



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

Ambler Road Environmental Impact Statement

Scoping Summary Report – Appendix A: Comments on Potentially Significant Issues

Potentially significant issues are summarized in Section 2.2 of the Draft Scoping Summary Report, which provides a high-level overview of issues in broad groupings (e.g., issues related to the biological environment and issues related to the social environment). This appendix provides the detailed comments, organized by the same broad headings and then by sub-issues. These comments are presented verbatim from the communications received. The comments were included in this appendix because they were considered to be “substantive” and related to potentially significant issues. As defined by the BLM during the public scoping meetings, a substantive comment is one that is specific, presents new information, shares issues relevant to the environmental analysis, and/or suggests alternatives to the proposed project and the reason(s) why they should be considered. Non-substantive comments, such as expressing opinions for or against the project without including an explanation, are not included in this appendix; however, they are a part of the project record and will reside in the Administrative Record.

Analysts assigned to write the EIS will delve further into the detailed comments related to each issue and use those comments to shape the analysis in the EIS. As presented at the scoping meetings, these comments will be considered to potentially refine the purpose and need, determine issues and impacts to be studied, determine alternatives to be studied, and potentially identify mitigation measures to apply to the project.

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Acronym List

ADEC	State of Alaska Department of Environmental Conservation
ADNR	State of Alaska Department of Natural Resources
ADOT	Alaska Department of Transportation and Public Facilities
AIDEA	Alaska Industrial Development and Export Authority
AMD	Ambler Mining District
AMDIAP	Ambler Mining District Industrial Access Project
ANILCA	Alaska National Interest Lands Conservation Act
APE	Area of Potential Effect
BIA	Bureau of Indian Affairs
BLM	US Bureau of Land Management
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
DEIS	Draft Environmental Impact Statement
DMTS	Delong Mountain Transportation System
DNR	State of Alaska Department of Natural Resources
DOT&PF	Alaska Department of Transportation and Public Facilities
EEA	Environmental and Economic Impact Analysis
EIS	Environmental Impact Statement
EPA	US Environmental Protection Agency
GAAR	Gates of the Arctic National Park and Preserve
GMP	General Management Plan
LEDPA	Least Environmentally Damaging Practicable Alternative
NCA	National Climate Assessment
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act

NPS	National Park Service
OHA	Office of History and Archaeology
OHV	Off-highway Vehicle
ROW	Right-of-Way
TAPS	Trans-Alaska Pipeline System
TCC	Tanana Chiefs Conference
USACE	US Army Corps of Engineers
USCG	US Coast Guard
USDOI	US Department of the Interior
USDOT	US Department of Transportation
WACH	Western Arctic Caribou Herd

Project and Process

Issue 1: Access

1. A lot more study is needed on a road through that area that area and I do not like the idea of a private road going near but bypassing many communities that do not have road access.
2. The EIS for the AIDEA AMDIAP project should assume community related commercial activity on the road will occur immediately upon the initiation of other traffic rather than treating such activity as a hypothetical future possibility, as indicated in the application. ...As noted in the SF-299, Question 16, the community of Kobuk currently has a road from the community to the Dahl Creek Airstrip and a road connects the Dahl Creek airstrip to the Trilogy Metals exploration camp at Bornite. These roads are currently suitable for seasonal use by vehicles ranging from pickup trucks to heavy equipment. Trilogy Metals regularly runs their 5000 gallon fuel truck between Dahl Creek and Bornite. It is less than two miles from the development at Bornite to the proposed project alignment and less than three miles from that point to a major proposed material site, landing strip and proposed construction camp. Former Cat trails already run from Bornite to the area of the proposed alignment and can be seen in the maps and photos provided with the application. The proximity of the AMDIAP to this existing road system, the fact that the Dahl Creek airstrip can accommodate deliveries of materials and equipment by Hercules aircraft and an application indicating that construction will occur in both directions from the material sites/construction camps along the alignment imply that the community of Kobuk will have road access to the project almost immediately after construction starts.
3. BLM needs to assess the potential cumulative impacts of the road being opened for public use. AIDEA has claimed that the road will stay closed to the public and will only be used as an industrial access road. However, it has provided no indication how it plans to keep the road private, particularly over the long term. The Dalton Highway was initially private and was eventually opened to the public. It is reasonably foreseeable that the Ambler Road could ultimately be open to the public. This will lead to even greater impacts to wildlife, and lead to potential conflicts between urban and traditional subsistence hunters. BLM should assess the full range of impacts, including socioeconomic and subsistence impacts that could stem from the road being open to the public. / Even if the road remains closed, it is also reasonably foreseeable that individuals will use the road illegally to reach this currently inaccessible area by private vehicles and recreational equipment. The cumulative effects of public use of the road must be fully evaluated in the EIS.

Issue 1: Access, continued

4. The EIS must assume that this road will eventually be open to the public. That might happen within ten years. In Alaska, roads built for industrial purposes usually become open to the public. The Dalton Highway is a perfect example. How will this affect the subsistence resources that the communities depend upon now? This will bring more people into the area with more infrastructure.
5. Lastly, there has been a lot of discussion and concern within our community about the potential for the road to open up this area to the multitude of people living along Alaska's current road system and the deleterious impact this would have on both the people and the resources found in northwest Alaska. While it is a stated intention that this road will be private, there are no guarantees that as times change, that this road will not eventually be opened up to the public. It is more apparent now than ever to us, that what can be done in one set of political circumstances can be undone by a different set in short order. Given the new Administration's approach to environmental safeguards, it is now obvious that permits, rules, and regulations, are only in place as long as the political will and institutions agree that they should be. Even if the political will remains, it is possible that court rulings in the future could also open up the road to the public. With that in mind we believe an analysis should be made of the impact of the Ambler Road on hunting access for local residents and visiting hunters, including the potential for increased conflicts between local and non-local hunters and impacts to the fish and wildlife from this increased access.
6. It is critical that the EIS evaluate the potential impacts of opening the proposed road to public access at some point in the future. Although it is claimed the road would be only for industrial use, this same claim was made for the Dalton Highway to the North Slope in the early 1970s, and of course that road was opened to public use. The same must be anticipated for any Ambler Road. The impacts of hundreds or even thousands of people driving an Ambler Road on subsistence use patterns, wildlife, fish, and other resources could be significant, and must be evaluated.
7. The State of Alaska maintains that this will be a private toll road. However it has no credible plan for implementation of this supposed status. To me, the State's intent sounds very similar to its pledge years ago to allow no public traffic on the "Haul Road" north of Dietrich Camp. Of course, legal and political pressures have changed that; and today anyone who wants to can drive the Dalton Highway all the way to Prudhoe Bay. Any credible study of the potential impacts of the road to Ambler must comprehensively assume that eventually the road will be open to the public.

Issue 1: Access, continued

8. Though proposed as a private road, the same was true for the Dalton Highway which is now open to the public. This is the likely future of this road, if built, and will increase access to the southern Brooks Range and the isolated communities in this area. Increased access can have all kinds of impacts. One of the topics the BLM should analyze is the potential impacts of increased access if the road were to be opened to the public.
9. Describe the authority to prevent public access. Senate Report 96 413 Kobuk ROW page 147 states “The Committee provided for a transportation corridor through the Kobuk unit to connect the mineral district with an existing haul road along the trans-Alaska oil pipeline”. While not envisioned by ANILCA or the Senate report, if any State or Federal funds are used (as they are in this scoping process) to develop and maintain an Ambler Road it could be open to the public. There likely may be a lawsuit similar to DOT and State of Alaska v. North Slope Borough and Tanana Chiefs (8/26/94), 879 P 2d 1009. This is a reasonable, perhaps likely, scenario leading to open the road, as with the Dalton Highway. A comprehensive analysis of those environmental effects of such a likely outcome is necessary. Evaluate the effects if the road becomes open to nearby communities or additional mining claims established along the way. Develop mitigating measures for those possibilities. Require further NEPA evaluation before road is opened to the public to fully assess the impacts.
10. A road to the Kobuk River might create opportunities for additional commercial transportation as well as recreational activities. Those impacts need to be evaluated, including consideration of the Congressional purposes of “wilderness recreation” for the Preserve as well as the Park, and “undeveloped” character of the Preserve and Park.
11. I'm very concerned about access to this road. The intention is for it to only be accessible to properly authorized commercial vehicles. I think this is a good idea, but I don't see any way to guarantee that this limitation stays in effect. The Haul Road to Prudhoe Bay was originally closed to the public, but all it took was a few Alaska State Legislators wanting some easy points with their constituents to open it up. Perhaps I'm mistaken, but I don't see any way to guarantee that the same thing won't happen to the Ambler Road. In fact, it seems to me that it will be inevitable. If the road becomes open to the public at some time in the future there will certainly be conflicts over hunting rights and other uses of the land. More resources will have to be allocated to both Federal and State agencies to monitor activities.
12. Evaluate the effects if the road becomes open to nearby communities or additional mining claims established along the way. Develop mitigating measures for those possibilities including restricted hunting or fishing. Require further NEPA evaluation before road is opened to the public to fully assess the impacts.

Issue 1: Access, continued

13. We request that: Analysis be made of the likely impact of the Ambler Road on hunting access for residents and non-residents, including the potential for increased conflicts between hunters. The WACH declined for much of the last two decades. Reduced population levels during that time led to harvest restrictions. Although the most recent caribou count indicates a population that is stabilizing or possibly starting to increase, concerns remain that increased access due to roads could greatly compound user conflict and limited availability of caribou. We recognize that the proposed road is currently specified as being commercial-only. However, history (e.g., with the Dalton Highway) suggests that once roads are established they eventually become used by the public. We are greatly concerned that the Ambler Road will not remain closed to public use given this history and the multiple jurisdictions (State, Federal and Native) that the proposed road would cross. These complexities need to be addressed specifically in the Draft EIS. Furthermore, it is essential that the definition of commercial traffic to be allowed on the road is clarified. Consideration also needs to be made of the potential for effective enforcement of the commercial-only restriction. Budget cuts at State and Federal levels are affecting law enforcement and may reduce the effectiveness of use restrictions. In addition, analysis needs to include any anticipated changes in complexity of hunting regulations as a result of road access restrictions. In light of the above concerns, we request that two analyses be conducted during the EIS process: one that reflects the impacts if the road remains commercial-only and another in which impacts are analyzed if the road becomes used for public hunting access.
14. The proposed action states that the road will remain a private commercial road. The Dalton Highway was also intended to be a private commercial road, but the state funding required that it be opened to public uses as well. The potential for this to happen with the Ambler Road should be thoroughly investigated, and all environmental impacts associated with this eventuality should be analyzed.
15. Describe the authority to prevent public access and limit access to industrial use only. If State and/or federal funds are used to develop and maintain the Ambler Road, then there would likely be a lawsuit similar to DOT and State of Alaska v. North Slope Borough and Tanana Chiefs (8/26/94), 879 P 2nd 1009. This is a likely scenario leading to open the Ambler Road as occurred with the Dalton Highway. If the Ambler Road were to be opened to public access, then consider public use controls such as those employed along the Dalton Highway (no ORVs, no firearms discharge within 5 miles of the road center) and consider other controls such as mandatory stops to allow caribou migrations, no parking other than in designated pullout areas, etc. Law enforcement authority needs to be identified for the proposed ROW, including monitoring and corrections.

Issue 1: Access, continued

16. AIDEA claims the road would be a private toll road, but has provided no indication of how the road could be kept private over time. We all know from case studies in Alaska that a road built is a road used by the public—no politician or land manager can stand up to the pressure. Using Red Dog and the Dalton Highway as examples, it is clear that any initial intent to maintain a private road with no hunter access is a fool's task. Prohibition works only if it is enforced, and enforcement is costly. Red Dog's original policy was to prohibit all public use and they eventually modified that policy after it became apparent that they could not effectively prevent residents of Kivalina from occasionally hunting caribou from it. It would be irresponsible to NOT consider the inevitable impacts this road will have on the need to regulate hunting opportunity once it is used by the public for access to hunting. Even if migratory movements and numbers of a caribou population remain unchanged after a road is constructed through some part of its range, subsistence hunters may experience more restrictive seasons or bag limits in response to an influx of nonlocal hunters. Couple the practical reality of manifesting the limited access notions proposed in the right-of-way request with the budget shortfalls that threaten even basic public services and infrastructure in the State, and it's clear this simply won't work as pitched.
17. What authority is there to close such a road to the public considering the public ownership and investment?
18. The likelihood of the road remaining restricted is very limited, therefore the analysis must include an alternative where it is open to public use.
19. Describe the authority to prevent public access.
20. Senate Report 96 413 Kobuk ROW page 147 states "The Committee provided for a transportation corridor through the Kobuk unit to connect the mineral district with an existing haul road along the trans-Alaska oil pipeline". While not envisioned by ANILCA or the Senate report, if any State or Federal funds are used (as they are in this scoping process) to develop and maintain an Ambler Road it could be open to the public. There likely may be a lawsuit similar to DOT and State of Alaska v. North Slope Borough and Tanana Chiefs (8/26/94), 879 P 2d 1009. This is a reasonable, perhaps likely, scenario leading to open the road, as with the Dalton Highway. A comprehensive analysis of those environmental effects of such a likely outcome is necessary.

Issue 1: Access, continued

21. Serious consideration must be given to the potential for the project to be opened and available for public use. BLM's review and decision making process with regard to the proposed project must seriously consider the very real possibility that the project, like the Dalton Highway, will be opened to public use. The James W. Dalton Highway, spanning over four-hundred miles from Livengood, north of Fairbanks, to Deadhorse, near the Arctic Ocean, was originally built in 1974 as a haul or supply road to support the Trans-Alaska Pipeline System ("TAPS") and Prudhoe Bay oil fields. Originally known as the North Slope Haul Road, the highway was restricted to commercial traffic until 1981, when the state opened public access over approximately half of the route to Disaster Creek (Milepost 211). The state opened public access over the remainder of the route in 1994, following a heavily litigated dispute with the North Slope Borough and Tanana Chiefs Conference, who opposed opening the entire road to the public. *Turpin v. North Slope Borough*, 879 P.2d 1009 (Alaska, 1994). Although the Dalton Highway continues to carry significant commercial truck traffic to and from Prudhoe Bay, locals and visitors can now use the highway to access what were once remote and unreachable areas. Doyon believes that it is reasonably foreseeable that, despite AIDEA's stated intent, there will be political pressure to open the proposed road to public use and that the road ultimately could be made available for either restricted or unrestricted use by the general public. Much as the Dalton Highway was and is "only maintained land route linking central Alaska to the northern coast of Alaska," *Turpin*, 879 P.2d at 1012, the proposed Ambler road would be the only maintained land route linking the Ambler Mining District in the northwestern Arctic to central Alaska. As stated in the Recreation Activity Plan for the Dalton Highway and the Utility Corridor, prepared by BLM in 1982, "Prior to 1981, the highway was open for public use only to the Yukon Crossing . . . The State of Alaska and BLM are committed to making this scenic splendor available to the public." It is very much possible that the proposed project could meet a similar fate. As was the case with the opening of the Dalton Highway to public use, the availability of the proposed project for general public use would result in opening a large, remote area of Alaska to public access.

Issue 1: Access, continued

The resulting increase in the types and amount of public use made possible by a public road could have adverse impacts on local communities and natural resources in these areas, as well as impacts on the road and its commercial and industrial use. Broader public use of the road would have impacts that are comparatively different from the limited industrial use road presumed in AIDEA's right-of-way application. There are important implications, for instance, for safety, law enforcement (e.g., accident response, highway patrol, criminal investigation, search and rescue), general health and welfare (e.g., the Dalton Highway led to social issues like significantly greater alcohol use), fish and wildlife, maintenance repairs and road work. As was the case with the Dalton Highway, opening the road to public use also would increase access to fish and game resources along the corridor, encroaching on fish and wildlife populations and habitat and creating additional pressure on subsistence resources by non-local sport hunters and anglers. This could, among other things, lead to access limitations on both subsistence and sport hunters and anglers, withdrawing lands that might otherwise be available for subsistence use. See Final Environmental Impact Statement, Renewal of the Federal Grant for the Trans-Alaska Pipeline System Right-of-Way (Nov. 2002); see also Dalton Highway Master Plan (Dalton Highway Advisory and Planning Board, 1988) (acknowledging that opening the road in 1994 caused additional issues). As it moves forward with its review and consideration of AIDEA's application, BLM should take a hard look at the possibility that the road to be opened to public use (whether over the near or longer term) and the potential impacts associated with such a public use road.

22. Law enforcement authority needs to be stated for the proposed ROW.
23. The EIS should address potential effects of the 211-mile road corridor on public access to fish and wildlife resources on state and federal land. If the road is closed to public use, the road corridor design should not block access to public lands outside the transportation corridor. It is recognized that there are concerns about potential use of the road by hunters both within the project area and beyond. Discussions of access and the potential for resource competition are recommended subjects for evaluation in the EIS.
24. there are too many unanswered questions such as security, access

Issue 1: Access, continued

25. The opening the haul road resulted in far ranging impacts over a vast area of the North Slope and northern Brooks Range. For example, hunting guides and resident hunters using airplanes were now able to greatly extend their activities by trucking aviation fuel up the haul road where logistical operations were established at airports that had been previously constructed for pipeline and road construction. This has greatly expanded hunting pressure for vulnerable wildlife in this open landscape where such pressure did not exist previously. In turn, adequate enforcement of hunting rules have fallen short of what is necessary. We seriously doubt that the proposed Ambler road will remain closed to the public. Therefore, we recommend that the impacts of public access be fully described and analyzed in the NEPA process.
26. After the 50 years of expected private mining use, hunters, fisherman, foresters, etc. will use this road just like they do the Dalton Highway.
27. When this road is opened to the public, which will eventually happen, it will increase access to the spectacular Arrigetch Peaks in the heart of the Gates of the Arctic National Park and 14-mile-long Walker Lake on the southern boundary of the park. Easy access is not needed; a little bit of effort to get to places is what this country could use.
28. The DEIS should address the cumulative, comprehensive impacts of the road and development enabled by the industrial haul road: As the saying goes, "If you build it, they will come." Once the road is built, there will inevitably be pressures to open it up for other uses (other than mining access) that are not authorized under the applicable provision in ANILCA. Even if restricted only to mining access, as it should be, construction of the road will have a ripple effect of impacts on the region. For example, the project description assumes that more jobs will be created than the entire combined population of all the nearby villages. The social effects must be evaluated of such a population surge from outsiders without the sensitivity to local ecosystems or way of life. The likely alternative economic and social impacts to the local subsistence way of life should be evaluated. The subsistence culture could be irreparably harmed or extinguished. Any benefits from copper-lead-zinc-gold-silver mining could be of limited term. Potential impacts to local communities after mining ends should be fully assessed.
29. Evaluate the effects if the road becomes open to nearby communities or additional mining claims established along the way. Develop mitigating measures for those possibilities including restricted hunting or fishing. Require further NEPA evaluation before road is opened to the public to fully assess the impacts.
30. Prohibit the use of firearms along the road, similar to the Dalton Highway restrictions.

Issue 1: Access, continued

31. The road passes at varying distances from villages and since it will be extremely difficult to control public use at locations remote from the portals, it is safe to assume that off-road vehicles will be used to access and use the road and the SF 299 notes that, at p. 28, noise is caused by “snow machines, boats and four wheelers”.
32. The Ambler Industrial road is to be private, but it runs primarily through public land, including the Gates of the Arctic National Park and Preserve. Should a road go through, it is reasonably foreseeable to expect an increase in off-highway vehicle (OHV) traffic. The statement “the number of visitors to the Preserve is limited and the number that would encounter the road is expected to be low” is entirely insufficient for a statement on the probable effects on the population, as it unrealistically assumes little to no additional OHV traffic. The EIS needs to consider mitigations for the preferred and alternative routes, road and railroad, that would maintain the routes as private and keep public use to null or minimum. This needs to be done without impacting current subsistence users, and with the knowledge that there is little to no State funding for enforcement.
33. The impact of OHVs is well-substantiated, including degradation of wetlands, illegal stream crossings, and degradation of tundra. It is reasonable to expect OHVs to be vectors transporting invasive plant and aquatic species. It is reasonable to expect OHVs to cause wildlife disturbance, disrupting movement, denning, and mating. Mitigation to reduce the impact of OHVs, including sheer number of OHVs, stream degradation, and increased invasive species needs to be considered.
34. Permitting a mine typically will take 15 to 25 years. The impacts associated with this road without mine use must be considered. Undoubtedly pressure from tourism, recreational, hunting and fishing, and local business user groups will petition for unlimited access. An access road constructed on private property with private funds can be considered a private road. A road constructed on federal and state lands with state or federal dollars is considered a public use highway. Take into consideration the petroleum industry’s desire to have limited access of the Dalton Highway to Deadhorse. The EIS must evaluate the environmental impacts associated with unlimited public access.
35. It is also quite likely that transporters, commercial pilots and guides will fly hunters to the areas along the road using the airstrips, if they are available for public use, or landing on the road. Private pilots could, similarly, use the road for access to hunt. These users will create conflicts with local subsistence users.

