	47	Water resources	EPA provides the following additional information in describing the Environmental Consequences of the minor culverts on water quality and ecological function. Small diameter culverts create fundamental challenges for maintaining stream function (e.g., conveyance capacity of small-diameter culverts is limited, resulting in velocity barriers to fish at high flows and creates greater potential for failure of the crossings during high flows and scour potential). Additionally, small-diameter culverts are readily plugged (e.g., woody debris, beavers, ice) and require more maintenance. One study found that 73% of 3-foot diameter culverts were plugged by beavers, 6 diameter culverts were plugged 25% of the time, and 10 diameter culverts only 7% of the time (Jensen et al, 2001, Habitat and structural factors influencing beaver interference with highway culverts, Wildlife Society Bulletin). The consequences of a plugged culvert can be blocked fish passage, impounded water behind the road embankment, or failure of the crossing.	See response to letter 33623, comment 44. The CWA Section 404 permit special condition 12 requires an Adaptive Management Plan (AMP) for monitoring, maintaining, and repairing culverts over the life of the road shall be developed in consultation with ADF&G and the Corps; this AMP would be instrumental in resolving issues associated with culverts becoming plugged due to debris, beavers, etc. Also, AIDEA's design commitments in Supplemental EIS Chapter 2, Section 2.4.4, Design Features Proposed by AIDEA, include a proactive approach to upsizing culverts and/or adding redundant overflow culverts at locations where risk of plugging is observed.

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33623	48	Fish and aquatics	The EPA recommends revising this FSEIS section to disclose the temporal short- and long-term impacts to wildlife and aquatic organisms during construction and operation and maintenance of the proposed project. If some stream crossings will be designed using an approach or approaches other than stream simulation as specified in the CWA 404 permit (e.g., hydrologic approach), the EPA recommends revising the FSEIS environmental consequences discussion to clearly identify where each design approach will be used, how the design approach for each crossing is chosen, and the differential impacts to both water resources and fish and aquatic life. The DSEIS states This analysis assumes habitat within a distance of up to about 5 times the width of culverts and bridges may be most affected.60 A footnote indicates that undefined observations suggest this to be the case. The EPA recommends the FSEIS include additional text to explain the approach used to estimate impacts to fish and aquatic life habitat, including citations supporting the approach, and a discussion of how the presence of floodplain culverts intended to convey overbank flow were considered.	See response to letter 32724, comment 274 and letter 33623, comment 41.
33623	49	Water resources	Permafrost Thaw and Flow Alterations The DSEIS states that groundwater movement will be altered or increased due to permafrost thaw.61 Additionally, there is an underlying assumption repeated throughout the DSEIS that dust, other particles (e.g., naturally occurring asbestos), or hazardous waste spills would not spread beyond 100 meters from the roadway edge keeping any contamination within the road footprint.62 EPA recommends the FSEIS update this section of to reflect other information provided in the DSEIS, including reference too: Research has shown that dust particles can travel up to 656 feet (200 meters) from roadways (McGanahan et al. 2017; Myers-Smith et al. 2006), but the greatest impact to vegetation from dust occurs within the first 328 feet (100 meters) (Auerbach et al. 1997; McGanahan et al. 2017; Myers-Smith et al. 2006; Walker and Everett 1987), 63 and However, even with the use of hydraulically sealed lids and truck rinsing procedures, ore concentrates are transported up to 2.5 miles (4 kilometers) from the Red Dog Mine haul road and low levels much farther (Hasselbach et al. 2005; Neitlich et al. 2017).64 The precautionary principle of risk management advocates for early measures to avoid and mitigate environmental damage and health hazards in the face of uncertainty65. Given that permafrost thaw will alter water flow (both surface and ground water) in ways that are not fully understood, and previous studies have shown that particles and mining concentrates move much further beyond the footprint of the road: EPA recommends the FSEIS apply the precautionary principle (refrain from presuming no environmental impacts in the absence of data) when describing the environmental impacts from spread of roadway dust, hazardous waste spills along the road, asbestos dust, and mining products/byproducts transport to drinking water sources, water quality, and vegetation beyond the road footprint (or 100m from the roadway). Additional information may be available to better characterize these impacts. For example, EPA recommends the FSEIS include additional information and results from similar mining road districts in remote Alaska (e.g., Red Dog Mine Road) in evaluating the environmental impact of the proposed project on water quality for wildlife and aquatic organisms and drinking water impacts.	Additional discussion on contaminant mobilization and water quality associated with permafrost thaw added to Section 3.2.5.
33623	50	Water resources	The following statements in the DSEIS list expected water quality issues resulting from this project that are not further addressed. The EPA recommends the FSEIS further assess and/or quantify impacts and discuss potential measures to address the concern for these water quality issues: The gravel material, however, absorbs more solar radiation than the natural vegetation and could lead to increased permafrost thaw, especially on the south face of east-west roadway alignments.66 Locally, reduced groundwater flow and interrupted surface drainage could result in areas of pooling on the uphill side of the embankment and drying of soils on the downslope side. Pooling would result in greater thermal absorption in summer, accelerating permafrost thaw and Permafrost thaw impacts peatland hydrology.67 Dust that builds up over time on tundra or floodplain vegetation may cause a larger impact on water quality. During a rain event, accumulated dust could be washed into nearby waterbodies over a short period and increase turbidity, total suspended solids, and other pollutant concentrations depending on the makeup of the source material.68 Flow constrictions and increased stream velocity may occur at the inlet and outlet of a culvert on a defined channel, which could lead to increased depths upstream of the culvert and potential streambed scour and bank erosion at the culvert outlet, with sediment deposition a short distance downstream of the culvert outlet.69	Additional discussion on impacts and mitigation added throughout Section 3.2.5 at locations noted.
33623	51	Water resources	Regarding DSEIS statement Recognizing the unique characteristics of Nutuvukti Lake and the Nutuvukti Fen, special conditions numbers 16 and 17 of the USACE CWA Section 404 permit require 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 (USACE 2020). 70 The EPA recommends the FSEIS clarify if there has been a comprehensive survey to determine if alternative unique conditions are occurring in other parts of the route which would require similar protection.	Statement added clarifying a comprehensive study to identify similar unique hydrologic features has not been completed.
33623	52	Water resources	Regarding the DSEIS statement Water quality impacts would be more noticeable, but generally local to the roadway embankment and crossings (erosion, turbidity), except for spills, which have the potential to travel longer distances downstream. Water quality impacts would be generally episodic, such as rainfall events washing road dust into streams, ice breakup causing local flooding, or spills of hazardous materials.71 Although it is likely that these water quality impacts will be more noticeable near the source of the impact, conservative constituent pollutant loads often cumulate downstream over time, from both chronic and episodic loading events resulting in downstream cumulative impacts. The EPA recommends the FSEIS assess these potential cumulative impacts from the proposed streamside roads and culverts/bridges within the downstream river network.	Additional discussion/assessment added under Section 3.2.5 cumulative impacts.
33623	53	Wetlands	Regarding DSEIS statement On March 20, 2023, the U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (USACE) Revised Definition of Waters of the U.S. rule (88 FR 3004) took effect. However, this revised definition of WOTUS was halted on May 25, 2023, when the U.S. Supreme Court published its decision in Sackett v. Environmental Protection Agency. This decision limits the application of the CWA to wetlands to those that have a direct surface connection to another body of federally protected water (i.e., a traditionally navigable waterway). The EPA and USACE are currently	Added the following clarification to the Wetlands section under Affected Environment. “Jurisdictional boundaries of WOTUS are defined based on regulatory definitions. For the purposes of considering environmental consequences in this analysis, impacts to all wetlands are considered.”

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			developing a new rule to amend the final Revised Definition of Waters of the United States rule based on the U.S. Supreme Courts decision in Sackett v. Environmental Protection Agency. The new rule will provide guidance on what wetlands and WOTUS are subject to the USACEs jurisdiction. The new rule is anticipated to be published by September 1, 2023. ⁷² The EPA recommends updating this information regarding the current definition of waters of the U.S. in Alaska based on more recent information which can be found on the EPAs website. ⁷³ EPA provides the following recommended test for the FSEIS: On August 29, 2023, the U.S. Environmental Protection Agency (EPA) and Department of the Army (the agencies) issued a final rule to amend the final Revised Definition of Waters of the United States rule, published in the Federal Register on January 18, 2023. ^{74, 75} This final rule conforms the definition of waters of the United States to the U.S. Supreme Courts May 25, 2023, decision in the case of Sackett v. Environmental Protection Agency. Parts of the January 2023 Rule are invalid under the Supreme Courts interpretation of the Clean Water Act in the Sackett decision. ⁷⁶ Therefore, the agencies have amended key aspects of the regulatory text to conform it to the Courts decision. The conforming rule, “Revised Definition of ‘Waters of the United States’; Conforming,” was published in the Federal Register and became effective on September 8, 2023. ⁷⁷ In addition, the January 2023 Rule is not currently operative in Alaska due to ongoing litigation. In Alaska, the agencies are interpreting “waters of the United States” consistent with the pre-2015 regulatory regime and the Supreme Court’s decision in Sackett. ⁷⁸	
33623	54	Mammals	In March 2023, the CEQ issued guidance for federal departments and agencies on ecological connectivity and wildlife corridors, which directs the government to prioritize these ecosystem services when conducting its analyses, decision-making, or permitting. ⁷⁹ During the review of major Federal actions under NEPA, agencies should disclose impacts of proposed actions and alternatives on connectivity and corridors. When these ecological corridors are impacted, the guidance directs Federal agencies to avoid and minimize adverse impacts to the maximum extent practicable. The EPA recommends the FSEIS acknowledges and complies with the guidance.	Supplemental EIS Sections 3.3.2 Fish and Aquatics and 3.3.4 Mammals contains extensive discussion of key habitat, migratory range, and impacts due to barriers to wildlife movement as recommended by the CEQ guidance.
33623	55	Air quality and climate	The EPA acknowledges that Appendix N identifies potential mitigation that requires a dust control plan for mitigation for both the construction and operations phases, and requires multi-agency review and approval. This is a key potential mitigation measure in the DSEIS for air quality. A 75% dust control target under the dust plan is feasible and beneficial. The mitigation plans to include a dust monitoring assessment which will provide a way to help ensure fugitive dust is not excessively impacting the environment. The EPA notes that if the dust control plan and dust monitoring plan are not applied, then the project is likely to result in greater concerns with air quality impacts. The EPA recommends the FSEIS and ROD include the fugitive dust control plan as a dedicated mitigation measure.	Comment noted. The current wording will remain as proposed mitigation, however as stated in the Supplemental EIS, an enforceable, comprehensive Dust Control Plan that identifies dust control measures to be implemented would be submitted and approved by the BLM prior to the issuance of a Notice to Proceed (see Appendix N). In addition, the USACE’s special conditions 22 and 23 (see Appendix N, Section 3.5), which the BLM has adopted as proposed mitigation measures, include measures to minimize airborne dust. Air quality monitoring for PM10 and PM2.5 at construction camps and nearby communities, which would be part of the dust control plan, would identify issues and provide necessary data to address and mitigate. If the dust control plan is not implemented appropriately, localized air quality impacts may occur.
33623	56	Cumulative and indirect effects analysis	Executive Summary, page ES-3 Regarding DSEIS statement Actual mine developments would require federal permits and would be evaluated in separate environmental review processes at the time they are formally proposed. Proposed mining projects may be located on non-federal land that would not require a federal permit. Therefore, we recommend revising the language to read developments may require federal permits and, if so, would be evaluated.	Revised as suggested.
33623	57	Purpose and need	Section 2.3.1, page 2-2 Regarding DSEIS statement Air transportation would not adequately support transporting all mining equipment that could be used to conduct exploration and development activities that are expected to occur under a Phase 1 pioneer road. However, given that current mineral exploration is primarily supported by air The first sentence, as written, is confusing in that it references what is needed for mining development and exploration. EPA recommends the sentence be revised to clarify be made that the road is not needed for exploration based on current exploration practices in the region and in other remote locations in Alaska e.g., Air transportation would adequately support transporting equipment that could be used to conduct exploration activities given that current mineral exploration is primarily supported by air. However, air transportation would not adequately support equipment needed to construct and operate a mining project.	Exploration supported by air transportation limits the scope of activities that can be conducted.
33623	58	Fish and aquatics	Section 3.2.7, page 3-52 Regarding DSEIS statement While floodplain function is not replicated and channel structure does not form on its own within the culvert, ²⁹ large rocks or other stabilizing structures added during construction to mimic more natural conditions (USFS 2008; Barnard et al. 2013). This sentence appears to be missing a word in the second phrase.	Text edited for clarity.
33623	59	Vegetation	Regarding DSEIS statement is Discontinuous permafrost is found throughout most of the region with many areas of ice-rich and thaw-sensitive terrain (Fulkerson et al. 2016; see Map 3-01 in Volume 4). The is at the start of this sentence appears to have been included by mistake.	Text revised as suggested.
33623	60	Wetlands	Section 3.3.1 and Appendix E, page 3-63, E-10 Regarding DSEIS statement Finer scale wetland mapping was prepared for the Alternative A and B alignments which is suitable for permitting and alternatives analysis (DOWL 2014a, 2016b). No fine-scale wetland mapping is available for the Alternative C alignment and it was analyzed using the ACCS regional mapping. This text on p. 3-63 is misleading by omitting the fact that the easternmost 50 miles of the Alternative A and B alignments also did not have field-verified mapping, which is discussed on page E-5 that says, DOWL (2014) prepared field-verified mapping, for Alternatives A and B, apart from the eastern 50 miles of the two alignments. Field-verified mapping was not available for Alternative C. We recommend using the same text from E-5 in this location. Similarly, page E-10 under Wetlands only discusses how Alternative C was not mapped to a fine scale and does not reiterate this same point for the eastern 50 miles of Alternatives A and B. We recommend clarifying the accuracy of these eastern 50 miles on page E-10.	Text revised as suggested by the commenter.

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33623	61	Alternatives	Appendix A, pages C-2 and C-3, Table 1 The EPA recommends adding a row to Table 1 that provides the total distance from the project end (Ambler Mining District) to Fairbanks, since the total distance is relevant to the alternatives comparison.	The straight line distance from the terminus (project end) to Fairbanks is the same for all alternatives. Table 1 in Appendix C lists the length of the industrial access road under each alternative (211 miles for Alternative A, 228 miles for Alternative B, and 332 miles for Alternative C).
33623	63	Recreation and tourism	Appendix C, page C-22, Table 2 The recreation section of Table 2 summarizes potential impacts to river float route crossings, but not other types of impacts to recreation. We recommend that rows be added to the recreation section to include other recreational impacts identified in the DSEIS and also recreational impacts along the Dalton Highway. For example, the DSEIS recreation section (3.4.3) describes that traffic along the Dalton Highway could be 50% greater than current levels. We recommend that the recreation impacts summary row identify one of the main conclusions of the DSEIS recreation section which states, The road and the mines together would substantially alter the recreation environment along the southern Brooks Range, with somewhat greater effect under Alternatives A and B than under Alternative C.	The BLM has added the following rows to Table 2 for Recreation and Tourism impacts: Impacts to developed sites in the Dalton Highway SRMA, Impacts to tourism industries, including flightseeing, guided backpacking trips, and recreation wilderness lodges, Impacts to hunting activity, Impacts to recreational backcountry users.
33623	64	Wetlands	Appendix E, Affected Environment for Wetlands, page E-3 Regarding DSEIS statement Wetlands are analyzed in this Supplemental EIS based on their ecological definition, including all identified impacts under the action alternatives, and the impacted quantities may differ in the projects USACE Section 404 permit as only those wetlands that meet jurisdictional requirements would be identified. The text referencing the CWA 404 permit indicates that the quantity of impacted wetlands described in the SEIS may be different than the impacted acreage described in the projects CWA 404 permit. EPA notes that the Ambler Road project includes an AIDEA agreement with the USACE to provide a CWA 404 permit based on a Preliminary Jurisdiction Determination (PJD). A PJD indicates that there may be waters of the U.S. on a parcel or indications of the approximate location(s) of waters of the U.S. on a parcel (33 CFR 331.2). When authorizing an activity through reliance on a PJD, the USACE makes no legally binding determination regarding whether jurisdiction exists over the particular aquatic resource in question (Page 3, Regulatory Guidance Letter 16-01). Given the PJD, EPA recommends deleting the second half of the sentence, or, alternatively, expanding this section to explain that the CWA 404 permit relies on a PJD as an explanation of why the CWA 404 permit uses the same quantity of wetland impacts as were disclosed in the JROD from 2020.	The Supplemental EIS very clearly states that for the purposes of the analysis wetlands are defined on a broad ecological context and the establishment of jurisdictional boundaries and exact acreages of impacts to WOTUS is developed through the Section 404 permit process. Discussion of the PJD process and implications should be included in the permit materials and the USACE ROD and are not appropriate in the Supplemental EIS.
33623	65	Cumulative and indirect effects analysis	Appendix H, page H-6 Regarding the DSEIS bullet Maps 3 through 8 identify potential for rare earth elements (REEs), placer gold, platinum group elements (PGEs), carbonate-hosted copper, sandstone-hosted uranium, and tin-tungsten-molybdenum deposits, respectively. These areas could also be potentially accessed from the industrial access road for further exploration and development. The maps referenced in this bullet are not included or they are in some other specific document/section that is not mentioned. The EPA recommends the FSEIS include the maps or reference the document or section they are from.	A series of 11 maps are located at the end of Appendix H, following the References section.
33659	1	Public access	The DSEIS does not appear to consider levels of trespass when evaluating effects. Any private place no matter how well guarded - homes, businesses, military bases - have some level of trespass. Appropriate measures can be applied to minimize trespass and associated negative effects. Examples of private roads within Alaska with trespass minimization programs include the right-of-way road adjacent to the Trans Alaska Pipeline (not to be confused with the Dalton highway), the Pogo Mine Road, and the DeLong Mountain Transportation System (DMTS) road. The SEIS does not seem to consider and analyze the effects of likely-foreseeable trespass based on information from these existing private roads within Alaska. Thank you for the opportunity to comment.	See response to letter 26067, comment 3.
33781	2	Cumulative and indirect effects analysis	No road should be built without Alaskans knowing the full extent of this entire project, including mining. This includes the maximum number, size and types of mines that would eventually be built in the project area; the maximum number of mining personnel and human activity levels, especially traffic levels on the road, that would result; and impacts from and on communities that would connect to the road. A decision to build this road is a decision to conduct the entire project. The review must consider all factors rather than focus solely on the road.	See response to letter 23434, comment 13.
33781	3	Public and stakeholder involvement	I just found out that you guys are asking us locals for comments on Ambler Road. You guys are not doing a good job of talking with our tribal members about this project. At the very least you guys should put it on Facebook so our tribal members in Upper Kobuk and the whole region will see it. Lots of people use Facebook. You also need to make it easier to send a comment in. I dont think you understand what challenges we have here. You need to come up and not just talk to NANA and tribal councils, you need to talk to all of us.	Please see the Introduction to Appendix S, Response to Comments, Section 1 Public Involvement Process for a description of the efforts the BLM has taken to engage the public in support of the Supplemental EIS.
33781	4	Public and stakeholder involvement	I heard that you are collecting comments about the Ambler Road. You guys need to do a better job of keeping our community informed. Our residents might not have internet, might not have a phone or computer, let alone know to go take a look on the federal register for giant development coming our way. Theres a lot of misinformation going around about the road project right now. It would be nice to have someone come and tell our community the straight facts. The way I see it those facts are pretty scary.	See response to letter 33781, comment 3.
33781	5	Public and stakeholder involvement	It is unfair to our Northwestern Alaskan people, given 97% are completely unaware of majority of aspects and information on the projects containing the road and mining exploration. Public commentary is scheduled for the busiest times of our seasons, not allowing people to attend. Research information is also lacking many major and certain information on the true negative imacts these projects will have to our region and all life within.	See response to letter 33781, comment 3.
33781	6	Subsistence	Im concerned about how the Road will affect our caribou population and our chum salmon. We Inupiaq rely on caribou and salmon for food, and many like myself have built our livelihoods and fed our families from salmon. (From what I know of the	The Supplemental EIS was expanded to include communities downstream from the road, including along the Kobuk River, who rely on salmon and whitefish. Potential impacts to salmon and salmon harvests are addressed.

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			last Environmental Impact Statement not a single mention was given to how the Road and future mines would damage our Kobuk River salmon run.)	
33781	7	Cumulative and indirect effects analysis	First, I believe the SEIS is still inadequate because it does not properly consider the impact of the handful of mines that this road would allow to operate. Without assessing the cumulative impacts of the road and mines, how can we have an accurate idea of what we are putting on the line? Toxic runoff from the mines is sure to affect the water quality of the Kobuk River and fish habitat. But what really scares me is the ticking time bomb in the form of tailings ponds. With all the rain weve been getting in fall time, out of the ordinary rain, I dont trust that the models that these mining companies would use to design their tailings ponds would hold up to the stress of climate change and increased rain and snowfall which weve been seeing every fall. My understanding of tailings ponds is that they WILL break. We could end up with no fish really quickly. Or, we could end up like the Lower 48 where they tell you sure you can fish, but you cant eat em. This would be a crisis for the region. Every family from Kotzebue to Kobuk depends on eating fish at least part of the year dry fish, half dried fish, smoked fish, baked fish. Salmon, sheefish, pike, grayling, qausrilaq, the list goes on. What really disturbs me, too, is how the Kotzebue Sound Commercial Fishery hangs in the balance, here. But nobody is talking about how we would be choosing mining a non-sustainable industry over fishing, a sustainable industry that has provided the region with pretty incredible income for decades, and a way to make a living that matches the culture. So again, I urge the BLM to consider the cumulative impacts of the road and mines and what you are letting AIDEA and mining companies with poor records at put at stake for us if you allow this road to go through.	See response to letter 32724, comment 141 regarding waste rock and tailings. See response to letter 23434, comment 13 regarding the adequacy of BLM's mining scenario analysis.
33781	8	Public and stakeholder involvement	The second thing I would like to talk about is public engagement. To put it bluntly, the BLM is doing a pretty poor job of engaging the people of this region in this decision. The cute little public meetings where we get in line and pass the microphone around doesnt work so well here. I have spent multiple days in wandering around Ambler, through multiple BLM comment periods now, helping people submit their comments. In November, my friend Clarence Griepentrog, who grew up in Ambler, and I went to many elders homes and helped them submit their comments online. So we did your job for you, youre welcome. One elder told us what Im sure many were thinking. She said: I dont like to talk at meetings. Its not within the cultural norms to do something like this. Anyway, in these private conversations, everyone we talked to said over and over again that they worry about caribou, fish, their grandchildren, and the huge uncertainty that is already hanging out there in terms of climate change. I worry that the BLM and its 1000 page SEIS wont begin to scratch the surface of the level of concern that people have. People dont feel comfortable speaking at a meeting. Or they dont even know about the meeting! Or they worry about intimidation from pro-roaders. Or, what Ive seen a lot of, some people dont know how to put what they want to say into words. So I hope that the BLM will work to meet people where they are at. This region is truly bursting with voices against the Ambler Road, many with no idea how to be heard.	See responses to letter 33781, comment 3 and letter 26718, comment 9.
33781	9	Hazardous waste	I am concerned about subsistence issues, especially related to PFASharmful FOREVER chemicals that bioaccumulate and biomagnify that are closely associated with mining activities and roadways affecting our water and animals and then us. There is evidence that exposure to PFAS can lead to adverse health effects and ecological riskssuch as increased testicular and kidney cancer, increased cholesterol, decreased vaccine response, increased rates of high blood pressure and preeclampsia in pregnancy, changes in infant birthweight, and changes in liver enzymes. These health effects combine with the already elevated health issues in our rural areas and documented healthcare disparities is a disastrous combination. Further, the health effects of PFAS on fish and other subsistence animals are not yet known, but there are concerns that they could lead to population decreases. Studies in rural Alaska demonstrate that PFAS are present in the tissue of subsistence animalsanimals humans eat. Remember, PFAS bioaccumulates and biomagnifies, that means its presence goes up the food chain and increases in concentration. Being a forever chemical means that PFAS will NEVER be broken down in the environment, it will persist for millennia and beyond. The roads potential LONG TERM negative health effects on the people in rural Alaska deserves better consideration because PFAS are forever chemicals and cannot be easily nor completely cleaned from an environmentAND they are not yet fully regulated NOR require reporting in many use cases. PFAS are used heavily in mining and roadway construction and materials and WILL affect our human health, our animals health, and our ecological health.	See response to letter 31242, comment 1.
33825	2	Air quality and climate	A 50 year span or even a 10 -30 year span forgets that climate change is modifying the Arctic so fast that decades long projections of normal business & construction plans no longer make much sense. It is likely that the over 1 billion dollar expense will never come close to being recouped. All BLM and other government agency plans should focus on mitigating as much as possible the hurtful effect of the changing climate on the people of Alaska.	Comment noted. All current potential mitigation is discussed in the Supplemental EIS. During construction, the development of an enforceable, comprehensive dust control plan is proposed as a mitigation measure. This plan would be reviewed by multiple agencies and must be approved by the authorized officer prior to any surface disturbing activities (see Appendix N). The dust control plan, with appropriate methods and usage of palliatives, would mitigate much of the construction air quality impacts associated with fugitive dust. In addition, air quality permitting requirements for the proposed construction camps would ensure compliance with regulations and would help to ensure that construction emissions would not exceed the NAAQS or AAAQS. During operations, air pollutant emissions from mobile sources and equipment would be subject to vehicle and generator regulations such as 40 CFR 80, 85, and 86 as well as emissions standards and air permitting requirements of ADEC included under 18 AAC 50. The mitigation measures for air quality included in Appendix N, including the requirement for a Dust Control Plan and air monitoring would be effective at ensuring that emissions do not cause an exceedance of ambient air quality standards. These are proposed mitigation measures that were analyzed for this project.
33877	1	Water resources	1. Lake and Stream Withdrawals for road construction and maintenance may not be replenished annually by nature. Climate changing impacts will affect the quantity of water for project uses. The initial construction of ice roads will require 1 million gallons of water per mile. Plus, there is all the construction roads to access the needed gravel, water, and airport access to	See response to letter 18334, comment 1.

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			consider. Each ice pad uses 250,000 gallons. I believe that the conclusions of a recent study in the National Petroleum Reserve Alaska (NPRA) can be applied to the Ambler Road construction and maintenance along with the mining that will occur. Winter Lake Water Withdrawal (LWW) is NOT BEING REPLENISHED ANNUALLY BY SAME YEAR SNOWMELT RECHARGE in that study. This suggested conclusion is based on the Water and Environmental Research Center at the University of Alaska Fairbanks' 2022 study of Modeling Stream Flow Response to Scenarios of Tundra Lake withdrawal and Seasonal Climate Extremes, Arctic Coastal Plain" research article 10.1029(2022). The study occurred in the northeast corner of the NPRA which is the Crea Creek watershed which is a sub-watershed of the Fish Creek drainage system. The area has historically supplied water and ice chips for oil exploration. The Key Points of the Water Resources Research are: * The winter Lake Water Withdrawal (LWW) reduces summer low and average stream flow with the recovery time of up to 3 years. * The winter LWW is not counterbalanced by same year snowmelt recharge as is currently assumed in the land management regulations. * Low rainfall (21% of normal) combined with winter LWW lead to intermittently dry streams in the following 3 summers. * The recovery time for multiple years of LWW is 2-5 years. One year replenishment is not enough. The combined effects on stream flow means the hydrological equilibrium is changed. Fragmentation of the surface water network occurs. Impassable fish stream conditions can then occur. This ultimately could modify fish species distribution and assemblage. This ecosystem is already experiencing fragmentation due to climate change. This will be exacerbated by permafrost thaws due to being exposed by the road and mine development. Irreversible damage to natural topography, vegetative patterns, hydrological flow, and aquatic habitat occurs. Mining industrialization can affect the snow and ice fields in the south side of the Brooks Range. These areas feed important springs that emerge in the north side of the Brooks Range which are within the Arctic National Wildlife Refuge. This hydrological connection should not be deteriorated. These springs are important habitat for fish and wildlife in the winter.	
33877	3	Mammals	3. Negative Impacts to the Western Arctic Caribou herd from this proposed project. Cumulative impacts from other federal proposals must be considered in the aggregate. This is a herd population that already is declining due to changing climate conditions and other undiscovered reasons. By 2021, the population dropped by more than half of the population in the 1990s. And 2022, the numbers further declined. This road will intersect 3 caribou migration routes. The rapidly occurring climate changes mean rising temperatures change the weather patterns. Freezing rain in the winter is more common. This freezes the ground plants which become inaccessible to the caribou as food. Cumulative impacts from 4 proposed federal permitting processes must be considered by the DOI: the NPR-A rule making, the Willow Project Seismic Permit, the Ambler Road ROW, and the upcoming D-1 Land draft EIS regarding the Bering Sea-Western Interior Planning Area (affecting 38 tribes). All 4 of these affected project areas have Western Arctic Caribou Herd use. The fragmentation and negative habitat impacts must be assessed cumulatively together somewhere in these regulatory processes. Industrial development disrupts caribou behavior according to recent studies. Roads, pipelines, and other infrastructure are seen as obstacles by the herd. This blocks their migratory paths and feeding patterns. They avoid mining camps and oil fields with their leaking chemical odors and tailings. Drilling equipment and truck traffic shakes the earth. The air is filled with the noise of planes and helicopters which disrupt the herd.	The Supplemental EIS discusses the potential impacts from Reasonably Foreseeable Actions within the Cumulative Impacts section (beginning on page 3-147). Relevant literature on the potential impacts of roads and pipelines is also discussed in the Environmental Consequences portion of Section 3.3.4 Mammals.
33877	4	Cumulative and indirect effects analysis	4. Environmental assessment of the Ambler Mining District mines will not accurately predict actual mining impacts. US studies of mines show that the environmental assessment process in permitting does not accurately predict future water pollution. Modern mines world-wide are failing at a higher rate with more catastrophic consequences that older mines. In terms of impacts, the mining industry is getting worse. Witness the selenium pollution of a whole watershed from the failure of the Mt. Polley dam. The mining industry trades long term negative impacts for short term profits. Early consideration for Mining Closure and Catastrophic Accidents is necessary. Historically in the US, the actual direct and indirect costs of "walkaway" restoration have typically proven to be 1.5 to 2 times the original estimate for mines without acid drainage. It is 10 times the estimate for mines with acid drainage. Acid mine drainage is a big uncertainty and almost is never predicted accurately. Historically, mining companies avoid clean-up costs by declaring bankruptcy. They transfer their assets to other companies controlled by the same overall company. Public funds then end up paying for clean-up. For the Ambler project area, the Naturally Occurring Asbestos (NOA) release from gravel extraction and road runoff and acidification of surface water is unacceptable.	See response to letter 32724, comment 141.
33877	5	Fish and aquatics	5. Lack of waterbody crossing data by the applicant is unacceptable. Only 55 waterbodies in the first 55 miles have been done. That leaves more than 156 unanalyzed miles.	Should an action alternative be approved in the BLM's ROD, additional surveys and studies would be conducted as needed in support of other local, State, and federal permits. As described in Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA - Biological Resources, fish surveys would be conducted to assess fish presence in rivers in streams for all life history stages along the selected alignment. The scope of these surveys would be coordinated with ADF&G, USFWS, and the National Marine Fisheries Service. The Supplemental EIS includes a description of design features and mitigation measures that are intended to reduce impacts to waterways, fish, and aquatic habitat from road construction and the installation of bridges and culverts (see Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA - Physical Environment, Section 3.2.5, Water Resources - Impacts Common to All Action Alternatives, and Appendix N, Potential Mitigation).
33877	6	Socioeconomics and communities	6. The economics of this road and mining do not pencil out. The road project cost estimate is \$1.4 billion. The state establishes a 50-year return on investment. The ROW application is for 50 years. But the already explored Ambler mining deposits have estimates of only 30-year mine life. So how will the state get a return on its investment? The state earns a pitiable 3% royalties. The state is subsidizing this whole project. That is the only logical conclusion.	See response to letter 26253, comment 4.

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33927	1	Subsistence	Proposed mitigations do not adequately address the impacts of noise and habitat fragmentation on Caribou that will be created if the road is constructed. Caribou have highly acute hearing (Perra et al. 2022), and evidence suggests that they do not become habituated to human noise (Johnson & Russel 2019). Multiple studies have shown that caribou alter their movement and distribution in response to anthropogenic noise (Bradshaw et al. 1997, Cumming & Hyer 1998, Wilson et al. 2016, Johnson and Russel 2019,) Studies have shown that proximity to infrastructure has a negative impact on calf weights (Arthur and Veccio 2009) and probably of pregnancy in reproductive females (Wilson et al. 2016). Further, wolves preferentially travel along linear corridors constructed by humans, resulting in significantly higher predation and predator impacts on caribou near roads (James & Stuart-Smith 2000). If the Ambler road is built, it will significantly impact the movement, distribution, and population size of the Western Arctic Caribou Herd, and thus the subsistence opportunity available to rural Alaskans in communities near the road which rely on the herd. Altered movement patterns resulting from road and predator avoidance will disrupt hunting patterns that have been developed over millennia, and lower reproductive rates and higher predation will result in herd declines. Both of these impacts will severely affect local communities. Additionally, although the Ambler Road will be closed to public use, workers employed in constructing and operating the road and ore hauling activities will constitute competition with local subsistence users for caribou and other resources.	The potential impacts of the road on caribou behavior, migration, distribution, and abundance, and the subsequent impacts of these changes on subsistence, are discussed in Sections 3.3.4 and 3.4.7. Potential impacts of competition with non-local hunters are also addressed in Section 3.4.7.
33972	1	Alternatives	Alternatives. I question why additional alternatives are included in the DSEIS. In 2020, the National Park Service (NPS) and the U.S. Army Corps of Engineers (USACE) selected alternative A as the preferred route and those decisions still stand today. The alternative selected in the 2020 JROD was not subject to judicial review and was determined by the U.S. Army Corps of Engineers to be the alternative with the least environmental impact. Alternatives must take into account that access to the States mineral resources were granted at Statehood and access to the Ambler Mining District was expressly provided for in ANILCA.	See responses to letter 58, comment 3 and letter 31764, comment 1.
33972	2	Subsistence	Subsistence Impacts. The DSEIS expands the ANILCA Section 810 analysis from 27 to 66 communities. This is overreach at its strongest: some of these communities are hundreds of miles away from the road area being proposed. It also assumes without scientific evaluation that subsistence uses for these communities will be significantly restricted. This is inappropriate and alarming. The focus of the SEIS should remain on the 10 villages closest to the road, and BLM should take into consideration that decades of successful coexistence of other private industrial and public roads in Alaska like the Delong Mountain Transportation System (DMTS) at Red Dog Mine, the road to Pogo Mine the Dalton Highway, and other shorter less noticeable but important highways/road systems exist safely in the State.	The selection of study communities was broad to capture potential direct, indirect, and cumulative impacts to subsistence resource abundance and availability. If population-level impacts to migratory resources such as caribou and fish occur, then any users of those resources stocks (e.g., WAH, Kobuk River sheefish) could be affected.
33972	4	Socioeconomics and communities	Economic and Community Benefits. The DSEIS significantly downplays the economic benefits and opportunities if development were to take place: in the 1,200+ page document, the term is only mentioned 11 times! This project holds the potential for the creation of thousands of direct AND indirect, quality jobs, especially for those living closest to the project through construction and operation phases. Alaskas mining industry provided for 11,400 direct and indirect jobs in 2022, with an average annual wage of over \$130,000.	See response to letter 27727, comment 7.
33972	5	Socioeconomics and communities	The DSEIS does not take into account concerns about production of minerals and oil and gas in the region to begin winding down. Should this happen, jobs and economic benefits will decrease, elevating the importance of replicating the successes of projects like Red Dog. According to the Northwest Arctic Boroughs (NWAB) Comprehensive Plan Update for 2030, 83% of the boroughs operating funds came from Red Dog in 2020. That is why the NAWB and North Slope Borough assemblies passed a joint resolution in April of 2023 in support of the AAP and development of the Ambler Mining District in recognition of the jobs, revenue, and good stewards mining companies can be. To avoid a gap in local jobs and other economic benefits, new opportunities need to be explored in the region and the AAP will do that.	See response to letter 25649, comment 1.
34066	1	Mitigation/monitoring	Now, therefore, be it Resolved, that the Subsistence Advisory Committee: 1. Urges the Bureau of Land Management (BLM) to recognize the SAC as a source of experts related traditional uses of subsistence resources; 2. Encourages the BLM to work with the SAC in the development of mitigation measures related to subsistence that arise out of the construction and operation of the road;	Appendix N includes several new potential mitigation measures whereby plans would be developed in consultation with land managing agencies or owners and the Subsistence Advisory Committee (e.g., Section 3.3.2, Wildlife PMM 1 and 2; Section 3.4.2. Transportation and Access PMM 1, Section 3.4.7 Subsistence Uses and Resources PMM 2).
34132	1	Subsistence	We feel that the Ambler Road represents a huge threat to subsistence in our region. Some of our many reasons for opposing the road include: * Interruption of caribou migrations * Reduction of caribou wintering habitat * Damage to fish spawning streams through altered water flows and sedimentation * Reduced numbers of salmon and sheefish from the Kobuk River populations * Potential water and land pollution from road construction and potential future mining activities The people of Northwest Alaska continue to depend heavily on wild foods. Fish and caribou are among the most crucial resources that make up what is on people's dinner tables. This food is not only the healthiest we can have, but it is integral to our culture and nourishes us in multiple ways. We are asking you, in whatever capacity you have, to oppose the Ambler Road (select the SEIS "no action" alternative) and to protect our subsistence economy and our Indigenous way of life.	Section 3.4.7 addresses the potential impacts of the road on subsistence, including impacts to caribou habitat and migration; salmon and sheefish spawning; and pollution/contamination from road and future mining activities.
34143	1	Remand of Final EIS	There were two issues to be addressed by the voluntary remand from DOI. 1) subsistence uses in ANILCA and 2) tribal consultation under the National Historic Preservation Act. The DSEIS expanded and included an additional analysis on issues beyond the remand, including a new phasing option for the road. The scope of the DSEIS should be constrained to the two issues identified in the remand. In general, the DSEIS significantly expands the mandated analysis and scope of the project. It identifies multiple potential issues but fails to put them into context or identify and analyze the severity of those impacts.	See response to letter 31764, comment 1.
34143	3	ANILCA 810 analysis	The DSEIS expands the ANILCA Section 810 analysis from 27 to 66 communities. We note some of these communities are hundreds of miles away from the road area being proposed. It also assumes without scientific evaluation that subsistence uses for these communities will be significantly restricted. The focus of the SEIS should remain on the 10 villages closest to	See response to letter 23196, comment 6.

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			the road, and BLM should take into consideration the decades of successful coexistence of other private industrial roads in Alaska like the Delong Mountain Transportation System (DMTS) at Red Dog Mine and the road to Pogo Mine.	
34143	4	Mammals	The document cites data about caribou population that may not be definitive and ignores that post-DMTS construction and operation, the Western Arctic Herd population increased in the region. This is data that should be included in the FSEIS.	See response to letter 23508, comment 14.
34143	5	Subsistence	The DSEIS does not acknowledge current successful structures of Subsistence Advisory Committees, particularly at the Red Dog Mine, in which communities have management authority in issues impacting subsistence uses. This should be taken into consideration in the FSEIS.	In several places, Section 3.4.7 of the Supplemental EIS discusses the Ambler Access Road SAC and its role in reducing potential impacts to subsistence.
34143	6	Mitigation/monitoring	The DSEIS does not discuss Alaskas history of roads coexisting with the environment, wildlife, and human health. The agency should outline permitting requirements and mitigation measures required by the Alaska Department of Fish and Game that has successfully regulated projects near fish habitat for many years.	Appendix N includes many potential mitigation measures that call for adaptive management plans (e.g., Wildlife Interaction and Avoidance Plan, Wildlife Monitoring Plan) to be developed in consultation with interagency partners, including the State of Alaska.
34143	7	Water resources	The DSEIS assumes the road will sever hydrology in some areas and does not discuss how the applicant has proposed a significant number of bridges and culverts to maintain connectivity. The objective balance of both should be considered in the FSEIS.	See response to letter 23508, comment 17.
34143	9	Socioeconomics and communities	The DSEIS significantly down-plays the economic benefits and opportunities if development were to take place: in the 1,200+ page document, the term is only mentioned 11 times. This project holds the potential for the creation of thousands of direct AND indirect, quality jobs, especially for those living closest to the project through construction and operation phases. Alaskas mining industry provided for 11,400 direct and indirect jobs in 2022, with an average annual wage of over \$130,000.	See response to letter 27727, comment 7.
34143	10	Socioeconomics and communities	The DSEIS does not consider concerns about production of minerals and oil and gas in the region to begin winding down. Should this happen, jobs and economic benefits will decrease, elevating the importance of replicating the successes of projects like Red Dog. According to the Northwest Arctic Boroughs (NWAB) Comprehensive Plan Update for 2030, 83% of the Boroughs operating funds came from Red Dog in 2020. The NAWB and North Slope Borough assemblies passed a joint resolution in April of 2023 in support of the AAP and development of the Ambler Mining District in recognition of the jobs, revenue, and good stewards mining companies can be. This should be discussed in the FSEIS.	See response to letter 23508, comment 19.
34143	11	Socioeconomics and communities	To avoid a gap in local jobs and other economic benefits, new opportunities need to be explored in the region and the AAP is a substantial part of keeping these benefits.	See response to letter 25649, comment 1.
34245	1	Fish and aquatics	The Chinook Salmon population is at risk of going extinct in Alaska, and this road would only further fragment the habitat of extremely important fish species like King Salmon.	Supplemental EIS Section 3.3.2, Fish and Aquatics, describes fish and aquatic habitat within the project area and anticipated impacts from development of the road, including potential cumulative impacts from the development of specific mine projects. Any future project that proposes the construction of dam (e.g., tailings dam) would require a review of the dam design and operation to receive state certification from ADNR's Division of Mining, Land, and Water, Dam Safety and Construction Unit. The Supplemental EIS notes in Section 3.2.3, Hazardous Waste - Mining, Access, and Other Indirect and Cumulative Effects, "tailings dam failures occur and could have major adverse effects to water quality, fish and wildlife habitat, fish and wildlife mortality, and human mortality."
34254	2	Noise	The construction of the road would be disruptive to the natural environment and the wildlife and people who live there. The noise, dust, and constant activity will be burdensome not only physically but psychologically.	The Supplemental EIS does recognize the impacts of the project to the natural soundscape, analyzing those impacts in Section 3.2.6, Appendix D, and Attachment A. The Supplemental EIS includes measures to minimize harm and mitigation measures. These are addressed in Appendix N of this Supplemental EIS.
34295	2	Socioeconomics and communities	Social impacts to communities: - Construction of man camps is directly linked to an increase in violence in local communities. Indigenous women are disproportionately impacted by violence and murder from transient industrial workers. - Illegal public use of the roadway will be difficult to stop. Alaska law enforcement are already unable to respond to most trespass issues in rural Alaska, and a 211 mile road will be next to impossible for law enforcement to completely secure from outside use.	See response to letter 33273, comment 2.
34295	4	Fish and aquatics	AIDEA only assessed 55 waterbody crossings in the first 55 miles of the road, leaving more than 156 miles unanalyzed. This lack of data and preparation to mitigate or eliminate impacts to fish is unacceptable, especially in the face of existing declines in fish populations.	Should an action alternative be approved in the BLM's ROD additional surveys and studies would be conducted as needed in support of other local, state, and federal permits. As described in Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA - Biological Resources, fish surveys would be conducted to assess fish presence in rivers in streams for all life history stages along the selected alignment. The scope of these surveys would be coordinated with ADF&G, USFWS, and the National Marine Fisheries Service. Supplemental EIS Section 3.3.2, Fish and Aquatics - Salmon Decline, describes the regional trend of population decline.
34295	5	Water resources	- The road as proposed will cross 2,900 streams, 11 major rivers, and 2,000 acres of wetlands, requiring at least 48 bridges, and nearly 4,000 culverts, which restrict natural water flows and impair fish movement, access, and spawning.	See response to letter 20215, comment 1. See response to letter 21015, comment 6. See response to letter 28800, comment 4.

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34295	6	Cultural resources	Tribal and cultural resources: - Road development could disrupt places of cultural and historical significance to tribes. Sacred sites could also be disturbed or have restricted access due to the road. - As the road is proposed for industrial use only, locals could be cut off from access to trails and hunting grounds that are on the other side of the road.	Disturbance and access impacts to Tribal and cultural resources are already discussed in Sections 3.4.7 and 3.4.8.
34297	1	Socioeconomics and communities	The Draft SEIS significantly downplays the unemployment numbers in the region and the economic benefits that would be realized should the project go through. In addition, the positive impacts of the project, such as job creation, are not given appropriate consideration. Jobs are crucial for sustaining a subsistence lifestyle and have been definitively linked to increased lifespan and better living standards in rural communities. The future success of Northwest Alaska is relying on this project for jobs and economic opportunities.	See response to letter 58, comment 2.
34297	4	Mitigation/monitoring	Additionally, the BLM may consider requiring, as a condition of the Right of Way, that BLM agree to obtain Alaska Native Corporation (ANC) landowner affirmative consent to use of any ANC lands needed for the project. As the lead agency, BLM can help facilitate mutually beneficial outcomes between Project proponents and ANC landowners.	As stated in Section 1.4 Purpose and Need, the BLM's decision will be limited to whether to grant, grant with modifications, or deny the applicant's ROW application to cross BLM-managed lands. AIDEA would be required to show proof of access and the ability to construct the road to any required standards prior to the BLM issuing them a Notice to Proceed with construction.
34297	5	Decision process - general	BLM's draft SEIS should only be evaluating the areas of federal land where BLM has jurisdiction. BLM's decision-making authority is limited regarding the Ambler Access Project.	NEPA requires federal agencies to analyze the entirety of proposed actions, not just where an agency has regulatory jurisdiction. Additionally, the USACE has regulatory jurisdiction over the entire project, and must also comply with NEPA.
34334	1	Remand of Final EIS	The voluntary remand that DOI submitted identified two issues to be addressed: subsistence uses in ANILCA and tribal consultation under the National Historic Preservation Act. However, the DSEIS included expanded and additional analyses on issues beyond the remand, including a new phasing option for the road. The scope of the DSEIS should be constrained to the two issues identified in the remand.	See responses to letter 58, comment 3 and letter 31764, comment 1.
34334	3	Alternatives	I question why additional alternatives are included in the DSEIS. In 2020, the National Park Service (NPS) and the U.S. Army Corps of Engineers (USACE) selected alternative A as the preferred route and those decisions still stand today. The alternative selected in the 2020 JROD was not subject to judicial review and was determined by the U.S. Army Corps of Engineers to be the alternative with the least environmental impact. Any alternatives must take into account that access to our mineral resources were granted at Statehood and access to the Ambler Mining District was expressly provided for in ANILCA.	See responses to letter 58, comment 3 and letter 31764, comment 1.
34334	5	Subsistence	The DSEIS failed to acknowledge current successful structures of Subsistence Advisory Committees, particularly at the Red Dog Mine, in which communities have management authority in issues impacting subsistence uses. This is irresponsible and must be taken into consideration moving forward.	In several places, Section 3.4.7 of the Supplemental EIS discusses the Ambler Access Road SAC and its role in reducing potential impacts to subsistence.
34334	6	Water resources	The SEIS infers the road will sever hydrology in some areas and ignores that the applicant has proposed a significant number of bridges and culverts to maintain connectivity. The objective balance of both must be considered.	See response to letter 23508, comment 17.
34334	8	Socioeconomics and communities	The DSEIS significantly downplays the economic benefits and opportunities if development were to take place: in the 1,200+ page document, the term is only mentioned 11 times! This project holds the potential for the creation of thousands of direct AND indirect, quality jobs, especially for those living closest to the project through construction and operation phases.	See response to letter 27727, comment 7.
34385	1	Alternatives	The alternative to consider no tolls collected by third parties to use an ROW across public lands and park lands must be evaluated for legal and financial sufficiency.	Funding mechanisms are distinct from alternatives. A statement demonstrating the financial and technical ability to construct, operate, maintain, and terminate a project is required pursuant to 43 CFR 2804.26(a)(5)(i) prior to approving a ROW application. The use of tolls is discussed in Appendix H.
34385	2	Compliance with other laws	In drafting the ROW provision, SS201(4) of ANILCA, Congress specifically decided to increase the protection of the Gates of the Arctic National Park and National Preserve ("Gates park preserve and wilderness") if an applicant applied to cross the boundaries. As I previously testified, I was in the room when the Senate Committee bill passed the Senate Energy Committee Nov 1979 and a party to the negotiations of the final bill that radically modified the Committee version that wrote the verbatim language in SS 201(4). (see attached Senate committee map, Senate Rpt 96-413). The higher standard of protection of the final bill, now law, is not reflected at all in these reviews or the two permits. It treats park land as if multiple use land, NOT "national interest" lands as congress intended. Congress deliberately layered a series of laws to assure that any ROW issued would 1). not IMPAIR the 4 National Park System units and the National Wildlife Refuge and National Wilderness Preservation System wilderness units that Congress established as a unified strategy to protect the resources "in the National Interest" in NW Alaska, and, 2) keep the promise to insure the opportunity to continue the 10,000-year tradition of subsistence on these National Interest lands. By failing to analyze whether the purpose of the park system lands and waters would be impaired and whether the opportunity to continue subsistence uses would be destroyed, no basis is available to decision-makers to consider alternative routes and mitigation strategies, or assure that subsistence in Northwest Alaska will survive the mining and truck caravans. The law intended that the promise for subsistence users would be kept and the parks would be unimpaired. These reviews and permits do the opposite.	As required in ANILCA, the NPS developed an Environmental and Economic Analysis (EEA) to determine the route through GAAR and develop terms and conditions for issuance of the NPS ROW grant. Impacts to GAAR are addressed both in the Supplemental EIS and in greater depth in the NPS EEA.
34385	3	Cooperating agency involvement	BLM in error uses a BLM Right of Way format, NOT the ROW format or special provisions the NPS would use for crossing a Park Preserve with the very highest level of protection. And, see the footnote quotes on NPS Management Policies, making it clear that such decisions should be made by NPS managers. The documents fail to evaluate the system-wide precedent of undermining the Congressional intent that parks are managed by the National Park Service. The Act of 1916 was written exactly to have a corps of seasoned and experienced park managers, that understand the purpose of the Park System. This document, and the preceding one, treats park areas as BLM multiple use area. The working group scoping out the study	The BLM explored and evaluated multiple alternatives routes that did not go through Gates of the Arctic National Preserve including a route, Alternative C, that was brought forward for detailed analysis throughout the Supplemental EIS. Other alternatives that avoided GAAR but were dismissed from detailed evaluation can be found in Appendix G of the Supplemental EIS.