Issue 1: Access, continued

36. The road would inevitably be open to the public, just like the Dalton Highway. Villages and their subsistence economies will suffer the consequences: interrupted caribou migrations, damaged fisheries, floods of hunting and fishing camps full of urban folks including many out-of-staters. Present activities function by aircraft or boat. This keeps the hoards down to a dull roar. Hard to get to? Yes, as it should be. This is Alaska, people, not Kansas!
37. What if the access road is constructed and no mining activity occurs? How many years will security be required to limit access on this "private road" by the public before it is ever used by a mining company? And at what cost? What provisions will be used to keep out trespassers? the EIS must explore how the road will be maintained and how the access on this road will be limited. The impacts associated with this road without mine use must be considered. Undoubtedly pressure from tourism, recreational, hunting and fishing, and local business user groups will petition for unlimited access. An access road constructed on private property with private funds can be considered a private road. A road constructed on federal and state lands with state or federal dollars is considered a public use highway. Take into consideration the petroleum industry's desire to have limited access of the Dalton Highway to Deadhorse. The EIS must evaluate the environmental impacts associated with unlimited public access.
38. When public access becomes available, the state will likely commence land disposal sales on state lands in the region. This will result in increased fire risk, fire suppression cost to protect property, more habitat fragmentation, vegetation removal, disturbance, and hunting and trapping pressure.
39. The empty promise to restrict access is remembered by local residents along Dalton Highway. Officials promised the road would only be used by industry. We know how successful that was. There are too many unanswered questions such as how many years of "restriction."
40. Describe the authority to prevent public access.
41. Require the road to be closed to all uses including ORVs not directly related to mining operations, monitoring or public safety.

Issue 1: Access, continued

42. Senate Report 96 413 Kobuk ROW page 147 states “The Committee provided for a transportation corridor through the Kobuk unit to connect the mineral district with an existing haul road along the trans-Alaska oil pipeline”. While not envisioned by ANILCA or the Senate report, if any State or Federal funds are used (as they are in this scoping process) to develop and maintain an Ambler Road it could be open to the public. There likely may be a lawsuit similar to DOT and State of Alaska v. North Slope Borough and Tanana Chiefs (8/26/94), 879 P 2d 1009. This is a reasonable, perhaps likely, scenario leading to open the road, as with the Dalton Highway. A comprehensive analysis of those environmental effects of such a likely outcome is necessary.
43. How will opening the road to the public affect the subsistence resources that the communities depend upon now? This will bring more people into the area with more infrastructure.
44. The Council emphasizes that the impacts of developing the Ambler Road Project will have adverse and far reaching effects within at least 50 miles of each side of the road. These impacts include noise disturbance to terrestrial and aquatic wildlife resulting from increased motorized off-road vehicle traffic and boat use extending up the coast and into the Kobuk River Drainage. The increased motorized off-road vehicle traffic and boat use resulting from development of the Amber Road will also have significant adverse impacts up and down the Koyukuk River, John River, and Alatna River drainages.
45. The DEIS needs to consider the scenario where AIDEA, with no experience equal to this vast project, and the land managers with no hands-on relationship to the operators, and law enforcement also encumbered by having to work through a distant finance corporation, do not respond effectively to damage to streams, to subsistence resources, to the upstream effects on fisheries within conservation units, to fish and wildlife resources, etc. The project claims no project workers will hunt on the land. The DEIS should evaluate the difficulties of a finance company, not an experienced mining company, in preventing absolutely thousands of workers from hunting in this country, competing with local people for subsistence fish and wildlife species.
46. How will the future transfer of ownership of this private road to the State of Alaska affect the subsistence users of this area?
47. BLM should assume the public will be able to access the road, because there is no information on how public access will be restricted. Unrestricted access and illegal road use may lead to increased hunting pressure. Further, poaching by construction and mining workers should be considered. Even if road use is limited to industrial access and poaching is limited, the estimated 400 trucks per day on a long industrial road has the potential to greatly impact subsistence hunting and harvesting success.

Issue 1: Access, continued

48. The road is too far north from our village to make it practical to bring in groceries and goods to reduce the cost of living, but it is not so far as to prevent those who want to make a great deal of money from drugs and alcohol from driving down the road and then by snowmachine or four-wheeler to Allakaket. Regardless of whether mining or trucking companies prohibit substance abuse, there will be individuals willing to bring it into Allakaket. We have seen no plans on the part of the state or federal government to provide a greater police presence to stop this. We in Allakaket do not even have a public safety officer to address this.
49. We disagree with the claim that this proposed road will remain closed to the public. Similar assurances were made that the TAPS haul road would remain closed to public use. A review of haul road history clearly shows that the initial closure was not adequately enforced by the State Department of Transportation. Prohibited travel soon increased as word got out that enforcement was lax. Also, violators were not prosecuted, and this led to greater illegal travel on the haul road. A lack of commitment to enforcing the closure ultimately led to opening of the road to public travel.
50. The EIS must assume that this road will eventually be open to the public. That might happen within ten years. In Alaska, roads built for industrial purposes usually become open to the public. The Dalton Highway is a perfect example.
51. How can we ensure that this industrial access road will remain just that? A significant concern from our region is the potential of public access and increased hunting and fishing from people outside our region. How can we avoid placing the route on areas that have RS-2477 designations and other public concessions? How can we avoid another Dalton Highway situation (while still allowing some access for our local communities)?
52. The EIS needs to consider mitigation for a scenario in which the Phase I pioneer road is built but no mines move forward. How long would the Pioneer road be in place before it was removed/reclaimed? This would be a period when public use would likely be relatively high – no truck traffic, no enforcement.
53. Clear Messaging That Road Will be Restricted Access - we urge BLM to clearly and consistently communicate the point that if the road is developed, it will be a limited access/private road. It will be important for the EIS to be clear on this point and to analyze impacts assuming the road is -- and will remain -- in restricted status, rather than assuming that the road will be open to the public.

Issue 1: Access, continued

54. Will the locals be able to use this road? Will they be able to haul in supplies from Fairbanks on this road? What will it cost the locals to use this road? How will they get permits to use this road? Will they be able to get permits to use this road? Will businesses other than mining interests be able to get permits to use this road? How much will it cost these businesses? These are all issues that need to be addressed in the scoping process.
55. We would prefer to see the road limited to industrial use. There could be a toll and permit requirement for each entity or vehicle that wishes to use the road. Local subsistence hunters who will have extremely minimal impact on any road should be exempt from restrictions on use or permit/toll requirements.
56. How many years will security be required to limit access on this “private road” by the public before it is ever used by a mining company? And at what cost?
57. What provisions will be used to keep out trespassers (from using the road)?

Issue 2: Alternatives/Project Description

58. We must ask are there reasonable alternatives to the road and mine: AIDEA is interested in developing the Ambler Road as part of its mission to "...increase job opportunities and otherwise encourage the economic growth of the state, including the development of its natural resources..." that is to mine. Alternatives BIA must consider are not different road routes, but different projects other than mining in Ambler and a state-funded 211 mile road through precious wilderness. KBCS believes that there are stronger alternatives to developing the Ambler Mining District: development of solar energy industry, wind energy industry, hydro power. A cost-benefit analysis of similar levels of investment in alternative energy industry is needed.
59. The state requests the BLM make a good faith effort to incorporate the ADOT analysis to the extent practical in the alternative identification and analysis of the AMDIAP EIS. This prior transportation analysis by ADOT can reasonably be expected to provide relevant information and significant efficiencies to the BLM and cooperating agencies in their alternative analysis in the EIS.
60. The Wetlands Analysis along AMDIAP Should Be Limited. As discussed above at page 4, the USACE's overall jurisdictional authority with respect to the AMDIAP ROW is limited by ANILCA's mandate. First, with respect to the route through the GAAR, while USDOJ and USDOT should certainly consult with USACE in the preparation of the EEA and the selection and approval of one of the two proposed routes through GAAR, under ANILCA Title II USACE has no wetlands permitting authority inside GAAR and therefore no power to overrule or modify any decisions made by USDOJ and USDOT. Second, with respect to the route outside the GAAR, for the selected route to meet LEDPA it must be the most practicable and environmentally protective route that also aligns/intersects with USDOJ's and USDOT's prior-selected and -approved route through GAAR; in accord with this LEDPA standard, the USACE must expeditiously provide input to BLM identifying alternative routes, if any, to AIDEA's proposed route that meet LEDPA and link up with the route selected and approved by USDOJ and USDOT through the GAAR.

Issue 2: Alternatives/Project Description, continued

61. I encourage BLM and NPS to examine narrow gauge rail as an alternative transportation option to the proposed road. Many of the deleterious social and environmental impacts of road development could be mitigated by using rail to haul the ore to the Dalton Highway, offloading it to trucks there. While the heyday of narrow gauge is past, it is still in use today and is still a viable alternative in situations that are too steep for traditional rail. A well known example is the White Pass railroad from Skagway to Whitehorse. When the Alaska DOT first started its analysis of access options to service the proposed mine a decade or so ago, it only examined traditional rail, which it found to be too expensive and challenging given the distances and terrain. The agency did not explore the possibility of narrow gauge. Given the huge consequences of punching a road through this fantastic wilderness, I believe all potential alternatives should be thoroughly investigated.
62. Another approach could be to build a railroad line (preferably westward, but this could also go to the Dalton Highway). While a train would be less able to stop and avoid interference with an individual caribou, it would reduce the likelihood of public access, outside hunters, and bootleggers, and it would be more economically efficient.
63. As far as a range of alternatives goes I do not feel adequate consideration has been given to an alternative of rail access from the south. Alaska DOT considered numerous alternatives from all directions including rail access, but their estimated costs did not reflect the total costs of having to drive concentrate from mines to Fairbanks or all the way to the coast on any of these road alternatives. It seems to me, if there is going to be road access, the costs of having to transport concentrate over a 30-40 year period needs to be figured into the equation for the price of this road. In other words, a train can haul a lot more loads of concentrate, for a much lower price than one hundred huge trucks traveling 220 miles plus an additional 550 miles to Anchorage.(Or offloading in Fairbanks to the train.) The direct impacts of this kind of heavy use on not only the proposed road, but also the Dalton, Elliott & Parks Highways needs to be considered.
64. Additionally some kind of comparison analysis needs to be done on costs to transport mineral concentrate by truck vs rail. Then these costs should be figured into these alternative forms of transport. Indeed it may be far less costly over the long run to build a more expensive railroad (initially) than the far cheaper road alternative. So actual cost comparisons & direct, indirect & cumulative impacts must be considered for all forms of transport, not just road options.

Issue 2: Alternatives/Project Description, continued

65. Once a mining operational plan is reviewed and approved by all appropriate regulators, a wide range of transportation options should be evaluated including: - all means of transport including, railroad, boat, barge, aircraft or road; and - all options and routes for the mining product to get to market, including to the west to Kotzebue, over land to the southwest to Nome as well as to the east to the Dalton Highway.
66. A number of alternatives to the proposed action should be evaluated in the DEIS. The DEIS should evaluate a reasonable range of alternatives, not just the proposed action with its variation through the Gates of the Arctic Preserve and the No Action. Other alternatives should be fully evaluated to provide the public with a full, reasonable range of alternatives. The longterm costs and benefits should be considered for each alternative, not just the short-term costs to build a road. Other access alternatives should include a railroad, which connects directly to the Alaska Railroad near Fairbanks: the possible use of large dirigibles; a southerly road route that connects more directly to the southerly route through Gates of the Arctic National Preserve and may need to skirt south of the Kanuti National Wildlife Refuge. A railroad would cost more initially than a road connecting to the Dalton Highway; however, a railway could reduce impacts to subsistence, control public access, reduce ore hauling and handling costs, result in less fugitive dust, and result in fewer passes and disturbances to wildlife. Dirigibles, if feasible, would greatly reduce all impacts on the ground. A more southerly road route may avoid some of the naturally occurring asbestos. If other alternatives are not considered, then cogent reasons must be presented for their dismissal. Cost alone is not sufficient for their dismissal, and neither is legal access. Condemnation or new legislation could correct legal access, but would need to be identified in the DEIS. The environmentally preferable alternative should be identified, which need not be the least costly and often is not. The most desirable alternative in terms of overall environmental and economic effects should be identified. This would be the federal agencies' preferred alternatives.
67. The State of Alaska has not fully explored the other more economically viable options to ship the copper ore to market due to reduced annual maintenance cost, such as railroad access to Norton Sound and or a winter ice road to a port on the lower Kobuk River or Hotham Inlet. There has been no discussion of the Mining Industry investing in and use of the Lockheed Martin PRL Logistics freighting blimp. There are transportation options that would be far cheaper over the long term.
68. The Council emphasizes the environmental impact statement should include the analysis of non-road alternatives to access the proposed mining site, including though not limited to the use of rail to deliver ore to a Bering Sea port.

Issue 2: Alternatives/Project Description, continued

69. The DEIS must evaluate access to the Ambler Mining District by other, less impacting modes of transportation—railroad, aircraft, barge, boat, etc.
70. In recent years there's been renewed interest in dirigibles for transport in remote areas where there is no existing infrastructure for surface transport, such as the Central Brooks Range. With dirigibles, there would be no need for construction, operation, maintenance and reclamation of a road, and there would be far fewer impacts to the region and its people, and likely much lower cost for transport.
71. Efforts to construct this road are ill conceived and premature. The plan fails to consider airships as viable, low-cost alternatives, one that avoids the damaging features of building and maintaining roads in the Arctic. However, it is illogical and destructive of existing and future resources to construct a 200-mile-long road corridor to access and develop the Ambler District when an alternative is clearly superior. Airships now in production offer the lifting capacity required to move heavy equipment to mining ventures.

Backhauls transport ore to road link or sea terminal. In road-less regions of Canada and Russia, resource planners and developers are collaborating with logistics companies that operate airships. Roads are no longer necessary to achieve development goals. Airships make roads obsolete. The cost of transporting heavy equipment and ore with airships is equivalent to road construction minus damage to the environment. If the Ambler District is destined for development, it must partner with airship aviation. For safety and financial concerns, the air route to the mine site should be from the west. Linking to already existing mining infrastructure at Red Dog reduces the operation's footprint and costs while a shorter route increases safety.

The Northwest Arctic Borough, the state and Teck Resources can devise a plan that integrates hanger facilities, equipment, fuel staging and ore dump. The cost of using the road to the port can be determined through stakeholder negotiations. In support of an airship alternative, please review the following material. It contains 15 items, mostly press and video accounts of airship companies, lifting capacities, airworthiness, timelines, regional activities and costs.

Issue 2: Alternatives/Project Description, continued

72. The DEIS should consider a railroad alternative that ties into the existing infrastructure in Fairbanks. Though initially much more expensive, haul costs of heavy mining equipment and ore would be far less expensive over the long term. Ore would not have to be transferred from trucks to RR cars in Fairbanks. Once loaded ore could be transported directly to port in Seward or elsewhere for shipment to processing facilities. Furthermore, this alternative would control public access and result in much less adverse impact to subsistence resources and uses than a road, which would certainly be opened to the public in time, as was the Dalton Highway to the North Slope.
73. For many years now, Red Dog Mine has successfully mined ore in the Northwest Arctic Borough, stockpiling ore in the winter, and shipping the ore out via water in the summer. A similar approach could be utilized for the Ambler Mining District. Alternate considerations could include improving the Kobuk River for navigation up to Ambler, or constructing a much shorter road to Kiana, where barge access is available into the fall. According to the American Waterways Association, a single barge can carry as much freight as 523 18-wheelers. Shipping via waterway also consumes less fuel per ton-mile, which significantly reduces emissions compared to other modes of transportation. Finally, this alternative would significantly contribute to the economic development of the upper Kobuk villages through installation of new and much-needed infrastructure while simultaneously maintain the remote nature and feel of the area.
74. The EIS scoping announcement does not identify alternatives that will be considered. During the planning process several alternative routes have been evaluated for consideration. These alternate eastern access routes are not alternatives to the proposed action but merely subsets of the proposal. Different alignment routes will have similar impacts but with likely variation in number of stream crossings, wetlands filled, and habitats lost. There are a number of alternatives that must be considered and evaluated in the Draft Environmental Impact Statement (EIS). Alternatives to the proposed action should, at a minimum, consider the following along with associated environmental impacts and potential mitigating measures.
•No Action•No Mining Activity for 15 to 25 years•Unlimited Public Access•Western Access
75. Pre-scoping information does not provide any indication of the range of alternatives that may be considered in the EIS. Only two alternate routes are identified on the accompanying map, both of which cross National Preserve lands. We recommend that a full range of alternatives be presented in the draft EIS. For example, a route down the Kobuk River to tidewater should be analyzed because it would not connect with the Dalton Highway, and thus reduce or eliminate impacts by urban hunters and other public activities coming in from the existing road system. A railroad alternative, with various routes, should also be included because it too would likely reduce impacts associated with road access to this remote area.

Issue 2: Alternatives/Project Description, continued

76. Trading one resource for another: Not unrelated to economic tests, the scoping should broadly address alternatives to the proposed road as well as alternatives to large mines in the Ambler district at all. Alternatives should not be excluded based solely on estimates that they are not the cheapest for the state or the miners. Nor should the EIS team accept assertions regarding the economics of individual alternatives, including the mines themselves, at face value.
77. In evaluating the 2016 SF299 application, the Department of the Interior (BLM) determined that the crossing of GAAR triggers the ANILCA Title XI process for the segment of the route located outside GAAR. However, since the affected BLM lands are public lands managed under the Federal Land Policy and Management Act of 1976 (FLPMA) and not a CSU under ANILCA, the state believes the authority for BLM to issue a right-of-way for the segment of the proposed road that crosses BLM managed lands comes from FLPMA.

While the BLM's FLPMA ROW must be evaluated under NEPA and the environmental impact statement must include a no-action alternative pursuant to 40 CFR 1502.14(d) and 43 CFR 46.415(b)(1), in ANILCA Congress specifically directed the Secretary of the Interior to allow access from the Pipeline Haul Road (i.e., the Dalton Highway) to the Ambler mining district. Nonetheless, the AMDIAP EIS and alternatives analysis will help to inform BLM's selection of the exact location and appropriate terms and conditions for the BLM ROW across BLM lands.

78. That document should be the sole and dispositive document concerning GANP and BLM should not - and cannot - duplicate NPS's efforts through additional analysis of this area in the EIS. We note that NPS has similar mis-statements. On the NPS webpage, it states: "This NPS webpage is focused on developing a permit for access across about 20 miles of NPS lands and should not be confused with the larger EIS for the entire 211-mile project currently underway under BLM leadership."
79. I know both proposed routes - the "North Route" and the "South Route" - very well; i.e. the detailed topography and resources. I have been flying over these routes for the past 37 years. The best route is No Route; but of the two proposed routes through the Preserve - in order to encounter fewer environmental, social and economic impacts on preserve resources: **The best route is the North Route.

Issue 2: Alternatives/Project Description, continued

80. Kobuk River: From the Alatna River crossing the proposed route heads up Helpmejack Creek. Here it splits into a southerly route and a more northern route. This is a very hard decision if the route need to pass through the National Preserve at all. I am not sure why the State needs to cross this "Boot" in the Gates of the Arctic National Preserve anyway. The State selected an entire section of townships south of the "Boot" to avoid this route if ANILCA hadn't given them permission to pass through the Preserve. I understand there is less gravel along this more southerly route. I also understand there are other concerns about the Pah River Flats.
81. In this area the more northerly alternative route across "The Boot", ascends the headwaters of Helpmejack Creek, then descends Kichalakaka Creek, directly across the river from designated wilderness within the Gates of the Arctic National Park. The actual crossing of the Kobuk is right below the junction of the upper Kobuk & the outlet of Walker Lake. This is a very important grizzly & black bear feeding area. Salmon congregate here. Industrial traffic here, less than a mile away from the wilderness boundary of the Gates of the Arctic National Park would be a travesty. Additionally, when this road eventually gets opened up to the public, which it will, the Park Service will have difficulty preventing folks with four wheelers from driving the easy three miles across designated wilderness to the southern shore of Walker Lake.
82. Under these circumstances, for a proposed route outside GAAR to meet LEDPA, it must be the most practicable and environmentally protective route that also aligns/intersects with the selected and approved route through GAAR. Any route that does not align/intersect with the final selected route through the GAAR is necessarily impracticable as it would not allow surface access through the GAAR to the Ambler Mining District from the Dalton Highway as Title II requires. In accord with this LEDPA standard, the USACE must expeditiously provide input to BLM identifying alternative routes, if any, to AIDEA's proposed route that meet LEDPA and link up with the route selected and approved by USDOJ and USDOT through the GAAR. Allowing BLM to deny approval of AMDIAP outside the GAAR eviscerates the mandatory approval provisions in Section 201(4) and runs roughshod over Congress's directive that the Secretary "shall permit" access to the Ambler Mining District.
83. Construction of a road from the Ambler Mining District east to the Dalton Highway makes no sense. Hauling ore concentrate from the mine to the Dalton Highway still leaves the ore hundreds of miles from a shipping port on the sea. A road or railroad built the shorter distance from the Ambler District west to the seaport at Red Dog makes far more sense.

Issue 2: Alternatives/Project Description, continued

84. Additionally I do not believe a road alternative from the south via Tanana, Hughes, Hagotza to Kobuk was given sufficient consideration. AIDEA professes that this proposed road would help the villages along the route & yet none of the villages are accessed by this road. AIDEA has stated that even though they are arranging financing for this road for the international mining companies, all these villages would have to find their own financial resources to build roads that would access this road to be of any use to these villages. Most of the villages along the proposed route are against the proposed road.
85. An alternative of no permanent road needs to be considered. An alternative of a winter-only route and its comparable costs needs to be considered. The idea that this road, if built will be removed is disingenuous. An alternative of a winter road, which would not need bridges, but instead uses ice bridges, should be considered. In this case it would be possible to put this road to bed when the mines are depleted. A winter road only would have far fewer impacts & is more likely to be accepted by the local public, especially if it were used to bring supplies into the villages. Of course the routing would need to be changed, since none of the village are anywhere close to the road as the route stands now.
86. If a road were to be constructed to the Dalton Highway, the northern route should be considered more seriously than the southern route. Simply put, it is shorter, crosses fewer waterways, and goes across steeper lands that would reduce access from the road to our hunting areas.
87. It appears that the initial feasibility study eliminated alternative routes largely based on construction cost. While this is an important factor, there are many social and environmental costs that must also be considered in an environmental impact statement. These routes should be re-evaluated to ensure that no reasonable alternative has been eliminated from consideration.
88. BLM must conduct review of AMDIAP using Title II from the Alaska National Interest Lands Conservation Act (ANILCA). ANILCA will be used to evaluate access possibilities, determine the best route for any corridor, and outline the best terms and conditions for any permits.