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			rejected specific insight and recommendations by the Gates Park Preserve Wilderness superintendent: 1) That the lower route across the narrower part of “the Boot” is the less damaging and most in keeping with the Secretary responsibilities to choose a route under SS 201(4) “that would have the minimum impact on the natural resources.” When I raised this to BLM, I was told, “I evaluate the application submitted to us,” which is contrary to law, and clearly the reason the review and permit simply rubber stamps the AIDEA application. 2) That serious consideration of a route to Nome of far less impact under the Subsistence Title and land use decisions, and BLM's authority to consider all routes. That route might substantially affect the possibility that the Western Arctic Caribou herd could survive. Like so many other alternatives rejected, it was blown-off as not requested by the applicant and “too expensive.” None of the costs for any of the alternatives are plausible, including the preferred alternative. This illustrates that all the alternatives need to be revisited. The BLM dismissed the alternative from the Dalton Highway through the hill country - the Alatna Hills -- directly west of Evansville-Bettles, that would avoid many of the braided rivers and wetlands to the north, and be build on better ground, and go directly to the narrowest point of “the Boot.”	
34402	1	Birds	The DSEIS outlines both direct and indirect impacts that all proposed alternatives are likely to have on waterfowl within the project area. However, the general lack of information pertaining to waterfowl use in the area makes it difficult for the DSEIS to make a detailed assessment of constructions impacts to waterfowl populations. Alaska provides critical nesting and brood-rearing habitat for a variety of waterfowl species. The DSEIS suggests the project will have the greatest impact on nesting Northern Pintail, Scaup (greater and lesser), and American Wigeon, with 24 other waterfowl species nesting and staging within the project area. Both Northern Pintail and Scaup populations remain far below long-term conservation objectives and have not rebounded despite extensive habitat conservation efforts in wintering grounds. In the absence of appropriate mitigation, we expect that disturbances to nesting habitat for these species will likely further reduce populations. Additionally, American Wigeon comprise a large portion of the total waterfowl harvested in the Pacific Flyway.	Very little baseline data for waterfowl exist for the project area, so we are not able to include analysis of population trends of waterfowl species in or near the project area. Added the following sentence to Impacts Common to All Action Alternatives, p. 3-116. “ <i>Similarly, the USFWS observed a significant decline in the total numbers of ducks observed during annual waterfowl surveys across parts of Alaska and the Yukon Territory; 2023 estimates were 50% below the 2022 estimate and 48% below the long-term average (1955–2022), despite good to excellent breeding habitat conditions across the survey area (USFWS 2023). Species expected to be common breeders in the Ambler project area were among those experiencing steep declines, including American Widgeon, Northern Pintail, and scaup.</i> ”
34402	2	Mitigation/monitoring	As noted in the DSEIS, the potential mitigation measures that BLM may adopt will have limited benefits due to a large portion of the projects proposed location on lands not managed by BLM. We encourage coordination and partnerships with the other land managers involved in this project to implement appropriate measures on lands outside the jurisdiction of the BLM.	Each land manager that issues a ROW or some other right of access is responsible for ensuring compliance with the terms of the grant for access.
34402	3	Mitigation/monitoring	Page N-30, Section 3.3.2 Wildlife General. Potential BLM Mitigation Measure 2 states AIDEA will develop and implement a Comprehensive Fish and Wildlife Monitoring Plan which includes, “The plan shoul dincude at a minimum a process for documenting conditions of fish, birds, and key wildlife species prior to construction to establish a baseline,”. Conducting surveys to estimate the density of nesting waterfowl within the project area during this process is critical to understanding how the project may impact waterfowl populations. To capture the range of nest initiation dates exhibited by waterfowl, survey timing should be as soon as habitats become available in spring (mid-April) and continue until summer. We agree with the DSEIS evaluation that cites the overall limited mitigation value these efforts would provide if only conducted on BLM-managed portions of the route.	See response to letter 34402, comment 5.
34402	4	Mitigation/monitoring	Page N-32, Section 3.3.2 Wildlife General. Potential BLM Mitigation Measure 7 states, AIDEA would work with land managers and wildlife agencies to identify construction timing windows to protect wildlife. The surveys to monitoring waterfowl nesting described above would provide a better understanding of when peak nesting occurs within the route. If construction must occur during the nesting season, there is the potential to use survey data to determine when peak nesting occurs for sensitive waterfowl species, such as Northern Pintail and Scaup. To minimize impacts to waterfowl, we recommend that construction windows do not overlap with peak nesting periods.	Appendix N, Section 3.3.4, Birds PMM 1 would require vegetation clearing activities to occur outside of the nesting season. Should the project be approved, the ROD will determine which mitigation measures will be required.
34402	5	Mitigation/monitoring	Page N-35, Section 3.3.4 Birds Potential BLM Mitigation Measure 1 states that nesting season is considered to occur between (May 1 July 15) but we suggest starting surveys earlier (April 20 or earlier depending on yearly variation in habitat availability) to account for early nesting waterfowl, including Canada Geese and Swans, as specified by the USFWS (https://www.fws.gov/alaska-bird-nesting-season). Moreover, we encourage practices to limit nest disturbances to avoid nest abandonment.	PMM text revised.
34568	1	Proposed action	1. The mining of the proposed minerals in the Ambler Mining District is not critical for economic or national security reasons, and is not going to affect the transition to a renewable energy future. The main atomic element that has proven deposits in the Ambler Mining District is copper, about 149-160 million pounds total. This pales in comparison to the Resolution Project in Arizona with approximately 40 BILLION pounds of copper; the area surrounding the project in Arizona already has roads and the environmental impact will be far far less than the one in Alaska. Outside of America, friendly countries have significantly more copper than in the US, Including Chile (by a factor of 4) and Australia (by a factor of 2).	See response to letter 21906, comment 1.
34568	3	Geology and minerals	3. Mining is a very dirty business and will certainly have many deleterious environmental effects. Although there are innumerable examples of toxic contamination from mines all around the world, look no further than the nearby Red Dog Mine which the EPAs Toxics Release Inventory classifies as the most toxic place in the country, having 756 MILLION POUNDS OF TOXIC CHEMICALS.	Comment noted. See also response to letter 32724, comment 407.
34568	4	Geology and minerals	4. Loss of habitats, barriers to migration, environmental degradation and toxicity will eventually contribute to a catastrophic collapse of the vital ecosystem in territories involved by the mining and the proposed road.	Comment noted.
34578	1	Subsistence	It would mostly impact rural Alaskans by impairing access to subsistence hunting and gathering activities, including hunting and berry-picking. It would also pollute waters from which Native and non-Native Alaskans fish. Pollution from the road and mines could cause traditional food sources to be unsafe for human consumptions or reduce population numbers so greatly that they cannot be depended upon for sustenance for Indigenous peoples. The health of my fellow Alaskans is directly connected to the health of the land and wildlife. Already, development in the state has wildly reduced caribou populations,	Potential impacts to subsistence, including impacts to berries from dust deposition and fish from contamination of waterways, is addressed in Section 3.4.7.

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			animals central to the way of life of many interior Alaskans. It is not as if rural communities can easily replace what is lost with food from the grocery store as groceries in rural areas are outrageously expensive.	
34578	2	Socioeconomics and communities	Road construction also leads to violence in local communities. Indigenous women would be the main recipients of this violence from transient industrial workers. A 2019 study found that the oil boom in North Dakota led to an increase in sexual violence for Indigenous women in the state. Road construction would also lead to an increase on Native land, potentially endangering communities and putting pressure on finite resources. Already, the state of Alaska has a well-documented lack of law enforcement in rural areas. In no way is the state prepared to monitor the illegal use of this proposed road.	See response to letter 18334, comment 2.
34584	2	ANILCA 810 analysis	Our review of the 1,283-page draft SEIS for the AAP indicates that BLM has exceeded the scope of its remand. BLM requested the remand to reconsider two primary considerations--its analysis of subsistence impacts under ANILCA and tribal consultation under the National Historic Preservation Act--yet the agency has reopened nearly the entire previous analysis and is recasting its content. The resulting draft SEIS minimizes the economic benefits of the AAP while raising an array of new concerns and treating worst-case scenarios as likely outcomes. For example, the draft SEIS' headline claims that the AAP could impact subsistence in 66 communities. This number is misleading because it encompasses all potential alternatives and all potential routes for the AAP. Only one alternative will be selected, only one road will be built along one route, and under no conceivable scenario would subsistence for 66 communities be affected--especially after mitigation is factored in.	See response to letter 23196, comment 6.
34584	3	Public access	Another example is the draft SEIS' claims that the AAP will result in trespass and may not remain a private road. The draft SEIS states that, "While the road would not be open to the general public by design, public use and trespass are reasonably expected to occur." Meanwhile, BLM received an application that explicitly asked for a private road and trespass is illegal. The fact that other haul roads in Alaska--including for the North Slope, the Red Dog Mine, and the Pogo Mine--have not faced these issues at meaningful scale (or, for that matter, impacted subsistence) is largely ignored. The draft SEIS' assertions thus appear unfounded and designed to deepen local apprehensions.	See response to letter 23058, comment 3.
34584	4	Decision process - general	The draft SEIS also includes expanded analysis of the potential environmental impacts of the AAP. We urge BLM to recognize the AAP, which has not yet been constructed, is clearly not responsible for existing fish and wildlife declines. The AAP's proponents have committed to robust mitigation measures that will help avoid impacts to local resources, and the draft SEIS must recognize that restricted-use haul roads in Alaska can and historically have been carefully constructed and operated to protect the surrounding environment.	See response to letter 27727, comment 9. The Supplemental EIS references examples of other roadways or mining projects in Alaska in several resource analyses and Appendices to provide context and data wherever relevant and applicable.
34584	5	Environmental justice	While the draft SEIS amplifies discussion of the AAP's potential environmental impacts, BLM has minimized descriptions of the AAP's economic benefits, as well as the benefits of the mines it would facilitate access to. Within the draft SEIS, few statements about jobs, revenues, and quality of life are unqualified. For example, BLM claims in the draft SEIS that "impacts to employment would occur but would not be expected to disproportionately benefit low-income and minority populations." Another is that jobs associated with the AAP "may be temporary." Among other assertions, these stand out: "Mining-related jobs would be a long-term, temporary effect and would be lost once the mines closed. Although this would, in effect, be a reversion to existing conditions, it would be perceived as an adverse economic effect at the time unless there were a clear source of replacement employment." "Some mine employees from NAB/YKCA communities may not continue to reside in the region after they are hired. Mining has high average wages and allows workers to live where they prefer and commute to the work site on a rotating schedule." "Also difficult to forecast are the effects of mining development in the District on the overall economic and social well-being of individuals and families in NAB/YKCA communities. Rotating shifts at a remote mining project would involve long periods away from home, which have been blamed for marital discord and family dysfunction. Moreover, income from employment in mining projects could be spent in ways that are beneficial or adverse." These statements are unnecessarily critical of the economic benefits the AAP and mining would create. We remind the Department that new economic opportunities in this region are hard to come by; high-paying jobs would be welcome by most residents; the prosperity and higher standard of living those jobs create is an unequivocal good; and the eventual end of those jobs, decades from now, cannot be construed as a defect of the AAP or any mine project.	Section 3.4.5, Socioeconomics and Communities, discusses the potential local and regional economic consequences of road construction and maintenance, as well as of future mining activities that would be supported by the proposed road. The discussion includes potential employment and income effects, local, regional, and state government revenues, as well as potential for improvement in cost of living in the region.
34584	6	Cumulative and indirect effects analysis	We also take issue with the draft EIS' discussion of the mine projects the AAP would facilitate access to, which would be permitted separately in the future. We find the agency's descriptions to be generally one-sided, with more attention given to those projects' potential impacts than proven mitigation measures, their economic benefits, and the national need for the minerals they would produce. For example, the draft SEIS explores the potential impacts of a tailings dam failure--an event without precedent in America's modern mining industry--while failing to acknowledge the necessity of new mines to provide the raw materials for clean energy technologies that will reduce the impacts of climate change.	The impacts of mining are analyzed to the extent that information is available to do so. No specific mining application/permit request for the District has been submitted to date. The BLM evaluated reasonably foreseeable mining development as indirect and cumulative impacts, using a hypothetical mining development scenario. When officially proposed, each mine would go through its own project-specific NEPA analysis and permitting process, which would provide further detail and analysis regarding the specific impacts of each mine operation.
34584	7	Remand of Final EIS	Approving a New Record of Decision by the Second Quarter of 2024. The federal permitting process for the AAP has now spanned more than eight full years. In seeking a voluntary remand, BLM pledged to complete its supplemental analysis for the AAP by the end of calendar year 2023. That timeline has already slipped, and further delays are inexcusable. The agency must complete its work in accordance with its latest court filings and issue a new Record of Decision (ROD) in the second quarter of calendar year 2024.	The BLM anticipates issuing a ROD in the second quarter of 2024, as reported to the court.
34592	1	ANILCA 810 analysis	Besides warranted widespread dissent to the construction of this road from the public, in large part due to the potential adverse effects to subsistence resources, national parklands, and Wild and Scenic Rivers, the specific purpose of my comment is to highlight the fact that the proposed project does not qualify for consideration under the provisions of Title XI of the Alaska National Interest Lands Conservation Act (ANILCA). Title XI of ANILCA addresses the conditions and procedures under which transportation and utility systems may be expanded within Federal department or agency jurisdictional lands.	Roads through Conservation System Units such as GAAR are subject to Title XI of ANILCA.

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			Subparagraph B of the Definitions paragraph defines transportation or utility systems that would be applicable under Title XI. They are listed below: i. Canals, ditches, flumes, laterals, pipes, pipelines, tunnels, and other systems for the transportation of water. ii. Pipelines and other systems for the transportation of liquids other than water, including oil, natural gas, synthetic liquid and gaseous fuels, and any refined product produced therefrom. iii. Pipelines, slurry and emulsion systems and conveyor belts for the transportation of solid materials. iv. Systems for the transmission and distribution of electric energy, v. Systems for transmission or reception of radio, television telephone, telegraph, and other electronic signals, and other means of communication. vi. Improved rights-of-way for snow machines, air cushion vehicles, and other all-terrain vehicles. vii. Roads, highways, railroads, tunnels, tramways, airports, landing strips, docks, and other systems of general transportation. The Draft Supplemental Environmental Impact Statement describes the proposed project as a new 211-mile-long industrial access road from the Dalton Highway to the Ambler Mining District in Northcentral Alaska to facilitate mining exploration and development. This does not fall under the any of the categories listed above. It is a road as listed in Definition vii., but this definition specifically describes systems of general transportation. The proposed road is specifically for the facilitation of mining exploration and development as stated in the Final EIS and DSEIS, and it would not permit public access. Both of these facts are antithetical to the purpose of general transportation systems. As the proposed road does not apply under any of the other definitions, it is not permissible under Title XI of ANILCA.	
34594	2	Public access	The SEIS should not assume that illegal trespass and use of the road will occur. The proposal is for a limited use access facility, which has been successfully done for other mines and on the North Slope.	See response to letter 23058, comment 3.
34594	3	Socioeconomics and communities	The SEIS should consider the extensive positive benefits of the road - to local communities, to the state of Alaska, and to the country. It should consider the high-paying jobs that will be created and the positive benefits to both the local community and the state. It should consider the economic benefits to local communities and the state. The SEIS should present a balanced analysis of the impacts and benefits of the project. It is clear to most Alaskans that the benefits far outweigh the impacts, once properly mitigated.	See response to letter 58, comment 2.
34632	1	Mammals	I believe that the DSEIS has overstated the impact on wildlife without really considering other successful mines in Alaska, such as Red Dog, Pogo, and Greens Creek, all of which have roads that support mining operations with an awareness for sensitive wildlife in the surrounding area. In fact, there is a template for “good mining” in the State of Alaska, and BLM should offer up examples from some of these other mines.	The Supplemental EIS analysis is based on the best available data. Examples of other roads and mines are referenced throughout the Supplemental EIS, wherever applicable, to provide context and supporting data.
34662	1	Mitigation/monitoring	This risk is too great as there is no clear understanding of the depth of the impacts that will occur. There are no guaranteed plans for mitigation measures to be performed throughout the mining experience and no guarantee of which companies that will be involved. It is being actively proven throughout the United States that our mitigation efforts thus far are not good enough to alleviate the effects of acid mine drainage, as one example.	The impacts of mining are analyzed to the extent that information is available to do so. No specific mining application/permit request for the District has been submitted to date. The BLM evaluated reasonably foreseeable mining development as indirect and cumulative impacts, using a hypothetical mining development scenario. When officially proposed, each mine would go through its own project-specific NEPA analysis and permitting process, which would provide further detail and analysis regarding the specific impacts of each mine operation.
34767	2	Alternatives	In November 2022, TCC commented on the scoping process for the development of this Draft SEIS, including extensive commentary on the assumptions and alternatives requiring analysis, as well as impacts to subsistence, fish and wildlife, waters and wetlands, transportation, and cultural resources. BLM incorporated some, but not all, of TCCs comments in this Draft SEIS. Notably, BLM did not include or analyze alternatives provided by TCC (as well as many other commenters), including a rail access alternative, a western access alternative, or a Tribal alternative.	In accordance with the CEQ NEPA implementing regulations at 40 CFR 1502.14, the BLM has explored and evaluated all reasonable alternatives for this project and discussed reasons why other alternatives were determined not to be reasonable. To determine whether an alternative was reasonable, the BLM considered an alternative's effectiveness at satisfying the purpose and need, technical and economic feasibility, the practicality of the alternative, and whether he alternative duplicated others evaluated. Western routes, both road and rail were specifically considered and were eliminated from further consideration due to economic feasibility and practicality. The Tribal Alternative as well as various western access routes and rail routes are discussed in Appendix G of the Supplemental EIS.
34767	3	Cumulative and indirect effects analysis	TCC explained during the Draft EIS comment period that BLM improperly segmented the Project by considering the road a standalone project when its fundamental purpose was the development of mining in the Ambler Mining District. In the absence of any mining proposal, the Project does not have sufficient independent utility to justify the cost and impacts of construction, and its impacts must be evaluated in combination with mine development in the District, rather than considering mine development as an indirect impact. This means that BLM should not have moved forward with the EIS process until a mining proposal was submitted. Without such a proposal, BLM cannot perform adequate NEPA impacts analyses. It is indisputable that the proposed Ambler Road under consideration in the Draft SEIS is deeply connected with the development of the Ambler Mining District. Indeed, the stated purpose is for year-round industrial surface transportation access across BLM-managed lands to the District. For most projects subject to an EIS, indirect effects are less, usually substantially less, than direct effects. In this case, although the impacts of the proposed road are substantial and unacceptable, the indirect effects of at least four large scale mines and perhaps many other mines of varying sizes would be disastrous and unsustainable for the region. Additionally, because specific Corps mitigation (i.e., avoid, minimize, compensate) requirements for the mines have been deferred until a later EIS, there is no way to know whether the impacts of the mines can be mitigated. Importantly, the proposed Ambler Road Project involves such a significant dedication of governmental and private resources that it virtually forces federal agencies to later approve mine proposals because of the major investments already made in constructing the industrial use road. The proposed Ambler Road Project and the mining activity it would enable in the District therefore are connected actions, cumulative actions, and/or similar actions.	Mining developments within the Ambler Mining District are not currently proposed (i.e., are not ripe for decision) and therefore are not treated as connected actions in the Supplemental EIS. As a result, the BLM has analyzed the effects of reasonably foreseeable mining developments within the District as indirect and cumulative effects (see Appendix H). See also response to letter 34767 comment 160 regarding mitigation measures for future mines.
34767	4	Proposed action	TCC and the Tribes question several of the stated premises of the proposed Ambler Road and associated mining projects. The Final SEIS should provide additional background on AIDEAs and others dubious arguments for the proposed road. The first questionable premise is that the proposed road offers access to needed mineral resources, especially copper. The	See response to letter 21906, comment 1.

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			second questionable premise is that the U.S. should mine minerals domestically so the nation is not dependent on China and other non-friendly countries, especially if the U.S. hopes to transition to a cleaner energy economy. The third questionable premise is that all critical minerals must be mined to ensure they are available for use. Regarding the first premise, TCC and the Tribes dispute the need for copper from the Ambler Mining District. Copper is available from numerous countries the U.S. does not find troubling, with Chile, Australia and Peru having the greatest copper reserves. The second premise is that the U.S. should mine minerals domestically. That statement ignores the fact that copper smelting largely takes place in China. That would be the case for copper produced in the Ambler Mining District. Figure 1 provides copper reserve data from the U.S. Geological Survey¹³ and smelting data from Statista; [graph] Within the U.S., the largest copper mines are in the Southwest and Utah, and they each produce more copper than expected to be produced by Ambler Metals Arctic mine in the Ambler Mining District (the mine farthest along in the planning process within the District). The Southwestern and Utah mines are located closer to population centers that supply workers, and to copper smelters (Alaska is remote, has winter restrictions for some types of mine work, and has no copper smelters, thus increasing copper production costs). Moreover, most of the Southwestern mines expect to operate much longer than the proposed thirteen-year lifetime of the Arctic mine. The largest copper mine in Canada, the Highland Valley Copper Mine in British Columbia, also produces significantly more copper than what is projected to be produced by the proposed Arctic mine. Figure 2 provides reserve and longevity data for the largest US and Canadian copper mines (note that all copper mines shown currently are in production except for the Arctic mine in Alaska): [map] The third questionable premise is that all critical minerals must be mined to ensure they are available for use. However, there are at least three options that are increasingly utilized to reduce the need for critical minerals before turning to mining, especially in sensitive areas that are important for subsistence such as Interior Alaska: 1. Recycling. More than 30% of copper used worldwide is recycled. Recovered scrap copper makes up about 38% of the U.S. supply in 2020.¹⁷ 2. Redesign of Products. Products can be redesigned to not require critical minerals.¹⁸ This includes, for example, eliminating cobalt use from batteries used in electric vehicles. 3. Recovery from Tailings. For a number of critical minerals, trace metals in existing mine tailings can be recovered for use. In summary, it is false to say that the U.S. needs metals from the Ambler Mining District to ensure a clean energy economy.	
34767	7	Government to government consultation	Trust Responsibility and Government-To-Government Consultation BLM, like all other federal agencies, owes a trust responsibility to the Tribes. Part of that trust responsibility includes the agencies affirmative duties to protect the subsistence resources of Indian communities.²¹ In Alaska, this duty is particularly important given the unique history and laws surrounding Alaska Native Tribes.²² The legal status of Tribal governments creates an important requirement for the federal government to consult directly with them when contemplating actions that may affect Tribal lands, resources, citizens, and welfare. Specifically, Executive Orders 13084 and 13175 mandate that all executive agencies recognize Tribes sovereign status. These orders also require agencies to establish policies and procedures to foster meaningful Tribal involvement and government-to-government consultation between federal agencies and Tribes where such decisions impact Tribal interests.²³ The Presidential Memorandum of January 26, 2021 reaffirms the policies of Executive Order 13175 and declares a commitment to honoring Tribal sovereignty and including Tribal voices in policy deliberation that affects Tribal communities.²⁴ Moreover, BLM must adhere to internal guidance documents, such as BLMs General Procedure Guidance for Native American Consultation,²⁵ describing the agencies duties to involve Tribes in decision making processes. BLMs past efforts at government-to-government consultation during the agency process leading to the 2020 Joint ROD were legally deficient. Though the BLM conducted government-to-government consultations with the Tribes, the agency failed to meaningfully incorporate or respond to the Tribes substantive concerns, reducing consultation to a mere box-checking exercise. BLMs wholly inadequate analysis of cultural and subsistence resources in the Final EIS and in its associated ANILCA Section 810 evaluation is an illustrative example of its failure to adequately consider and address the Tribes concerns. In developing the Final SEIS and making its choice of alternative, it is imperative that the BLM meaningfully engage with, incorporate, and respond to the overwhelming opposition to this Project by Tribal Governments. Critically, this engagement does not include participation by AIDEAs Subsistence Advisory Committee (SAC). AIDEA designed the SAC to create the appearance of deference to Indigenous knowledge and Tribes, but AIDEA intentionally failed to include elected Tribal government leaders and has been intolerant of Tribal voices that disagree with AIDEAs plans. SAC members are paid and used in the media to promote the proposed Project, they dismiss the legitimate concerns raised by elected Tribal leaders, and they are postured as if they provide a legitimate counterpoint to the Tribal governments responsible for the communities that would be affected by the Project. BLM must view input provided by cultural advisory bodies created by the applicant as paid advocacy on behalf of industry, and not as an appropriate or valid source for Tribal perspectives. Native corporations likewise are not sovereign. Tribes through their elected leaders, including through their regional Tribal consortiums or representatives, are the sole spokespersons for their sovereign nations. A clear understanding that Tribes are sovereign nations with elected governments should permeate the Final SEIS and inform any future actions. Tribal consultation must be fully independent from industry interests and should not be administered by AIDEA.	See response to letter 17991, comment 2.
34767	9	ANILCA 810 analysis	Most relevant here, section 810 of ANILCA also requires federal agencies to incorporate the subsistence priority into their land use planning and decision-making processes.³⁸ When determining whether to . . . permit the use, occupancy, or disposition of public lands, the relevant federal agency shall evaluate the effect of such use, occupancy, or disposition on subsistence uses in the Draft SEIS are woefully insufficient to minimize the adverse impacts of the proposed Project. In light of these factors, authorization of any of the Action Alternatives would violate the federal governments duty to protect subsistence uses and resources. Based on the impacts described in the Draft SEIS, neither BLM nor any other federal agency could legitimately make the ANILCA 810(a)(3) determinations listed above.⁴⁶ Achieving compliance with ANILCAs subsistence protections for any alternative other than the No Action Alternative would, at a minimum, require a fundamental redesign of the alternative, with the attendant analysis and Tribal consultation required under federal law.	See response to letter 29489, comment 32.

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34767	10	ANILCA 810 analysis	Sect. 810 Subsistence Evaluation Must Use Up-to-Date Subsistence Data BLMs ANILCA section 810 evaluation contained in Appendix M relies heavily on outdated subsistence data included in Appendix L. This is particularly problematic because salmon numbers have declined dramatically in recent years so recent subsistence harvest data are important for section 810 decision making. The most recent data in Table 18 in Appendix L for Koyukuk River region communities harvests for their top five species is 2014 for two communities (Anaktuvuk Pass and Hughes) and 2011 or earlier for the other communities. ⁴⁷ In addition, it is critical for BLM to include the methodology used in determining the subsistence harvest percentages for each of the tables and figures included in Appendix L in the Final SEIS.	Added description of methodology for determining harvest percentages to Appendix L. The harvest data presented in Appendix L are the best available subsistence data. Incorporated more recent salmon harvest reports (through personal use fishery reports) to provide more up to date information regarding the recent decline in salmon harvests.
34767	11	ANILCA 810 analysis	Sect. 810 Subsistence Evaluation Must Recognize Substantial Impacts to WAH Caribou The Western Arctic Herd (WAH) caribou are an extremely important component of the natural environment of northwest Alaska. The ecology of caribou influences the entire food chain: plants, insects, birds, other herbivores, predators, and even the bacteria that decompose their remains. Caribou are vitally important to people who reside within or near the WAH range. For Indigenous people in much of northern and Interior Alaska, especially those living in the Koyukuk and Kobuk Rivers regions, caribou are central to their cultural identity and an essential subsistence food. Impacts from the proposed Ambler Road and its associated mines and connecting roads would change caribou distribution and could reduce abundance, both of which would profoundly affect those practicing subsistence in terms of their culture, social structure, physical and mental health, and household finances. The Draft SEIS states that BLMs potential mitigation measures might reduce the severity of some road impacts to caribou, but serious impacts for those in the region who rely on caribou for subsistence would not be preventable or reparable.	The Supplemental EIS acknowledges that potential impacts on WAH availability or abundance could cause significant restrictions to subsistence uses for communities in the region.
34767	12	Mammals	The Draft SEIS states that Although caribou herd populations tend to fluctuate, the WAH population has declined substantially in recent years. Recent censuses estimated the herds population at 188,000 caribou in 2021 and 164,000 caribou in 2022. The Final SEIS needs to add that, as of July 2023, the WAH numbered 152,000 caribou. Figure 3 shows the populations decline since 2003. The population decline appears to be the result of increasing adult cow mortality combined with declining female calf survival, ⁵³ however, the mechanisms driving these processes are not well understood. Although the recent population trend for the WAH is clear, what is not clear is whether this decline represents the waning phase of a population oscillation characteristic of caribou, or whether it is driven and ongoing by other factors such as climate change. Unfortunately, we are not able to determine the declines driver(s) until it becomes clear that the WAH either is or is not rebounding. As of now, there is no indication that this herd has begun to recover. Even with a largely intact home range, from 2003 to 2023 the WAH declined from 490,000 to 152,000 caribou, a decline of 69%. Climate change, manifested as icing events during warmer winters, appears to be a factor in this decline and is forecast to intensify in the foreseeable future before temperatures stabilize (if they ever do). An effective means of countering some detrimental impacts of climate change is to leave natural areas intact by limiting development.	Section 3.3.4 of the Supplemental EIS discusses the recent decline in the size of the WAH as well as potential impact of climate change on caribou as well as the possibility that development has the potential to limit options for seasonal range making it more difficult to adapt to changing weather conditions.
34767	13	Mammals	The Proposed Ambler Roads Probable Impact on WAH Abundance. Habitat fragmentation likely is the most serious threat to the WAH posed by the proposed Ambler Road and its associated mines and connecting roads. As stated in the Draft SEIS: Each action alternative would fragment the WAH caribou range. The effects of this fragmentation, could be pronounced because the range is currently largely unaltered from a natural state. If fragmentation limits caribou seasonal movements, it could result in large negative impacts on caribou survival and productivity. ⁵⁴ Notably, habitat fragmentation cannot be addressed effectively through mitigation measures such as those in the Draft SEISs Appendix N.	The potential for habitat fragmentation is discussed in Section 3.3.4 of the Supplemental EIS. Proper mitigation, such as limitations on traffic volume and stopping traffic, may improve the ability of caribou to cross roads as discussed in the Supplemental EIS.
34767	14	Mammals	Minimizing impacts of habitat fragmentation caused by the Project may be less an exercise in protecting specific areas of range than protecting large areas that give caribou options for selecting locations that would provide the best combination each year of food availability, reduced risk of predation, decreased exposure to insect harassment and disease, favorable snow and ice conditions, reduced risk of harvest, etc. Each time development encroaches into intact caribou range, the herds choices for finding optimal conditions diminish. The decline of a caribou population that is driven in part by increased industrial development can be an incremental process: over time, it can lead to caribou population collapse by a thousand tiny cuts. The critical resource for conserving caribou herds is space to provide intact habitat options. Table 22 in Appendix E and Maps 3-23 and 3-23b in Volume 4 illustrate that the Ambler Mining District and the western portion of the proposed road include important WAH migratory and winter range. Combining years of data for this table and these maps obscures annual variability in seasonal distribution of the herd. This limitation is at least partly attributable to the small sample sizes of satellite collared WAH caribou prior to 2009. ⁵⁷ Annual variability in seasonal distribution likely is a biologically important adaptation that enabled caribou to survive the transition from the Pleistocene to current times. The annual values reported in Table 22 show that during five years (2012-2016), <5% of the WAH wintered within 30 miles of the Alternative A, B, or C alignments. In contrast, during 2010, 28% of the herd wintered within 30 miles of Alternatives A and B and 18% wintered within 30 miles of Alternative C. During 2021, 40% of the herd wintered in this portion of Alternatives A and B and 45% in Alternative C. Because caribou survival is influenced by their patterns of range use through space and time (i.e., range use is not an artifact of random chance), displacement in any single year from some portion of their range that often receives little usebut occasionally receives very high usecould increase mortality when environmental conditions necessitate that caribou need that space. The impacts of a catastrophic mortality event in any single year can extend far into the future.	The potential impacts of development are likely to vary by year as the wintering distribution changes in response to changing conditions. The Supplemental EIS discusses how development decreases the options available to the WAH to adapt to changing conditions including a changing climate.
34767	15	Mammals	In general, the east-west alignment of Alternatives A and B would have the greatest probability of being encountered by WAH caribou migrating south during fall and north during spring. During some fall migrations, WAH caribou moving south that cross the Kobuk River between Onion Portage and Shungnak abruptly turn east and parallel the Kobuk River to overwinter in the Lockwood Hills or on the south slopes of the upper Kobuk Valley. Caribou following this movement pattern would contact Alternative C given its northwest-southeast alignment.	Comment noted. The occurrence of movements parallel to the Kobuk River in some years is interesting with regard to assessing environmental consequences of Alternative C.

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34767	17	Cumulative and indirect effects analysis	Although AIDEAs application is limited to the proposed Ambler Road, this project is inextricably linked to eventual development of mines in the Ambler Mining District. The Draft SEIS states that, [Direct] Habitat loss and alteration due to the reasonably foreseeable development of the District could equal or exceed that from the road itself (see Appendix H, Table 2-10) and exponentially increase fragmentation of migratory and winter range. ⁶³ Thus, it is impossible, and unwise, to not consider mining in the Ambler Mining District in addition to the proposed road when deciding between the No Action Alternative vs. Alternatives A, B, or C. If this road is constructed, mines would be a reality within a relatively short time.	Mining development is considered and analyzed in the Supplemental EIS, within the context of indirect and cumulative effects (see Appendix H and Chapter 3 cumulative effects analyses).
34767	18	Mitigation/monitoring	Given the habitat fragmentation caused by the proposed Ambler Road, the Draft SEISs mitigation measures would be unable to preserve WAH distribution or abundance.	Comment noted.
34767	20	Subsistence	If construction of the proposed Ambler Road and associated mines and connecting roads reduces the abundance, availability, and access of traditional foods for subsistence users as the Draft SEIS finds, this likely would impose psychological costs. Individuals who value their subsistence lifestyle and cultural heritage may experience a deep, persistent sense of loss when they cannot harvest subsistence foods in places traditionally used by their ancestors with techniques handed down for millennia. Short of medical interventions, there are no mitigation measures to address psychological impacts from this project.	Reviewed Section 3.4.7 and added text to address psychological effects of disruptions to subsistence.
34767	21	Public access	In discussing the roads that likely would be constructed to connect the proposed Ambler Road and communities, the Draft SEIS states that: It is reasonable to assume that connecting roads would be authorized as public roads, given current ADOT Regional Transportation Planning (DOT&PF 2022) and the assumption that construction of any connecting road would involve some public funding ⁷¹ . . . Over the 50-year life of the proposed road, in addition to Kobuk, it is reasonable to assume that Bettles/Evansville, Shungnak, and/or Ambler would pursue additional permanent roads connecting to the road (Alternative A or B) ⁷² . . . The Alternatives A and B alignment comes close to several areas that would be anticipated to desire some access for commercial deliveries. ⁷³ Connecting roads likely would be used for hunting and other activities at least by residents of connected communities. Hunting is one of the mostperhaps the mostdisruptive activities for wildlife near roads. Public road designations also raise the possibility that private citizens or commercial operators would fly into connected communities and use public roads to access hunting areas. In many communities, this would be a divisive issue: some residents would attempt to profit by renting rooms, ATVs, etc., to nonlocal visitors while others would vigorously oppose nonlocal use of traditional subsistence areas (this situation occurred in several NANA region communities during the 2000s when village residents transported, for a fee, nonlocal hunters to traditional subsistence hunting areas via boat). Social impacts stemming from contentious uses of connecting roads certainly would be felt most acutely by residents of the connected communities, however, impacts on caribou at the herd level would affect everyone who uses, values, or depends on the WAH. Even if hunting from the proposed Ambler Road is prohibited, hunting activities conducted from connecting roads would increase the potential to disturb and harvest WAH caribou and thus affect subsistence users in and near the project area. The Draft SEIS states that The traffic level for these local community and emergency response operations [on connecting roads] would likely total less than 1 truck or bus per week. ⁷⁴ This assumption significantly understates the likely use patterns. Even if it is correct for trucks or buses, however, evidence from existing trails around Ambler, Kobuk, and Shungnak suggests that ATV traffic levels on newly constructed connecting roads would vary seasonally and often would be high during fall.	The cumulative and indirect effects analysis in Chapter 3 of the Supplemental EIS analyzes the types of impacts described by the commenter that could result from the public access scenarios presented in Appendix H.
34767	22	Mammals	Collectively, commercial deliveries to connecting communities, public use of connecting roads, agency use, and use of the proposed Ambler Road by nearby mines, lodges, and private landowners could substantially increase traffic and activity levels in the project area. Increased traffic would have greater disrupting impacts on caribou. ⁷⁵ A new publication shows that caribou react to traffic when it is more than five vehicles per hour. ⁷⁶ BLM needs to ensure that the Final SEIS analyzes the impacts of all forms of additional traffic on connecting roads, including during different times of the year.	The access scenarios presented in Supplemental EIS, Appendix H, Indirect and Cumulative Scenarios are based on assumptions as described in the appendix in order to analyze the potential effects of reasonably foreseeable actions.
34767	23	Subsistence	Even under industrial use only status, this project would have significant biological impacts on wildlife, including caribou, and social impacts on subsistence users. If this road is ever designated public, these impacts would intensify. Skeptics need only consider the much lower per capita harvest rates for subsistence users from communities along roads vs. communities in roadless areas ⁷⁷ and compare the number of caribou herds that exceed 100,000 animals with ranges crossed by the Alaska road system (none) vs. herds in roadless areas (three) ⁷⁸ over the last 50 years. The largest herds near roads generally have numbered only 40-50,000 caribou, and some include only a few hundred individuals. Notably and additionally, all Alaska caribou herds near roads are intensively managed and thus have complicated and restrictive hunting regulations that often frustrate subsistence hunters.	Section 3.4.7 addresses the differences in per capita harvests between road-connected and roadless communities.
34767	25	Fish and aquatics	The proposed road would have cumulative impacts on subsistence and fish far outside the TCC region. The two primary watersheds that would be impacted by the proposed Ambler Road are the Koyukuk River which flows into the Yukon River and the Kobuk River which flows into the Chukchi Sea. Each of the three Action Alternatives would have high impacts on anadromous fish species important to subsistence, particularly salmon, because the Koyukuk and the Kobuk and their tributaries drain into the Yukon and the Chukchi Sea, respectively. The protection of salmon and non-salmon fish passage, spawning and rearing habitat, all of which would be impacted by the proposed road, is just as important to downstream fish users as to the seven communities (Shungnak, Ambler, Kobuk, Alatna, Allakaket, Bettles, and Evansville) whose subsistence regions overlap the project area. The proposed road also would greatly impact non-salmon species residents rely upon for subsistence. Among the many maps in the Draft SEISs Vol. 4, Map 3-18 on Known Non-Salmon Fish Habitat, best portrays the numerous water crossings for the proposed Ambler Road (see Figure 4). The Yukon Rivers Chinook salmon run has been identified by the Alaska Department of Fish and as a Stock of (Yield) Concern since 2000.	Impacts to fish and aquatic habit are described in Supplemental EIS Section 3.3.2, Fish and Aquatics, and impacts to subsistence are described in Supplemental EIS Section 3.4.7, Subsistence Uses and Resources. The recent trends in salmon population decline are described in Supplemental EIS Section 3.3.2, Fish and Aquatics - Salmon Declines.
34767	26	Fish and aquatics	Potential contamination of sheefish, whitefish, salmon, and other fish species spawning grounds and other habitat are of particular concern to the study communities. Spills have the potential to substantially degrade habitat quality and affect the	Supplemental EIS Chapter 2, Alternatives, describes practices that would be in place to prevent or minimize spills (e.g., fuel would be stored in double walled tanks, fuel storage facilities would

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			long-term health of individual fish and fish populations. Habitat located in the vicinity of road crossing sites, which includes spawning, rearing, feeding, wintering and migratory habitat, would be most susceptible to contamination from potential spills. Such a spill, particularly if near a stream, would substantially alter water chemistry, cause fish mortality, substantially degrade habitat quality and function, and cause population-level effects. ⁹³ In addition to spills, contamination of fish and fish habitat can occur from vehicle-related contaminants and naturally occurring asbestos that enters waterways during and following road construction.	include spill detection equipment). Additionally, Section 2.4.4, Design Features Proposed by AIDEA, includes mitigation measures intended to prevent spills or accidental releases, quickly respond to spill events, and prevent contamination from ore hauling.
34767	28	Fish and aquatics	The introduction of invasive species could also impact fish habitat and/or productivity. Unlike other ROW impacts that are expected to be more short-term, the introduction of invasive species could become a long-term impact if their spread is uncontrolled. This would cause a significant effect because of the long-term nature of the impact. Because the Ambler road region contains virtually no roads and the gravel roads that exist are near communities, the proposed Ambler Road would dramatically change the hydrologic functioning of the region if culverts are poorly designed, inadequately repaired and maintained, and/or if culverts are used in places where bridges are required. Given the relatively short timeline anticipated for building the road, it is difficult if not impossible to expect that adequate future field work would be able to evaluate the thousands of streams requiring culverts.	Supplemental EIS Section 3.3.1, Vegetation and Wetlands, describes the potential introduction of non-native and invasive species, and mitigation measures intended to minimize the risk of their spread from the project. Supplemental EIS Section 2.4.4., Design Features Proposed by AIDEA, and Appendix N, Potential Mitigation, describe measures that would be required to minimize impacts from culverts, including their long-term maintenance. For example, these commitments include the development of an adaptive management plan for monitoring and maintaining culverts over the life of the road and the completion of fish surveys to assess the presence of fish.
34767	29	Fish and aquatics	The vast majority of spawning locations for fish species in the project area are not known. What is known is that whitefish spawn and/or rear in almost all streams in the region. Several significant whitefish and sheefish spawning areas in major rivers in the region have been located but, for the most part, whitefish (including sheefish) abundance, habitat use, and habitat range extent has not been documented. AIDEA states that it would identify stream habitat, fish bearing or not, in the project area in part by using desktop analyses. ⁹⁶ According to the Draft SEIS, ADF&G investigated waterbody crossings in the first 55 miles of the proposed route, leaving 156 miles uninvestigated. Additionally, AIDEA does not plan to design all culverts to 50-100 year flood levels, ⁹⁸ with BLM stating that culvert designs would depend on perceived risk, as determined on a case-by-case basis. Appendix M acknowledges these culvert and stream flow deficiencies, stating: The presence of the road in addition to related culverts, bridges, and gravel infrastructure would also alter and degrade fish habitat both upstream and downstream from the road, which could affect fish abundance for subsistence users in certain waterways crossed by the road corridor. Bridges and culverts would eliminate and alter fish habitat (see Supplemental EIS Section 3.3.2, Fish and Aquatics). Culverts would eliminate portions of natural stream channels by routing flow underneath the roadway embankment. All the conditions described above are likely to have adverse impacts on fish abundance.	The Supplemental EIS uses the best available information to develop the anticipated impacts the project would have to environmental resources, including fish and aquatic habitat. Should an action alternative be approved in the BLM's ROD, additional surveys and studies would be conducted as needed in support of other local, State, and federal permits. As described in Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA – Biological Resources, fish surveys would be conducted to assess fish presence in rivers in streams for all life history stages along the selected alignment. The scope of these surveys would be coordinated with ADF&G, USFWS, and the National Marine Fisheries Service.
34767	30	Mitigation/monitoring	Mitigations Inability to Preserve Fish Populations. The mitigation measures in Appendix N, although well-intended, would be unable to ensure there would not be adverse impacts to the regions fish. To protect fish living in the thousands of stream crossings of the proposed road, the mitigation measures would need to be implemented comprehensively and in very detailed ways. Unfortunately, the state and federal agencies that perform oversight of road construction, operations, maintenance, and reclamationas well as that of the associated mineslack sufficient funding and trained personnel. This lack of funding impacts their abilities to undertake the field and other work needed to monitor all the remote salmon and other fish habitat sites throughout the Koyukuk and Kobuk River watersheds. State and federal oversight is simply insufficient to monitor the thousands of stream crossings, contaminant use and transport, dust, gravel and other habitat disturbances that would occur during road construction and operations. Fish spawning and rearing habitat information in the region currently is sparse, especially juvenile fish habitat in small streams. The vast majority of spawning locations for multiple fish species in the region are unknown. Additionally, if waters are not documented as bearing fish, there are few legal protections even if, in reality, the waters are important fish habitat.	Should the project be approved, the ROD will determine which mitigation measures will be required. The USACE terms and conditions are considered as proposed mitigation in the Supplemental EIS, and include monitoring provisions for the entire project area.
34767	31	Subsistence	The proposed road would substantially harm the availability of salmon and non-salmon fish located in subsistence use areas for seven communities: Alatna, Allakaket, Ambler, Bettles, Evansville, Kobuk, and Shungnak. Additionally, communities upstream and downstream from the [road] corridor along the Koyukuk and Kobuk river drainages (Ambler, Anaktuvuk Pass, Hughes, Huslia, Kiana, Noorvik, Shungnak, and Wiseman) could experience indirect impacts to fish availability.	Section 3.4.7 addresses the potential impacts to salmon and non-salmon fish in the mentioned communities.
34767	32	Subsistence	Additionally, residents access to fish used for subsistence would decrease due to the road serving as a physical barrier to overland movements and bridge construction blocking certain river drainages. ¹¹⁰ Critical mitigation measures, such as a prohibition on hunting with firearms for five miles from either side of the Ambler Road to protect wildlife populations, would decrease access further.	Potential impacts to access, including impacts of increased security measures, are addressed in Section 3.4.7.
34767	33	Subsistence	Last, it is important to acknowledge that for the people and large carnivores living near the project area, their reliance on fish, caribou, moose, etc. is interconnected. If any one of these resources, e.g., salmon, is depleted, there would be increased food reliance on the other resources such as caribou or moose as well as non-salmon fish. A decline in multiple resources at once would reduce a communitys ability to adapt to these changes and to find suitable substitutions for the declining harvests. Similarly, if bears in the area can no longer capture sufficient numbers of salmon, they likely would turn to other sources of protein, potentially making subsistence more difficult for human populations. Humans and large carnivores thus are competing for a diminishing supply of wild foods, and the proposed road and associated mines ³¹⁴ ouldd diminish that supply further.	Section 3.4.7 addresses the potential for increased pressure on some resources as a result of communities adapting to reduced availability of other resources. Added additional text to address the potential change in feeding behaviors/distribution of resources such as marine mammals and bears resulting from reduced availability of fish.
34767	35	Cultural resources	In addition to compliance with NHPA, however, BLM also needs to comply with other federal cultural resource protection requirements. Under NEPA, BLM must detail how it is complying with all applicable cultural resource legislation and executive orders (EO). Thus, BLM needs to demonstrate in this SEIS how the agency is consulting with Tribal governments to address Sacred Sites under EO 13007. BLM also needs to explain in the SEIS how it addresses cultural resources under the Federal Lands Management Policy Act of 1976 (43 U.S.C. 1701-1784), the Religious Freedom Restoration Act (42 USC 21b), the	See response to letter 32570, comment 26.

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			American Indian Religious Freedom Act (42 USC 1996), and EO 13175: Consultation and Coordination with Indian Tribal Governments. As the SEIS reads now, the only relevant cultural resource laws are NHPA Section 106 and NEPA, but there are other associated statutory and regulatory requirements.	
34767	36	Cultural resources	The APE must be large enough to capture impacts such as industrial and traffic noise, introduced smells, air and water pollution, vibrations, bright lights, destruction of vegetation, and degradation of natural and cultural features. These impacts could eliminate the essential characteristics of landscape-level cultural resources and destroy the meaning and purpose they serve in the lives of Indigenous people. Because the Project would lead to the development of a network of associated mines, connecting roads, and trails sprawling in all directions linked to the Ambler Road corridor, the APE needs to capture the impacts resulting from these facilities. Similarly, because the proposed Project 315ouldd result In up to several hundred ore trucks daily on the Dalton Highway, the APE must include the Dalton Highway corridor for consideration of cumulative impacts on cultural resources. At the July 13, 2023, and October 20, 2023 quarterly meetings with TCC, BLM staff stated they are considering creating a 20-mile-wide APE, i.e., 10-miles on each side of the road centerline. BLM needs to expand the Final SEIS study area to match this 20-mile-wide proposed APE.	See response to letter 29556, comment 35.
34767	37	Cultural resources	As stated in the NHPA regulations, BLM and AIDEA must make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Although TCC and the Tribes appreciate BLMs recent ethnographic research efforts for the Project, these efforts are too late to inform the development of Project alternatives. Identification of historic properties is supposed to inform the development and selection of project alternatives through interdisciplinary analysis that is dependent on the constellation of cultural resources across traditional use areas or cultural landscapes. The Advisory Council on Historic Preservation provides guidance on meeting the Reasonable and Good Faith Effort standard.119 Projects across the country have met the standard so it is concerning that BLM and AIDEA are failing to do so for the proposed Project. Because not all cultural resources data are identifiable using archaeological methods, agencies need to conduct ethnographic interviews with knowledgeable Indigenous residents within, or knowledgeable about, the APE. These interviews would help identify culturally significant areas, convey Indigenous knowledge associated with locations in the APE, and inform the assessment of effects to historic properties. BLMs efforts to collect ethnographic information to date have been too late and too vague. Additionally, the ethnographic inventory conducted only with Tribal Liaisons during the archaeological and ethnographic survey falls short of meeting the regulatory requirements. Most of the Section 106 identification efforts so far have focused on AIDEAs preferred alternative, Alternative A. This has caused significant data gaps for Alternatives B and C, which does not comply with the implementing regulations for Section 106. These regulations state that an agency must: Identify historic properties and assess the effects of the undertaking on such properties in a manner consistent with the standards and criteria of 800.4 through 800.5, provided that the scope and timing of these steps may be phased to reflect the agency officia"s consideration of project alternatives in the NEPA process and the effort is commensurate with the assessment of other environmental factors; and Develop in consultation with identified consulting parties alternatives and proposed measures that might avoid, minimize or mitigate any adverse effects of the undertaking on historic properties and describe them in the EA or DEIS. BLM and AIDEA have not done Section 106 identification work for Alternatives B and C, so Project efforts to date do not reflect the agency officia"s consideration of project alternatives in the NEPA process. BLM also has not Develop[ed] in consultation with identified consulting parties [Project] alternatives. TCC proposed a Tribal Alternative and offered to work with BLM on the development of this alternative, but BLM rejected the consultation effort. A cautionary note for BLM and AIDEAcultural and historic sites in the area are poorly documented and largely undocumented by Western science-based knowledge systems. Safeguarding cultural resources begins with identification of lands important to Tribes and sites therein. The publication of information such as Native place names and site locations identifies them to the public and inadvertently provides the information to potential trespassers. Disclosure of location data increases sites vulnerability to vandalism. BLM and AIDEA thus must be very careful in how site information is managed and shared. Protocols on sharing site data may need to prescribed as amendments to the PA for the Project.	The BLM and AIDEA have and continue to conduct background research, consultation, interviews, field investigations and surveys and is aware of the Reasonable and Good Faith Effort standards. Also see response to letter 32570, comment 30.
34767	38	Cultural resources	Consult with Tribes in the Development of a New or Amended Programmatic Agreement including Giving Tribes the Option of Becoming Invited Signatories. Any PA developed for this Project needs to include robust consultation with Tribes. Moreover, agencies should provide Tribes with the option of becoming invited signatories, which would help demonstrate the PAs integrity and local support. To date, however, BLM and the other signatories have not shared a single proposed PA amendment with Tribes despite consulting parties requests to do so. There is a need for a more expansive consultation process since the subject matter in the PA is nearly exclusively linked to the cultural heritages of descendent communities affected by the Project.	Consultation with Tribes pursuant to Section 106 of the NHPA is described in Appendix I Preparers, Consultation, and Collaboration. The PA (Appendix J) contains the process by which amendments to the agreement can be proposed and approved.
34767	39	Wetlands	As BLM notes, the Final SEIS issued through this process may serve as the basis for decision-making by other agencies, such as issuance of a permit for fill in wetlands and waters of the United States by the U.S. Army Corps of Engineers.122 Although it does not map or describe them in ways that are sufficient to provide a full analysis, the Draft SEIS describes activities that would destroy many thousands of acres of wetlands through the development of the proposed Project and associated mining, as well as including thousands of potentially harmful water crossings.	The Supplemental EIS states that wetlands are considered in the broad ecological context and specific jurisdictional WOTUS are addressed in the Section 404 CWA permitting process. The Supplemental EIS provides sufficient information for USACE to complete a LEDPA determination.
34767	40	Wetlands	It is abundantly clear that the Draft SEIS is insufficient to support a LEDPA determination, or to demonstrate compliance with the Section 404(b)(1) Guidelines and the required public interest review. Any of the proposed Action Alternatives would include unacceptable, substantial, and irreversible impacts to likely thousands of waterways and numerous acres of wetlands under Corps jurisdiction. This key paragraph in the Draft SEIS, unaltered from the Final EIS, reinforces these analysis: The development and operation of mines and AIDEAs proposed action could result in contamination to [the] surrounding environment due to fugitive dust from trucks hauling ore or spills from trucking accidents, leading to further loss or alteration of vegetation and wetlands. The loss or alteration of rare or high-value wetland types combined with climate change-induced	The Supplemental EIS incorporates the best available science specific to the project to adequately present the potential impacts, which included the 2 functional assessments (DOWL 2014; ABR 2017) specific to the project area, as cited in Section 3.3.1 of the Supplemental EIS. DOWL 2019 mapping provided wetland delineation for Alternative Route C. The USACE reviewed the material provided by AIDEA (i.e. Dowl's reports) and determined that they were sufficient for a NEPA level of analysis.