Issue 2: Alternatives/Project Description, continued

89. The DEIS should consider a railroad alternative that ties into the existing infrastructure in Fairbanks. Though initially much more expensive, haul costs of heavy mining equipment and ore would be far less expensive over the long term. Ore would not have to be transferred from trucks to RR cars in Fairbanks. Once loaded ore could be transported directly to port in Seward or elsewhere for shipment to processing facilities. Furthermore, this alternative would control public access and result in much less adverse impact to subsistence resources and uses than a road, which would certainly be opened to the public in time, as was the Dalton Highway to the North Slope. Evaluate the use of the Kobuk Wild River as a route to transport ore out of the area and associated impacts. Evaluate a route from Nome or Kotzebue rather than from the east. The State of Alaska has claimed that historic roadways exist from the Kobuk River south, entirely avoiding the National Preserve, and from Hughes to Tanana. This is one of several southerly routes that avoid massive impacts on migrating caribou, and have additional advantages. This route would largely avoid impacts of bisecting the migration route of the Western Arctic Caribou herd and the effects that would have on the character of the Gates of the Arctic National Park and on regional subsistence uses.
90. Justification for approving the ROW permit differ by Agency and should be explained in the DEIS: While NPS is governed by Section 204 of ANILCA for the Gates of the Arctic National Preserve portion of the proposed road, BLM is not. BLM, in fact, has discretion to approve or not approve a ROW permit for the Ambler Road; and BLM does NOT need to approve this ROW if it is not economically feasible or for other reasons. We hope that BLM's eventual decision to approve or not approve the permit for the portion of the road that would cross BLM lands will be based on proper application of BLM statutes and policies, including the Federal Land Policy and Management Act (FLPMA; <https://www.blm.gov/or/regulations/files/FLPMA.pdf>) and not based on the mistaken belief that BLM is somehow REQUIRED under ANILCA to allow the road, which it is not.
91. Alternatives to developing a road for the use of private mines are plenty. Instead of tearing into untouched land, the U. S. can continue to use mines in the lower 48. There are disturbed areas that continue to produce such as the numerous mines in Arizona and Nevada.

Issue 2: Alternatives/Project Description, continued

92. Another alternative is to put the money that would go into the road toward developing Alaska's agricultural output. Investing in the state's food resources will cut the costs and logistics of transporting food north. The state could put the proposed road money into scientific research of the Brooks Range, the Koyukuk and Kobuk Rivers. Perhaps there are undiscovered species or sub-species of life not found in any other mountain range in the state. The Spark family, from the Yukon-Kuskokwim delta area, has grown a successful business of personal beauty products made from tundra plants, Arxotica. Perhaps elements from the Brooks Range and Kobuk valley that are sustainable hold promise for entrepreneurship. Alaska's tourism industry continues to grow. What if the state put the road money toward a wilderness or hunting guide certification program? Guided trips into the Brooks Range, whether for climbing or river running, are potential sources of jobs for those familiar with the region.
93. AIDEA's proposed route connects to other infrastructure already existing in the State of Alaska - the Dalton Highway, the Alaska Railroad and year-round, ice-free ports located in South Central Alaska.
94. If the true intent is to develop resources in the Ambler mining district and limit public access from urban Alaska (Fairbanks, Anchorage) then the EIS must consider a western access. The potential of a western access is not significantly longer in miles but achieves the stated objective of limiting access to mine related activities. It makes good sense to encourage use of similar industrial facilities at a single export port.
95. (Allakaket Tribal Council Passed Resolution 2013-43, whereas): The Brooks Range Corridor option is being examined for constructing and maintaining overland access to the Ambler Mining District and Kobuk Mineral Belt because it is the least expensive route and there are six other routes under consideration that should be used instead.
96. A road to the Kobuk River might create opportunities for additional commercial transportation as well as recreational activities. Those impacts need to be evaluated, including consideration of the Congressional purposes of "wilderness recreation" for the Preserve as well as the Park, and "undeveloped" character of the Preserve and Park.

Issue 2: Alternatives/Project Description, continued

97. alternative road alignments may be possible and provide additional opportunities/ challenges: Road west to the Kotzebue Sound – would be a short route, however, access a seasonally available port only, but would avoid the long haul of concentrates to Seward, Anchorage, or wherever (a matter of economics); I believe that this route was studied by DOTPF, but found to be troublesome for land status, other reasons, whatever they were(?); the alternative should be presented and discussed to include additional resource development, environmental impacts, other opportunities and economics o Road southwest to a more year-round port at Nome or Norton Sound near Koyuk – this would be a huge investment and probably not obviously economic; I'm not sure that this was studied by DOTPF, but maybe should have been; the additional resource opportunities here could be enormous and be more available on a year-round basis; Other – the proposed route avoids, to the extent possible, villages in the area; this seems to be counter-productive for those residents despite their intent to remain remote and inaccessible; a discussion of issues relative to road access should be included.
98. I believe a better alternative could be a western route from the coast like the Red Dog Mine, investing in local village infrastructure like education and job training and investing in local tourism, a sustainable industry already functioning in celebration of public lands, clean water, clear air, and wild spaces.
99. As discussed in the Ambler Road project's Revised SF299 Consolidated Application, “[o]nly one potential alternative completely avoids conservation system units,” the Elliott Highway Corridor. TWS believes this alternative should be included by BLM in its EIS analysis as it may provide conservation benefits that would exceed the potentially higher cost of this route.
100. Evaluate the use of the Kobuk Wild River as a route to transport ore out of the area and associated impacts.
101. Evaluate a route from Nome or Kotzebue rather than from the east.
102. Consider a more southerly route that ties directly into the NPS southerly alternative in the Gates of the Arctic National Preserve. A better route exists there with regard to soils, asbestos and rock material. River crossings may be fewer, but bigger. A more southerly route could also avoid areas with naturally occurring asbestos.
103. Within the Brooks East alternative, options that reduce impacts to the Gates of the Arctic National Park and Preserve should be considered, including eliminating proposed borrow sites, airfields, and fuel/chemical storage tanks.
104. Evaluate a route from Nome or Kotzebue rather than from the east.
105. The Council emphasizes the environmental impact statement should include the analysis of non-road alternatives to access the proposed mining site, including though not limited to the use of rail to deliver ore to a Bering Sea port.

Issue 2: Alternatives/Project Description, continued

106. Gates of the Arctic National Preserve and Kobuk Wild River. The route will cross 20 miles of these places. The route should NOT go through these areas. These areas need to remain undeveloped in order to protect the resources of the area which are important to the state of Alaska. And these resources go beyond the immediate area. Congress created these places in order to preserve the remote and undeveloped condition for the best interest of the nation. An industrial road is totally inappropriate for these special areas.
107. Routes should be considered that follow a southern route from Tanana and Hughes north to the Ambler mineral belt, to avoid the extreme impact on the Western Arctic Caribou herd from the east-west route you have identified. The State of Alaska has already asserted RS 2477 Highways that cover almost the entire route south from the Mineral Belt to Hughes and to Tanana and to Fairbanks. Failing to even include this route in your alternatives contradicts the laws the involved federal and state agencies are required to follow, particularly Title VIII of the Alaska National Interest Lands Conservation Act ("ANILCA"). Private land routes south of the Koyukuk Park Unit should also be mapped, described and analyzed. Again, the only way for the public engaged in this review or the decision makers of considering the best route are to present alternatives.
108. Consider a more southerly route that ties directly into the NPS southerly alternative in the Gates of the Arctic National Preserve. A better route exists there with regard to soils, asbestos and rock material. River crossings may be fewer, but bigger. A more southerly route could also avoid areas with naturally occurring asbestos.
109. Your proposal fails to address the way your transportation route force the National Park Service (NPS) at the Kobuk Preserve Unit to consider a dangerous, wilderness-threatening, route along the National Wilderness boundary and the National Park boundary. Your single route gives the impression of trying to create a political environment that would make an NPS route further south look politically ridiculous by forcing a long detour away from the dangerous wilderness-threatening route. Creating this perception undermines the credibility of your objectivity, and compromises the legitimacy of the ROW decision across the Kobuk Preserve Unit. The social and economic implications of creating a process that undermines the confidence of the public in the Bureau of Land Management and the National Park Service and the applicant, "AIDEA", should be thoroughly evaluated.

Issue 2: Alternatives/Project Description, continued

110. If the true intent is to develop resources in the Ambler mining district and limit public access from urban Alaska (Fairbanks, Anchorage) then the EIS must consider a western access. ADEA is proud of their achievement for the DeLong Mountain Transportation System (DMTS), which includes an industrial access road from the Red Dog Mine to the DMTS port. The potential of a western access is not significantly longer in miles but achieves the stated objective of limiting access to mine related activities. It makes good sense to encourage use of similar industrial facilities at a single export port.
111. The Revised SF299 at Table 4 does not include a scoring entry, but states that only the highest scoring railroad corridor is presented. The table appears to rank the corridor alternatives in the order viewed most favorably by the applicant, from the lowest score to the highest and least desirable. Unless the wording is an error, this is the worst and unacceptable of the four alternatives to include in the table. In any event, all of the listed alternatives and the rejected railroad corridors must be evaluated in the EIS to enable full public disclosure and a complete environmental analysis for the decision-maker to weigh in reaching the decision.
112. The Project Fails to Consider a Range of Reasonable Management Alternatives. BLM should consider management alternatives that include alternative modes of travel (including rail), as well as alternative route locations. . . . BLM should consider more than one route and take-off point on the Dalton Highway. Additional crossings of the Gates of the Arctic National Preserve to the two under consideration should be identified and considered.
113. We recommend the EIS include a range of reasonable alternatives, which meet the stated purpose and need for the project and are responsive to the issues identified during the scoping process and through tribal consultation. This will ensure the EIS provides agency decision makers and the public with information, which defines the issues and identifies a clear basis for the choices made among the range of alternatives as required by NEPA. The Council of Environmental Quality recommends all reasonable alternatives be considered, even if some of them are outside the capability or the jurisdiction of the agency preparing the EIS for the proposed action (40 CFR 1502.14(c)). A robust range of alternatives will include options for avoiding significant environmental impacts.

Issue 2: Alternatives/Project Description, continued

114. The EIS should "rigorously explore and objectively evaluation all reasonable alternatives" (40 CFR 1502.14(a)). This includes identifying the specific criteria that were used to (1) develop the range of reasonable alternatives, (2) eliminate certain alternatives, and (3) select the agency preferred alternative. The EPA is aware a detailed analysis of eight potential corridors was previously conducted for the proposed action in 2011 by the DOT&PF. If the BLM chooses to rely on this analysis as a starting point for the development and screening of alternatives for the EIS, it is important a reasonable range of alternatives be carried forward for analysis in the EIS, as required by NEPA.
115. We recommend consideration of a westerly route, such as a connection to the Delong Mountain Transportation System. In addition, we recommend the EIS provide a clear discussion of the reasons for the elimination of alternatives that are not evaluated in detail.
116. Better solutions to this project would be instead of building a road from the Dalton highway, we consider the following actions: 1. Listening and collectively addressing the multiple local regional and national villages and organizations that do not want a road through this region of Alaska 2. Consider the economic impacts to the state of Alaska should they have to maintain this road. As a former and future Alaska resident, I do not want to be burdened in our current economy with infrastructure that satisfies a small percentage of industrial capitalism that is largely not going to be shared within the state of Alaska anyway. 3. Invest instead in local, village infrastructure, education and training so that a road is not necessary for mining. 4. Consider a rail connection from south instead of a road with trucking, thus increasing our already climatically changing arctic environment, furthering the loss of fragile permafrost environments. 5. Consider a western route from the coast, similar to the Red Dog Mine 6. Invest instead, in local and regional tourism that supports a sustainable tourism industry focused on public lands, clean water, clean air, and wild spaces.
117. Consider a more southerly route that ties directly into the NPS southerly alternative in the Gates of the Arctic National Preserve. A better route exists there in consideration of soils, asbestos and rock material. River crossings may be fewer, but more manageable and controllable. A more southerly route could also avoid areas with naturally occurring asbestos.
118. Application has data gaps, including the extent and level of use of the proposed road. E.g. How many ore trucks per day or hour would be traveling the road during the height of migration? What are the existing 'best available technology' standards for conducting and rendering open pit copper mining without destroying the subsistence sheefish (*Stenodus leucichthys*) and salmon fishery? What is the nature, scope, scale and impact of operations on the road necessary to support the thousands of employees involved in mining operations? [Lacking such information, it is impossible to identify alternatives or propose mitigation when the project outlines are so incomplete.]

Issue 2: Alternatives/Project Description, continued

119. If this project pans out economically, is to consider a fleet of currently available rigid airships or dirigibles for resource extraction and supply.
120. The Alaska State Airport System is now well developed. Extension of the Dahl Creek airstrip would allow cargo jet aircraft to transport the mineral resource - while leaving the arctic tundra/taiga ecosystem intact. Heavy lift air ships-with their recent and progressive technological development- would be a practical and economical alternative for the transport of ore concentrate to a saltwater port. Varialift Airships and Lockheed Martin airships are two aircraft companies worthy of investigation.
121. Alternative routes to the west from the Ambler Mining District would provide significant comparative benefits and lesser impacts than previously stated and should be given further detailed consideration. Between 2010 and 2012, the Alaska Department of Transportation & Public Facilities (DOT&PF) undertook a "reconnaissance analysis" of eight distinct corridors, including both routes heading east toward the Dalton Highway and west toward either Kotzebue Sound or Norton Sound. Ambler Mining District Industrial Access Project Corridor SF299 Supplemental Narrative (June 2016), p. 8. This analysis culminated in a Summary Report dated May 2012, which identified the Brooks East corridor as the most feasible alternative and determined that routes to the west would have greater environmental impacts and would otherwise be unfeasible. Ambler Mining District Access Summary Report AKSAS 63812 (DOWL HKM, 2012). This analysis, however, failed to sufficiently consider certain significant factors and entirely failed to address others. BLM's review and decision making process should give further detailed consideration to certain western route alternatives, particularly the Cape Darby and Selawik Flats routes and refinements to those routes that would result in both improved benefits and reduced impacts, as described below. DOT&PF's preliminary access corridor alternatives selection process focused on perceived environmental impacts with secondary consideration of direct capital and maintenance costs.

Issue 2: Alternatives/Project Description, continued

122. While technical aspects related to road construction were included, they were not given much weight, and certain critical factors were not considered. Additional factors that were not considered, but that should be assessed as part of BLM's review and decision making process, include the following: · Mine operating cost as impacted by the complete logistics chain. This is a function of the real cost per ton of freight delivered to the Ambler Mining District from point of origin and cost per ton of concentrate or product delivered to smelter or buyer. The "scoring" system utilized to compare access corridor alternatives, as presented in the 2012 Ambler Mining District Access Summary Report, identified the Brooks East Corridor as the least cost alternative. However, this assessment does not include the complete transportation network and fails to account for 600 miles of existing additional road or road/rail required to access a port facility at Anchorage or Valdez from the Brooks East Corridor terminus at the Dalton Highway. In addition, the Dalton, Elliot and Parks highways would all have increased maintenance costs associated with Ambler Mining District development traffic. The alternative use of the Alaska Railroad would add an additional logistics element but would also reduce traffic on the Parks Highway. To fairly evaluate the alternatives, the cost per ton for freight and product delivered from source to customer should be compared.
123. Facilitation of additional development outside of the Ambler Mining District. The earlier access corridor comparisons did not factor potential to improve the viability of other mineral districts. The west corridors to the Seward Peninsula could provide access to the numerous mining districts (Koyuk District, Fairhaven District, Kougarok 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 development of other mineral resource districts. 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). Any review of the various route alternatives should include an assessment and comparison of the extent to which a road project will help achieve these objectives and stimulate the development of natural resources in areas outside of the Ambler Mining District.

Issue 2: Alternatives/Project Description, continued

124. While the stated “purpose of this project is to support mineral resource exploration and development in the Ambler Mining District in northwest Alaska,” unlike the Brooks East route, a western route would enable AIDEA not only to meet the proposed project’s purpose and need but also support mineral resource exploration and development in other mining districts in the state. Ambler Mining District Industrial Access Project Corridor SF299 Supplemental Narrative, p. 14. Relationship to state or regional long-term transportation and infrastructure plans. The corridor comparison did not include an assessment of how each corridor alternative would contribute to state or regional long-term transportation and infrastructure plans. West corridors may contribute more to long-term plans. For example, a deep-water port facility in the Cape Darby area would presumably provide significant benefit to communities in the region and provide a long-sought deep-water port in the north Bering Sea. In addition, the long planned “Road to Nome” could potentially share infrastructure with the Cape Darby Corridor Alternative.
125. Transportation safety and risk. The corridor comparison did not look at the risk associated with transporting fuel, mineral process chemicals, or mineral concentrate over the various route options and distances associated with each. The Brooks East Corridor would presumably require transport overland by truck and possibly rail for roughly 850 miles, whereas the Cape Darby Alternative would only require 340 miles of overland transport. BLM’s review must look at transportation safety and risk-related impacts not only associated with use of the proposed road itself, but also with use of connecting infrastructure, such as the Dalton Highway in the case of the Brooks East Corridor. An eastern route connecting with the Dalton Highway, like the proposed Brooks East route, will significantly increase mine-related traffic on the highway, including from heavy industrial vehicles. Safety, risk, maintenance, and other issues relating to this increased traffic must be carefully assessed. Impacts of stream crossings on salmon and sheefish habitat. The Corridor Evaluation Criteria assumed that any stream crossing negatively impacts salmon or sheefish habitat. This is not a correct assumption. Stream crossings can be designed and constructed with no significant impacts to habitat. · Road design criteria. The Corridor Evaluation Criteria did not address the advantages that would be associated with being able to adapt the road design criteria to the unique transport requirements of a heavy-haul mine access road, rather than adapting mine transportation operations to existing infrastructure.

Issue 2: Alternatives/Project Description, continued

126. As stated in the Ambler Mining District Access Design Criteria Memorandum, sec 2.1.2, dated September 2011, "Since several of the access corridors connect to existing rural roadways, vehicles using the new corridor must also be consistent with criteria governing existing highways." If the mine access road corridor did not include existing highway access and had its origin at a port location, such as Cape Darby, the road could be designed for the most efficient and cost effective means of transport, allowing transport of large and/or heavy equipment as well as oversize modules. This would be expected to result in operational cost savings and reduced environmental impacts.
127. In summary, Doyon believes that the "high level" review of the process utilized to select the Brooks East Corridor as the preferred access to the Ambler Mining District, and to potentially exclude any western routes from further detailed consideration, failed to sufficiently address, and in some cases failed to address entirely, significant considerations and criteria typically included in an evaluation of access options to a new mine development project. Western routes, and particularly the Cape Darby and Selawik Flats Corridors and route modifications to those routes that would further reduce impacts as noted in our comments, should be further evaluated in detail as part of BLM's review and decision making process. This review should 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 access other resource areas;
 - 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.
128. With projected daily traffic totalling up to 80 trucks, and factoring in taxpayer expenses for construction and maintenance, are there state or Federal regulations that would require the haul road to be a two-lane road for its entire length, or would a one-lane road with several passing areas be feasible? Tracking software would ensure efficient traffic flow, while substantially decreasing construction and maintenance expenses, as well as lessening the environmental impact.
129. The public is given to understand that the road structure will have to be built up 6 to 12 feet. How will the future permafrost melting affect the calculation of the appropriate road foundation?

Issue 2: Alternatives/Project Description, continued

130. All culverts are expected to be 36" wide or greater, yet an earlier document stated 36" width will be used "where icing is likely" and the Revised Consolidated Application Section 4 lists virtually all culverts (182 of 188) as slated to be less than 36". This suggests that the project proponents are interested in installing culverts even smaller than 36" width, when even that width may not be sufficient; note not only evidence from the Dalton Highway, but as recently as December 2017 a 48"-wide culvert failed in Cordova, closing the Copper River Highway. As of late 2017, tribes in Washington state were pursuing a court case against the state over blocked culverts – if the Supreme Court takes the case and upholds the findings of lower courts, Washington state may need to spend \$2.4 billion to replace over 900 "high priority" culverts. This is an ongoing and predictable issue that will require good engineering initially, and constant maintenance.
131. The EIS needs to independently determine the appropriate size and type of culvert (e.g. embedded) for each of the alternative corridor stream crossings, and determine the realistic cost. It is highly likely that the cost is underestimated – that more large culverts will be needed. What will be the impact if fish passage is blocked during a single migration or outmigration? During multiple migrations? Are there streams for which blockage could have population level effects? "Blockage" could include everything from a culvert half-filled with ice when the stream is actually flowing, mud and debris in the culvert, culverts that are "perched" above the stream during certain times of year, culverts that channel water so it flows very fast and makes it difficult for small fish to outmigrate. If a salmon run is blocked for a significant amount of time, it not only affects the salmon consumers, it decreases the nutrient load (marine derived nutrients) in the stream, which could have ripple effects in the local ecosystem.
132. Fish movement will be impacted. Culverts are known to be continuing hazards to fish movement throughout the state, and there are expected to be 2,900 culverts on the full length of the proposed road and 319-544 along the Gates of the Arctic section. Of these, virtually all are slated to be small culverts – 36" in diameter or less than 36" diameter. Both seem to contradict the statement that embedded fish culverts will be installed. It is difficult to believe that of over 2,900 stream crossings, 2,869 of them are less than 4' wide in all seasons. Even where streams are less than 3' wide, including at flood stage, if they contain fish, fish-friendly culverts need to be put in place.

Issue 2: Alternatives/Project Description, continued

133. The ADFG maintains a webpage that shows, among other locations, the number of culverts along the Dalton Highway that are blocked with debris, iced up, perched above waterways, and in other manners obstructing fish movement. The ADFG estimates that 21% of Dalton Highway culverts would likely block fish passage, 19% might, and 19% had no survey; only 42% were expected to have no impact on fish passage, similar to the Kenai and MatSu (44%). The Bristol Bay Watershed Assessment estimates 30-61% of culverts are impassable to fish at any one time. What would failure at specific streams mean for specific fish populations?
134. Mitigation Response to Impacts (on aquatic and water resources within the access alignment): The establishment of culverts that will really enable fish passage must be considered. Keeping the culverts free of debris must be figured into the yearly operational budgets. This is extremely important.
135. The focus of the applicant may be more on culvert design that will hold up under ore truck traffic. The suggestion for overflow culverts is a good one. The EIS should determine which crossings should have embedded fish passage culverts, whether and where they should be wider than 36", whether some culverts should be upgraded to bridges, and provide a potential cost range of implementing overflow culverts at several locations as part of the EEA.
136. In addition to the large bridge crossings, the AIDEA has proposed 12-15 medium (50-140 foot span) and 3 small (<50 foot span) bridges, along with 24-34 moderate/major culverts (4-20 foot diameter) and 2,869-3,155 minor culverts (3 foot diameter). Many of these culverts will be used to maintain water connectivity, but others will be needed to maintain fish passage. If a water body is fish bearing then ADF&G Fish Habitat permits will be required for their construction and long-term maintenance to ensure unimpeded passage for all species and all appropriate life stages of fish. This may include periodic removal of beaver dams and other woody debris.
137. ...making sure that any streams and rivers crossed have well designed and non-restrictive engineered bridges/culverts, or similar. It is well documented that this is a shortcoming of many past projects both in Alaska and throughout the country when it comes to roads crossing rivers and streams that support anadromous fish, there are multitudes of examples of poorly designed water crossings failing to provide the expected free passage of fish to their feeding and spawning sites.

Issue 2: Alternatives/Project Description, continued

138. For mining class loads (very similar to heavy oilfield service equipment), this road project will be expensive to construct in an environmentally sound manner. Without specific knowledge of the engineering data available, and with only the knowledge of the number of major stream crossings (18) and topography of the route, I can assure you that \$2 million a mile is overly optimistic. It would not surprise me to see that cost double or even mushroom beyond the \$1 billion mark. Most major stream crossings will be bridged and the thousands of small streams and drainage paths will require high-cost culverts (particularly if fish are present) to support industrial loads.
139. The project as proposed is not complete. The most minimal review is not possible considering the vague and inconsistent description of this project. A good – actually a bad – example is the proposal for a three-phased roadway. The construction of anything short of a fully designed facility, meeting all the tests of all the many federal permit needs including those from Corp of Engineers Permits to US Coast Guard permits for bridge/stream crossings, entirely compromises and betrays this project. There is no way to estimate the cost of the project until we know how the numerous streams will be crossed. We cannot evaluate the effect on the fisheries, the water, the stream ecosystems, the effect on land animals and birds on from the impact on water and fishery ecosystems until we know if this “Pioneer Road” will be fully mitigated, with mitigating design like culverts, use of materials other than spreading gravel through river habitat. We know for example that the spawning area of fisheries in the Koyukuk River and tributaries, the John River and Tributaries, the Alatna River and tributaries, the Kobuk River and tributaries are extremely important to the character-defining bear species in this country. But in this proposal we cannot assess how the design will affect that fish habitat.
140. The project is simply not ready for environmental evaluation or ready to be certified to receive a Right Of Way. It is crucial that your environmental review list all the legal standards of section 106 of the Historic Preservation Act to consider this cultural landscape, all the considerations of the sustainability of the local subsistence way of life as required by ANILCA Title VIII and section 201(4)(d), all the levels of environmental protection required by ANILCA Title XI and Title II section 201(4) and section 1313 are completely identified and the project measured to assure compliance. Although section 201(4) does authorize a ROW, the law does NOT waive existing park law preventing impairment of land or water beyond the specific ROW use. How can the project managers estimate the cost of the project without this information and better-defined design needs? The National Park Service cannot begin selecting a ROW corridor for its portion of this project until BLM brings the level of information and analysis to the point that the NPS has some basis for its decisions. The BLM and the NPS work must be sequential, not simultaneous, to allow for proper decisions.

Issue 2: Alternatives/Project Description, continued

141. Removing the protective layer of natural vegetation in the Arctic, rapidly increases the thawing of permafrost. How will increased thawing of permafrost and associated impacts to this thawing to areas along the corridor be addressed?
142. The road design should consider providing periodic pullouts or large, flat areas to serve as staging areas for other potential mineral exploration projects or other industrial-type activities along the corridor.
143. Additionally, the design of the road should consider reducing steep grades and curves that could contribute to tip-overs and spills.
144. As proposed, the proposed roadway presents challenging slopes, often as steep as 9% grade. Assess the difficulty of maintaining such a gravel roadway as proposed, the secondary impacts through erosion and degradation likely from such a design, and the challenge of the removal and complete restoration of such a roadway.
145. For alternatives with roads, analysis should look at whether road widths can be reduced safely to reduce environmental impacts and reduce the amount of wetlands filled.
146. The EIS should take a strong look at the desired ROW width of 250' to 400' wide. This is may be much wider than is needed, with consequentially greater impacts to land, wetlands, and waterways.
147. The right-of-way width applied for is excessive at 250' ranging to 400' in some cases. The road prism will occupy a small portion of the right-of-way except in cases where the terrain dictates a wider area. The excessive width unjustifiably removes land from alternative uses and permits AIDEA to engage in further developments that will not be subject to environmental review and to deprive the agencies owning the servient estate of compensation for sales or leases. Where state lands with material sites underlie the right-of-way, AIDEA will avoid compensating the state DNR the 50 cents per cubic yard that it normally is paid for sales to public agencies. The right-of-way should be reduced to that necessary to contain the road prism and to maintain the road. Anything wider must be thoroughly justified.
148. Studies on soil types, which will affect the design and cost of the road, are incomplete.

Issue 2: Alternatives/Project Description, continued

149. The proposed Ambler Road concerns me because of its potential effects on wildlife and fisheries the very source that sustains the local people. As well as environmental degeneration to the Gates of the Arctic National Park and Persevere. An industrial access road through the Brooks Range could negatively impact the water quality and health of the Alatna and Kobuk river ecosystems that will affect the sheefish, chum, and king salmon in the area. This can directly impact the subsistence lifestyles of the native peoples. Alaska is known around the world as one of the last wild place on earth, and we should be doing all we can to keep this image, as it is important to the tourism economy of the region. I believe a better alternative could be listening to local villagers who do not want the road in their region and investing in local village infrastructure such as job training and opportunities. Other alternative exist, such as using a western route from the coast like the Red Dog Mine, and or rail connection from the south.
150. To properly evaluate environmental and social impacts, BLM must know anticipated levels of traffic on the road, as well the new airstrips being contemplated. Aircraft may have negative impacts on wildlife and subsistence in a broad geographic area, depending upon flight patterns, and this information is critical to determining impacts.
151. Road construction activities such as borrow mining, airfield construction, gravel storage areas, and soil laydown areas are likely to warm the underlying soils (“heat sinks”) and result in irreversible thawing. The potential environmental and economic impacts need to be considered. This is mentioned with regards to water accumulation along the industrial road, but not for accessory infrastructure activities.
152. A number of environmental impact issues come into play for this proposed project. These are not limited to: scenic values (this road would traverse the foothills of the scenic Central Brooks Range and in some places only a few miles south of designated wilderness), wetlands, fugitive dust (particularly asbestos in western portions of the route) , gravel borrow sites, fish, wildlife (especially the Western Arctic Caribou Herd), subsistence uses, vegetation removal and indirect effects, water quality, sound/noise, Wild River effects (Alatna and Kobuk), cultural resources and historic sites, public access and recreation uses, and public health and well-being. Potential mitigating measures for all perceived impacts should be identified and described. Potential effects should be described for various phases of the access project, including construction, operations and maintenance, and removal/reclamation. Direct and indirect effects on each impact issue should be analyzed in the DEIS.
153. The development scenario needs to include type of mines, which minerals (gold, silver, lead, copper, etc).
154. What exactly is the project area for the purposes of NEPA?

Issue 2: Alternatives/Project Description, continued

155. The proposed ROW does not go to the Ambler Mining District. What further impacts would occur when those connections are made? What further review and permitting would take place? This needs to be addressed in DEIS.
156. The proposed phased in development of a road starting with a pioneer road sounds like a risky idea. The environmental review should consider the entire project through completion as well as any phases that might be considered. A partially completed road would not serve the mining companies as planned and could leave the gate open for many different negative impacts on environment, local communities as well as wildlife.
157. AIDEA proposes to build a pioneer road that would flood seasonally, impacting hydrology and wildlife, and causing safety hazards. Because the phased approach under consideration would result in greater adverse environmental impacts than building the road in just one phase, the EIS needs to analyze the impacts of an alternative with the two-lane road built in a single phase.
158. BLM must analyze the impacts of all 41 gravel mines, ice roads, and impacts from ongoing construction efforts during the gradual "build-out" contemplated.
159. Dishonest cost accounting. The proposed phased buildout of the road is a farce designed to conceal costs. The proposed narrow "pioneer" road with a thin embankment would trigger immediate permafrost degradation and very high maintenance costs. The 2nd phase of widening the road and bringing the embankment up to proper thickness would require replacement of all of the thousands of culverts that will be needed because the route is mostly located on wet sideslopes with permafrost. This cost is not accounted for in the estimates.
160. The ROW permit should be non-transferrable. The need to transfer the ROW creates the question that the mine and road are not sustainable. A new operator would not have participated in the development of the necessary terms and protections and remediations. A new holder of the ROW needs to go through the permit process to consider new environmental conditions, what was learned from the failure of the previous ROW holder.
161. The ROW needs to provide access only to direct purposes for Ambler Mineral belt access only. The project proposal claims the use of the ROW will be limited to Mineral belt access only. The only way to keep that promise is to extend no more of an interest in the permit than direct Ambler mining purposes only.

Issue 2: Alternatives/Project Description, continued

162. To assure the most responsive, arms-length management and compliance with the terms and conditions of the ROW, the applicant should be changed from AIDEA to the mining and transportation company actually doing the work. Only in that way can the project viability and compliance be assured. This is clearly most consistent with the intent of ANILCA envisioning the operator as the applicant. Given Alaska's fiscal situation, this would make more economic sense.
163. Alternately consider assigning the ROW to the mineral operations companies as applicants, in lieu of AIDEA.
164. AIDEA is not the proper holder of the ROW. BLM and the National Park Service are improperly outsourcing the management of the ROW to a finance corporation. Red Dog is the evident model for this project, and that is one reason this project description is a failure. AIDEA is not the proper instrumentality to hold the ROW permit. If the BLM, the National Park Service, the State of Alaska, and Native Corporation land owners and others cannot work directly with the mining and transportation companies, the very high environmental standards this land and the resources require will fail. Agencies need a hands-on relationship with the truckers and the mining company to have rapid communication and immediate response in such remote and sensitive country. The requirement that a consortium of mining companies and transportation companies – as happened with Alyeska and the Alaskan Pipeline – needs to be part of the ROW permit conditions.
165. The EIS should also analyze new options, including but not limited to a) fly-in mine operation with pipelines going east or west to move ore concentrate and fuel, b) fly-in mine operation with dirigibles for re-supply c) railroad along the current Brooks East corridor, including 50-year costs and reclamation d) road and railroad options from Fairbanks to Port MacKenzie e) road and railroad options from Fairbanks to Seward f) access via the Kobuk river and g) operations using only an ice road (e.g. seasonal mining, or year round mining with crews brought in by plane and cargo shipped in and out seasonally). The Kobuk River or “ice road” options would not be significantly different from the plans for Donlin, which would fly crews in to the mine site and bring materials in seasonally by barge. These options should consider the economic costs over a 50-year life (construction, maintenance, labor, fuel, etc.), reclamation costs, and environmental impacts (construction, sensitive wildlife and migratory bird areas, areas crossed that would be sensitive to spills, environmental impacts of maintenance such as salting or sanding, etc.). Some of these options would have higher initial construction costs but lower reclamation costs.

Issue 2: Alternatives/Project Description, continued

166. The proposed Ambler Road alignment is primary east to west, and perpendicular to the natural hydrologic flow of waters from the Brooks Range, such that culverts, bridges, and the roadway may cause changes to the physical, chemical, and biological characteristic of the existing, undisturbed, landscape conditions. Determining whether the proposal complies with Guidelines, the Corps must assess potential impacts on the aquatic ecosystem, including substrate, suspended particulates/turbidity, water, current patterns and water circulation, and normal water fluctuations. Information regarding culverts and bridge crossings should be included to evaluate these impacts.
167. Potential impacts to permafrost should be included in the analysis. In order to assess impacts to permafrost wetlands, a range of roadbed design alternatives should be analyzed, as permafrost conditions under the proposed road could have direct and indirect impacts to physical and chemical and biological conditions of the aquatic ecosystems.
168. A practicable alternative is defined as one that would fulfill the proposal's overall purpose after considering cost, existing technology, and logistics. Defining the project purpose is the responsibility of the Corps; however, applicant input is considered in making this determination. The project overall purpose as defined by the Corps will be provided for determining a reasonable range of alternatives as part of the scoping phase of this project.
169. Failing to consider alternatives may ignore the possibility that there are no good routes. But the greater loss to the Secretary of Interior in the decision process is the benefit of the analysis of the local people. All possible alternatives should be assessed by the people with the greatest knowledge of this country and the validity of this proposal: the local, rural people who have lived here for generations.
170. If built the road would require construction camps, air strips, and other development that could adversely affect wildlife and certainly the remote character of the landscape. These additional impacts must be considered in any environmental review.
171. An alternative that must be considered is one in which the road as proposed is constructed and no mineral exploration or development occurs for some significant amount of time.

Issue 3: EIS and EEA Process

172. The USACE's environmental review should include only limited discussion of compensatory mitigation. In 1994, USACE and the Environmental Protection Agency issued guidance specific to Alaska discussing how compensatory mitigation should be implemented in Alaska. The guidance recognizes that because such a large proportion of Alaska is wetlands, it is frequently difficult, if not impossible, to find locations where new wetlands can be created. The guidance states, "Due to the physiographic conditions in Alaska, there are circumstances in the State where it is not practicable to restore or create wetlands." Due to the impracticality of restoring or creating wetlands in Alaska, as of 1994, when the guidance was issued, over 95% of Wetlands Permits in Alaska had been issued without requiring compensatory mitigation. Applied to AMDIAP, for those areas in which compensatory mitigation is impracticable, the EIS should be limited to determining the feasibility of compensatory mitigation.
173. Because a Clean Water Act Section 404 permit is required for this project, the EPA will review the project for compliance with Federal Guidelines for Specification of Disposal Sites for Dredged or Fill Materials (40 CFR Part 230), promulgated pursuant to Section 404(b)(1) of the CWA ("404(b)(1) Guidelines"). For wetlands and other special aquatic sites, the 404(b)(1) Guidelines: * establish a presumption that upland alternative are available for non-water dependent activities; * require that any permitted discharge into waters of the U.S. be the least environmentally damaging practicable alternative available to achieve the project purpose; and, * require 5that appropriate and practicable steps to be taken, in sequence, to: (1) avoid, (2) minimize, and then (3) compensate for impacts to aquatic resources.
174. As the preparation of this EIS will also serve to satisfy the NEPA requirements of the CWA 404 permit issued by the U.S. Army Corps of Engineers, we recommend: 1) an analysis of the proposed project's compliance with the 404(b)(1) guidelines be conducted concurrently with the EIS; 2) the EIS range of alternatives be informed by the range of alternatives developed for the analysis; and 3) the final EIS clearly demonstrate the selection of the least environmentally damaging practicable alternative. For clarification, NEPA requires the evaluation of reasonable alternatives to the propos4ed action, whereas the Guidelines require the analysis of practicable alternatives. The alternatives analysis required by the Guidelines is not limited to the alternatives evaluated under NEPA.
175. AIDEA has not indicated ownership of its list of 41 potential material sites. Any sites located on BLM-managed lands are subject to regulations governing contracts and permits for mineral materials (see 43 C.F.R. Subparts 3601-3604).

Issue 3: EIS and EEA Process, continued

176. As detailed below, AIDEA's permit application for the Ambler Road is woefully inadequate and fails to provide sufficient information for the public and the reviewing agencies to meaningfully evaluate the project and its potential impacts. The direct, indirect, and cumulative effects of the proposed road are likely to be far-reaching and dramatic. The construction, maintenance and use of the road and its river crossings will negatively impact subsistence, wildlife, vegetation, permafrost, and water resources in an area already under stress from climate change. As the lead agency, BLM must rigorously analyze the wide range of potential impacts and provide sufficient information for the public and other agencies to meaningfully review this project.
177. The Revised Permit Application lists several alternative routes that were considered, but eliminated by AIDEA. 14 There is a brief discussion of air and water options, which were both excluded without a complete analysis. 15 The EIS should fully explore the eight different route alternatives, rail options, air options, and water transport options if barging is reasonable. For any alternatives considered in detail, AIDEA should provide a wetlands delineation using the Cowardin Classification of Wetlands and Deepwater Habitats. BLM should consider an alternative which eliminates AIDEA's phased approach, and requires AIDEA to build the Phase III road at the outset. BLM should consult with local communities to determine a route which will have the least impact on subsistence in the region. BLM is not limited to the routes considered and eliminated by AIDEA, and is legally obligated to explore and evaluate reasonable alternatives in its EIS.

Issue 3: EIS and EEA Process, continued

178. B) AIDEA's application lacks information critical to the scoping process. Federal agencies "must use scoping to engage State, local and tribal governments and the public in the early identification of concerns, potential impacts, relevant effects of past actions and possible alternative actions. "The lack of a detailed project description presented a serious challenge to providing constructive scoping comments on this proposed development. 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 included in the EIS. The impacts we have identified for purposes of scoping are based on AIDEA's application, however, BLM must obtain substantially more data about the region, and information on the project design, to properly conduct its NEPA analysis. There is a substantial amount of baseline data missing from AIDEA's application that must be gathered before BLM can meaningfully evaluate and the public can fully understand the potential impacts from the project. AIDEA has provided almost no information about the aquatic resources in the region and how a project of this scale is likely to change nearby hydrology and habitat. Further studies are needed on the aquatic resources in the region and the potential impacts of the road and mines. BLM needs to do further studies to understand the negative impacts this project will have on caribou migration and wildlife. BLM should conduct a comprehensive study in each of the impacted communities to fully assess the subsistence, socioeconomic, cultural, recreational, and other negative impacts of this project. BLM cannot meaningfully evaluate the potential impacts and necessary mitigation measures without all of this information.
179. BLM may not rely solely on the one-sided information and conclusions contained in AIDEA's permit application. As the lead agency responsible for developing the EIS, BLM is obligated to obtain appropriate baseline data for the project area and do a thorough analysis of potential impacts from the proposed project and its connected actions.
180. The project description, and the BASES for the project need as asserted by AIDEA, are flawed. AIDEA has not given enough detail in their project description for BLM to even understand what this project will entail, and therefore what this project's likely impacts will be.
181. Judging from the documents shown on the website, the BLM is in violation of the Alaska National Interest Conservation Act (ANILCA). ANILCA clearly outlines the process by which a road shall be chosen. It states that process shall be "in lieu of" an EIS under NEPA. ANILCA Title II also gives the timeline of 1 year for this process to happen. I believe the timeline and the method of selection offered by the BLM violates ANILCA.

Issue 3: EIS and EEA Process, continued

182. ANILCA requires that BLM approve AMDIAP; not only does ANILCA mandate approval, but that BLM do so expeditiously. By acknowledging that it must approve AMDIAP, BLM can narrowly scope the EIS to complete the EIS. Congress's statement that the Secretary "shall permit" access to the AMD, clearly requires that BLM approve AMDIAP. It would be illogical to mandate approval of a right-of-way ("ROW") through the highly protected Gates of the Arctic National Park and Preserve ("GAAR") and not require those portions of the ROW connecting it to Dalton Highway and AMD also be approved.