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			changes to wetlands could degrade and reduce them from the area. These projects would also result in loss and alteration of tundra types, which are uncommon in the project area, which could also be further impacted by climate change-induced affects and could increase the introduction and spread of [non-native invasive species]. Some of these impacts to wetlands and vegetation would be permanent, forever changing the project area. As such, the impact on vegetation and wetlands from AIDEAs proposed action, reasonably foreseeable future actions, and ongoing climate change is expected to have substantial cumulative and long-term impacts to wetlands and vegetation, including rare plants and ecosystems. ¹⁴² The above statement in the Draft SEIS is a strong argument for choosing the No Action Alternative AND for the U.S. Environmental Protection Agency to use its authority under Section 404(c) of the CWA to conduct a review and analysis to determine if the discharge of dredged and fill material should be prohibited. Nor did the permitting process for the existing Corps Section 404 permits include analysis of the cumulative and indirect effects of the development of the proposed Project and associated mining development. As the Draft SEIS correctly notes, again unchanged from the Final EIS: The cumulative effects from mine development, indirect road access, AIDEAs proposed action, as well as other reasonably foreseeable developments would compound the magnitude of all previously discussed impacts. Cumulative effects would occur from the combined impacts of these projects. Thousands of acres of wetlands and vegetation would be impacted by these projects. Alterations to wetlands and vegetation from fugitive dust, changes to soil characteristics, changes to hydrology, thawing of permafrost, and increases in non-native invasive species (NNIS) to the areas would result in widespread changes to wetlands and vegetation across the project area from these projects, which would be further compounded by the effects of climate change. Associated wetland functions and ecosystem services could also be lost or altered due to the development of these projects. ¹⁴³ Therefore, based on the extensive new information provided in the Draft SEIS, including the new Subsistence Technical Report, information provided by the Tribes, and the continued lack of comprehensive (i.e., not just through the Corps permit), meaningful, and enforceable mitigation measures throughout the length of the road, the Corps immediately should rescind all Section 404 authorizations, consider the new information in a revised permit evaluation, disseminate a new Public Notice for comment, and only then make a new final permit decision.	
34767	41	Cooperating agency involvement	NEPA requires the Final SEIS to describe a legitimate purpose and need, identify reasonable project alternatives, fully evaluate a no action alternative, and adequately describe and assess mitigation measures that might lessen project impacts. In the development of the Final SEIS, the Agencies should update the purpose and need statement to more accurately reflect the project goals. Specifically, the Draft SEIS provides that BLMs stated purpose of the Project is for year-round industrial surface transportation access across BLM-managed lands to the Ambler Mining District. ¹⁴⁵ This statement is corrected from the Final EIS, removing exploration as part of the Purpose since exploration canand doesoccur without surface access to the District. The Corps stated overall purpose is, however, to provide year-round surface transportation access for mining exploration and development in the Ambler Mining District. ¹⁴⁶ Unlike BLM, the Corps purpose and need statement provides that the Project would be needed for mining exploration in the Ambler Mining District. As TCC and the Tribes have repeatedly expressed, and as BLM has acknowledged throughout the development process for this Draft SEIS, extensive mining exploration currently is being undertaken in the District with access via air. A private, year-round industrial access road is not needed for mining exploration. Access for that purpose can be accomplished through vastly less intrusive and harmful methods. The Corps should resolve this inconsistency by removing mining exploration from its stated purpose and need for the proposed action.	The USACE's purpose and need is focused on its evaluation of impacts to the aquatic ecosystem.
34767	42	Mitigation/monitoring	BLM and Other Landowners Must Strengthen the Mitigation Measures. Appendix N discusses the mitigation measures that would apply to the proposed Ambler Roads construction, operations, maintenance, and reclamation. As noted in many places in Appendix N, the measures only apply to, and are enforceable on, the less than 25% of the road under BLM jurisdiction for Alternatives A and B ¹⁴⁷ and the nearly 83% of the road under federal jurisdiction for Alternative C. ¹⁴⁸ Other landowners along the road route such as the State of Alaska, Alaska Native owners, and local governments can adopt any or all of the mitigation measures. It is uncertain, and unlikely, that all would adopt and enforce the proposed mitigation measures. Because the mitigation measures might only apply to part of the proposed Ambler Road, their effectiveness would be greatly limited. For example, for mitigation measures to protect caribou to be successful, e.g., stopping vehicles to allow caribou migration and limiting hunting along the road ROW, they need to apply equally over the entire length of the road regardless of land ownership.	Each land manager that issues a ROW or some other right of access is responsible for ensuring compliance with the terms of the grant for access. Should the project be approved, the ROD will determine which mitigation measures will be required.
34767	43	Mitigation/monitoring	Appendix N in the Draft SEIS labels each mitigation measure a Potential BLM Mitigation Measure (emphasis added). As the Draft SEIS states, this broad list of potential mitigation is provided to inform the various decision makers of available options for mitigating impacts from the Amber [sic] Road Project and will be expanded upon based on comments to this draft. ¹⁵² This sections comments assume that each of these Potential BLM Mitigation Measures will be included in the Final SEIS, albeit modified based on public comments. TCC and the Tribes urge BLM to be as specific as possible in the language of its mitigation measures, both to be clear to AIDEA on the measures requirements and to ensure fair and effective enforcement of the mitigation measures. For instance, BLM should replace examples of monitoring programs in measure 1.1:10 with the specific monitoring programs needed, as discussed in Table 1 under 1.1:10, below. TCC and the Tribes also note that many of the mitigation measures listed involve substantial unpaid labor to be performed by Tribes, Tribal governments, and Tribal people in the service of industry. In analyzing the likely effectiveness of potential mitigation measures, BLM should not assume that Tribes would be willing participants in assisting the development of a Project that would cause harm to their communities and to which they are opposed.	Each land manager that issues a ROW or some other right of access is responsible for ensuring compliance with the terms of the grant for access. Should the project be approved, the ROD will determine which mitigation measures will be required.
34767	44	Mitigation/monitoring	1.1: 5. Disturbance of existing facilities, objects, or properties ADD cultural and paleontological resources to the list of facilities, [objects], or properties that AIDEA would not disturb or destroyon public lands. Additionally, CHANGE to mostly effective. The rationale for this change is to ensure that the list of objects and infrastructure which should not be harmed includes cultural and paleontological resources.	Cultural and paleontological resources are addressed under the PA (Appendix J) prepared pursuant to the NHPA.

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34767	46	Mitigation/monitoring	1.1:14 Invasive plant species spread ADD a required study by federal and state biologists on the potential impacts on fragile Arctic vegetation and ecosystems, including aquatic invasive plants and their potential impacts on fish, and identification of potential mitigation measures. The current mitigation measure is insufficient to prevent invasive plant species spread.	See Appendix N, Section 3.3.1.1, Vegetation, and Section 3.3.1.3, Non-native and Invasive Species, for a comprehensive list of proposed mitigation.
34767	47	Mitigation/monitoring	1.1:14 Invasive plant species spread ADD measures that address invasive plant species spread by vehicles, by foot, and by wind along the road corridor. The current mitigation measure is insufficient to prevent invasive plant species spread.	See Appendix N, Section 3.3.1.1, Vegetation, and Section 3.3.1.3 Non-native and Invasive Species, for a comprehensive list of proposed mitigation.
34767	48	Mitigation/monitoring	1.1: Summary of Effectiveness, General Measures CHANGE to mostly effective. Since several of these mitigation measures are less than highly effective, this summary should be characterized as mostly effective.	Text revised as requested.
34767	49	Mitigation/monitoring	1.2: 4. Incident and accident reporting ADD cause and how determined after nature of incident or accident,. Knowing causes is essential to prevent incidents and accidents in the future.	PMM revised as suggested.
34767	52	Mitigation/monitoring	3.2.2: 1. Removing gravel from sensitive surface water locations DELETE unless the taking is approved by the Authorized Officer as per further site-specific analysis. This deletion would make the provision consistent with the Corps 404 permit, requirement 10 (p. N-52) which applies to the entire route. If this mitigation measure is not adopted by all land owners, managers, or resource permitting agencies, those decisions would be inconsistent with the Corps 404 permit for the entire road.	Should the project be approved, the ROD will determine which mitigation measures are required. The USACE terms and conditions are included as PMM in Appendix N Section 3.5.
34767	55	Mitigation/monitoring	3.2.3.1:3. Immediate spill reporting DELETE but no later than 48 hours after occurrence. Federal rules in 40 CFR 300.125 and 40 CFR 153.203 require immediate notification.	PMM revised as suggested.
34767	60	Mitigation/monitoring	3.2.7: 1. Dust Control Plan ADD Tribes that practice subsistence in the project area for consultation regarding palliative options for dust control. Like federal and state agencies, Tribes represent governments and thus should be consulted to review dust control measures because the decisions made could impact Tribal members.	Text revised as suggested.
34767	61	Mitigation/monitoring	3.2.7: Summary of Effectiveness, Air Quality and Climate CHANGE to mostly effective. All the mitigation measures in this section are mostly effective, so the summary should be characterized as mostly effective.	Text revised as suggested.
34767	64	Mitigation/monitoring	3.3.1.1: 2. Restoration and revegetation CHANGE to partially effective. Avoidance of invasive species introduction during restoration and revegetation may not occur due to non-BLM land owners, managers, or resource permitting agencies not adopting this mitigation measure.	Text revised as suggested.
34767	68	Mitigation/monitoring	3.3.1.3: 2. Invasive Species Prevention and Management Plan contents CHANGE to partially effective. If non-BLM land owners, managers, or resource permitting agencies do not require an Invasive Species Prevention and Management Plan, this mitigation measure would be partially effective.	Text revised as requested.
34767	69	Mitigation/monitoring	3.3.1.3: 3. Spreading of invasive plants CHANGE to partially effective. If non-BLM land owners, managers, or resource permitting agencies do not require compliance with this mitigation measure, the mitigation measure would be partially effective.	Text revised as requested.
34767	70	Mitigation/monitoring	3.3.1.3: 4. Weed-free sand and gravel CHANGE to partially effective. If non-BLM land owners, managers, or resource permitting agencies do not require compliance with this mitigation measure, the mitigation measure would be partially effective.	Text revised as requested.
34767	71	Mitigation/monitoring	3.3.1.3: Summary of Effectiveness, Non-Native Invasive Species CHANGE to partially effective. If non-BLM land owners, managers, or resource permitting agencies do not prevent Non-Native Invasive Species spread, this mitigation measure would be partially effective.	Text revised as requested.
34767	78	Mitigation/monitoring	3.3.2: 7. Construction timing ADD Tribes that practice subsistence in the project area to identify construction timing windows to protect wildlife. Tribes have expert Indigenous knowledge on wildlife behavior and life cycles.	PMM revised as suggested.
34767	79	Mitigation/monitoring	3.3.3 Fish and Aquatics (NEW) ADD mitigation measure for vibratory hammer use over impact hammers whenever feasible. AIDEA also must utilize additional mitigation measures if impact hammers must be used. This new mitigation measure would minimize sound pressure impacts on fish (see p. 3-92).	See response to letter 32570, comment 83.
34767	80	Mitigation/monitoring	3.3.3 Fish and Aquatics (NEW) ADD mitigation measure requiring that bridges and culverts include very visible signage if near or over any salmon bearing streams or habitats. This new mitigation measure would alert road users to sensitive waterways with salmon.	PMM included as suggested.
34767	81	Mitigation/monitoring	3.3.3 Fish and Aquatics (NEW) ADD mitigation measure requiring quantification of all dewatering activities from gravel pits, lakes or streams for ice roads, dust control, gravel washing, worker use, etc. and ensure there remains sufficient water in fish habitats to prevent harm. This new mitigation measure would protect fish populations, including fish spawning and juvenile areas, from harm associated with road-related dewatering activities.	PMM included as suggested.
34767	82	Mitigation/monitoring	3.3.3: 4. Natural channel designs ADD mitigation measure for large rocks or other stabilizing structures to be added during construction to mimic more natural conditions. Large rocks would aid young smolt out-migration (see p. 3.89).	Appendix N, Section 3.3.3, Fish and Aquatics, PMM 4, addresses this suggestion by following the USFWS standards.
34767	83	Mitigation/monitoring	3.3.3: 8. Materials harmful to aquatic organisms CHANGE fish-bearing stream[s] to all fish-bearing waters, including lakes, ponds, and off-channel habitats As noted in the Draft SEIS (p. N-35), this measure would be more effective if it were also to	PMM revised as suggested.

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			prohibit the use of dust control suppressants with potentially harmful ingredients to all fish-bearing waters, including lakes, ponds, and off-channel habitats.	
34767	85	Mitigation/monitoring	3.3.5 Mammals (NEW) ADD mitigation measure that prohibits hunting with firearms for five miles from either side of the Ambler Road. Hunters easily could avoid hunting on the narrow authorized ROW as required by mitigation measure 3.3.5: 8., resulting in reduced wildlife populations. The Dalton Highway Corridor Management Area,153 in contrast, extends for five miles from both sides of the highway and hunters are prohibited from using firearms in this area, a precedent that should be in place for the Ambler Road.	Appendix N, Section 3.3.5, Mammals, PMM 8, and Section 3.4.3 Recreation and Tourism, PMM 1 and 2, cover prohibition of hunting in the ROW.,
34767	86	Mitigation/monitoring	3.3.5: 8. Hunting, fishing, etc. from the road ROW CHANGE this mitigation measure to prohibit all, and not just authorized, users from hunting, fishing, etc. from the road ROW. All users, including those using the road for subsistence access and recreation, need to be prohibited from activities within the authorized ROW. The ROW would provide a pathway for wildlife, especially during periods of deep snow, so this change must be made to protect wildlife populations.	ANILCA Title VIII does not allow closure of public lands to subsistence use.
34767	87	Mitigation/monitoring	3.4.2 Transportation and Access (NEW) ADD a mitigation measure that specifies maximum vehicle levels per hour. This mitigation measure could differ by season, e.g., minimize traffic during sensitive wildlife periods (e.g., caribou migration and moose calving periods) and during subsistence hunting periods. This new mitigation measure would reduce vehicle interference with caribou migration and moose calving. Additionally, the mitigation measure would reduce impacts on subsistence hunters from wildlife losses due to vehicle traffic. Latest research (2023) shows that caribou react to traffic more than 5 vehicles per hour.	Mitigation measure as proposed is too prescriptive and is potentially covered by Appendix N, Section 3.4.7, Subsistence, PMM 1.
34767	93	Alternatives	Combined Phasing Option. TCC and the Tribes support Combined Phasing as another form of mitigation for inclusion in the Final SEIS. By combining the first two phases of construction, this option decreases the construction-related impacts to permafrost, water quality, fish, and the noise and disturbance impacts from staging and operating construction equipment compared to a three phase approach.155 The Draft SEIS describes the advantages of combined phasing: [Three] Phased construction may accelerate subsurface soil temperature increases, as Phase 1 pioneer road construction would not include all design measures to insulate the roadway. Drainage 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.156 TCC and the Tribes disagree with the statement that The combined phasing option may result in more potential impacts from ice roads and ice padsdue to winter construction access trails relative to the phased construction options.157 It is possible for construction timing to be designed so there are fewer ice roads and ice pads needed, thus mitigating additional impacts from combined phasing (including temporarily higher traffic, see p. 3-167), though such timing might require an additional summer construction season. It is critical to note, however, that even with the implementation of a combined phasing option, the mitigation measures would not be sufficient for BLM to reasonably or lawfully choose any of the Action Alternatives.	Comment noted.
34767	94	Environmental justice	Socioeconomics and Communities (Draft SEIS, Sect. 3.4.5) and Environmental Justice (Draft SEIS, Sect. 3.4.6). TCC and the Tribes are greatly concerned that BLM did not address our major concern of missing, murdered, and/or sexually assaulted Indigenous women as a result of the proposed Ambler Road and associated mines either in Chapter 3s Socioeconomics and Communities section or in the Environmental Justice section.158 No one in the developed world is at greater risk of going missing, murdered, or sexually assaulted than an Indigenous woman in proximity to a resource extraction project. The only reference to such a risk in the Draft SEIS is buried in Table 22 of Appendix F which reads that there is a Likely risk associated with mixing with a typically young, single male road and mine worker crews, but limits on crew travel to local communities from their work sites is expected to limit the impact.159 Minimizing the most statistically significant established risk that women potentially would be raped, sex trafficked, murdered, or disappear to a tangential mention of mixing with single men is not only an affront to all women and Indigenous people, it is not the exhaustive examination of the potential for disproportionate and adverse effects on human health or the environment to the greatest extent practicable and permitted by law that Executive Order 12898 on Environmental Justice promises and demands.	Text describing the potential for sex trafficking and gender violence in environmental justice communities as a result of the proposed project has been added to Section 3.4.6, Environmental Justice. The potential for increased sexual violence as a result of subsequent mining development is discussed in Section 3.4.5, Socioeconomics and Communities and Section 3.4.6, Environmental Justice in the Supplemental EIS. The health impact assessment available on the BLM ePlanning website for the project also discusses this issue. A potential mitigation measure would require AIDEA to prohibit its employees, contractors, subcontractors, and their employees from visiting local communities while on duty or while staying at project facilities except for the conduct of official business. When communities are visited for conduct of official business, AIDEA would keep records of purpose, date, location, and participants, and would make such records available to BLM or law enforcement agencies on demand (Appendix N Section 3.4.5.1).
34767	95	Environmental justice	Data linking the trauma well-known to follow in the wake of resource development projects to the astronomical suicide rates among Indigenous peoples also are readily available, yet markedly absent from the Draft SEIS. Among other deficiencies, the Draft SEIS does not consider the mental health impacts sure to follow such attacks. Mental health is a significant human health issue and demands consideration.	The potential for increased psychosocial stress at either a household or individual level as a result of the proposed project and subsequent mining development is discussed in Section 3.4.5, Socioeconomics and Communities and Section 3.4.6, Environmental Justice in the Supplemental EIS. The health impact assessment available on the BLM ePlanning website for the project also discusses this issue.
34767	97	Environmental justice	Unemployment rates in EJ communities may be overstated for a number of reasons. Cultural communication issues can contribute to incorrect categorization of answersfor example, a community resident may state he/she/they are looking for work meaning they are open to and actively seeking task-specific temporary work (e.g., wood cutting, project work, seasonal work), a common economic profile in rural Alaska. Active employment seeking is a requirement for some programs within the state and federal systems that offer rural assistance, which can create over-reporting of those looking for work. Though there is reason to suspect that unemployment data may be imperfect in EJ communities, there is no question that unemployment rates are higher than in urban Alaska. For this reason, existing and long term forms of employment are of major social importance. There is no evidence that either road construction or the mining operations reasonably assumed to follow would have an impact on employment rates in EJ communities. Inclusion of unemployment data infers a correlation between EJ community employment rates and extractive development that does not exist. When Indigenous people are employed in extractive industries, they typically are underrepresented and generally relegated to low wage, short term work that exposes	As noted in Section 3.4.5, Socioeconomics and Communities in the Supplemental EIS, unemployment data likely underestimate the number of people who would like to work, particularly in more remote communities, because the unemployment rate includes only people who are actively seeking work. Several of the study area communities are off the road system, making commuting to a job in another town or city impractical. Consequently, some people may cease to actively search for work. As described in Section 3.4.5, Socioeconomics and Communities and Section 3.4.6, Environmental Justice in the Supplemental EIS, road and mine construction and operation would provide opportunities for workforce training and development and employment for NAB/YKCA communities, most which have high minority and low-income populations. Those document

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			them to workplace hazards. Thus, such employment may be undesirable. Of the EJ communities studied for this project, none would be physically connected to the road. Only two, Kobuk and Shungnak, are located within a commutable distance to a proposed mine in the Ambler Mining District. This means that employment by the proposed road or associated mines is no more accessible or available to EJ community residents than employment located in any other place they could travel to daily, weekly, or monthly by air.	sections also indicate that proposed mines located on land owned by NANA (e.g., Bornite Mine) may be developed under an operating agreement specifying that NANA shareholders receive direct and meaningful benefits from development at the mine.
34767	98a	Environmental justice	Recreational tourism, general ecotourism, guided hunting, outdoor outfitting, ecotourism guiding, small craft aviation, remote lodges, food service, aviation support, and the arts are common and enduring forms of employment in EJ communities. All of these existing forms of employment are directly threatened by the proposed Ambler Road. These adverse impacts would be permanent, irreversible, and unable to be mitigated (i.e., either eliminated or acceptably minimized). The economies of the regions EJ communities depend upon subsistence abundance, undeveloped expanses of wilderness, intact practice of culture, and the necessity of small bush airplanes for transportation. The proposed road could prove devastating to EJ communities. BLM must include this adverse information on existing economic opportunities in EJ communities in the Final SEIS. Unfortunately, BLMs failure to consider EJ at the most basic level permeates Chapter 3.	Potential effects to recreation and tourism are primarily addressed in Section 3.4.3 (Recreation and Tourism) of the Supplemental EIS, and are also addressed in Section 3.4.5 (Socioeconomics and Communities) as well. Since the recreation and tourism industry employs both local and non-local residents, impacts cannot be assumed to disproportionately affect EJ communities (see Appendix F, Table 22). See also response to letter 32570, comment 99.
34767	98b	Environmental justice	By way of example, the Draft SEIS states that At the end of the Ambler Roads 50-year life span, the road would be closed and reclaimed. Effects of the road would be removed from the area162 This is akin to stating that the impacts of Indian Boarding Schools end the day they shuttered their doors. There is certain and absolute harm to EJ communities under every category under considerationreview of relevant data or meaningful inclusion of Indigenous perspectives would demonstrate that.	The statement in question has been revised to clarify that some of the operational effects of the road would no longer occur (e.g., jobs, traffic, restrictions on land use). The paragraph goes on to state that “it is possible that some adverse impacts would persist and continue to fall disproportionately on EJ communities.” (See S Supplemental EIS Section 3.4.6)
34767	99	Environmental justice	Environmental Justice (Draft SEIS, Appendix F). TCC and the Tribes urge BLM to make the following changes to Table 22: Sand and Gravel Resources - Change DH&A Effects to Possible. EJ community members in the region frequently use gravel sources that are a significant distance away as sand and gravel are scarce in many communities. Infrastructure projects (e.g., landing pads, communication towers) can rely on remote gravel sources as AIDEA and mining companies have the funds to obtain those remote resources while EJ community members generally do not. Land Ownership, Use, Management, and Special Designations Change DH&A Effects to Likely. The land use and management changes are extreme and their impact on EJ communities would be extreme and potentially worse with state land ownership. As discussed in these comments on mitigation, the Draft SEIS mitigation measures only apply to, and are enforceable on, the less than 25% of the road under BLM jurisdiction for Alternatives A and B163 or the nearly 83% of the road under federal jurisdiction for Alternative C.164 Should the State of Alaska not adopt or enforce key mitigation measures, e.g., for fisheries protection, EJ communities would be highly, adversely affected. Recreation and Tourism Change DH&A Effects to Likely. EJ community members engage in travel between EJ communities overland and by boat and engage in between-village tourism, hiking, backpacking, floating, walking, animal observation, bird watching, recreational hunting/fishing, boating, and all other forms of recreational land use on a consistent basis and in much greater numbers than tourists. Impacts would be high and adverse, and disproportionate. Visual Resources Change DH&A Effects to Likely. EJ community members travel significant distances to hunt, fish, and gather and utilize vantage points which are both functional and culturally significant. Local subsistence hunters are more likely to be present on the land, travel long overland distances following game, and utilize vantage points and would be disproportionately impacted. Altered visual resources might also harm hunting outcomes for residents of EJ communities.	See responses to letter 32570, comment 97; letter 32570, comment 98; letter 32570, comment 99; and letter 32570, comment 100.
34767	100	Subsistence	Subsistence Uses and Resources (Draft SEIS, Sect. 3.4.7). BLM needs to define and differentiate between the terms subsistence use area and traditional use area. In Section 3.4.5 and Appendix L, a subsistence use area appears to be a type of traditional use area. These sections state that If residents stop using portions of the project area for subsistence purposes the opportunity to transmit traditional knowledge to younger generations about those traditional use areas would be diminished.167 In Section 3.4.8 on Cultural Resources, BLM includes traditional use areas as one type of cultural resource. Subsistence based economies are areas where wild food resources are available, and those change with time. More inclusive terms to use may be historic and contemporary use areas, or traditional land domains. Designated areas need to be based on lands that are important to individual Tribes, and these areas may overlap between Tribes. It is difficult to fathom places more significant to Tribes than the places where their members and ancestors sustained their ways of life over countless lifetimes (i.e., traditional use areas). A report for NPS in 2018 documented 605 traditional use areas.168 Discussing traditional use areas in the subsistence section, where they will receive less attention, is not appropriate. BLM needs to analyze traditional use areas in the cultural resources section.	See response to letter 32570, comment 111 for the 32570, 101 comment.
34767	101	Subsistence	Subsistence Uses and Resources (Draft SEIS, Sect. 3.4.7). BLM needs to define and differentiate between the terms subsistence use area and traditional use area. In Section 3.4.5 and Appendix L, a subsistence use area appears to be a type of traditional use area. These sections state that If residents stop using portions of the project area for subsistence purposes the opportunity to transmit traditional knowledge to younger generations about those traditional use areas would be diminished.167 In Section 3.4.8 on Cultural Resources, BLM includes traditional use areas as one type of cultural resource. Subsistence based economies are areas where wild food resources are available, and those change with time. More inclusive terms to use may be historic and contemporary use areas, or traditional land domains. Designated areas need to be based on lands that are important to individual Tribes, and these areas may overlap between Tribes. It is difficult to fathom places more significant to Tribes than the places where their members and ancestors sustained their ways of life over countless lifetimes (i.e., traditional use areas). A report for NPS in 2018 documented 605 traditional use areas.168 Discussing traditional use areas in the subsistence section, where they will receive less attention, is not appropriate. BLM needs to analyze traditional use areas in the cultural resources section.	See response to letter 32570, comment 111 for the 32570, 101 comment.
34767	102	Cultural resources	Cultural Resources (Draft SEIS, Sect. 3.4.8). Although BLM greatly improved this section compared to the Final EIS, there still are flaws. As discussed below, these deficiencies include very limited inclusion of Indigenous knowledge, not reviewing	See response to letter 32570, comment 102.

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			and including existing information such as data held by the Bureau of Indian Affairs (BIA), missing Tribal origin stories, limited identification of travel routes, missing traditional use areas, and not including documented Indigenous cultural landscapes. BLM has not included Indigenous knowledge anywhere in Section 3.4.8 beyond including Indigenous place names and seven important riverine travel routes TCC provided. Failure to include Indigenous knowledge has resulted in an incomplete cultural resources impacts analysis. In December 2022, President Biden recognized the importance of Indigenous knowledge and issued guidance for federal departments and agencies on considering, including, and applying Indigenous knowledge in Federal research, policies, and decision making. ¹⁶⁹ Additional guidance on utilizing Indigenous knowledge in agency decision making is available from: The White House Office of Science and Technology Policy and Council on Environmental Quality. 2021. Memorandum on Indigenous Traditional Ecological Knowledge and Federal Decision Making. Electronic document, ¹⁷⁰ The White House Office of Science and Technology Policy and Council on Environmental Quality. 2022. Guidance for Federal Departments and Agencies on Indigenous knowledge. Electronic document, ¹⁷¹ and The White House Office of Science and Technology Policy and Council on Environmental Quality. 2022. Implementation of Guidance for Federal Departments and Agencies on Indigenous knowledge. Electronic document ¹⁷²	
34767	105	Cultural resources	Tribes, TCC, and BLMs own staff repeatedly have recognized rivers and creeks as travel routes. Nevertheless, the Draft SEIS continues to focus on RS-2477 travel routes. RS-2477 designations do not make routes more culturally significant than travel routes without the designation. The State of Alaskas RS-2477 trails are biased designationssome may be original Alaska Native trails that need to be identified as such for potential precontact site identification. As discussed in the following paragraphs, the cultural resources section needs to include the full spectrum of travel routes in the study area and not just the recently attributed RS-2477 designations. Traditional Trade Networks are one of the historic themes AIDEA uses to evaluate properties for National Register of Historic Places eligibility. The Traditional Trade Networks theme relates to the movement of goods, technology, and social and cultural patterns in the upper Kobuk and Koyukuk drainages.¹⁷⁴ AIDEA further states that Trade routes through the Project area included flows of goods between the upper Koyukuk River to the Kobuk River and downstream to Kotzebue Sound.¹⁷⁵ Field efforts focused on terrestrial travel routes with physical evidence despite scoping and consultation comments along with ethnographic data (e.g., Arundale and Jones 1984¹⁷⁶; Smith 2021¹⁷⁷; Watson 2018¹⁷⁸; Watson et. al 2014¹⁷⁹; Alaska Division of Subsistence Technical Reports¹⁸⁰) documenting that Tribes rely on rivers and creeks to traverse the region, just as their ancestors have done for countless generations. Despite ancestors traveling the rivers for centuries and Tribal members using them nearly year round, BLM and AIDEA do not consider them traditional trails. The rivers and geographic features along river corridors are associated with Tribal identities. BLM and AIDEA appear to look only for trails with physical evidence. Tribes have cared for and stewarded the land for generations, and are careful to not leave physical evidence. The knowledge of trails is handed down. BLM and AIDEA need to do ethnographic work to get the whole picture because they are only looking at a small part by focusing on trails with physical evidence. Regrettably, the Draft SEIS, the Final EIS, the Programmatic Agreement, the Cultural Resources Management Plan, and AIDEAs reports all have failed to define trails and/or travel routes. This leaves us to seek definitions elsewhere. Merriam-Webster Dictionary has two applicable definitions for a trail¹⁸¹: 1) a marked or established path or route especially through a forest or mountainous region; and 2) a course followed or to be followed. Rivers and creeks fit both of these definitions. As AIDEA is a public corporation created by the Alaska legislature, it also makes sense to look at how the state defines trails and travel routes and whether rivers and creeks fit into the states definitions (they do): 1) “trail” means a footpath or way on land or water that is open to public use as a matter of right whether or not a thoroughfare, particularly for dog sleds and mechanized snow vehicles (Alaska Statute (AS) 19.30.241(9)); and 2) navigable water” means water that, at the time the state achieved statehood, was used, or was susceptible of being used, in its ordinary condition as a highway for commerce over which trade and travel were or could have been conducted in the customary modes of trade and travel on water; the use or potential use does not need to have been without difficulty, extensive, or long and continuous. Accordingly, both the general public and the State of Alaska views trails and travel routes as including rivers and creeks. (AS 38.04.062(g)(1)) The Draft SEIS acknowledges that TCC identified the following rivers commonly traveled that would be affected by the proposed road. They include, but are not limited to, the Tlaakk’o Neekk’e (North Fork of the Koyukuk River), E Tseeyh No’ (John River), Aalaatne (Alatna River) and its Malamute Fork, Dodzen Beetno’ (Wild River), Noye’e [No’] (Beaver Creek), and Kobuk River. In addition, TCC and the Tribes urge BLM to review BIAs 2017 report Supplemental Report For Niksiksuvik BLM F-22168 Nana Regional Corporation, Inc., which shows multiple travel routes relevant to the project. This report is on file at BIAs Regional Office in Anchorage. Map 3-27 in Volume 4 of the Draft SEIS shows 17b easements, Alaska Department of Natural Resources Trail Inventory trails, winter trails, and other routes that are cultural resources under NEPA. Almost all of these routes reflect use going back more than 50 years. The travel routes on Map 3-27 need to be in the travel routes analysis. Map 3-29 shows multiple “common river float routes” which are Tribal travel routes as well. All routes on these two maps should be considered ancestral travel routes that the proposed Ambler Road Project would impact.	See responses to letter 32570, comments 105–108.
34767	106	Cultural resources	The Draft SEIS states that Cultural resources is a broad term and includes archaeological, historical, and architectural resources; structures; travel corridors; and places of religious, spiritual, or cultural significance to Tribes, including Traditional Cultural Places (TCPs), Sacred Sites, traditional use areas, cultural landscapes, and geographic features.¹⁸² As mentioned previously, Watsons 2018 report documents 605 lifetime use areas for communities relevant to the Ambler Road project.¹⁸³ Lifetime use areas reflect the community scale of analysis, as well as at the lifetime temporal scale.¹⁸⁴ In her report, Watson equates lifetime use areas with traditional use areas. Each one of these lifetime use areas/traditional use areas are cultural resources that Tribes identified and confirmed their extents. These lifetime use areas date back well beyond 50 years. The Final EIS and the Draft SEIS both state that traditional use areas are types of cultural resources. Lifetime use areas/traditional use areas are lands important to Tribes and must be analyzed in the Final EIS as cultural resources, not marginalized in the subsistence analysis. Appendix K of the Final EIS indicates that NPS made AIDEA aware of existing cultural landscapes in the project area in 2018.¹⁸⁵ None of AIDEAs documents since 2018 or this Draft SEIS have	Information regarding Eagle Rock has been added to the Supplemental EIS. See responses to letter 32570, comments 111 and 112 for remainder of comment.

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			mentioned the statement from the 2018 report that Further research and consultation with the NPS is needed to determine the extent/boundary of the existing cultural landscapes186 on National Park Service lands. AIDEA has yet to address these cultural landscapes in any of it fieldwork or mention them in its cultural resources reports for the project. It is likely these cultural landscapes have ethnographic components that may predict site identification of the archaeological record. Regardless of whether these cultural landscapes are ethnographic, archaeological, or a combination of both, BLM must include these cultural landscapes that are crossed by Project alternatives187 in the Final SEIS cultural resources analysis. Notably and additionally, the Evansville Tribal Council has provided information to the federal government supporting Eagle Rocks listing on the National Register of Historic Places.	
34767	107	Cultural resources	The Environmental Consequences189 portion of the cultural resources section also is deficient. BLM needs to address several issues in the Environmental Consequences discussion to ensure a realistic analysis of impacts. As discussed below, analytical deficiencies include neglecting olfactory impacts, lack of clarity on the APE, impacts analyses based on biased approaches, the need for reliable enumeration of cultural resources, and not acknowledging current impacts from mining exploration both inside and outside the Ambler Mining District because of the proposed Project. TCC and the Tribes support BLMs finding in the Environmental Consequences sub-section that 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 [Traditional Cultural Places] and cultural landscapes, would be adverse, regional, and long term.	See responses to letter 32570, comments 113–118.
34767	108	Cultural resources	BLM needs to add olfactory impacts to the discussion on Impacts Common to All Action Alternatives. A gravel road and gravel pits would permanently change the natural smell of the area and cultural places through the introduction of vehicle traffic, gravel, and vegetation removal.	See response to letter 32570, comment 113.
34767	109	Cultural resources	On p. 3-246, BLM states that it used a 10-mile-wide study area to broadly encompass the APE, which is reinforced on page 3-241 where BLM states that The study area for cultural resources extends for 5 miles on either side of each Action Alternative. At the July 13, 2023 and October 20, 2023 quarterly meetings with TCC, however, BLM stated that it is considering creating a 20 mile wide APE, i.e., 10-miles on each side of the centerline for the project. BLM needs to expand the Final SEIS study area to match this 20 mile wide proposed APE.	See response to letter 32570, comment 114.
34767	110	Cultural resources	Additionally, from the start of the proposed project, BLM studied the Alternative A route more than Alternatives B and C. As a result, the Draft SEIS includes biased studies resulting in statements such as Alternative A could affect the greatest number of documented cultural resources. However, the higher number of documented cultural resources along this route is likely due to more archaeological investigations conducted along this route191 BLM needs to study all Action Alternatives equally; failing that, BLM must attach a similar qualifier to every table and analysis involving study and research of the different Action Alternatives throughout the Final SEIS. There are insufficient field investigations along Alternatives B and C to determine the relative impacts to cultural resources among the three Action Alternatives. Regarding reliable counts, NPS documented cultural landscapes, the full extent of documented travel routes, and the 605 lifetime use areas for communities relevant to the Ambler Road project. These are more reliable counts of the full range of cultural resources; notably, the researchers and agencies documented these places on a regional scale without a focus on a project alternative. BLM must similarly include in the Final SEIS reliable counts of cultural resources that utilize ethnographic data and compliment archaeological data.	See response to letter 32570, comment 115.
34767	111	Cultural resources	Finally, TCC and the Tribes are concerned that mining exploration has current impacts on communities in the region and on cultural resources. This exploration is occurring both within and outside the Ambler Mining District in places facilitated by the proposed road, and does not represent only reasonably foreseeable actions with indirect and cumulative effects. The Final SEIS must be clear that there are current cultural resources impacts both inside and outside of the Ambler Mining District that are linked to the proposed Project.	See response to letter 32570, comment 117.
34767	112	Mammals	Caribou: The Red Dog Mine and Road vs. the Ambler Road (Draft SEIS, Sects. 3.3.4 and 3.4.7). To understand how WAH caribou might respond to the proposed Ambler Road and associated mines, it is extremely helpful to look at how the herd has responded to the Red Dog mine and road. Information gained from the Red Dog mine and road needs to be included in Section 3.3.4 of the Draft SEIS. Red Dog is the only industrial mine within the range of the WAH. It is an open pit mine that has operated since 1989 and is located about 80 miles north of Kotzebue. Red Dog consists of a single large mine, a 52-mi-long road (owned by AIDEA), and a port site. The road does not connect to any other road or community, the only infrastructure along the road is <1 mi of snow fence, and during some years there is only minimal public use of this road by residents of Kivalina during fall for hunting caribou. During many years, large numbers of WAH caribou have moved through the area during their fall migration. Despite Red Dogs modest amount of infrastructure by industrial mining standards, in every year during 2001-2015, when large numbers of caribou migrated near Red Dog, satellite collar data showed that tens of thousands of WAH caribou reacted to the road as they approached it. Some collared caribou reversed their direction of travel while up to ~30 miles away from the road. During the 2011 fall migration, for example, the WAH numbered ~325,000 caribou; 28% of them (~92,000 caribou) approached within 30 miles of the road and the rest of the herd bypassed that area to the east through areas containing no industrial development; and 86% (~78,000) of those caribou near the road were delayed and/or deflected by it. In that year, four of the collared caribou did not cross the road and all four died northwest of it that winter due to a winter icing event.	Caribou interactions with the Red Dog Road (Wilson et al. 2016, Dau 2023) are described in Section 3.3.4 of the Supplemental EIS.
34767	113	Mammals	Researchers found significant consequences to subsistence from the delays resulting from the Red Dog road: 1) The road affected caribou movement for days or weeks even after they crossed it. Collared individuals that had been delayed by the road traveled at least 1.5 times faster after crossing the road than individuals that had not been delayed as they attempted to catch up with the rest of the herd. This meant that hunters downstream of the road had a much shorter window of opportunity	The effects of the DMTS on caribou of the WAH and comparisons with the proposed Ambler Project were discussed in Section 3.3.4 of the Supplemental EIS.

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			to harvest caribou. 2) The higher rate of travel for delayed caribou after they crossed the road did not compensate for being delayed up to two months. As a result, in some years caribou didnt reach subsistence hunting areas until freeze up when ice conditions prevented hunters from accessing them by boat or sno-go. Some hunters eventually harvested cows after ice conditions became safe, but many subsistence hunters harvested few or no caribou in those years. 3) In some years, delays meant that caribou had entered rut by the time they arrived in some hunting areas. Subsistence hunters do not harvest bulls after the onset of rut because the meat becomes unpalatable, so hunters take cows instead. Cows are smaller than bulls so hunters must take more of them to meet their subsistence needs. Harvesting cows has a much greater potential to affect population numbers than taking bulls and is especially problematic for a declining caribou herd. With this knowledge of how WAH caribou responded when they encountered the Red Dog road, we can hypothesize the consequences of WAH caribou encountering the proposed Ambler Road. The Ambler Road project likely would pose a significantly higher likelihood of impacts to caribou than the Red Dog mine and road for the following seven reasons: 1) The proposed Ambler Road would be at least 211 miles long, not including connecting roads to nearby communities or roads associated with the mines. This is four times the length of the 52 mile Red Dog road. 2) Unlike the Red Dog road, there is the potential for eventual public use of the proposed Ambler Road. The Draft SEIS states that it is reasonably foreseeable that once the road is constructed, local residents within the general area of the road, as well as other residents within Alaska, will seek ways to access the road both lawfully and unlawfully. This is not the case for the Red Dog road. Many comments on the original EIS and in the development of this Draft SEIS question the ability of the BLM and AIDEA to keep the Ambler Road private, basing their comments on the opening of the Dalton Highway to the general public after nearly 20 years of its north end being open to industrial traffic only. While the situations differ, given the dearth of developed infrastructure in Alaska and the value of the road and associated facilities, it is reasonably foreseeable that efforts would be taken to convert the Ambler Road to a public road. As the Draft SEIS states, During the initial EIS process, the Alaska Outdoor Council stated that they will pursue all channels to ensure the road is permanent and open to the public (AOC 2019). Further, once communities are connected to the road for commercial purposes, it is unlikely that those commercial uses would be discontinued. Additionally, the Ambler Road would connect to the Alaska road system at the Dalton Highway which greatly increases the possibility that it eventually would be opened to the public during or after the operational life of mining in the region. The Red Dog road has no connection to Alaskas road system. 3) The Ambler Road would access multiple large mines in the Ambler Mining District, and likely other mines along the eastern portion of the road. In contrast, the Red Dog road accesses a single mine. 4) The Ambler Road likely would have at least 2-3 times higher traffic levels than the Red Dog road given the projects support of multiple mines and some level of community use. The Draft SEISs Table 2-6 shows Annual Average Daily Traffic for the Ambler road would be up to 118 vehicles per day for Phase 2 and up to 168 vehicles per day for Phase 3. A 2017 report on the Red Dog transportation system states that there are up to 56 trucks per day. Additionally and notably, a recent publication shows that caribou react to traffic at much lower levels than understood previously, i.e., when it is more than 5 vehicles per hour rather than 15 vehicles per hour. This new information on how caribou respond to traffic levels needs to be incorporated into analyses in the Final SEIS. 5) The Ambler Road would have more airstrips (AIDEA proposes three new airstrips), materials sites, and construction camps, than the Red Dog road. 6) The Ambler Road would connect to multiple communities for commercial delivery of goods and services. In contrast, the Red Dog road connects to no other communities. 7) WAH caribou cross the Red Dog road only once each year during the herds fall migration. In contrast, in some years many WAH caribou would cross the Ambler road twice to reach their winter range, once in the fall and then again the following spring to migrate toward their calving grounds and summer range. Additionally, the project area is within WAH winter range that caribou could be displaced from.	
34767	114	Air quality and climate	Permafrost Thawing and Climate Impacts (Draft SEIS, Sects. 3.2.1 and 3.2.7). The region crossed by Alternatives A and B is nearly entirely underlain by permafrost (see Figure 5). Some of the road route likely is underlain by extremely ice-rich areas known as yedoma deposits (50-90% ice content by volume), which are not shown in the Draft SEISs maps and possibly are yet to be identified. The Draft SEIS states that Aerial imagery and limited geotechnical investigations indicate the presence of ice-rich, thaw-sensitive permafrost along parts of each route. The proposed road must not be built on yedoma deposits as they are likely locations for dramatic infrastructure failures through thaw settlement. As stated in the Draft SEIS, Maximum potential for thaw settlement along Alternatives A and B ranges from 2 to 98 feet (Jorgenson et al. 2015). This level of settlement of the road could be catastrophic and even deadly. BLM cannot reasonably and lawfully choose an Action Alternative that would result in a road crossing yedoma deposits. [map] Disturbingly, the Draft SEIS does not quantify road-related potential project contributions to accelerating local permafrost thaw which would result in generating GHGs such as CH4 and CO2. As shown in Map 3-01, above, Alternative A or B road construction and presence on the landscape are highly likely to contribute to permafrost thawing. With the road extending more than 200 miles, the Final SEIS needs to quantify and estimate the potentially significant impacts of greenhouse gas contributions from permafrost thawing. Additionally, spur roads and associated mines likely would result in additional traffic as well as permafrost thawing because BLM mitigation measures would not apply. The greenhouse gas releases from these roads are not included in the Draft SEISs Appendix H. As a related example, Chapter 3 notes that Recent fiber-optic cable installation adjacent to the Dalton Highway has caused permafrost degradation and the development of thaw ponds (Grove 2018).	Comment noted. Permafrost and climate change is discussed in Section 3.2.7 of the Supplemental EIS and each alternative's footprint is discussed in relation to permafrost impacts. The Supplemental EIS notes, road project effects and mining project effects of the types discussed in this Supplemental EIS that can hasten permafrost thaw, coupled with the effects of a generally warming climate on permafrost, could cumulatively release CH4 and further contribute to climate change. The Supplemental EIS states such impacts to permafrost are anticipated in Section 3.2.1. The applicant's estimate of construction costs includes the anticipated construction costs associated with thicker embankments, or additional insulation, to preserve the existing soil thermal regime as much as possible and the necessary maintenance to keep the road functional and useful for its users. Impacts to water quality from the thawing of permafrost are addressed in Section 3.2.5.
34767	115	Air quality and climate	Air Quality (Draft SEIS, Sect. 3.2.7). The Draft SEIS acknowledges that the Fairbanks North Star Borough is in non-attainment for particulate matter less than 2.5 microns in diameter (PM2.5) for the 24-hour NAAQS (and AAAQS) due to its susceptibility to temperature inversions and local emissions sources such as woodstoves, industrial and residential combustion of fossil fuels, and motor vehicles206 (emphasis added) The Draft SEIS goes on to say that Increased vehicle traffic through Fairbanks would contribute emissions, potentially increasing PM2.5 concentrations and furthering the non-attainment status of the area for that pollutant.207 The Final SEIS must analyze and quantify the additional contribution of the	Comment noted. Impacts to air quality were assessed by evaluating the type, duration, and potential magnitude of air pollutants that could be emitted by project related activities under each alternative. Estimated emissions were calculated for those activities where reasonably foreseeable data was available. Appendix D shows the activities that have the potential to generate emissions under construction conditions and under road operation conditions. This appendix helps to define the likelihood and magnitude of impact. In addition, Appendix D shows the types of pollutants potentially emitted from each activity and where data was available, the potential magnitude of those emissions. EPA and ADEC monitor those areas that are in

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			ore concentrates trucks from the proposed mines to Fairbanks air pollution,208 including the contribution from ore concentrates transfers to trains in Fairbanks.	nonattainment to protect them from further degradation and this project, as well as all current and future projects, will comply with all guidance for nonattainment areas.
34767	116	Wetlands	Wetlands (Draft SEIS, Sect. 3.3.1). The Draft SEIS is greatly inadequate in determining an accurate baseline for aquatic resources, especially wetlands, for determining and evaluating the proposed Projects effects on wetlands, for mitigation planning, and for comparing the different alternatives. Aquatic resources including wetlands are the circulatory system of the region, evolved over millennia to produce and sustain the unique and valuable ecosystem that supports subsistence resources and practices, and the spiritual well-being and health of Indigenous people. BLM and AIDEA cobbled together mostly outdated wetlands data and information compiled using different and not comparable methods utilized at different times, using varying terminologies, without a standard, regionwide wetlands functional assessment methodology. As a result, neither the BLM nor the Corps knows what the impacts to wetlands from the proposed Project would be, and whether those losses can or should be mitigated. Aquatic resource functions vary greatly across landscapes, so it is not meaningful to simply use acres of wetlands and lakes and linear feet of permanently or temporarily degraded streams to characterize impacts. Lack of a science-based functional assessment in the Draft SEIS is a serious and perhaps fatal flaw. Tribes, agencies, interested parties, and the public have no idea what the actual wetlands losses would be for the Action Alternatives. In 2020, the Alaska District of the Corps authorized activities associated with the proposed road based on insufficient information and a flawed NEPA document. BLM needs to require AIDEA to produce a wetlands analysis which covers the entire Project using current professional standards so that in the Final SEIS, decisionmakers have the data and information they need to make legally defensible, science-based ROW and permit decisions.	Suitable high resolution and field ground truthed wetland mapping is available for Alternatives A and B whereas mapping for Alternative C is based on a desktop effort combining National Wetland Inventory data and existing vegetation mapping. The available mapping, both desktop and high-resolution mapping, are sufficient to determine significant differences to impacts from Alternative C and Alternatives A and B. The high-resolution wetland mapping for Alternatives A and B is suitable to compare those similar alternatives. A similar assumption was made when considering functional losses where some information was available for portions of Alternatives A and B but was not available for Alternative C. Because Alternative C is much longer than both A and B, the assumption was that functional losses overall would be greater. Special attention was given to the Nutuvukti Fen to the extent that Alternative B was developed to avoid any upstream disturbance in that area.
34767	117	Funding and bonding	Road Financing: Project Costs and Repayment (Draft SEIS, Chapter 2 and Appendix Cs Table 1). BLM needs to update project costs and repayment amounts in the Final SEIS. BLM must review and update the detailed cost items that went into the cost numbers presented on p. C-3 to address all significant design and construction decisions made since AIDEAs application.209 Field work and Corps permit decisions require new bridge and culvert numbers and sizes, and BLM should use field data to ascertain the availability of gravel without excessive levels of asbestos, rather than assuming the availability of such gravel. Also, BLM must analyze and present the cost of mitigation measures using updated data (including project, labor, and materials costs) for both two-phase and three-phase construction plans.	See response to letter 22770, comment 15.
34767	118	Funding and bonding	The Draft SEIS states that road bonds would be repaid by assessing annual fees on the users of the road through a lease agreement [and] AIDEA has stated at Draft EIS public meetings and indicates on its website that the project would not move ahead with road construction until legal agreements were in hand with the mining companies that would use the road. What needs to be added, however, is that Ambler Metals negotiated an agreement with AIDEA to reduce its annual fees by tens of millions of dollars through a toll credit. How did this annual fee reduction occur? AIDEA agreed in February 2021 to spend up to \$35 million through December 31, 2024 on the road project which would be matched by Ambler Metals, and Ambler Metals would recoup its matched funds through credits which may be applied, with interest, to future Project user [i.e., annual] fees when the road proceeds to financing and construction. There is a significant likelihood that the State of Alaska would not be repaid its full costs from the industrial users of the road who would pay road tolls, never mind Ambler Metals credit described above. The federal government estimates that the proposed roads Alternative A would cost the State of Alaska nearly \$700 million in total construction cost and nearly \$12 million annually to maintain the road, maintenance stations, and communications.213 BLM estimates reclamation costs for Alternative A would be nearly \$80 million. Given changes since the application, construction costs likely would be higher at this time.	See response to letter 22770, comment 15.
34767	120	Proposed action	Road Financing: Reclamation Funding (Draft SEIS, Chapter 2). The Draft SEIS says: AIDEAs application states that, at the projects 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. This paragraph is contradictory. BLM should require any Reclamation Reserve Fund or similar bonding instrument to have guaranteed funding for the entire roads reclamation prior to BLM granting a ROW. AIDEA has committed to this approach in its application, as stated above.	See response to letter 25830, comment 26.
34767	121	Proposed action	Throughout the Draft SEIS, there are places where road closure is discussed, but not in sufficient detail to disclose the very likely permanently degraded and scarred landscape that would remain for Alaskans and nearby Indigenous communities. BLM should do additional research on examples of road and mine closures in the State of Alaska and in similar climates to disclose in the Final SEIS how landscapes would be permanently altered. Fish and wildlife species often never fully recover. Vegetation mosaics may not fully recover either, and have significantly decreased variability and resilience. Vegetation cannot reestablish on altered post-mining landscapes with associated changes in groundwater levels, surface water flows, drainage patterns, etc. These impacts are substantial and irreversible.	See response to letter 29489, comment 92.
34767	123	Hazardous waste	Contamination of surface waters and the groundwater table with the metals mined, with the selenium and asbestos released, and the harsh chemicals used to extract and process ores would likely poison this region for centuries to come. The Draft SEIS provides scant information on the potential mine handling and treatment options. Toxic pollutants likely would enter waters and environment, adversely affecting health, resilience, and sustainability. Tailings dam failures also have been a major issue and common occurrence worldwide. Additionally, mine dewatering operations can result in major environmental impacts. The Final SEIS must, at a minimum, include a more detailed discussion and analysis of these mine-related issues including tailings failure model scenarios.	See response to letter 32724, comment 141.