Issue 3: EIS and EEA Process, continued

183. BLM's Notice acknowledges that under Title II of ANILCA the NPS must approve AMDIAP through the GAAR. However, the BLM Notice goes on to state that this mandatory approval provision applies only to those parts of AMDIAP ROW going through the GAAR. Specifically, the Notice states that, although Section 201(4) "directs the Secretary of the Interior to authorize the road through the Preserve, [it] does not address other public lands" – that is, the mandate does not apply to the BLM-managed lands. Rather, BLM contends that ANILCA Title XI applies to AMDIAP outside GAAR. Title XI governs the approval of rights-of-way ("ROW") crossing federally protected lands in Alaska. BLM's position that Section 201(4) applies solely to those portions of AMDIAP crossing the GAAR is erroneous. Congress' mandate applies to all federal lands over which the AMDIAP ROW passes, which necessarily includes GAAR and all BLM-managed lands. Section 201(4)(c) states: The Secretary [of the Interior] and the Secretary of Transportation shall jointly prepare an environmental and economic analysis solely and 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 prepared in lieu of an environmental impact statement which would otherwise be required under [NEPA.] (Emphases added.). Section 201(4)(c)'s reference to "the right-of-way" is not limited to a right-of-way through the GAAR. Section 201(4)(c)'s reference to "the right-of-way" relates to the right-of-way discussed in Section 201(4)(b). Specifically, Section 201(4)(b) 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." Thus, the right-of-way to which ANILCA Title II applies (including, among other things, its mandate) does not just go through the GAAR but from "the Ambler Mining District to the Alaska Pipeline Haul Road" – that is, all 211-miles of the AMDIAP ROW. In addition to being consistent with ANILCA's plain language, Section 201(4) should be interpreted as applying to all federal lands. An interpretation of a statute that furthers rather than frustrates a statute's purpose should be adopted. *The Emily & The Caroline*, 22 U.S. (9 Wheat.) 381, 388 (1824). Section 201(4) is meant to speed up environmental review and permitting to ensure that access to the mineral-rich Ambler Mining District is approved expeditiously. Because applying Section 201(4) across the entire AMDIAP ROW furthers Congress's purpose of accelerating environmental review and permitting, this interpretation is proper.

Issue 3: EIS and EEA Process, continued

184. USACE has no jurisdiction inside GAAR. ANILCA Section 201(4) makes it clear that the only two agencies with decision making authority relating to review of AMDIAP's environmental and economic impacts inside GAAR and the selection and approval of the route through GAAR are NPS and USDOT – no other federal agency. ...BLM and NPS now take the position that USACE has the authority to make the final route selection. ...BLM's and NPS's reasoning is wrong and backwards. ...USACE has no specific authority under ANILCA Title 2 to overrule the decision of the USDO and USDOT on the selection and approval of the final route through the GAAR.
185. AMDIAP crosses just 18 miles of BLM managed lands at the eastern terminus of AMDIAP where it connects to the Dalton Highway. These 18 miles of highly industrial land are known as Dalton Highway Utility Corridor ("Industrial Corridor"). Farther west, AMDIAP crosses 6 miles of State and Native Corp selected lands, which BLM manages. ANILCA Title II Applies to all Federal Lands / Wetlands along the Entire 211-Mile AMDIAP ROW. Section 201(4)'s Mandatory Approval Provisions Apply to the Entire AMDIAP.
186. The scoping notice seems to assume without any explanation or rationale that the Ambler Road EIS should be fully developed under ANILCA Title XI. The part of the Ambler Road through Gates of the Arctic National Preserve (GANP) is clearly exempt from NEPA under ANILCA Section 201(4)(d). That section of ANILCA establishes a NEPA-like process requiring the analysis of alternatives and impacts. We do not think that Congress intended the ordinary ANILCA Title XI process to apply to the entirety of the road. For example, it stated clearly that only the "procedural requirements" of Title XI, Section 1104(e) - not all of Title XI -- apply to the Ambler Road in the GANP portion. To our knowledge, the GANP is the only segment of the road that is in a conservation system unit. Given that fact, we do not see how Title XI is triggered. If the BLM believes Title XI is required, it should clearly lay out its thinking (in writing), or it should proceed under "normal" NEPA outside of the Title XI process.
187. No reasonable person can read ANILCA Section 201(4) and conclude that any agency besides NPS and USDOT have jurisdiction to prepare the EEA and select and approve the route through the GAAR. ANILCA Section 201(4) does not even mention USACE. Trilogy strongly believes that DOI and USDOT should certainly consult with USACE in the preparation of the EEA and the selection and approval of the route through GAAR – that only makes common sense, but the USACE has no specific authority under ANILCA Title 2 to overrule the decision of the USDO and USDOT on the selection and approval of the final route through the GAAR.

Issue 3: EIS and EEA Process, continued

188. AMDIAP is exempt from NEPA per Section 201(4).
189. The EIS should be completed by February 2019, one year from the date of filing the application. Taken together, environmental review and permitting under Title XI must be completed within 16 months of application.
190. AMDIAP Is Exempt from NEPA. BLM has proceeded with an EIS under NEPA. BLM contends that this language is inapplicable to those portions of AMDIAP outside GAAR. BLM contends that Title XI of ANILCA applies to these portions of AMDIAP. Title XI addresses ROWs on federal lands anywhere in Alaska. Given that BLM has proceeded under this erroneous path, it makes the most sense to continue with EIS NEPA Scoping and Review, however, I do so without waiving any rights or privileges.
191. 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)). Referring to GAAR GMP at page 177 it is clear the NPS held this same opinion. This passage clearly states that Section 201(4) applies to the entire AMDIAP ROW, from “the Alaska pipeline haul road [(n.k.a. the “Dalton Highway”)] to the Ambler mining district.” Only “other” ROWs (i.e., those not connecting the Dalton Highway to the AMD) must be approved under ANILCA, Title XI.
192. BLM must conduct review of AMDIAP using Title II from the Alaska National Interest Lands Conservation Act (ANILCA).
193. Congress’s statement that the Secretary “shall permit” access to the AMD, clearly requires that BLM approve AMDIAP. It would be illogical to mandate approval of a right-of-way (“ROW”) through the highly protected Gates of the Arctic National Park and Preserve (“GAAR”) and not require those portions of the ROW connecting it to Dalton Highway and AMD also be approved. ...Furthermore, the BLM’s own EIS on the Industrial Corridor completed in 1991 in connection with a resource management plan (“RMP”) and record of decision (“ROD”) covering the first 18 miles of AMDIAP recognized the application of Title II of Section 201(4) of ANILCA to an AMD ROW and acknowledged that the BLM must approve such ROW. ...Why has the BLM changed its tune? Nothing has changed in the area covered by the 18 miles of Industrial Corridor – the Alaska Pipeline still pumps oil from Prudhoe Bay to Valdez and the haul road is still used to support those operations. There is no justification for the BLM to surreptitiously change its approach to permitting AMDIAP at this point in time. The reason that Congress mandated approval of AMDIAP is obvious: Congress knew at the time it enacted ANILCA in 1980 that the AMD had vast mineral wealth. Congress worried that by creating GAAR, it would cut off access to the AMD. To balance the conservation and development interests, Congress established GAAR but mandated approval of ROW connecting the Dalton Highway to the AMD, through GAAR. By ignoring ANILCA’s mandate

- to approve this ROW, and claiming that it has the authority to deny approval of AMDIAP, BLM is single-handedly contravening Congress's clear and unambiguous mandate. BLM should follow what Congress wrote in plain English in Section 201(4) of ANILCA. The BLM cannot override the laws adopted by the Congress of the United States of America!
194. Not only must BLM approve AMDIAP, but in Section 201(4) Congress expressly and specifically exempts AMDIAP from review under the National Environmental Policy Act ("NEPA"). Despite this unambiguous language, BLM has proceeded with an EIS under NEPA. ...Given that BLM has proceeded under this erroneous path, it makes the most sense to continue with EIS NEPA Scoping and Review, however, I do so without waiving any rights or privileges.
195. The BLM must conduct review of AMDIAP using Title II from the Alaska National Interest Lands Conservation Act (ANILCA). I believe that the entire access corridor is subject to ANILCA Section 201(4)(d), rather than just that section that crosses National Park Service lands. Therefore the project does not require an EIS, but it requires an Environmental and Economic Analysis (EEA).
196. With respect to the route outside GAAR..., USACE needs to work closely with BLM to confirm that AIDEA's proposed route outside the GAAR meets LEDPA. ...Any route that does not align/intersect with the final selected route through the GAAR is necessarily impracticable as it would not allow surface access through the GAAR to the Ambler Mining District from the Dalton Highway as Title II requires....given that Congress mandated approval of AMDIAP, the scope of BLM's and USACE's alternatives analysis in the EIS and for permitting the route outside GAAR is limited to selecting the most practicable and environmentally protective route outside GAAR that intersects with the selected and approved route through GAAR, and not the other way around. That is, NPS and USDOT should not wait to choose a route through GAAR until after BLM and USACE have selected a route outside GAAR.

Issue 3: EIS and EEA Process, continued

197. Valhalla Mining LLC owns 185 State Mining claims in the Ambler Mining District (“AMD”) and is focused on developing the Sun deposit located along the AMDIAP road route. We acquired these claims with the understanding that through Alaska National Interest Lands Conservation Act (“ANILCA”) Title II, the AMDIAP road would be built from the Dalton Highway to allow surface access to the mineral-rich Ambler Mining District. With regard to ANILCA, Congress mandated that all federal lands over which the AMDIAP ROW passes, which necessarily includes GAAR and all BLM-managed lands, are exempt from review under the National Environmental Policy Act (“NEPA”). ...Section 201(4)(c)’s reference to “the right-of-way” is not limited to a right-of-way through the GAAR. Section 201(4)(c)’s reference to “the right-of-way” relates to the right-of-way discussed in Section 201(4)(b). ...The State of Alaska and NANA specifically selected and finalized selections of mineral rich lands in the AMD with the understanding that they would be allowed access to the lands under ANILCA Title II.
198. The State of Alaska, Alaska Native Corporations, and private persons and entities have made respective land section/ownership and mining claim selections based on this premise of the above provision in Federal law which guarantees environmentally responsible surface access from the Ambler Mining District to the Dalton Highway.
199. While NPS is governed by Section 204 for the Gates of the Arctic National Preserve portion of the proposed road, BLM is not. BLM has discretion to approve or not approve a ROW permit for the Ambler Road. BLM does not need to approve this ROW if it's not economically feasible or for other reasons.
200. Exploration and other work activities is significantly hampered by the lack of surface access to the AMD. Furthermore, not facilitating the development of the AMD results in Alaska being responsible for not addressing the effects of climate change by not producing metals that are vital to realizing the objectives set out in the Paris Climate Change Accord. Expediently reviewing and permitting AMDIAP as Congress intended will assist developers in exploring this vast mineral wealth. Narrowly scoping the EEA, recognizing the wealth of data already at NPS and the USDOT’s disposal, will help the Project get back on track and make it more likely that this untapped source of mineral wealth will be realized.
201. I don’t believe that this process should in any way be a judgment on a future mine, should it be proposed. This process should focus solely on selecting a route for a road, just as ANILCA states.

Issue 3: EIS and EEA Process, continued

202. BLM's Notice acknowledges that under Title II of ANILCA the NPS must approve AMDIAP through the GAAR. However, the BLM Notice goes on to state that this mandatory approval provision applies only to those parts of AMDIAP ROW going through the GAAR. Specifically, the Notice states that, although Section 201(4) "directs the Secretary of the Interior to authorize the road through the Preserve, [it] does not address other public lands" – that is, the mandate does not apply to the BLM-managed lands. Rather, BLM contends that ANILCA Title XI applies to AMDIAP outside GAAR. Title XI governs the approval of rights-of-way ("ROW") crossing federally protected lands in Alaska. BLM's position that Section 201(4) applies solely to those portions of AMDIAP crossing the GAAR is erroneous. Congress' mandate applies to all federal lands over which the AMDIAP ROW passes, which necessarily includes GAAR and all BLM-managed lands. Section 201(4)(c) states: The Secretary [of the Interior] and the Secretary of Transportation shall jointly prepare an environmental and economic analysis solely and 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 prepared in lieu of an environmental impact statement which would otherwise be required under [NEPA.] (Emphases added.). Section 201(4)(c)'s reference to "the right-of-way" is not limited to a right-of-way through the GAAR. Section 201(4)(c)'s reference to "the right-of-way" relates to the right-of-way discussed in Section 201(4)(b). Specifically, Section 201(4)(b) 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."

Issue 3: EIS and EEA Process, continued

203. Recently, BLM and NPS have taken the erroneous position that Section 201(4) applies only to those portions of AMDIAP crossing GAAR. As discussed in greater detail in my attached letter to BLM, commenting on BLM's environmental impact statement, Section 201(4) of ANILCA applies to the entire right-of-way. BLM's and NPS's current position that Section 201(4) applies only to GAAR is not only inconsistent with the plain language of ANILCA but NPS's past interpretations. In 1986 NPS completed a GAAR general management plan ("GAAR GMP"). Although it has been slightly amended, the GAAR GMP still governs the NPS's management of GAAR. In the GAAR GMP, NPS acknowledged Section 201(4) applies to the entire ROW: 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)). Referring to GAAR GMP at page 177 it is clear the NPS held this same opinion. This passage clearly states that Section 201(4) applies to the entire AMDIAP ROW, from "the Alaska pipeline haul road [(n.k.a. the "Dalton Highway")]" to the Ambler mining district." Only "other" ROWs (i.e., those not connecting the Dalton Highway to the AMD) must be approved under ANILCA, Title XI.
204. BLM must conduct review of AMDIAP using Title II from the Alaska National Interest Lands Conservation Act (ANILCA). ANILCA will be used to evaluate access possibilities, determine the best route for any corridor, and outline the best terms and conditions for any permits.
205. BLM has ignored ANILCA and the environmental review timeline by adding at least an additional 2.5 years (assuming no further delay) to the approval process without justification—effectively tripling the time it will take for AIDEA to receive Project approval. Such a lengthy delay not only violates ANILCA, Title XI but is entirely unnecessary given how narrow the EIS must be.

Issue 3: EIS and EEA Process, continued

206. Development of the AMD cannot take place without an industrial access road. Due to Federal land holdings, the road cannot be developed to the west or south of the AMD. Fortunately, authors of ANILCA recognized the value present in the AMD and included a provision in ANILCA allowing for the development of an industrial access road, AMDIAP, to be built across Federal lands heading east towards the Dalton Highway. Section 201(4) of Title II of ANILCA mandates that a right-of-way be granted from the Dalton Highway to the AMD. Furthermore, Section 201(4) also 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. The Secretary [of the Interior] and the Secretary of Transportation shall jointly prepare an environmental and economic analysis solely and 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.] This direct order in ANILCA was explicitly stated to prevent delays in the approval process when the time came to develop the rich minerals endowment in the Ambler Mining District. The permitting process for the Ambler Mining District Industrial Access Project has already exceeded the timelines described in Section 201(4) of Title II of ANILCA. As a lifelong Alaskan and small business owner, I implore you to expedite the permitting process for the Ambler Mining District Industrial Access Project. All direct and indirect deviations from the timeline laid out in ANILCA Title II goes against the directives of Congress; promises to Alaskans; and the minerals and infrastructure policies of President Trump and Interior Secretary Zinke.
207. AIDEA is NOT the appropriate holder of the ROW: As proposed, BLM and the NPS would be out-sourcing their management responsibilities to AIDEA, a state financing corporation. AIDEA is fundamentally a public financing corporation with multiple programs and commitments. . . . The situation involving the Red Dog Mine illustrates our concerns about AIDEA being the permittee for the Ambler Industrial Road proposal. Despite the comparative simplicity of the Red Dog project, the U.S. Environmental Protection Agency (EPA) recently was forced to intervene in Red Dog mining operations to prevent continued, excessive polluting of Alaskan waters by Red Dog operators. In this case, AIDEA did not act well enough or soon enough to protect Alaska's fragile northern waters. We have concerns about their capability, as the applicant, to oversee the massive proposed Ambler Road project, including ensuring compliance with all applicable requirements such as terms and conditions of a ROW permit.

Issue 3: EIS and EEA Process, continued

208. To assure proper accountability and future compliance with the permit for the Ambler Road project, the applicant(s) should be changed from AIDEA to the mining and transportation company(s) that will actually do the work and operate the road. Only in that way can the project viability – and the claimed level of protection and compliance – be assured. The mineral companies that would mine and transport the ore have already been identified. The ROW permit can and should be assigned to the mineral company(s), restricted to mineral purposes only; or, as was the case with Alyeska, permitted to a consortium of mineral companies. This approach would be most consistent with the intent of the ANILCA § 201(4)(b) and (c), envisioning the operator as the applicant.
209. The EIS must consider “connected actions” per NEPA regulations. Impacts of a road cannot be considered in a vacuum; other connected actions must also be considered. These include but are not limited to impacts from mines in the region, asbestos effects, acid mine drainage effects on waters, vegetation and fisheries, tailings ponds, transport of heavy metal ores to Fairbanks and to port, and the costs of all these activities. Evaluating culvert placements will be key to preserving existing fish runs.
210. An EIS of the road must trigger an EIS of the mining operations.
211. Additionally, cumulative impacts need to be inventoried about how this proposed road will affect the adjacent areas in the western Brooks Range.
212. EIS will serve multiple federal agencies. Some of the information provided by BLM states that the EIS is being done because a road right of way has been requested from BLM. While a road right of way has been requested of BLM, and BLM is the lead federal agency for the preparation the EIS, the EIS will also serve other federal agencies for actions requested of them. Notably a wetlands permit from the Corps of Engineers and bridge permits from the Coast Guard. So the EIS must provide the legally required information and analysis for all the affected federal agencies to make decisions for the actions requested of them.
213. BLM should consider measures to avoid or minimize environmental impacts pursuant to both NEPA and FLPMA and work closely with USACE during this process. Any measures must account for all three phases of development, as the mitigation needed for a seasonal pioneer road will differ from that needed for a massive industrial road. BLM needs to fully assess the potential scope of industrial activities and related impacts for all three phases of the project in order to meaningfully assess the need for and effectiveness of various mitigation measures for each project phase. Mitigation measures should be implemented at the earliest possible stage in construction and road development to minimize damage to the environment.

Issue 3: EIS and EEA Process, continued

214. The DEIS should coordinate analyses among several federal agencies, including BLM as the lead agency, the Corps of Engineers for wetlands, the US Coast Guard for bridges over navigable rivers, and the National Park Service and the Federal Highways Administration for that portion of the access through Gates of the Arctic National Preserve. Although the NPS (Secretary of the Interior) and the Federal Highways Administration (Secretary of Transportation) are governed by Section 204 of ANILCA for that portion of the access going through Gates of the Arctic National Preserve, BLM and other federal agencies are governed by ANILCA Title XI, which requires concurrent coordination of application and analyses. Coordination should also occur with AIDEA, the Alaska Department of Transportation, as well as the Alaska Department of Fish and Game, recognized area tribes, NANA, DOYON, and area village corporations. Tribal consultation should take effect before the DEIS is completed and released.
215. With the storied past of congressional termination of the NEPA process for the TAPS, it is recommended that the DOI prepare an appropriate environmental review on the Ambler Road that does not require federal exemption from judicial review. An open public process that conforms to the spirit of NEPA and subjected to judicial review would exemplify responsible economic development planning. Moreover, it is recommended that Ambler road planning be sympathetic to environmental justice concerns of small, disadvantaged Alaska Native villages.
216. Because BLM must approve AMDIAP, the scope of the EIS is necessarily narrow. Environmental review should focus on those areas of a project over which an agency has discretion. Here, none of the federal agencies have discretion to deny AMDIAP; they must approve it. Therefore, ANILCA gives the agencies discretion only over AMDIAP's terms and conditions, and AMDIAP's surface route - see ANILCA § 201(4). In short, the EIS should be scoped to: Address only AMDIAP's proposed route, and terms and conditions of AMDIAP's approval; Exclude from formal consideration the No Action Alternative; Tier to the Industrial Corridor RMP; Discuss only AMDIAP's direct environmental effects on the 24 miles of BLM-managed land and associated with Clean Water Act jurisdictional wetlands along the AMDIAP ROW; Include consideration of compensatory wetlands mitigation only in those rare places where compensatory mitigation is practicable, and Exclude consideration of wetlands impacts covered by a nationwide permit. These are the only areas the EIS should consider.

Issue 3: EIS and EEA Process, continued

217. The EIS should also be geographically limited. A narrow EIS is also justified given BLM's limited interest in lands along AMDIAP. BLM has jurisdiction over only 24 miles of land along AMDIAP's 211-mile route – 18 miles of which have already been studied in a 1991 BLM RMP. The RMP found there would be no significant impacts from AMDIAP and in fact AMDIAP was consistent with the intended use of the Industrial Corridor. The BLM must use this plan and best practices as referred to in the Red Book require that the BLM Tier the RMP into the current AMDIAP EIS. Moreover, 6 miles of these BLM lands are State or Native selected lands. Consequently, they are not even considered "public lands" under ANILCA. See ANILCA § 102(3).

Given that BLM has interests in only 10 percent of AMDIAP's route, the EIS should focus solely on AMDIAP's impacts on these 24 miles of BLM land and under the narrow scope outlined above.

218. BLM must rigorously consider the benefits of a No Action alternative. As stated above, the BLM should not issue a ROW that fails to "protect the environment" as required by FLPMA. BLM must analyze the impacts to environmental resource values outside the immediate ROW corridor. This includes nearby communities, wildlife and habitat values, and downstream impacts, among other impacts described in more detail below.

219. BLM and the other agencies need to fully analyze this massive project and should not truncate either their analysis or the timeframe necessary for the analysis and public outreach. Recently issued Executive Order 13807 and Department of Interior Secretarial Order 3355 seek to speed up and slim down NEPA documents and NEPA processes. Such limits are inappropriate for many projects in Alaska, where impacted communities are geographically dispersed, and projects and their environmental impacts are often complex. The Secretarial Order imposes limitations for EISs on all DOI projects, including a page limit of 150 pages, with the exception of a 300-page maximum for "unusually complex projects."

Approval from high-level agency officials is required prior to going over these limits. These arbitrary page limits are unrealistic, as the majority of EISs are well over 300 pages in length. The purpose of an EIS is to "provide full and fair discussion of significant environmental impacts and [to] inform decision-makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment." This particular project has a huge scope, as BLM must consider both a 211-mile gravel road in an undeveloped area, and a large mining development project. Adhering to arbitrary limits will lead to less transparency in the document, more mistakes, and missing key data. It would be inappropriate for BLM to adhere to these limits when it comes to a project of this scale.