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34767	123	Hazardous waste	Contamination of surface waters and the groundwater table with the metals mined, with the selenium and asbestos released, and the harsh chemicals used to extract and process ores would likely poison this region for centuries to come. The Draft SEIS provides scant information on the potential mine handling and treatment options. Toxic pollutants likely would enter waters and environment, adversely affecting health, resilience, and sustainability. Tailings dam failures also have been a major issue and common occurrence worldwide. Additionally, mine dewatering operations can result in major environmental impacts. The Final SEIS must, at a minimum, include a more detailed discussion and analysis of these mine-related issues including tailings failure model scenarios.	See response to letter 23434, comment 6.
34767	124	Cumulative and indirect effects analysis	Mining Outside the District Facilitated by the Ambler Road Project. The Draft SEIS did not sufficiently analyze nor use the latest information on the Roosevelt project, a Reasonably Foreseeable Mine Development with significant current and future impacts. The South32 Roosevelt project is not in the Ambler Mining District, nor is it small-scale. However, it is facilitated by the prospect of Alternatives A and B. According to trade media, “[T]he Ambler Road also makes other mineral projects in the area more compelling, such as the enormous Roosevelt project being explored by South32.” South32 is a globally diversified mining and metals company with significant capitalization and a 50/50 joint venture with Trilogy Metals in Ambler Metals, the company developing mines in the District. The Roosevelt project is mentioned very briefly in Chapter 3 and Appendix H. Neither mention provides sufficient analysis of the impacts of this enormous potential project, roughly the same areal extent as the entire Ambler Mining District (see Figure 4 including South 32s mining claims). The Final SEIS needs to fully analyze the potential impacts of the Roosevelt project as a Reasonably Foreseeable Mine Development, just as BLM modeled and analyzed mining within the Ambler Mining District. Additionally, in September 2023, Trilogy announced the findings of its exploratory fieldwork on its Helpmejack project, among several exploration projects located along the proposed route of the Ambler access road. This work is taking place between the Ambler Mining District and South32s Roosevelt project. The announcement states that Graphitic schists, calcareous shists, and mafic volcanics seen at Helpmejack resemble those seen in the Ambler Sequence in the western part of the belt. That same announcement also discusses exploration on its Malamute project, located immediately north of the west end of South32s Roosevelt project. Because of the ownership of these two projects, they are not small-scale mining operations even at the exploratory phase. Both projects are shown in Figure 6. [map] Given the extensive and impactful (e.g., numerous helicopter flights that currently are occurring out of Coldfoot) mining exploration clearly associated with the expectation of construction of the proposed Ambler Road, the Final SEIS needs to include development of these major mining projects outside of the Ambler Mining District as Reasonably Foreseeable Mine Developments. Potential mines outside the District but nevertheless facilitated by the road have not undergone the level of analysis that mines in the Ambler Mining District have in the Draft SEIS, and they need to. The brief mention of Small-scale mineral exploration focusing on the District in Section 2.3.3 in Appendix H does not address or analyze these substantial future mines.	See responses to letter 26152, comment 1 and letter 23145, comment 3.
34767	125	Fish and aquatics	Endangered Species Act Listing of Yukon River Chinook Salmon. The SEIS needs to consider and analyze Yukon River Chinook salmon's potential listing as a threatened or endangered species under the federal Endangered Species Act as a Reasonably Foreseeable Action. According to TCCs fisheries experts, many stakeholders are considering a listing request during the next few years. If this federal listing occurs, it could result in significant management impacts for the watersheds that feed the Yukon River such as the Koyukuk and Kobuk Rivers and their tributaries that cross the proposed Ambler Road (see Map 3-05 in Volume 4). Other salmon stocks in the Yukon River, e.g., summer and fall chum, also eventually may see listings. A federal summary of 2023 Yukon River Salmon Fisheries provides the following grim statement for subsistence communities that rely on Yukon River salmon such as those along the Koyukuk River: The USFWS and the Yukon River Fishery Management team acknowledges the last three years with no directed Chinook and summer Chum salmon and 4 years with no fall Chum Salmon subsistence salmon fishery has resulted in tremendous hardship, loss of cultural practices, and unprecedented sacrifice within Yukon River households and communities. ²³³ At the state level, Yukon River Chinook salmon have been a Stock of Concern (SOC) since 2000 and the Alaska Board of Fisheries reviewed that listing in 2022. There currently are efforts to make both Yukon River summer and fall chum, and even coho salmon, into SOCs because of sustained declines that are greatly impacting subsistence. In 2023: [Chinook salmon] passage was the second lowest ever recorded at the [Pilot Station sonar] project (2022 was the lowest) and about 33% of the average annual passage of 177,431 fish (2003-2022; Figure 3). ²³⁴ The Eagle sonar operated from June 30 to October 6, with an estimated passage of 14,752 Chinook salmon, which is approximately 70% lower than the historical average and the second lowest season total estimate (2022 was the lowest). ²³⁵ The Yukon River fall chum salmon run is the fifth lowest on record (1974-2022), while the coho salmon run is the second lowest (1995-2022). The fall chum salmon run size is approximately 290,000 fish compared to a historical run size of 948,000 fish. The coho salmon run size is approximately 65,000 fish compared to a historical run size of 222,000 fish. ²³⁶ Yukon River summer chum returns in 2023 were not as bad as Yukon River Chinook, fall chum, and coho in 2023, however they were well below the 10-year and 20-year averages. ²³⁷ The Yukon River salmon decline is so critical that it is affecting peoples physical health and mental well-being. The federal government provided disaster relief for the Yukon River in 1998, 2009, 2012, 2020, 2021 and 2022. The salmon crisis in the Yukon and Kuskokwim rivers is harming more than local economies, food security and culture, according to people in the region. It is also harming human health. That was a message emphasized at a field hearing held by U.S. Sen. Lisa Murkowski, R-Alaska, in Bethel, the regional hub for the Yukon-Kuskokwim Delta. ²³⁸	The text has been updated to include the Wild Fish Conservancy petition filed with NOAA seeking a listing of threatened or endangered for Alaska Chinook salmon under the Endangered Species Act (see Supplemental EIS Section 3.3.2, Fish and Aquatics - Special Status Species).
34767	126	Transportation and access	First, AIDEA 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. Neither AIDEA nor BLM in Chapter 2 have provided a justification for that excessive ROW width which is many times larger than the width of most gravel roads in Alaska. Even during Phase 3, the proposed Ambler Road would only be 32 feet wide. BLM would be giving away far more public lands than necessary by approving a road with such a wide ROW. TCC and the Tribes recommend that BLM require AIDEA to demonstrate why such a wide ROW is necessary for the road length. BLM also should include a mitigation measure for	The proposed ROW width is driven by the cut and fill slopes for the proposed road. While the road surface would be 32 feet or less, the embankment fill height necessary to protect permafrost and the variable terrain crossed by the proposed result in large cut slopes and fill slopes regularly along the length of the corridor. High terrace slopes at many of the proposed bridge crossings, along with high embankment slopes at bridge approaches required to provide adequate clearance for the 100-year flood and navigability result in a need for a wider ROW width at large bridges.

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			vegetation allowing clearing only the minimum necessary for construction. The Section NHPA Section 106 Programmatic Agreement allows vegetation clearing throughout federal and state right of ways [sic], general language that can lead to excessive vegetation removal.	Map Set 2B-1 Preferred Alignment provided with AIDEA's SF299 application (available on BLM's ePlanning page for the project) illustrates how slope limits vary greatly along the length of the corridor. 250 feet is a typical ROW width for other highways and haul roads in the state, including the Dalton Highway. Supplemental EIS mitigation measures, permit stipulations, and ROW grant stipulations would establish limits on clearing of vegetation. Regulatory agencies and AIDEA understand that excessive clearing would potentially impacts permafrost, water resources, and vegetation resources and would be in conflict with mitigation measures to minimize impacts on those resources.
34767	127	Transportation and access	Second, BLM needs to include in Appendix H statewide and regional transportation plans from Alaska Department of Transportation and Public Facilities when discussing non-physical actionslikely to influence human uses of land in northwest Alaska.	A review was completed to identify applicable regional and statewide transportation plans not previously cited in the Supplemental EIS. DOT&PF's 2022 Regional Northwest Alaska plan was already included in Appendix H. Discussion of DOT&PF's 2022 Statewide Freight Plan was added to Appendix H.
34767	133	Wetlands	Over 2,000 acres destroyed; 11 million cubic yards of permanent fill permanently altering the landscape; lack of accurate wetland and floodplain mapping means BLM & USACE cannot determine the LEDPA or how the required mitigation sequence would be applied; USEPA wrote in 2019 that the USACE documentation used to permit the proposed road fills was insufficient to support a reasonable judgement that the proposed discharges will comply with the Guidelines and that the project may result in substantial and unacceptable impacts to an ARNI (i.e., Kobuk River watershed)	Suitable high resolution and field ground truthed wetland mapping is available for Alternatives A and B whereas mapping for Alternative C is based on a desktop effort combining National Wetland Inventory data and existing vegetation mapping. The available data is sufficient to determine that wetland impacts to wetlands on Alternative C greatly surpasses those of Alts A and B. These assumptions are suitable for both the Supplemental EIS analysis and the evaluation of the LEDPA as part of the Section 404 wetlands permit application.
34767	135	Water resources	76 linear miles of stream destroyed and degraded; ~61,000 truck trips/yr would result in pollution from spills, accidents; 11 million cubic yards of permanent fill would eliminate wetlands that clean water; both point and non-point source pollution would occur at unacceptably high levels; use of millions of gallons of fresh water for ice roads and pads would waste water and diminish water quality	See response to letter 20731, comment 1. See response to letter 18334, comment 1.
34767	136	Section 106 consultation	NHPA 106 Programmatic Agreement discloses that, for the most part, required surveys and evaluations have not been done, and that the compliance work would be deferred to the post-approval construction and operations phases; historic properties would be sacrificed unnecessarily and opportunities to avoid and minimize adverse effects diminished; 26-mile road section would intrude into Gates of the Arctic National Park and Preserve and cross/harm Kobuk River (Wild & Scenic)	The BLM has complied with the NHPA through execution of a Programmatic Agreement (Appendix J) that outlines how historic properties will be taken into account through a phased process. The Programmatic Agreement is being executed pursuant to 36 CFR 800.4(b)(2) and 800.14(b), which states, "Where alternatives under consideration consist of corridors or large land areas, or where access to properties is restricted, the agency official may use a phased process to conduct identification and evaluation efforts. The agency official may also defer final identification and evaluation of historic properties if it is specifically provided for in a . . . programmatic agreement executed pursuant to 36 CFR 800.14(b)."
34767	137	Land use/management	Applicant does not own the land required for the road and recently an Alaska Native corporation, Doyon, plans to withdraw its permission to cross its lands, rendering the Action Alternatives unimplementable; the applicant can no longer affirm that property interests required for the road have been or would be acquired	See response to letter 26067, comment 10 and letter 25830, comment 25.
34767	139	Proposed action	Information provided by the applicant and noted in the BLMs Draft SEIS is preliminary and lacking in the engineering details to ascertain whether future, post-approval designs of structures would comply with safety criteria	See response to letter 21015, comment 5 and letter 22855, comment 1.
34767	140	Water resources	EO 11998, Floodplain Management, requires Federal agencies to avoid, to the extent possible, the short- and long-term adverse impacts associated with the occupancy and modification of floodplains, a requirement the proposed Ambler Road violates by its intrusion, and because the road is optional, not required for high priority National purpose/need such as National Security, protecting human health, or responding to a disaster; the road would bisect, block, and fill waters of the United States and cause significant degradation of critical functions and services; restoration and creation are impossible to accomplish, losses would be permanent and irreplaceable; only the No Action Alternative complies with applicable laws, regulations and Executive Orders	See response to letter 21015, comment 6.
34767	141	Water resources	Water essential for the survival of people, fish and wildlife species, and vegetation would be wasted; 1 million+ gallons of fresh water wasted for each mile of a 25-foot ice road; >250,000 gallons of water wasted on ice pads taken from streams and wetlands; would adversely affect ground water discharge and recharge and harm fish populations	See response to letter 14123, comment 1. See response to letter 20731, comment 1. See response to letter 18334, comment 1.
34767	144	Mitigation/monitoring	EO 11990, Protection of Wetlands, requires Federal activities to avoid adverse impacts to wetlands where practicable, and all practicable measures to minimize harm must be considered; potential environmental engineering and voluntary best management practices are NOT acceptable mitigation; no project-specific compensatory mitigation measures are proposed; applicant is deferring all mitigation planning/design until AFTER all approvals are obtained; risk and uncertainty is unacceptably high for the human environment; all Action Alternatives, hence, the USACE authorizations provided in 2020, are contrary to the public interest	This comment is non-substantive because it does not address the Supplemental EIS.
34767	145	Visual resources	The road, bridges, culverts & associated infrastructure would destroy/degrade the relatively pristine landscape permanently and irreversibly; road would introduce loud noises, harsh lighting, and noxious odors, permanently scarring the landscape	The visual effects associated with the introduction of the proposed road, bridges, and other infrastructure are described in Section 3.4.4 including the magnitude of effects and impact duration. Impacts on soundscapes are included in Section 3.2.6.
34767	147	Recreation and tourism	26-mile road section would intrude into Gates of the Arctic National Park and Preserve; crosses and harms Kobuk River (Wild & Scenic); would harm the recreation, hunting, fishing & tourism industries	See response to letter 23434, comment 4.

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34767	148	Water resources	1. Proposed road and associated activities are contrary to the 404(b)(1) Guidelines and the Clean Water Act purpose to restore and maintain the chemical, physical, and biological integrity of waters of the United States through control of discharges of dredged or fill material. The 2020 application, POA-2013-00396, should have been denied: o insufficient information to determine the LEDPA o Inaccurate, incomplete, outdated data/maps on waters, wetlands, and floodplains o Proposed road would significantly and permanently degrade the aquatic environment o Development of activity-specific minimization measures were mostly deferred until the post- authorization, construction phase o Neither the 2020 nor the 2023 NEPA documents or the Administrative record contain sufficient information to make a reasonable judgment on impacts to aquatic resources The information in the 2020 BLM NEPA document and ROD were determined to be inadequate by a Court; Tribes and USEPA determined that information on WOTUS was, and still is in the 2023 Draft SEIS, woefully inadequate Water quality, levels, flows (quantity and duration), reliability would be disrupted throughout the region as over 3,000 streams would be affected by fill, 3-4,000 culverts, 49 bridges, pad construction, support structures, and the high level of new, hazardous pollution from over 61,000 truck trips, annually Lack of a science-based functional assessment is a fatal flaw. Tribes, agencies, interested parties, and the public have no idea what the actual losses would be for the Action Alternatives, and what the costs to the nation would be, yet the Corps Alaska District authorized activities associated with the road based on insufficient information and a flawed NEPA document Logistically, technically, biologically impossible to replace functional losses consistent with the 404(b)(1) Guidelines and the 2008 Army-EPA Mitigation Rule due to magnitude, location, type of impacts to a fragile, subsistence ecosystem Chemicals and hazardous wastes would irreversibly pollute the ecoregion, harming water quality/supplies, people, communities, subsistence resources, and practices for centuries to come 26-mile road section would intrude into Gates of the Arctic National Park and Preserve; crosses and harms Kobuk River (Wild & Scenic); would harm the recreation, hunting, fishing & tourism industries, AND adversely impact and limit subsistence resources and practices for 34 communities Fish migration, spawning, diversity, productivity, survival, and health at all life stages would be adversely affected because easily disrupted ecological values would be affected Declining caribou populations, a key subsistence resource, would be further harmed 404(b)(1) Guidelines: the road, and associated fill material, would have an unacceptable adverse effect on municipal water supplies, fishery areas, wildlife, and recreation areas, and would result in significant degradation of the aquatic ecosystem	See response to letter 14123, comment 1. See response to letter 20731, comment 1. See response to letter 18334, comment 1.
34767	149	Water resources	Part V Prohibitions and Significant Degradation, Subpart C Potential Effects on Physical and Chemical Characteristics of the Aquatic Ecosystem 1-Substrate (230.20): Major (Significant) adverse effects due to filling, slumping, eroding, reconfiguring, channelizing, and habitat destruction 2-Suspended Particulates/Turbidity (230.21): Major (Significant) adverse effects of toxic dust and chemicals from trucks and other activities would degrade water quality, smother vegetation and fish spawning areas, poison fish and wildlife species 3-Water (230.22): Major (Significant) adverse effects to water quality, clarity, temperature, smell/odor, with adverse health effects 4-Current Patterns & Water Circulation (230.23): Major (Significant) because the 211-mile road, fills, 49 bridges, 3-4,000 culverts would obstruct flows, alter velocities and patterns, reduce ecosystem structure critical for supporting landscape mosaic and subsistence species 5-Normal Water Fluctuations (230.24): Major (Significant) because the 211-mile road, fills, 49 bridges, 3-4,000 culverts would dramatically alter water-level fluctuation patterns, causing exaggerated extremes in some locations and static/non-normally-fluctuating water levels in other locations, harming and destroying communities and populations of aquatic species and vegetation; nutrient balance would be altered as movement of aquatic species; spawning areas would be destroyed/degraded 6-Salinity Gradients (230.25): Negligible Part V Prohibitions and Significant Degradation, Subpart D Potential Effects on Biological Characteristics of the Aquatic Ecosystem 1-Threatened or Endangered Species (230.30): No Effect, neither BLM nor USACE have identified any protected species in their administrative record. Neither has NOAA/NMFS nor USFWS. 2-Fish, Crustaceans, Mollusks, and Other Aquatic Organisms in the Food Web (230.31): Major (Significant) because the proposed Ambler Industrial Mining Road Project would reduce and possibly eliminate food chain organisms, decreasing overall productivity throughout the ecoregion. Adult fish, juveniles, larvae, and eggs would be harmed by changes in water quality and circulation patterns, and by chemicals and increased sedimentation. 3-Other Wildlife (230.32): Major (Significant) for both resident and transient species due to increases in pollution and sedimentation, dramatic changes in water circulation and flow patterns, disruptions in overall biological productivity	See response to letter 20731, comment 1. See response to letter 20215, comment 1. See response to letter 23508, comment 1. Appendix N Section 3.3.3 identifies mitigation measures to minimize impacts on fish and aquatic species.
34767	150	Water resources	Part V Prohibitions and Significant Degradation, Subpart E Potential Effects on Special Aquatic Sites 1-Sanctuaries and Refuges (230.40): Major (Significant) because a 26-mile road section would intrude into the Gates of the Arctic National Park and Preserve; cross and harm the Kobuk River (Wild & Scenic); would harm the recreation, hunting, fishing & tourism industries; contrary to the conservation and preservation purposes of these areas 2-Wetlands (230.41): Major (Significant) with over 2,000 acres destroyed; 11 million cubic yards of permanent fill; lack of accurate mapping means BLM & USACE cannot determine the LEDPA or how the required mitigation sequence would be applied; USEPA wrote in 2019 USACE documentation insufficient to support a reasonable judgement that the proposed discharges will comply with the Guidelines and that the project may result in substantial and unacceptable impacts to an ARNI (i.e., Kobuk River watershed); the proposed project would destroy/degrade important wetland-upland connectivity, the hydrological conditions that sustain fish and wildlife species and vegetation, and aquifer recharge capabilities 3-MudFlats (230.42): No Effect disclosed by BLM or USACE in the administrative record 4-Vegetated Shallows (230.43): Major (Significant) because vegetation and the species that depend upon it along the 76 linear miles of streams, and bordering lakes and ponds would be adversely affected, reducing functions, food sources, and subsistence resources	See response to letter 20731, comment 1. ROW access through Gates of the Arctic National Preserve was identified in ANILCA. The National Park Service completed an Environmental and Economic Analysis in 2019 that identified Alternative A as the preferred alternative through Gates of the Arctic National Preserve. Appendix N Section 3.3.1 identifies mitigation measures to minimize impacts on vegetation.
34767	151	Water resources	Part V Prohibitions and Significant Degradation, Subpart F Potential Effects on Human Use Characteristics 1-Municipal and Private Water Supplies (230.50): Major (Significant) because water essential for the survival of people, fish and wildlife species, and vegetation would be wasted; 1 million+ gallons of fresh water wasted for each mile of a 25-foot ice road; >250,000 gallons of water wasted on ice pads taken from streams and wetlands; the project would adversely affect groundwater discharge and recharge; 76 miles of stream would be destroyed or degraded along with over 2,000 acres of	See response to letter 14123, comment 1. See response to letter 20731, comment 1. See response to letter 18334, comment 1. See response to letter 20215, comment 1.