Issue 3: EIS and EEA Process, continued

220. The impacts associated exploration and development of any proposed Ambler mine needs to be considered in each of the alternatives. AIDEA provides a guess as to the number of vehicle trips per day that would use the road. There needs to be a basis for the determination of vehicle trips that can only be offered by a mine proponent. This action should be presented as a mine with an access road, not a road with a potential mine.
221. The land owners along the prospective route of the AMDIAP should consider scientific studies to aid their understanding of the land's resources and to serve as a baseline for monitoring effects of the AMDIAP. These studies should include geological and geophysical mapping, LIDAR mapping, botanical/ plant diversity studies, and other biological studies.
222. BLM's multiple uses mission and standards for impact mitigation are too course and crude for some of the areas affected, which are managed for missions, standards, and to prevent/mitigate impacts on a finer scale. The road would cross a national preserve unit of the National Park System, and the Kobuk River corridor, a conservation unit of the Wild and Scenic River System. Each of these designations will require more stringent evaluations before it would be responsible of BLM to grant a right-of-way.
223. Other Considerations: ...Determine how emergencies would be handled and who would pay for such services. Consider the increased risk of fire if a road is built. Estimate the costs to State and Federal agencies for monitoring, maintenance, and emergency services. Evaluate power sources and whether fuel, natural gas, or electricity would need to be transported along the ROW. Estimate the number of ore trucks and support vehicles needed along the ROW per day and year, and describe any seasonal differences. Describe how much of each type of ore (copper, lead, gold, silver, cobalt) would likely be transported and the methods to transport, contain, and control the ore concentrate. Evaluate the effects of copper, asbestos, lead, cobalt, and other contaminants on local people, fish, and wildlife, workers, and recreational users. A reclamation and restoration fund should be required and built into the overall cost estimates.
224. The impact that any road will have as it cuts through an intact arctic ecosystem like this will include disruption of bird, animal and plant habitats, introduction of foreign and potentially toxic materials in road construction and truck loads, potential for accidental spills, degradation of clean air and water, transported foreign soils and dust that can coat large areas robbing the vegetation of sun light. In this area already stressed by climate change, impacts to permafrost conditions, river and stream erosion, changes to lakes and waterways and fish and wildlife make the cumulative impacts of the project difficult to predict.

Issue 3: EIS and EEA Process, continued

225. We request the BLM and NPS evaluate the following in the Environmental Impact Statement (EIS) and Environmental and Economic Analysis (EEA): (1) Impacts to subsistence resources along the road corridor and adjacent areas; (2) Health impacts assessment, particularly from possible contamination from fuel spills, chemical spills, air and water quality impacts (from dust and asbestos). Metals or chemicals from dust on plants metabolizes into tissue and may then be eaten by animals, including caribou, birds, and fish. Some of these animals may then be eaten by other animals or used as our subsistence foods, so we would like an analysis of such impacts; (3) Impacts to caribou migration; (4) Economic and sociological impacts to the people of our village; (5) Impacts to stream crossings, and fish-bearing streams from road, bridge and culvert construction. The RMP provides that "roads and trails are engineered, constructed, and maintained in a manner that minimizes the effect on landscape hydrology; concentration of overland water flow, subsurface water flows; minimizes erosion, and minimizes sediment transport", so we would like to ensure these policies are carried out in any proposed project; (6) Local impacts to Kobuk, and Kobuk River watershed-wide impacts; (both within the road corridor and outside the corridor), including a wetlands analysis; (7) Evaluation of traditional knowledge of our elders and residents regarding subsistence uses, cultural and historic resources that may be affected throughout the region; (8) Impacts on permafrost, and whether thawing permafrost may destabilize the ground and surrounding areas of the road; including aufeis at bridge and road crossings; (9) The potential drainage impacts from airstrips and gravel mining operations close to streams, particularly where there is surface hardening and compaction from the road, construction pads, storage areas and camps; (10) Impacts to fish, wildlife, terrestrial vegetation and aquatic life; (11) Methods of chemical and hazardous materials transportation, and assessment of impacts from potential spills. NovaCopper/Trilogy recently had a spill along the road from Bornite to Dahl Creek, and we would like more information on that spill, whether any fines have been imposed, and what remedial actions have been taken to mitigate these spill impacts. (12) Impacts from water use for ice roads, camp construction, mine operation. The RMP requires that projects affecting water, and associated resources, including development of springs and seeps, will protect ecological functions and processes; (13) Analysis of alternatives to the proposed road, including transport by air, water and rail and a no-project alternative. We also ask that the alternative of using a route to connect to the Red Dog Mine road and Port be considered; (14) A full analysis of cumulative, direct and indirect impacts of the road and anticipated mines.

Issue 3: EIS and EEA Process, continued

226. We request that, before the commencement of the EIS and EEA and before any project is approved (mine or road), baseline studies be conducted in the region. We recommend baseline studies and exposure pathway studies including:
- Human blood (for lead, cadmium, other metals and asbestos) and other elements that may arise during construction of the road and/or mine
 - Caribou tissue studies
 - Berries, moss, lichen and other vegetation studies Soils, air and aquatic baseline conditions
 - Aquifer characterization
227. The EIS should be narrowly scoped. Environmental review should focus on those areas of a project over which an agency has discretion. None of the federal agencies have discretion to deny AMDIAP; they must approve it. The EIS should only address AMDIAP's proposed route, exclude from formal consideration the no action alternative, tier to the Industrial Corridor RMP, discuss only AMDIAP's direct environmental effects on the 24 miles of BLM-managed land and associated with CWA jurisdictional wetlands along the AMDIAP ROW; include consideration of compensatory mitigation only in those rare places where compensatory mitigation is practicable; and exclude consideration of wetlands impacts covered by a nationwide permit.
228. Many of the Areas BLM Is Considering Including in the EIS Should Be Considered Briefly—if at All. Due to BLM's and the federal government's limited jurisdiction, however, the EIS should only consider these issues to the extent they are implicated on the 24 miles of BLM land. For instance, if there are special status species on the 24 miles of BLM land, BLM may consider how AMDIAP's route through the BLM lands impacts those resources and species. But it is difficult to imagine how AMDIAP's route, and terms and conditions on 24 miles of BLM land could significantly impact global climatic patterns or travel management. Moreover, as discussed in greater detail below, Trilogy urges BLM to limit its analysis under Section 106 of the National Historic Preservation Act ("Section 106") to the 24 miles of BLM land. BLM's Section 106 analysis should rely heavily on the cultural resources work already completed as part of the Industrial Corridor RMP. The Notice also indicates that the EIS will consider "reasonably foreseeable future activities." Such activities are at this point too ill-defined to allow meaningful consideration.

Issue 3: EIS and EEA Process, continued

229. The EIS Should Tier to the Industrial Corridor Resource Management Plan and Record of Decision. Much of the work on the EIS was already completed in the Industrial Corridor RMP and ROD. The Industrial Corridor RMP and ROD set priorities for BLM's management of the Industrial Corridor. Between 1986 and 1991, BLM conducted extensive planning and environmental analysis of the Industrial Corridor in the RMP and ROD. This environmental review actually included a discrete analysis of the Title II Section 201(4) right-of-way as it crosses the Industrial Corridor. The RMP stated that "impacts created by the right-of-way . . . can be alleviated by appropriate construction methods and by state regulation." The BLM's EIS should tier to this analysis. This tiering will reduce the need for duplication and costly work, and shorten the time for completion of the EIS.
230. The most concerning part about NPS's inexplicable delays is that they violate federal statute. In Section 201(4) of Title II of ANILCA, Congress recognized that the AMD was mineral rich and there was a need for surface access to the AMD. For this reason, in Section 201(4) of ANILCA, Congress expressly mandated that a right-of-way ("ROW"), stretching from the Dalton Highway through the Gates of the Arctic National Park and Preserve ("GAAR") to the AMD, be expeditiously reviewed and approved. Congress did not want federal approvals to get hamstrung by the type of drawn-out environmental review that has plagued AMDIAP to date.
231. Second, to further expedite approval of this important road, Section 201(4) mandates that a draft EEA be released within 9 months of the application date and the final EEA completed within 1 year. Section 201(4) goes on to state that the Secretaries of Interior and Transportation shall make a route decision within 60 days of release of the final EEA. Therefore, Section 201(4) requires that AMDIAP be reviewed and permitted within 14 months of the application date. Based on these deadlines, the draft EEA should have been completed 10 months ago, in February 2017 (a month after NPS issued the delay notice). The final EEA should have been completed 7 months ago, in June 2017. And the Secretaries should have made the route determination 5 months ago, in August 2017. During this time NPS made little meaningful progress in developing the EEA. NPS didn't so much as release a request for proposals for a contractor within the first 8 months after AIDEA submitted the Application. All NPS did was issue a notice that it was tripling the statutorily prescribed time period for completing the EIS. In the nearly one year since NPS issued the delay notice, the NPS has done nothing. This failure to meet its obligations under federal law is entirely unacceptable and avoidable if the NPS would simply follow ANILCA.

Issue 3: EIS and EEA Process, continued

232. Third, Congress expressly and unambiguously exempted the AMDIAP ROW from environmental review under NEPA. Congress knew that NEPA's involved environmental review procedures would bog down approval of AMDIAP and deprive the State of Alaska, Alaska Native Corporations, and the Nation of the potential benefits of mineral development in the AMD.
233. We were very disappointed to see BLM establish a scoping period of nearly a year. Such an approach builds an expectation with the public that this EIS will stretch for many years. The issues are well understood, and we expect few new issues to emerge in scoping and public meetings. We strongly encourage to establish a realistic but aggressive schedule to complete the EIS. NANA believes the final EIS and record of decision should be completed in two years or less. BLM should develop a detailed schedule and then consistently and clearly communicate to the cooperating agencies, stakeholders, and EIS contractor that BLM intends to maintain the schedule through to the record of decision.
234. Further, the Secretarial Order adds a target to complete all final EISs within one year. The Council on Environmental Quality recognizes that "universal time limits for the entire NEPA process are too inflexible" and agencies should base timing for NEPA analyses as "appropriate to individual actions." The proposed project must consider input from a variety of federal, state and local agencies as well as tribes, and impacts many local communities. We are very concerned that under this timeline there will not be sufficient time for consultation with affected tribal entities or input from remote communities in the region that will be directly impacted. Further, BLM will not have adequate time to do new studies or even fully consider existing data. This overly strict timeline limits the chance for multiple-year surveys that have yet to be conducted, but are needed to understand impacts to wildlife populations and habitat, recreational use trends, economic impacts, adverse health impacts on local communities, and subsistence impacts inherent in this proposed project. AIDEA has also not provided sufficient data and information in its application for the agencies to comply with any strict timeframes.
235. Regarding tempo of the EIS/Record of Decision process, I cannot see how the Record of Decision can be rendered by "early 2020" as stated at the hearing last night. This seems a purely political goal, as the decision will be made immediately before the next presidential term. I strongly urge the process to take the time necessary to do the job right, which will take at least until 2021 or 2022.

Issue 3: EIS and EEA Process, continued

236. BLM intends to issue a record-of-decision by 2020 and bring the EIS process to conclusion for the Ambler road project. Scoping comments received by BLM (and NPS for their independent EEA) will be consolidated by federal agency officials and responded to in separate technical reports that summarize responses to public comment. It is assumed that BLM (and NPS) will exercise their agency expertise with assistance of third-party contractors to address Tribal concerns. It is recommended that BLM (and NPS) convene consultations with all affected Tribes during or toward the end of the scoping comment review phase. A data gap analysis would follow the scoping review report, leading to the development of preliminary alternatives report. A second consultation with directly impacted Alaska Native villages is highly recommended before a draft report on preliminary alternatives is issued publically. The structure of Tribal meetings could take for format of cooperating agencies (see below). If the recently adopted Secretarial Executive Order shortening NEPA time-frames applies to the Ambler road, then the Tribal or village outreach by the lead agencies should intensify consultation with TCC impacted communities.
237. BLM is required to comply with both President Trump's August 2017 Executive Order No. 13807, entitled "Establishing Discipline and Accountability in Environmental Review and Permitting Process for Infrastructure," dated August 15, 2017 ("Pres. E.O.-13807"), and Secretary of Interior Zinke's Order No. 3355, entitled "Streamlining NEPA Reviews and Implementation of EO-13807," dated, August 31, 2017 ("Zinke Order 3355"). Both Pres. E.O.-13807 and Zinke Order 3355 make it clear that the environmental review and permitting of infrastructure projects should not take more that 1-2 years. Pres. E.O.-13807 expressly incorporates, and Zinke Order 3355 indirectly references, a federal agency environmental review and permitting guidance document, entitled "2015 Red Book: Synchronizing Environmental Reviews for Transportation and Other Infrastructure Projects" ("2015 Red Book"). ...The 2015 Red Book instructs how environmental review and permitting on infrastructure projects involving multiple agencies can be streamlined and synchronized to reduce delay and expedite an efficient and effective environmental review and permitting process. ...Zinke Order 3355 requires that if BLM sets a deadline that exceeds the oneyear timeframe by more than three months, the Assistant Secretary having responsibility over the project must approve the extension. There is no indication that BLM received approval to exceed the one-year timeline by 29 months. When a state agency is spending tens of millions of dollars to complete an EIS, there is simply no excuse for such large departures from statutory and regulatory obligations.

Issue 3: EIS and EEA Process, continued

238. Completion of the EIS by February 2019 is also possible because much if not all of the fieldwork has already been completed. I understand based on communications from AIDEA and listed on their website that before AMDIAP filed the Application, AIDEA completed over \$20,000,000 worth of environmental and wetland studies along the entire 211-mile long ROW. ...The EIS should rely on all of AIDEA's environmental and wetland data and analyses, and USACE's analysis and determination. ...The BLM's EIS should tier to the current AMDIAP EIS. This tiering will reduce the need for duplication and costly work, and shorten the time for completion of the EIS. ...By narrowing the scope of the EIS and relying on existing environmental and wetland data, BLM and USACE can complete the EIS on AMDIAP no later than February 2019 and issue all necessary permits and authorization by no later than March 2019.
239. In addition to requesting comments regarding the scope of the EIS, the Notice stated that BLM would miss the deadline prescribed by the Alaska National Interest Lands Conservation Act ("ANILCA") for completion of the EIS within 1 year of submission of AIDEA's application. Based on BLM's current timeline, the EIS would not be complete until at least December 2019 – more than 3 years since acceptance of the application by all Federal agencies as Complete and Compliant – this is unacceptable. I urge BLM to recognize that ANILCA requires that BLM approve AMDIAP. Second, due to the importance of AMDIAP, I urge BLM to recognize that ANILCA requires that BLM approve AMDIAP. Third, not only does ANILCA mandate approval, but that BLM do so expeditiously. By acknowledging that it must approve AMDIAP, BLM can narrowly scope the EIS to complete the EIS by no later than February 2019, and have the ROD and all required permits/authorizations issued by March 2019.
240. The proposed road to the Ambler mining district would penetrate deeply into the largest block of road-less lands in the United States. The consequences of this proposed road are enormous and will affect a vast region that extends far beyond the road itself. We recommend that this greater regional context be incorporated in the EIS process. The enormous magnitude of negative consequences that this project entails must be presented so that people are informed of what is at stake.

Issue 3: EIS and EEA Process, continued

241. Many of the informational requirements needed for a ROW are missing or exceedingly vague in AIDEA's application. BLM must require more information. 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. There is no question that this ROW will have significant impacts, thus BLM should hold AIDEA to the requirements for a plan of construction, operation, and rehabilitation. BLM's regulation at 43 CFR § 2804.12(a) provides that a completed application must include the following: (1) A description of the project and the scope of the facilities; (2) The estimated schedule for constructing, operating, maintaining, and terminating the project; (3) The estimated life of the project and the proposed construction and reclamation techniques; ... (5) A statement of your financial and technical capability to construct, operate, maintain, and terminate the project... Each of these requirements are dealt with in turn below. (1) A description of the project and the scope of the facilities; AIDEA has not provided a complete description of either the project or the full range of anticipated facilities needed for the proposed road. 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 AIDEA's application. There is no description of equipment that will be needed to construct and maintain the road or associated gravel mines. 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 states 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"

Issue 3: EIS and EEA Process, Comment 241, continued

Aside from projected locations of bridges and culverts, little else is described for these structures. This vague information is 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). 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 must be spelled out in the application. This should include information on infrastructure size, number of staff, means of year-round access, and power generation requirements. (2) The estimated schedule for constructing, operating, maintaining, and terminating the project; AIDEA provides no meaningful information about the schedule of its project. All statements in its application are tied to the level of industry interest at any given time, making the timeframe for every aspect of the project from construction through reclamation completely unclear. AIDEA's use of a 3-phase approach to construction is particularly problematic. There is almost no information on AIDEA's plan to use this 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." There is 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 earlier, AIDEA's proposed Phase I road is not even anticipated to be a year-round road and could present a serious hazard to the public, wildlife, and the environment if left in place. To comply with FLPMA, BLM must have a schedule for terminating the project, which is lacking in the present application.

Issue 3: EIS and EEA Process, Comment 241, continued

(3) The estimated life of the project and the proposed construction and reclamation techniques; AIDEA provides almost zero information about the plans for reclamation of this project, despite the fact that AIDEA is only permitting this project as a “temporary” road. AIDEA’s application does not discuss basic information on how this road will be constructed, let alone any information on how it will be reclaimed. AIDEA states that it “may procure road design, construction, maintenance and operation services through third-parties,” but this 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. Specific shortcomings include statements that merely acknowledge the need for, and state vague locations of, material sites. AIDEA anticipates 42.23 million cubic yards of gravel will be needed for the project for construction and maintenance. (4) By way of comparison, about 24 million cubic yards of gravel was used to construct the Dalton Highway paralleling the Alaska pipeline. There is no information on blasting, how much gravel will be taken from each site, the excavation process, necessary machinery, or gravel mine reclamation. As stated above, important information on bridge and culvert construction and maintenance is absent from the application, as well as any information on AIDEA’s reclamation plan. Different reclamation techniques would be needed depending upon which “Phase” of the road is eventually built and subsequently reclaimed. Presumably, AIDEA must use ice roads to transport materials, however, a description of these activities and ice road construction and maintenance is wholly absent from the application. AIDEA has not met the requirement to provide information on the estimated life of the project or construction and reclamation techniques. (5) A statement of AIDEA’s financial and technical capability to construct, operate, maintain, and terminate the project; In its application to BLM, AIDEA provides the following response to this requirement: “AIDEA’s capability to construct, operate, maintain and terminate the project is evidenced by the successful Delong Mountain Transportation System (DMTS) at Red Dog Mine.”⁸² This response is unacceptable, and AIDEA must be held to a higher standard than a single conclusory sentence. BLM must analyze AIDEA’s assertion with close scrutiny. ...Finally, BLM must carefully consider AIDEA’s financial ability to reclaim the road. AIDEA’s ability to finance the construction and maintenance costs for this project is already questionable; their ability to finance any sort of reclamation, let alone one that would adequately restore the project area to an appropriate condition, is in serious doubt.

Issue 3: EIS and EEA Process, continued

242. Important substantive requirements flow from FLPMA's ROW provisions. First, BLM must honor the requirement that the right-of-way grant "do no unnecessary damage to the environment." 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." BLM is obligated to carefully consider the requirements in FLPMA and include terms and conditions for the Ambler Road ROW that: protect federal property and economic interests; efficiently manage the ROW and lands adjacent to it; protect the interests of people living in the area who rely on fish, wildlife, and biotic resources for their subsistence lifestyle; locate the ROW along the least environmentally damaging route; and otherwise protect the public interest in lands traversed by the ROW or adjacent thereto. Important substantive requirements flow from the FLPMA's ROW provisions, and these apply with equal force to the local communities and habitat beyond the road corridor itself. According to AIDEA's ROW application, the first phase of construction would result in a seasonal road, with restricted access during spring break-up to "minimize roadway damage." Use of the Phase I pioneer road will be restricted from April through August, "due to the shallow embankment construction and spring break up conditions." It is deeply troubling that the Phase I road will be used seasonally and not be built to withstand typical North Slope spring conditions. This could have significant adverse environmental impacts, as well as present safety hazards for road travelers. AIDEA must construct a road which can withstand typical seasonal conditions, and has the structural integrity to support vehicles each spring and summer. As designed, any use could lead to significant road and environmental damage. Even if access is restricted, water flooding over the road would likely lead to increased contamination from asbestos, increased hydrological impacts with the road acting as a dam, and decreased road integrity over time. During summer months when permafrost is most vulnerable, the road will likely remain unstable. Permitting such haphazard and careless construction would be an outright failure to protect property, economic interests, and other users of lands adjacent to the ROW. BLM must "protect the interests of individuals living in the general area traversed by the right-of-way who rely on the fish, wildlife, and other biotic resources of the area for subsistence purposes" and incorporate terms and conditions or mitigation measures to adhere to this requirement. BLM must consider widespread community opposition to this project, primarily due to negative impacts on subsistence. The road would run near several communities, including Bettles, Evansville, Shungnak, Kobuk, and Ambler.

Issue 3: EIS and EEA Process, Comment 242, continued

For any ROW granted, BLM must consult with communities to determine terms and conditions which will alleviate negative impacts to subsistence. For example, speed limits, dust maintenance, and proper water crossing designs must be incorporated. As described above, local communities are concerned about public access and increased hunting in the area will put further pressure on communities that already face issues with food scarcity. BLM must “require location of the right-of-way along a route that will cause least damage to the environment, taking into consideration feasibility and other relevant factors.” As discussed further above, it is important that BLM consider a broad range of alternative routes under NEPA. While NEPA does not require that BLM select a particular alternative, FLPMA contains a higher standard that requires selection of the least environmentally damaging alternative. Thus, BLM may consider feasibility “and other relevant factors,” but must not simply defer to the project applicant’s desire to build a road at the lowest possible cost and should take into consideration this obligation. The requirement that BLM “protect the public interest in the lands traversed by the right-of-way or adjacent thereto” makes it clear that BLM is responsible for protecting environmental resources beyond the road corridor. Impacts to subsistence in nearby communities, negative impacts to wetlands in the region, and downstream hydrological impacts from water crossings must be fully analyzed and taken into account in determining whether granting a ROW for the road to Ambler Mining District is in the public interest. We strongly encourage BLM to work with other permitting agencies and surrounding landowners to ensure any mitigation measures adopted for the project are applied consistently for the length of the road.

Issue 3: EIS and EEA Process, continued

243. Under AS 38.05.850, the DMLW Northern Region Office (NRO) has the authority to issue both public and private easements. 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 to DNR, NRO will evaluate the proposed activities for consistency with authorized activities or constraints on state lands. The adjudication process will include agency/public notice, response to comments, and decision appeal provisions. As part of the adjudication process, NRO will evaluate multiple-use considerations and restrictions, as well as economic benefits. Any restriction of general public use will need to be carefully weighed against other proposed multiple-use considerations, and will only be approved if it is deemed sufficiently in the public's best interest.
244. Allakaket Tribal Council Passed Resolution 2013-43 A RESOLUTION OPPOSING THE BUILDING OF A YEAR-ROUND ROAD TO ACCESS THE AMBLER MINING DISTRICT AND KOBUK MINERAL BELT USING THE BROOKS EAST CORRIDOR STARTING AT PROSPECT CREEK
245. Huslia Tribal Council passed Resolution: 17-02 "Resolution in Opposition of the Proposed Ambler Mining Road"
246. The Bettles City Council recently sent out correspondence indicating our support for a year round road through Bettles, AK to the Ambler Mining District. It was in the form of City Resolution 2012-5. Please disregard said correspondence and cease using it in your meetings and presentations, as Resolution 2012-5 has been rescinded by Bettles City Council, through our Resolution 2012-8. The City of Bettles has rescinded Resolution 2012-5 - recognizing the error that was made in gauging public opinion -and the City of Bettles is sending out correspondence to all entities in receipt of said resolution.
247. Evansville Tribal Council passed Resolution No. 2017-09-02 Opposing the Proposed Road to the Ambler Mining District
248. passed A resolution of the Northern Alaska Environmental Center BOARD OF DIRECTORS and ISSUES COMMITTEE in opposition to the proposed Ambler Mining District Industrial Access Road
249. Passed Resolution No. 2014-54 Opposing Ambler Road; Tanana Chiefs Conference Full Board of Directors opposes current plans to build the Ambler Road until further information is developed and tribes be given formal and regular consultation with the appropriate agencies at the discretion of the aforementioned villages.

Issue 3: EIS and EEA Process, continued

250. Allakaket Tribal Council passed Resolution 2017-35 A Resolution to Serve as a Cooperating Agency in Federal Review Processes for Ambler Road (copy submitted in PDF is unsigned)
251. It is my strongest, overall recommendation that the EIS process be terminated immediately. This would save the federal government a lot of money, and the public a lot of time. But if an EIS process continues, a No Action Alternative will clearly be the only prudent public policy decision.
252. Do not allow the sale, extraction or use of gravel from federal lands. My understanding of the DeLong Mountain Transportation System is that NANA sold gravel, from pits inside the legislative boundaries of Cape Krusenstern National Monument. The ROW holder should not be able to get paid for gravel it got rights for as part of the ROW they were granted. Terms should be clear the ROW will not convey surface or subsurface materials on federal lands.
253. ADEC's regulatory authority includes permitting for the following activities associated with construction camps: Solid waste landfills (18 AAC 60); Drinking water system permit (18 AAC 80); Food Service permit (18 AAC 31); Wastewater discharge – domestic wastewater (18 AAC 72).
254. Land use permits for construction camps or staging areas on state land are required under statute AS 38.05.850.
255. A material sale permit will be required to access or mine gravel sources on state lands. DNR statues AS 38.05.550-565 address material sites and sales, including site designation and material sale contract requirements. Mining and reclamation plans will need to be submitted for review and approval by DMLW for material sites located on state and non-state lands (AS 27.19). For new material sites which require material site designation, a best interest finding (BIF) and public notice per AS 38.05.550, AS 38.05.035(e), and AS 38.05.945 are required. Best interest findings are also subject to appeal provisions.

Issue 3: EIS and EEA Process, continued

256. All but one of the rivers that are proposed to be crossed by large bridges are documented as anadromous in the ADF&G Catalog of Waters Important for the Spawning, Rearing or Migration of Anadromous Fishes (Table 2). As such, ADF&G Fish Habitat permits will be required for bridge construction and for any long-term maintenance that will occur in the river or on the riverbanks within the ordinary high-water zone. ADF&G provided a table including suggestions for the documentation that may be needed for evaluating river crossings in 11 drainages (Koyukuk River, Wild river, John River, Alatna River-Malamute Fork, Alatna River, Kobuk River, Reed River, Beaver Creek, Mauneluk River, Shungnak River). Once material and water withdrawal sites are identified, the Division of Habitat will work with ADNR to determine if a Fish Habitat Permit will be required for the activity. If water is proposed to be withdrawn from a fish bearing waterbody, there will be stipulations placed upon the withdrawal rate and a requirement that the intake be screened with small mesh to avoid impacts to juvenile fish. Additionally, there can be limits placed on the amount of water that may be drawn down under the ice.
257. For any RS 2477 public use right-of-way crossing or in the vicinity of the proposed road corridor, allowances for continued public use of these routes, and in particular, design of public crossing routes across the road corridor to access state lands will need to be addressed in any state land use decisions.

Issue 3: EIS and EEA Process, continued

258. State law requires all activities requiring licensing or permitting from the State of Alaska, or conducted by State agencies for public construction and improvement, to comply with the Alaska Historic Preservation Act (AS 41.35.070). For review of a State project under the Alaska Historic Preservation Act, if OHA's review indicates that significant cultural resources will be adversely affected by a project, the proposed project may not commence until the department has performed the necessary investigation, recording, and salvage of the site, location, or remains.
- OHA/SHPO's role includes assisting with site avoidance, and the development of measures to minimize the potential effects of a project (e.g. use of different equipment or materials, or the presence of an archaeological monitor). In cases where avoidance or minimization is not feasible, or not sufficient enough to avoid adverse effects, OHA assists with the development of mitigation measures to offset the negative impacts to the resources affected with something positive. Mitigation approaches are dependent on the project circumstances and can range from site intensive data recovery projects (archaeological excavation) to the creation of educational or interpretive products for the public and/or affected communities. An archaeological monitor may be required as a condition of OHA's concurrence, or a stipulation in an agreement document. The reasoning behind such a request varies, but is primarily made where the likelihood of encountering cultural material is considered to be high, and avoidance is impracticable or cannot be ensured.
259. DMLW NRO authorizations include construction and use of bridges or other improvements across state-owned submerged lands associated with navigable waters (issued under AS 38.05.850).
260. Construction and maintenance of the proposed road will most likely require the use of water or the temporary diversion of water. Temporary Water Use Authorizations (TWUA) are required for water withdrawals (including dewatering activities), diversions, impoundments, ice roads, and in source uses (11 AAC 93.035 (a) (b) and 11 AAC 93.220).

Issue 3: EIS and EEA Process, continued

261. The EIS also need not analyze effects covered by nationwide permit (“NWP”) 14. AMDIAP falls within the scope of USACE’s NWP 14 program. NWPs are permits that allow individuals to dredge-and-fill without needing to apply for individual wetlands permits. NWP 14 allows dredging-and-filling in connection with a “linear transportation project” (i.e., roads, highways, etc.) without an individual wetlands permit. NWP applies if the dredge-and-fill activity will cause less than a 1/2-acre loss to an individual wetland. AIDEA will not need a wetlands permit for those wetlands where AMDIAP will have less than a 1/2-acre impact on wetlands. When the USACE issued NWP 14, USACE determined that the cumulative, nationwide impact of dredging-and-filling under NWP 14 will not significantly impact the environment. Thus, the EIS should not assess the environmental impacts of AMDIAP on wetlands where there will be a loss of less than a 1/2 acre.
262. What exactly is the project area for the purposes of NEPA?
263. The road to Ambler has the potential to increase social and political tensions between different population sectors and community institutions that either support or oppose aspects of development. Doyon, the Alaska Native Corporation for the region, considers itself a major shareholder for this project, due to the fact that 11 miles of the proposed road crosses Doyon lands. Although AIDEA is attempting to permit a road that would cross Doyon lands, it is not clear at this point whether they even have the permission or approval of Doyon to do so.
264. BLM should have done more public outreach in Nome
265. The villages of the upper Koyukuk, Allakaket, Alatna, Evansville & Bettles have the least to gain and the most to lose by construction of this road. All four of these villages have voiced local opposition to this road. This road should not be built through this country without their permission. If the people of the Kobuk Valley want the road and the people of the Koyukuk Valley don’t, then a route that avoids the Koyukuk should be utilized. The scoping process needs to inventory the opposition & support for & against this road in both valleys. It needs to list the positive things or both regions and the negative things for both regions. If an agreement can’t be reached with the local villages, then this EIS process should be stopped.
266. The proposed Ambler Road concerns me because of its potential effects on local people, many of whom do not support the building of such a road, the environment, wildlife, fisheries, and Alaska’s economy. An industrial access road through the Brooks Range could negatively impact the subsistence lifestyle of native peoples, water and air quality, the health of Alatna and Kobuk river systems, tourism, animal migration, and the view of Alaska as one of the last wild places. I believe a better alternative would be to consult with local residents about their thoughts concerning this project in order to obtain an accurate view of its effects as pertaining to those who would be most affected.

Issue 3: EIS and EEA Process, continued

267. we urge the Bureau of Land Management and its leadership, and the Ambler Road Scoping Committee overlooking this review to reconsider this project by carefully and fully reassessing the potential long-term effects that will occur with the proposed development, and to fully involve and engage the affected communities through a proactive process beyond scoping meetings.
268. Scoping meetings and comment gathering from communities and residents in the affected areas falls short of the need to make thorough reviews and reports of the potential changes and the shift to a new paradigm that would alter the natural landscapes, environmental ecosystems, and lives of Tribal Nations and their Peoples in the proposed access routes and to those communities that will subsequently be affected by the mining industrial development. And by these thoughts we request the Bureau of Land Management to grant an extension of this review and to provide the necessary resources for all communities affected.
269. Pre-scoping information fails to even mention that this road will likely lead to massive mining activities in the upper reaches of the Kobuk watershed. This deficiency represents a serious flaw because it comes at the very beginning of the EIS process and fails to inform the public so that they can provide important scoping comments early in the process.
270. In addition to issuing the Notice, Bureau of Land Management (“BLM”) and NPS have convened a host of scoping meetings. These meetings have been troubling for their lack of professionalism and clear bias against the Project. One area of concern is the agencies’ suggestion that AMDIAP will one day be open to the public. In response to questions regarding how AMDIAP will be kept private, agency representatives have stated that there is no way to guarantee AMDIAP will remain private. Agency representatives have even conjectured that there are no known private roads constructed in Alaska that have remained private. This statement ignores several private rights-of-way (“ROW”) that have remained private. For example, DeLong Mountain Transportation System (“DMTS”) and Pogo Mine Project Road (“Pogo ROW”). DMTS services the Red Dog Mine and opened in 1989. Nearly 30 years later, DMTS remains private. In fact, Red Dog Mine is DMTS’s sole user. Similarly, the Pogo ROW has served the Pogo Mine since it began producing in 2006 and remains a private road. Given the agencies’ clear bias against the Project, these statements that AMDIAP will become public are patently false and will unnecessarily appear designed to scare communities along the AMDIAP ROW. These statements are likely to cause communities to fear that AMDIAP will lead to a flood of recreational users in the area, threatening natural resources and residents’ subsistence life-styles – which is just not true. The agencies need to must stop making these unfounded statements because they will assist in what appears to be a calculated move to building opposition to the Project. That is not the role of either the NPS or the BLM.

Issue 3: EIS and EEA Process, continued

271. Has a full scoping presentation been done by AIDEA in all the villages that subsistence activities would be affected. This importance cannot be overlooked.
272. Based on the potential disproportionate adverse effects perceived by residents of those villages, their concerns need to be incorporated substantively into not only the scoping phase, but also integrated in data gathering, the interdisciplinary analysis of environmental consequences and mitigation measures stipulated in the record of decision.
273. Consideration should be given to conducting some meetings in region.
274. Historic Resources Analysis Should Be Very Narrow. BLM indicated in its Notice that it would evaluate historical and cultural resources under Section 106. This analysis should also be confined to the 24 miles of BLM land AMDIAP crosses. A Section 106 review need only be conducted of a federal “undertaking” in the “area of potential effects” (“APE”). See 36 C.F.R. § 800.4. The scale and nature of the undertaking influences the breadth of the APE. 36 C.F.R. § 800.16(d). Courts have recognized that, as with NEPA, when a federal agency’s control of a linear project (like a road) are limited, the APE is similarly limited. Army’s decision to define the APE only with reference to the 10.9 miles of a utility line that crossed an Army Base, not the entire 41.9 mile project. No. 3:08CV-105-H, 2009 U.S. Dist. LEXIS 95823, at *15-18 (W.D. Ky. Oct. 14, 2009); accord *McGehee v. U.S. Army Corps of Eng’rs*, No. 3:11-CV-160-H, 2011 U.S. Dist. LEXIS 56652, at *15 (W.D. Ky. May 23, 2011) (stating that “an area of potential effect depends on the scope of the activity” and holding that the construction of a temporary bridge of “limited nature and scope” had no potential to effect a historic property). Here, BLM controls just 24 miles of a 211-mile road. BLM’s limited jurisdiction over the Project should not federalize the entire 211-mile road for purposes of Section 106. Therefore, the APE should only be defined in relation to the 24 miles of AMDIAP that crosses BLM land.
- BLM must also rely on the cultural analysis already completed in the Industrial Corridor RMP. The RMP describes the cultural resources found within the Industrial Corridor and where they are clustered. See RMP at 3-22 to -23. None of these cultural resources are clustered where AMDIAP will intersect with the Industrial Corridor. BLM must make extensive use of the analysis of cultural resources already completed in the RMP to expedite its Section 106 obligations.

Issue 3: EIS and EEA Process, Comment 274, continued

Trilogy also encourages BLM to consider substituting the NEPA process for compliance with its limited Section 106 obligations. See 36 C.F.R. § 800.8(c). “An agency official may use the process and documentation required for the preparation of . . . an EIS/[record of decision] to comply with section 106 in lieu of the procedures set forth in [NHPA regulations].” *Id.* If BLM chooses this process, it must notify the State Historic Preservation Officer (“SHPO”)/Tribal Historical Preservation Officer (“THPO”), and the Advisory Council on Historic Preservation (“AHCP”) that it intends to rely on the NEPA process. *Id.* BLM would need to identify consulting parties (e.g., SHPO/THPO and Native Corps) and document any effects of the 24 miles of the AMDIAP ROW in the EIS. *Id.*

In any event, CEQ and the ACHP published a helpful guide similar to the Red Book titled NEPA and NHPA: A Handbook for Integrating NEPA and Section 106. This handbook discusses how NEPA and Section 106 can be integrated. The handbook discusses integrating to the two processes regardless of whether BLM decides to use the NEPA process to document compliance with Section 106 as discussed above. The handbook also discusses the circumstances under which it is appropriate to rely on the NEPA process to document Section 106 compliance. Regardless of whether BLM decides to combine the two processes in a single EIS, BLM should rely on the handbook in complying with Section 106. If BLM adopts these strategies, in no event should Section 106 compliance take longer than the time it takes to complete the EIS.

Issue 3: EIS and EEA Process, continued

275. We insist that consultation between BLM and NANA be proactive on the part of BLM, and pursued in a way that honors both the letter and the spirit of the consultation requirements required by Congress and as further defined in the DOI directive entitled "Department of the Interior Policy on Consultation with Alaska Native Claims Settlement Act Corporations" (August 12, 2012).
276. as a result of the previously stated facts and the potential negative impacts to our heritage lands and waters, and probable disruption to the livelihood of our membership and residents we ask the Bureau of Land Management to grant the Community of Noorvik to become a part of the primary working group communities in this new paradigm of potentially reshaping our communities and livelihood by introducing a new industrial complex systemization into our Tribal Nations and Peoples of Northwest and Interior Alaska.
277. The unwanted and unwarranted EIS process for a proposed road to the Ambler mining district should not be started. The state of Alaska should not waste public funds filing a permit application and starting the environmental review process for an ill-conceived industrial access proposal for a private mining company. Allakaket, Alatna, Bettles, Evansville Inc., Kobuk and TCC have all passed resolutions against this road after dozens of meetings with AIDEA. The resolution from Evansville effectively blocks prime access from the Dalton Highway at the road's inception. AIDEA isn't listening to any of the testimony rural Alaskans presented against the Ambler Road. By authorizing more meetings and more scoping, the administration is not listening to the overwhelming distrust of this proposal. The failures of the Parnell Administration and his Roads to Resources campaign should not continue to stain Walker's administration as well.

Issue 3: EIS and EEA Process, continued

278. We request that: 6. Future public comment processes engage all communities within the herd range and take into account the challenges of organizing comments in remote settings. We appreciate the willingness of BLM to extend the comment deadline for the current scoping process to provide additional opportunities to engage with affected stakeholders and communities. Moving forward, it is important that this practice be continued and be extended to include engagement with all communities in the WACH range and other stakeholders. Prior to the public comment period on a Draft EIS, we request that all the concerns and issues identified through the current comment period be compiled and shared with all stakeholders to inform comments on the Draft EIS. This needs to go beyond just posting these comments on an agency website and should include sending copies to each community within the herd range. Based on the presentation provided to the Working Group at our annual meeting in December 2017, a 45-day comment period is currently proposed for the Draft EIS. This is insufficient to allow organization of community meetings, thorough review of the Draft EIS, and a robust comment process. As is stated above, the Working Group includes representatives of stakeholder groups from across the state of Alaska. It takes time to inform our members of new documents and to organize discussion and feedback, especially for those living in some of the more remote villages where communication can be a challenge. A short commenting process makes it difficult to ensure robust discussion. We hope that the input of the Working Group and other stakeholders and communities will continue to be valued in decision making processes. For this reason, we request a longer comment period for the Draft EIS.

Issue 3: EIS and EEA Process, continued

279. BLM must meaningfully consult with Alaska Native Corporations. As it proceeds with its review and decision making process with regard to the proposed Ambler Mining District access road, it is absolutely critical that the BLM engage in meaningful consultation with affected Alaska Native Corporations, including Doyon—as early as possible and at each step of the process.

In its Notice of Intent and Extension of Time To Prepare an Environmental Impact Statement for the Proposed Ambler Mining District Industrial Access Road, Alaska, 82 Fed. Reg. 12119, 12121 (Feb. 28, 2017), BLM stated that it “will consult with . . . affected Alaska Native corporations, in accordance with Executive Order 13175 and other policies. Native concerns . . . will be given appropriate consideration.” In a December 1, 2017 letter from Mark Davis of AIDEA to Doyon President and Chief Executive Officer Aaron Schutt, citing this statement, AIDEA stated, “The Executive Order referenced by BLM in the Notice of Intent deals with U.S. Government relations with Tribes, but BLM has indicated that it will use that order as a basis for consultation with Native Corporations, which in this matter are primarily NANA, Doyon, Evansville, Inc., and K Corp.” December 1, 2017 letter from Mark R. Davis, AIDEA, to Aaron Schutt, Doyon, p. 6. Unfortunately, AIDEA’s statement understates the mandatory nature of BLM’s consultation obligations to Alaska Native Corporations. It is 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 Alaska Native Corporation concerns are sought and appropriately considered in the various Federal agency decision making processes relating to this proposed project. 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. Tribal consultation is intended to assure meaningful tribal participation in planning and decision making processes for actions with the potential to affect tribal interests. While the AIDEA letter is technically correct that EO 13175 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 specifically extended these obligations to Alaska Native Corporations, requiring the Office of Management and Budget (OMB) and all Federal agencies to “consult with Alaska Native corporations on the same basis as Indian tribes under Executive Order No. 13175.” / In accordance with this mandate, in August 2012, the Department of the Interior (“DOI”) issued its Policy on Consultation with Alaska Native Claims Settlement Act (“ANCSA”) Corporations.