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			wetlands; ~61,000 truck trips/yr would result in pollution from spills, accidents; 11 million cubic yards of permanent fill, and both point and non-point source pollution would occur at predicted unacceptably high levels --- for Alaskan Native subsistence communities the regional landscape is their water supply and it would be irreversibly, substantially, permanently, and unacceptably harmed 2-Recreational and Commercial Fisheries (230.51): Major (Significant) because the BLM Draft SEIS discloses that the proposed road project would have disruptive effects on suitability of fishing grounds and areas, the reproductive success of key species, and migration/movement patterns; the introduction of pollutants, along with changes in temperature and circulation patterns expected to reduce populations, and increase problems with bioaccumulation of toxic chemicals, making fish unsuitable for human consumption 3-Water-related Recreation (230.52): Major (Significant) because salmon, sheefish, whitefish in general would be adversely affected by changes in turbidity, temperatures, dissolved oxygen levels, toxic materials, introduction of pathogenic organisms as is typically the case for mining roads; subsistence resources and resources that support recreational and commercial fisheries would be adversely affected 4-Aesthetics (230.53): Major (Significant) as water quality and aquatic habitats are degraded by the construction and operation of the proposed road and ancillary development; there would be unmitigable adverse effects to the landscape due to the unsightly intrusion of the project in a subsistence area, with concomitant adverse noise, lighting, smells/odors, diminishing the quality of life for residents and transient tourists	
34767	154	Cumulative and indirect effects analysis	ES-5, 3-78: Air and water quality, and water flows, would be altered along the corridor, affecting a mostly natural and undeveloped landscape. Page 3-78 states The Red Dog Mine has shown that fugitive dust from heavy metals can travel thousands of feet to several kilometers in distance. Once fugitive dust spews into the air it cannot be removed. Dust ultimately falls and pollutes and/or smothers the landscape, causing breathing problems for people and fish and wildlife.	Section 3.4.5 (Socioeconomics and Communities) discusses the potential for mining-related air quality effects to occur from fugitive dust containing NOA, and Section 3.2.7 (Air Quality and Climate) of the Supplemental EIS has been revised to include additional discussion of potential mining-related air quality impacts associated with fugitive dust. The potential cumulative and indirect effects of mining-related fugitive dust is also discussed in Section 3.3.1 (Vegetation and Wetlands), Section 3.3.2 (Fish and Aquatics), and Section 3.2.5 (water Resources). As stated in the reasonably foreseeable mining development scenario (Appendix H, Section 2.1.4) future NEPA analyses for mining operations would examine air quality and health effects from ore transportation and loading. Given the lack of detailed mining proposals at this time, the specifics of developments of each mine component and their resulting impacts on specific resources would be further discussed as part of future NEPA analyses and permitting for proposed mines, and would include analyses of issues raised in this comment.
34767	155	Water resources	ES-5, 3-90: thousands of culverts would channel flowing water under the road and would affect natural flow patterns, erosional patterns, natural channel migration, ponding and flooding patterns converting a relatively natural landscape to a an artificial, drained, ditched, culverted one that will adversely and unacceptably affect critical subsistence resources and practices, and indigenous communities and people. The existing natural system will be replaced with an artificial one that will have to be maintained and significant cost, and that may not work as hoped for (by AIDEA) in terms of managing flow and protecting fish species ability to move freely throughout the region. Instead, there will be design issues, problems with trash accumulation, impacts on reproductive rates, pollution, and fish kills. In the Yukon River Basin alone culverts would be installed in over 1,000 mapped streams, most of which are known to be inhabited by anadromous and/or resident fish. There are no guarantees that culverts will be properly designed and maintained, and it is very common for culverts to be ignored and left to clog and suffer from lack of maintenance.	See response to letter 20215, comment 1.
34767	157	Mammals	ES-5: The road would fragment wildlife habitat. Caribou migration patterns and movements of other wildlife would be affected by the presence of a road and road noise. Between 4,100 and 4,775 acres of Caribou habitat would be adversely and permanently affected for the 50-year life of the project, and beyond, due to landscape alterations and associated, induced development.	The effects of direct habitat loss and habitat fragmentation are discussed in Section 3.3.4 of the Supplemental EIS.
34767	159	Proposed action	p. 2-17: Reclamation of the industrial access road and support facilities would be undertaken at the end of the 50-year project. A detailed reclamation plan containing sufficient performance standards subject to land manager approval would be developed prior to issuance of the authorizations. This as a major problem, and a fatal flaw, due to the risk and uncertainty associated with relying on potentially unknown entities 50 years from now to properly and successfully implement the reclamation. The project-specific measures and costs are, at this point, completely unknown. It would not be a surprise if those responsible for reclamation dont claim that the work is cost prohibitive. Worse, the significant adverse impacts to indigenous people and natural and cultural resources will have occurred with no certainty whatsoever that the areas can be reclaimed. There is scant evidence in the large-scale mining industry that landscapes where mining roads and associated infrastructure, and mines, can be reclaimed. For the most part, once natural resources are destroyed and degraded, especially in Alaska, they are lost for many hundreds of years, or forever. Cultural resources and spiritual resources are non-renewable and irreplaceable. Further studies and analysis are required for inclusion in the Final SEIS to evaluate the reclamation issue, especially the lack of even a conceptual mitigation plan for public review.	See response to letter 29489, comment 92.
34767	160	Cumulative and indirect effects analysis	p. 3-3: Because no specific mining proposal is under consideration, no specific mitigation is proposed for the indirect mining scenario. Such mitigation would be applied for each of those mines as they go through the environmental approval process. While on the one hand this statement is understandable under existing laws and regulations, in the specific case of the proposed Ambler Road it is a major issue for several reasons. First, for most projects, indirect effects are less, usually substantially less, than the direct effects of proposed projects. In this case, while the impacts of the proposed road are substantial and unacceptable, the indirect effects of at least 4 large-scale mines and perhaps up to a dozen other mines of varying sizes will be disastrous and unsustainable for the region. Second, because specific mitigation (avoid, minimize, compensate) requirements will be deferred until a later environmental approval/review process, tribes, federal agencies, organizations, and the public will not have a meaningful and impactful opportunity to comment on specific adverse effects of future mines and plans to mitigate adverse impacts --- there is no way to know whether the impacts of the road or the mines	The mining development scenario is a hypothetical description of potential mining development that could occur, and is presented for analysis of indirect and cumulative impacts only. Although the mining scenario is based on the best available data for the 4 major mining prospects within the District, many of the development details used in the analysis (e.g., disturbance estimates, traffic estimates, production rates) were assumed based on typical scenarios for mining development of base metal deposits in northern regions of Alaska. Therefore, it would be inappropriate and premature to develop and prescribe mine-specific mitigation measures based on hypothetical assumptions which are subject to change. Identifying mine-specific mitigation measures and BMP requirements are outside the scope of this analysis.

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			can be mitigated. Third, the costs of implementing any required mitigation for the road and the mines will very likely be unaffordable, so corners will be cut, rationales will be generated about mitigation being too hard to do, and in the end indigenous people and their subsistence resources and practices will suffer the consequences. Fourth, deferring specific mitigation planning for the design phase for the road, should it be approved, and the future, as specific mine proposals are evaluated essentially biases these analyses strongly in favor of approval --- the time is NOW to recognize that the direct and indirect/cumulative effects provide a strong argument for selection of the No Action Alternative.	A statement has been added to Section 2.1.4 of Appendix H to explain how mitigation and other BMP requirements for individual mines would be determined in conjunction with future NEPA evaluations and permitting processes once specific mine developments are proposed. The various types of permits which could trigger mitigation and BMP requirements throughout the life of a mine are outlined in the hypothetical baseline scenario (Appendix H Section 2.1.4), and generally include permits related to land use access and easements, federal permits (e.g., Clean Water Act Section 404), waste rock disposal, mine water management, water use and discharge, sanitary wastewater treatment, and air quality.
34767	161	Hazardous waste	pp. 3-8, 3-11, p. 3-14: The road and its associated facilities would transect areas with existing geological hazards as well as unfavorable soil and subsurface conditions, which road construction and use may exacerbate. The DSEIS states that it is not known whether proposed road alignments will transect hazardous, mineralized areas with high toxicity. These issues plus the predicted release of corrosive materials, making problems with thawing permafrost, and adverse effects drainage will not be addressed until the design phase, meaning that there is no reliable, engineering, and science-based way to know the full nature and extent of these damaging effects, if they can be mitigated, and how much mitigation will cost BEFORE decisions are made on the proposed alternatives. Choosing the No Action Alternative will avoid this issues and impacts.	Appendix N includes mitigation measures regarding road construction and identifying existing hazards as well as unfavorable soil/subsurface conditions.
34767	162	Fish and aquatics	pp. 3-84, 3-85, 3-86, 3-87, 3-89: Fish are a key subsistence resource. They depend upon clean water and air along with an abundant network of streams, lakes, and wetlands to survive and thrive. Fish species have evolved to use the entire region and the waterbodies within it. Studies have shown that fish need to have the ability to use a variety of waterbodies over time, in various seasons, and for each life cycle. Fish have survived natural perturbations and climate challenges because they can move to avoid water that is too silty, too warm or cold, or otherwise not suitable. The proposed road would adversely affect fish by bisecting, culverting, and diminishing the quality and quantity of habitat necessary for their survival. Once destroyed, waterbodies cannot be replaced. The Alaska Department of Fish and Game only investigated 55 waterbody crossings in the first 55 miles of the proposed route, leaving 156 miles uninvestigated. Therefore, because of the expected adverse impacts and the lack of proper analysis of the entire 211-mile route, the true extent of impacts is still unknown. This is unacceptable when one considers the serious decline in salmon and other fish populations and their body sizes, all subsistence resources people depend upon to survive. Worse, AIDEA proposes to identify measures to minimize, not eliminate, impacts to fish and aquatic species post-approval and in the design phase. Hence, it will be too late to save fish, and too late for BLM and USACE to benefit from public comments on mitigation proposals which mostly likely will be ineffective as demonstrated at other mining projects.	Should an action alternative be approved in the BLM's ROD, additional surveys and studies would be conducted as needed in support of other local, state, and federal permits. As described in Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA - Biological Resources, fish surveys would be conducted to assess fish presence in rivers in streams for all life history stages along the selected alignment. The scope of these surveys would be coordinated with ADF&G, USFWS, and the National Marine Fisheries Service. The Supplemental EIS includes a description of design features and mitigation measures that are intended to reduce impacts to waterways, fish, and aquatic habitat from road construction and the installation of bridges and culverts (see Supplemental EIS Section 2.4.4, Design Features Proposed by AIDEA - Physical Environment; Section 3.2.5, Water Resources - Impacts Common to All Action Alternatives; and Appendix N, Potential Mitigation).
34767	163	Fish and aquatics	pp. 3-103, 3-104: Existing infrastructure is limited and fish movement is generally not impeded within the project area. Implementation of any of the Action Alternatives for the road will dramatically and adversely affect fish and fish passage. If mining projects are implemented, which is the purpose to the Ambler Road Project, fish and fish passage will be further adversely and irreversibly affected along with subsistence resources and practices.	Potential future mining projects are described in Supplemental EIS Appendix H, Indirect and Cumulative Scenarios. Potential impacts to fish and aquatic habitat from future mine development is described in Supplemental EIS Section 3.3.2, Fish and Aquatics - Mining, Access, and other Indirect and Cumulative Effects. Impacts to subsistence are Described in Supplemental EIS Section 3.4.7, Subsistence Uses and Resources.
34767	164	Water resources	pp. 3-105, 3-106: A serious issue commonly associated with mining projects like the ones expected to be implemented if the road is constructed is the creation of a damaging cone of depression that will, according to the BLM, lower the groundwater table, thereby lowering the water table well below natural stream or lake levels and considerably reduce the flow into streams. When this occurs, wetlands, lakes, and streams and the habitat in and around them suffer and significant amounts of habitat critical for people and fish and wildlife species can die off. This impact cannot be mitigated., but it can be avoided by selecting the No Action Alternative.	See response to letter 17876, comment 1.
34767	166	Cumulative and indirect effects analysis	The 4 mine projects anticipated to be pursued immediately should the road be constructed are the Arctic Project (112,000 acres), the Bornite Project (241,000 acre site), the Sun Project (36,800 acres), and the Smucker Project (27 State of Alaska claims, acreage not indicated). Page H-25 discloses that about 4,506 acres will be destroyed/degraded by mining disturbances within the Mining District. Therefore, the reasonably foreseeable future condition will include, at a minimum, 389,800 acres of direct impacts, mostly to aquatic resources and subsistence habitat and fish and wildlife species, plus the additional unspecified acreage involved in the 27 State of Alaska claims. Additionally, significant adverse effects will result from all of the associated infrastructure and human activity surrounding the 389,800 acres. Elsewhere in the DSEIS the BLM writes that there are at least a dozen additional mining projects in the cue that, if approved and implemented, would increase the significant adverse effects as a result of the Ambler Industrial Mining Road exponentially. These impacts are irreversible, unsustainable, contrary to the Federal Trust Responsibility for protecting the sovereignty (and food sovereignty) of tribes, and again, foisted upon low income and minority communities.	See response to letter 32724, comment 182.
34767	167	Proposed action	Mineral Deposits: The mineral deposits may be large in size, but they are NOT designated critical resources. Caribou, salmon, fish in general, birds, and mammals which comprise the subsistence resource base ARE critical resources, without which Native Alaskans will suffer, get sick, and starve (ANILCA 810, Environmental Justice, NEPA). Despite claims from the State of Alaska and international mining companies, the latest mining reports fail to demonstrate that the Ambler District contains economic amounts of critical minerals that would justify construction of the \$2 billion road.	Comment noted.
34768	1a	Mammals	Proposed mitigations do not adequately address the impacts of noise and habitat fragmentation on Caribou that will be created if the road is constructed. Caribou have highly acute hearing (Perra et al. 2022), and evidence suggests that they do not become habituated to human noise (Johnson & Russel 2019). Multiple studies have shown that caribou alter their movement and distribution in response to anthropogenic noise (Bradshaw et al. 1997, Cumming & Hyer 1998, Wilson et al. 2016, Johnson and Russel 2019,). Studies have shown that proximity to infrastructure has a negative impact on calf weights	Results of Perra et al. 2022 were added to Section 3.3.4 of the Supplemental EIS. Some potential effects of noise on wildlife are discussed in Supplemental EIS Section 3.3.4.

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			(Arthur and Veccio 2009) and probably of pregnancy in reproductive females (Wilson et al. 2016). Further, wolves preferentially travel along linear corridors constructed by humans, resulting in significantly higher predation and predator impacts on caribou near roads (James & Stuart-Smith 2000).	
34768	1b	Subsistence	If the Ambler road is built, it will significantly impact the movement, distribution and population size of the Western Arctic Caribou Herd, and thus the subsistence opportunity available to rural Alaskans in communities near the road which rely on the herd. Altered movement patterns resulting from road and predator avoidance will disrupt hunting patterns that have been developed over millennia and lower reproductive rates and higher predation will result in herd declines. Both of these impacts will severely affect local communities. Additionally, although the Ambler Road will be closed to public use, workers employed in constructing and operating the road and ore hauling activities will constitute competition with local subsistence users for caribou and other resources.	The potential impacts of the road on caribou behavior, migration, distribution, and abundance, and the subsequent impacts of these changes on subsistence, are discussed in Sections 3.3.4 and 3.4.7. Potential impacts of competition with non-local hunters are also addressed in Section 3.4.7.
34769	1	Socioeconomics and communities	. Cost-Benefit Analysis: A comprehensive economic analysis is needed to assess the feasibility and cost-effectiveness of constructing and maintaining a road in such a remote region and in contradiction to the flow of so many rivers. With climate change leading to more extreme weather events and increased aueis, construction needs to recognize one-thousand-year flood events as no longer an anomaly. This venture places an undue financial burden on state resources without a proportional return on investment. As we anticipate the economic impacts of climate change, responsible financial management is paramount to prepare for future uncertainties within the state.	See response to letter 26718, comment 27.
34770	1	Public access	The BLM should evaluate the full impacts of the Ambler Road eventually being opened for public use, since there is a strong historical precedent for that action (i.e., the Dalton Highway and the De Long Mountain Transportation System that connects Red Dog Mine and its port site). The draft SEIS acknowledges for the first time the potential for the industrial road to be purposefully opened to the public sometime in the future and we appreciate the BLMs analysis in Appendix H of some of the potential impacts of reasonably foreseeable public use and trespass. The final SEIS should include a more detailed analysis of the full impacts of an eventual public access road, given the strong precedent for that outcome.	Comment noted. The Supplemental EIS addresses potential future public use of the road.
34770	2	Proposed action	The final SEIS should more clearly convey that the Ambler Road will most likely never be removed and reclaimed. The draft SEIS acknowledges a lack of reclamation as a possibility, which is an improvement over previous analysis. However, it should be made clear that reclamation of the Ambler Road is highly unlikely. We are not aware of any major industrial road permitted by the BLM or the State of Alaska that has been reclaimed. There is an opportunity to strengthen the final SEIS by noting how many miles of BLM-managed mining roads have actually been reclaimed in Alaska.	See response to letter 22595, comment 13.
34770	4	Socioeconomics and communities	An updated and thorough cost-benefit analysis should be included in the final SEIS. Some project costs, such as road construction and maintenance, are already included in the SEIS and should be updated to reflect increases since 2019. Other potential costs have never been considered in the EIS, including the cost of replacing culverts that require resizing or impede fish passage, the cost of treating mine waste in perpetuity if any of the mines go bankrupt, and the cost of compensatory mitigationjust to name a few considerations.	Appendix C cost estimates were updated for the action alternatives in the Supplemental EIS. A cost-benefit analysis is outside the scope of this Supplemental EIS. It is expected that costs and revenues would be revisited as the bond market would require additional due diligence on AIDEA's part to have a successful bond sale.
34770	5	Mitigation/monitoring	It is critical that the final SEIS for the Ambler Road considers the mitigation policy and guidance to address impacts to resources from public land uses, as outlined in BLMs Manual Section 1794 and Handbook 1794-1. As part of following this guidance, the SEIS should expressly account for the risk that compensatory mitigation measures may fail and identify necessary assurances and safeguards.	Appendix N contains a robust suite of potential mitigation measures for the project per guidance in BLM Manual Section 1794. Should the project be approved, the ROD will determine which mitigation measures will be required.
34770	6	Mammals	There is an opportunity to incorporate more of the best available science regarding potential caribou behavioral disturbances in the final SEIS. We appreciate the new citations included in draft SEIS, including research by Wilson et al. (2016) found that satellite-collared WAH caribou that were delayed by the much shorter Red Dog Mine industrial access road in the Northwest Arctic by an average of 33 days during the herds 2011 fall migration. We also recommend the inclusion of a study by Parlee et al. (2018) which describes the tragedy of open access and the impacts of mineral resource development on Canadas Bathurst herd, which has experienced one of the steepest declines of any large migratory barren-ground caribou herd.	Citation of Parlee et al. (2018) was added to Section 3.3.4 of the Supplemental EIS.
34770	7	Mammals	We are pleased to see the draft SEIS align with the best available research on caribou and their lack of habituation to roads during calving season. However, there are still some misleading statements in the SEIS on habituation to roads, such as that initially exposing caribou to a small pioneer road may increase their tolerance of the larger Phase 2 road. Given the lack of biological research to support caribou habituation to roads, we recommend that this misleading statement be removed.	See response to letter 22770, comment 4.
34770	8	Mammals	We appreciate that the draft SEIS includes a more nuanced understanding of habitat variability and the amount of space that caribou require, given their low fidelity to seasonal ranges. Longtime Western Arctic Caribou Herd biologist Jim Dau describes spacenaturally intact home rangeas the most important factor for the long-term survival of caribou. Caribou need access to multiple geographically disparate areas to have options for distributing themselves to best utilize available food, areas of low insect and predator abundance, and areas of low hunting pressure. Although caribou herds rarely utilize their entire range in any single year, they will use 100% of their seasonal ranges over a course of decades. The biological research included in the final SEIS should accurately capture these considerations.	Section 3.3.4 of the Supplemental EIS discusses the change in the WAH wintering area over more than 40 years based on radio-collar data and discusses observations of herd distribution made prior to that.
34770	9	Mammals	Moose densities are low in the upper Koyukuk and Kobuk watersheds, and harvest is already restricted. If the Ambler Road were built, up to 36 square miles (23,000 acres) of important moose habitat could be lost. Compensatory mitigation of an equivalent amount of riparian habitat should be required to maintain adequate hunting opportunity.	See response to 22770, comment 8.
34770	10	Water resources	Regarding the potential mitigation measures discussed in Appendix N, we urge the BLM to require more a specific water monitoring plan. The agency should clarify what is required to be monitored, where, and for how long.	See response to letter 22770, comment 9.

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34770	11	Hazardous waste	The BLM should include a quantitative spill risk assessment in the Ambler Road final SEIS that includes the potential for all on-site and transportation-related spills and considers the full range of hazardous materials. A recent analysis (Lubetkin, 2022) compared predicted versus actual spills of hazardous materials at the five largest mining operations in Alaska and found that mining project proponents severely underestimated spill risk when seeking federal and state permits.	P. 3-19 includes Lubetkin analysis.
34770	12	Subsistence	The BLM rightly placed more attention on the potential direct, indirect and cumulative impacts of the proposed Ambler Road to rural subsistence throughout the draft SEIS. However, the SEIS repeatedly minimizes the likelihood that the Ambler Road would eventually be open to the public. Given the profound impacts that public access would have on subsistence resources, the BLM should update the potential impacts to subsistence using a more realistic road access scenario in the final SEIS.	See response to letter 22770, comment 11.
34770	13	Recreation and tourism	The draft SEIS does not adequately capture the value of the Brooks Range to recreational users, including hunters, anglers, paddlers, hikers, and wildlife photographers. The Brooks Range is vast, wild, and remote, offering residents and visitors alike an unparalleled wilderness experience that is difficult to find elsewhere. The draft SEIS includes statements such as, the road and the mines would substantially alter the recreation environment along the southern Brooks Range. This sentiment does not capture the profound mental, physical and spiritual benefits that many people derive from spending time in wild places.	See response to letter 22770, comment 12.
34770	14	Recreation and tourism	The final SEIS should acknowledge the likely direct and indirect impacts of the Ambler Road on recreation. For example, non-local hunters inside and outside the project area could face additional restrictions on hunting opportunities if habitat fragmentation from the Ambler Road were to contribute to the further decline of the Western Arctic Caribou Herd.	See response to letter 22770, comment 13.
34772	3	Subsistence	In 2017 we conducted ethnographic research in the Upper Kobuk River of the traditional use of fisheries by Tribal members in Kobuk, Shungnak and Ambler. We created a cultural fishing resource inventory and reference collection documenting tribal connections to landscapes, sites, features, and resources within the region of the Upper Kobuk River relevant to traditional fisheries use. This project was also intended to help the communities of Ambler, Shungnak, and Kobuk protect and preserve important historic and traditional places, and cultural practices and knowledge connected to the Upper Kobuk River region of Alaska, from approximately 15 miles downriver from the confluence of the Kallarichuk and Kobuk Rivers upriver to the headwaters of the Kobuk River. Seventy-eight (78) distinct resources directly connected to cultural fishing in the Upper Kobuk River region were identified from our sources. The study revealed a need for further ethnographic study to understand the role of sharing in subsistence harvest both at the community level and regionally. Although some existing records reflect traditional knowledge in the Upper Kobuk River region, the documentation of traditional knowledge as it relates to cultural fishing has not been thoroughly recorded across all species of fish harvested by indigenous inhabitants of the Upper Kobuk River region. Data collected about subsistence harvest on a household basis (such as the surveys conducted by ADF&G) may not produce a full understanding of community subsistence harvest due to the known, but not well understood, dynamic of multi-household cooperative subsistence fishing. This indicates a need for an ethnographic study to understand the role of sharing in subsistence harvest both at the community level and regionally. The results of such a study would be vital to the BLM decision on the Ambler Road. It appears that minimal archaeological surveys have been conducted in the Upper Kobuk River region. Additional surveys informed by elders with knowledge of old trade routes, place names and fishing sites along the Upper Kobuk River would be helpful to fill this gap. Our Tribe has an extensive map of Place Names that we would like to share with the BLM archeologist, so that a proper record is established for the Upper Kobuk Region. Pre-contact and early contact trade routes were mentioned during our workshops that BLM should explore further with elders to better understand these aspects of broader regional interactions and influences as they relate to traditional use of fisheries.	Comment noted.
34772	4	Subsistence	Native Allotments The Draft SEIS level of analysis of impacts to holders of Native Allotments is inadequate. There should be an analysis of potential conflicts with these traditional uses of our land. This should include the project's compatibility or incompatibility with existing and traditional uses of the land and nearby areas, impact on communities, historic and cultural resources.	Native allotments are analyzed in Section 3.4.1 (Land Ownership, Use, Management, and Special Designations).
34772	6	Cumulative and indirect effects analysis	Road Connection to Ambler The SEIS states, “[o]ver the SO-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.” 2 SEIS, App. H p. 29 . If that is a reasonably foreseeable consequence of the Ambler Road construction, there should be analysis of the environmental, social, health and cultural impacts of “additional permanent road” to Ambler. The entire character of our village and our people would change with the construction of such a road, and those effects, including social, heath an environmental effects must be considered and analyzed.	Supplemental EIS Chapter 3.4.5 (Socioeconomics and Communities) discusses the potential effects of secondary access roads and other reasonably foreseeable public and non-industrial access scenarios (see Appendix H, Section 2.2.1) on communities within the analysis area. This includes potential effects on the cost of living, community services, rural lifestyles, and public health.
34772	7	Funding and bonding	No Accurate cost of the Ambler Road Construction AIDEA has never produced a complete accurate estimate of the cost of road construction and the ability of the future mines to repay the cost of the road. There is no independent estimate of costs, nor a range of costs for each alternative, nor a financial plan. Before the construction of the Delong Mountain Transportation System (DMTS) Red Dog Mine Road, the Legislature contracted for a study by Stanford Research Institute (SRI) to make sure the road was a good investment for the State of Alaska. A similar independent economic analysis should be required before issuance of the right-of-way. The only independent analysis of the Ambler Road we are aware of, to date, was the analysis presented to the Alaska Legislature by a Project Management Consultant with 38 years of oil & gas industry experience, working on major capital projects around the world who concluded: “the Ambler road project plays the age-old game of privatizing profits while socializing costs” identifying major flaws in AIDEA's analysis. It is the mining companies that will realize profits, and the Alaska Native villages that will bear the costs. We are entitled to know what those costs and profits will be.	See response to letter 22770, comment 15.

4. References

- Bureau of Land Management (BLM). 2023. Notice of Availability of the Ambler Road Draft Supplemental Environmental Impact Statement, Alaska. Available at: <https://www.federalregister.gov/documents/2023/10/20/2023-22870/notice-of-availability-of-the-ambler-road-draft-supplemental-environmental-impact-statement-alaska>. Accessed February 21, 2024.
- . 2008. *BLM National Environmental Policy Act Handbook*. BLM Handbook H-1790-1. Washington, D.C.: U.S. Department of the Interior, Bureau of Land Management.

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