Issue 3: EIS and EEA Process, Comment 279, continued

In this Policy, the Department purported to “recognize [and respect] the distinct, unique, and individual cultural traditions and values of Alaska Native peoples and the statutory relationship between ANCSA Corporations and the Federal Government.” Thus, the Policy states that “[w]hen taking Departmental Action that has a substantial direct effect on ANCSA Corporations, the Department will initiate consultation with ANCSA Corporations.” In recognition that “Federal consultation conducted in a meaningful and good-faith manner further facilitates effective Department operations and governance practices,” it further commits that the Department will “identify consulting parties early in the planning process and provide a meaningful opportunity for ANCSA Corporations to participate in the consultation policy.” The Consultation Guidelines of the Department’s Tribal Consultation Policy that are incorporated by reference into the ANCSA Corporation Policy thus require BLM to consult as early as possible, beginning at the Initial Planning Stage, and provide that the agency should give at least 30-days’ notice prior to scheduling a consultation, except in exceptional circumstances. / Accordingly, Doyon expects to be engaged by BLM in meaningful consultation throughout each stage of the review and permitting process, and intends to provide further comments and input through consultation and the public comment process. Such consultation should not be limited to group format meetings involving multiple tribes and Alaska Native Corporations, but must provide ample opportunities for one-on-one conversations. While Doyon appreciates BLM’s interest in group meetings for efficiency and other reasons, such meetings are not always conducive to meaningful discussions of Alaska Native Corporation issues and concerns. Alaska Native Corporations have particularized interests that differ from those of tribal entities, and not all Alaska Native Corporations are similarly situated or necessarily share the same interests. Pursuant to Federal law and policy, BLM must ensure that Alaska Native corporations are provided the opportunity to meaningfully participate in Federal agency decision making processes that could impact our ability to fulfill the purposes for which we were established under ANCSA and to protect and advance the economic, social, and cultural interests of our shareholders.

Issue 3: EIS and EEA Process, continued

280. Considering the scale of potential affects to small villages posed by the Ambler road, it is recommended that the lead agency (and the NPS) designate ail villages cooperating agencies in the environmental review process. Villages in the area possess special expertise on matters relating to their historical demographics, customary and traditional use areas, traditional ecological knowledge, cultural resources, village infrastructure, governance, climate change, health and food security. That said, affected villages may organize as a coalition and function as a cooperating agency, such that working the BLM (and the parallel NPS studies) would proceed rapidly along the environmental review time-frame.
281. Further, the collective knowledge possessed among Tribes would add traditional knowledge to the affected environment and guide assessment of consequences. It is particularly stark to assess effects to the human environment, including community and clinical health. To date, the publically available application for the project is heavily weighted on the natural environment and a commensurate treatment of the human environment is warranted. Frequent and direct relations among agency officials, the preparers of the EIS and the affected communities would facilitate meaningful consultation while addressing responsible development practices (see below).
282. Consultations with those communities should involve a regular venue for open communication and be carried out strategically to allow Tribal leadership and communities to understand the planning phases and the interdisciplinary analytical framework. In other words, meaningful consultation afforded to Tribes should include the opportunity for members to participate in and understand how the project evolves while rendering impact assessments and resulting mitigation measures. Cooperating agency status among several villages would facilitate meaningful consultation on a regional level and substantively supplement government-to-government (GtoG) meetings.

Issue 3: EIS and EEA Process, continued

283. Tribal alternative: Cumulative impacts and adaptive management. The context of the Ambler road project (a third pioneering vehicular road that would traverse the traditional lands of multiple TCC Tribes) warrants serious consideration of an integrated Tribal Alternative. A full-blown alternative based on genuine rural-village community-outreach, meaningful Tribal consultation and traditional knowledge data-gathering with Alaska Native entities would more appropriately address environmental justice concerns of the several, disadvantaged communities potentially affected by the project. A Tribal Alternative would include baseline data and interdisciplinary analysis on historic and contemporary demographics of affected villages, the affected environment relating to socioeconomic and socioecological factors, health impacts including human and behavioral health, community infrastructure (housing, roads, trails and public utilities), public and community health services, employment and workforce development (parallel to Section 29 employment clause of the TAPS authorization), public and community education, public safety, wildland economies and food security, land management including conservation of resources that support the wild food economies and cumulative impacts. The development of a Tribal Alternative would coalesce direct, indirect and cumulative impacts to the communities most affected by the project. A Tribal-based alternative could be structured to address those impacts while developing a complimentary adaptive management strategy to monitor anticipated and inadvertent impacts. An adaptive management program designed and implemented with local residents would use formal scientific data gathering and traditional ecological knowledge. The Tribal Alternative model would assume an organizational structure for data gathering, impact analysis and mitigation measures carried out in close coordination with preparers of the EIS and resource staff of the lead and other cooperating agencies. The development of a Tribal Alternative may best be accomplished by organizing a coalition of Tribal government and ANCSA native corporation representatives into a cooperating agency to work closely with the NEPA team of agency officials. Tribal representatives would function as experts possessing special expertise on intrinsic knowledge about their communities and be a supplemental third-party contractor. A coalition of regional Tribal representatives acting in the role of a cooperating agency with third party contracting support may be a more cost-effective, productive and meaningful way to engage Tribes in the EIS process compared to the village outreach model used thus far for community engagement.
284. We want it understood that the position taken in the resolution remains with full support of the Board. The scoping process will not be allowed to perform any of its activities on Evansville, Inc. land and scoping of any alternative route will not be allowed on Evansville, Inc. land.

Issue 3: EIS and EEA Process, continued

285. We acknowledge the need to provide meaningful public involvement in the preparation of an EIS and recommend the identification, inclusion, and integration of traditional environmental knowledge into the EIS analysis, as appropriate. Such anthropological work can include the collection of local and traditional knowledge concerning the affected environment, anticipated impacts from the project, as well as traditional hunting and land use patterns in the area. We recommend that, in addition to reviewing any pertinent traditional environmental knowledge currently available, additional studies be conducted as necessary to clearly identify concerns and potential impacts, including cumulative impacts, from the proposed project and project alternatives. This information should be reviewed and included in the EIS to the extent possible and utilized in the analysis of potential impacts.
286. Executive Order 13175, Consultation and Coordination with Indian Tribal Governments (November 6, 2000), was issued to establish regular and meaningful consultation and collaboration with tribal officials in the development of federal policies that have tribal implications, and to strengthen the United States' government-to-government relationships with Indian tribes. In addition, pursuant to Public Law 108- 119, 118 Stat. 452, as amended by Public Law 108-4217, 188 Stat. 3267, federal agencies are required to consult with Alaska Native Claims Settlement Act Corporations on the same basis as Indian tribes under Executive Order 13175. The EIS should describe the process and outcome of government-to-government, or government-to-corporation, consultation between the BLM and tribal governments or ANCSA corporations within the project area, issues that were raised, and how those issues were addressed in the selection of the proposed alternative.
287. Also, consistent with the July 28, 1999, memorandum from the Council on Environmental Quality to Heads of Federal Agencies, the BLM should consider inviting affected tribal governments to participate in the EIS development process as cooperating agencies. This would provide for the establishment of a mechanism for addressing intergovernmental issues throughout the EIS development process.
288. The EIS process must invite potentially affected tribes to be cooperating agencies in the development of the EIS. They can provide vital and useful information that would otherwise not have been assessed, as shown by their input during the Donlin EIS process.³ Tribal governments do not have to indicate a preference for or against the project to be cooperators.

Issue 3: EIS and EEA Process, continued

289. Although tribes have significant experience to contribute to the EIS process, the process is not designed in a manner that is easily accessible to them. It is highly technical, uses highly regulatory and legal language, and meetings are often conducted in Anchorage; although meetings can be accessed by phone, this does not allow for real interaction and input.
290. Discussion documents and preliminary EIS sections need to be provided in formats that allow tribes to have meaningful input. The process for how an EIS is developed needs to be explained in a format that can be understood – the development and discussion of preferred alternatives; how alternatives that will go in the EIS are determined (development/acceptance/elimination of options and who makes those determinations); how to contribute to the Data Gaps section, the process of moving from individual documents to a preliminary draft EIS, draft EIS, preliminary final EIS, and final EIS; the amount of material that needs to be reviewed; who the key people are to contact by phone or email for specific sections; the option to have “tribal only” calls or meetings with tribal government cooperators; how to provide comments informally, formally, and publicly. There should be discussion of the different ways that impacts can be analyzed or summarized. There is a lot to learn about the process itself that should be communicated to tribal governments, beyond a form letter that asks if they want to be part of the EIS process.
291. At least one person in the cooperating agency group should be designated to facilitate understanding; providing layman’s guides to the technical information presented, and working with tribes to ensure their voices are heard in feedback in a manner that allows their perspective to be completely understood and acknowledged. Tribes are likely to have meaningful input on baseline data needs in the Data Gaps section, if they understand the process are listened to. If tribes would like to have their own consultant or contractor work with them through the process, this should be acknowledged in the MOU. It would be extremely helpful if federal or state agencies contributed funding to allow tribes to be as involved as possible, whether through transportation to meetings, funding a communication role, or assisting tribes in funding consultants.
292. Cooperating agencies and tribal governments must develop the EIS while considering both the impacts of mines in the Ambler region and the impacts of access to them.
293. The road is only one part of the project; the mine at the end is a whole other issue that is equally concerning. I would like the EIS for the road to include analysis of the environmental impacts of the mine as well, since the mine is the whole purpose of the road. The two proposals (road and mine) are very much tied together.

Issue 3: EIS and EEA Process, continued

294. Withhold decision until mining plans are submitted and investors are committed. The current process seems in the opposite order time wise. AIDEA states that the companies mining in the Ambler Mining District, not the State of Alaska, would pay for the Ambler Road. Therefore BLM should withhold final decision until the applicant demonstrates an economically feasible project with bonding, viable loans and collateral for repayment, i.e. credit worthiness..... AIDEA also stated they have no lenders at this point in time, therefore it makes more sense wait to complete the EIS process when this project may be more of a reality. If BLM continues with the EIS process and there are no mining plans, the public process has been a waste of state money, federal staff time and the public's time.
295. To assure the most responsive, arms-length management and compliance with the terms and conditions of the ROW, the applicant should be changed from AIDEA to the mining and transportation company actually doing the work. Only in that way can the project viability and compliance be assured. This is clearly most consistent with the intent of ANILCA envisioning the operator as the applicant. Given Alaska's fiscal situation, this would make more economic sense.
296. As of now there is the implication that mining will take place in the Ambler District once the road is built. As of yet there has been no permit application from any mining interests to DNR. Aren't we putting the cart in front of the horse. Until a serious proposal is received this proposed road construction is following the path of previous misdirection and waste of state money.
297. The process of this ROW request seems to out of sequence with an appropriate approach to properly consider all impacts of the proposed actions. The Environmental Review process should first consider the mining project(s) themselves by review of an operations plan that details the scope of the proposed mining development.
298. AIDEA states the companies mining in the Ambler Mining District, not the State of Alaska would pay for the construction of a road. Therefore BLM should withhold final decision until the applicant or responsible mining company demonstrates an economically feasible project with bonding, viable loans and collateral for repayment, proving credit worthiness and accountability. ...ANILCA intended that operator of the mine be the applicant for mining or ROW permits not a state corporation like AIDEA. To assure the most accountable and compliant management of a mining operation and ROW the applicant needs to be changed to the company that is planning on doing the work. This is the only way to assure project viability and compliance. Also given Alaska's current fiscal situation, this would be the prudent way to proceed. BLM should not approve a ROW if the operators cannot assure the entire operation is economically feasible.

Issue 3: EIS and EEA Process, continued

299. Withhold decision until mining plans are submitted and investors are committed. The current process seems in the opposite order time wise. AIDEA states that the companies mining in the Ambler Mining District, not the State of Alaska, would pay for the Ambler Road. Therefore BLM should withhold final decision until the applicant demonstrates an economically feasible project with bonding, viable loans and collateral for repayment, i.e. credit worthiness.
300. This application is very premature. The public and agencies should not be required to research what the real costs and flaws for this incomplete application. Currently there is no viable demonstrated mining plan by Trilogy Metals. Where is the huge energy going to come from? A gas line or massive amounts of diesel will be needed; there has been no projection. Everything done to date regarding mining operation by Trilogy Metals is vague at best. The current mining proposal has huge logistical gaps that make this proposal pie in the sky. The reason is Trilogy has stated publicly they are not going to mine. Their intention is to sell to a Company who might mine the copper ore. There is no real plan.
301. Though I realize the development of base metal mines in this remote part of Alaska could provide employment opportunity for local area residents and mining specialists, government entities need to carefully weigh the costs against the benefits of the proposed 211 to 227 mile access road from the Dalton Highway to the Ambler Mining District. Though Trilogy Metals, Inc. (formerly NovaCopper) has diligently explored and described ore deposits in the Ambler Mining District, particularly the Bornite and Arctic sites, this exploration company may not have the resources to develop and operate mines in this area without the assistance of a larger partner. Trilogy assets as of August 31, 2017 (posted online) are at \$47,048,000. The estimated road costs for AIDEA are between about \$250,000,000 for an exploratory single lane road to nearly \$500,000,000 for the full build out of a two-way road with several bridges along the route. It defies logic that a relatively small mining company like Trilogy Metals could pay for the Ambler Access Road. I realize Trilogy Metals and potential partners would pay toll fees over several years or decades to refund AIDEA's investment, but the lack of a mining plan and apparent fiduciary capability make this a risky investment for the State of Alaska at this time. BLM and AIDEA should withhold a final decision on the access project until a mining company presents an economically feasible mining plan with cost estimates for engineering, permitting, construction, operations, insurance, bonding, viable loans, and collateral for repayment of road construction and maintenance costs, and commitment for removal and reclamation.

Issue 4: Maintenance and Operations

302. AIDEA's application provides no information on its dust palliative application plan. It refers generally to the fact that there are a number of possible dust palliatives that might be applied and says it would consult with the University of Alaska Fairbanks once a corridor is approved. Dust-related issues and contaminants associated with dust palliatives are a serious concern that BLM needs to fully analyze in the EIS. Dust palliatives can contain dangerous contaminants that have the potential to pollute surface and groundwater resources. Dust fallout can extend and affect up to 0.6 miles on either side of a road, which can impact the vegetation community within 656 feet, and cause faster snow melt up to 328 feet of the road. Without information on the measures AIDEA will adopt to control dust, BLM will be unable to determine the extent of adverse effects to permafrost, water, fish, and wildlife resources in the region, as well as the need for and effectiveness of potential mitigation measures. BLM should not allow AIDEA to rely on a future promise to identify these measures; such measures need to be part of its application and fully analyzed as part of the EIS.
303. BLM must also consider the impacts of gravel mining as a connected action. AIDEA has provided little information on gravel mining beyond the number of material sites they anticipate needing for construction and maintenance of the road. They anticipate 42.23 million cubic yards of gravel will be needed for the project for construction and maintenance. It is seemingly impossible to check the veracity of this number, as AIDEA's application does not provide incremental gravel needs for various elements of the project (e.g., turnouts, airstrips) or for the various phases of the road. AIDEA needs to provide far more information about the potential gravel resources necessary for the project for BLM to fully analyze the potential impacts. Gravel extraction is generally done in large, open pit mines typically located away from major streams and lakes. Although direct stream impacts may be mostly mitigated, 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 area's 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 (0.4 ha) gravel pit may impact as much as 25 acres surrounding the site.

Issue 4: Maintenance and Operations, continued

304. Acid mine drainage tremendously increases the cost of waste management. A 1998 report estimated 70% of the waste rock at the Arctic deposit could be potentially acid generating (PAG). Despite this work, Trilogy has conducted virtually no studies to understand the potential for acid drainage. The most recent information we have with respect to the potential for acid drainage is the September 2013 PEA for Arctic and the May 2016 technical report for Bornite. This mentions static tests conducted on Arctic deposit samples in 2011 that indicate all the ore and much of the host rock will be PAG, and 55% of the waste rock would be PAG.
305. Geochemical studies can inform an EIS by providing some idea of the waste management structures that would be required, and the geographical area and constraints in general for containing the waste. If there is more acid generating waste rock than neutralizing waste rock, the acid waste rock will likely need to be kept under water (co-disposal with tailings). This is already discussed for the Arctic deposit, where over 23 million tons of waste rock would be co-disposed with 1 million tons of tailings in the first year of operation, in a lined tailings facility. Co-disposal limits the options for separating waste rock and tailings waste facilities, and limit the options for potentially feeding ore from several deposits into a single processing facility. Importantly, if PAG waste rock needed a water cover within the tailings facility, it would set up exactly the situation that the Mount Polley expert review panel recommended against. Instead, paste or dry stack tailings facilities are recommended.
306. The Ambler Mining District has numerous metals present and most notably, copper which is particularly toxic to fish and aquatic organisms. Leachate from tailings or newly exposed rock or spillage from mining activities such as impoundment failures will be potentially highly consequential to aquatic ecosystems and must be analyzed in the EIS.
307. The ore deposit near the Kobuk has the highest risk for Acid Mine Drainage (AMO). Any AMO from mining is toxic to fish. A study must show how to control and contain AMO in order to prevent permanent water contamination.

Issue 4: Maintenance and Operations, continued

308. Truck traffic will also release copper into the environment. It is known that copper sheds from brake pads and washes off into waterways, where it impacts salmon. More needs to be understood about this in a site-specific manner. Testing should be conducted to determine if site-specific waters will allow copper to have a toxic effect on fish; it is known that toxicity declines when waters are more alkaline and have high dissolved organic matter content. Testing should include collecting baseline water quality in streams, ephemeral waters, and wetlands on alkalinity and dissolve metal concentrations and could advance to using water collected on site for use in laboratory toxicity testing, as was done by independent investigators at the Pebble exploration site. Consideration should also be given to understanding whether area fish other than salmon are susceptible to low level increases of copper. Consideration should be given to researching whether copper shed from brakes in winter can build up on snow and ice and release quickly into waters, potentially at relatively high concentrations, in spring or during a short winter thaw.
309. The impacts of ore concentrate on vegetation at the Red Dog mine's Delong Mountain Terminal Road is well documented, although impacts on wildlife that uses the vegetation (grouse, caribou, etc.) have not been well-studied.
310. In addition to health and visibility effects, studies of road-sourced dust on the North Slope and elsewhere, demonstrate increased snow melt rates along shoulders and concomitant effects on ecologic productivity in road vicinities. Dust palliative effectiveness varies with temperatures and relative humidity. Potential toxicity to plants and animals from palliatives should be addressed.
311. The road dust will have an impact.
312. Dust from both the road and the truck-bed material would be constant, with heavy metals and asbestos in the mix.
313. The statement that most dust impacts would be within 100 feet of the road, with no impacts when there is snow and ice, ignores actual evidence from the Red Dog road, including evidence of contamination from ore concentrate several hundred meters from the road.
314. An option for using LNG-powered trucks for mining and transporting freight and ore concentrate should be considered, particularly with regards to air quality and climate impacts.
315. Spills from overturned trucks and collisions are inevitable. Cargo will include fuels, lubricants and reagents used in mining. These may affect water quality and aquatic ecosystems.

Issue 4: Maintenance and Operations, continued

316. Chemicals Transported and Used- P. 51, SF 299- Lists chemicals and reagents potentially transported. With the exception of the inorganic acids, sodium cyanide, and copper sulfate, most are relatively benign. A spill of CuSO₄ will cause significant aquatic ecosystem and terrestrial vegetation damage. Release of highly toxic NaCN powder creates a major hazard to humans and wildlife. If the soluble powder were to enter a stream that is acidic (likely in areas of spruce forest), it may cause a release of HCN, inhalation of which can be fatal. The list fails to include high explosives used in mineral mining (and riprap production and road construction). Accidents and spills will occur, and concentrates will escape to the environment despite requirements to cover loads. These risks and impacts need to be quantified and addressed in the EIS.
317. Construction costs need to include design features to mitigate the effects of land movement, and maintenance costs need to be calculated based on expected frequencies of these events, particularly given climate trends.
318. It is critical that EIS determine the likely impacts of the rapidly changing Arctic climate on road construction and maintenance. Analyzing the emission of greenhouse gases on a project are no longer required by NEPA, but understanding the impacts of the climate on the project are crucial to an economic analysis. A good start would be Melvin 2017. Engineering should engage the services of companies that are technically competent in analyzing the specific range of climate impacts in the area of road-building, and who are competent in designing mitigation for mines after climate analysis, such as SRKs Vancouver office. Analysis needs to consider not only air temperature fluctuations, but the increased likelihood of flooding, rain-on-snow events, freeze-thaw, thermokarst development, sinkholes, and river bank erosion. Road flooding is one of the most common climate-related damages in Alaska, and design for a 50-100 year flood is very likely to be insufficient. The EIS needs to consider engineering mitigation where the road crosses floodplains, including potentially an elevated road with wide culverts for water flow or extensive bridges across floodplains. Analysis needs to consider the specific risks to bridges, storage buildings (e.g. if buildings are built for storage or emergency equipment), and downgrades, upgrades, curves on the main industrial road, frontage roads, spur roads, and airfields. Bridges and culverts, currently sized to “bankfull width” of streams may realistically need to be sized larger, with consequentially higher costs. The estimated damages to infrastructure that currently exists in Alaska is \$4.2-\$5.5 billion, with some of the largest projected costs anticipated for the Yukon-Koyukuk region. The region would be one of the largest beneficiaries of reduction in greenhouse gases – but this road and consequential development of a mining district would increase greenhouse gases, disproportionately affecting residents.

Issue 4: Maintenance and Operations, continued

319. Permafrost in Arctic Alaska is melting- a scientific proven fact. The road would be very difficult to maintain, as the ground becomes softer and boggy: more gravel, more maintenance. Not to mention more carbon dioxide emissions, added to vehicle emissions.
320. Studies must be done to determine the extent of melting permafrost in the project area. What is the extent of the active permafrost, the continuous and discontinuous permafrost? This will have an effect on the foundation of the road. Mitigation for that must be planned. Also the EIS must consider how much the project construction, its footprint of gravel pits and work camps will cause permafrost melting by the vegetation disturbance, destruction, etc.
321. Will road activities have the potential to increase temperature in wetlands or streams, through slowing or blocking water movement? If this is monitored, control sites should be set up to determine the influence of climate change alone versus road amplification of climate impacts.
322. It's probably not BLM's concern, but I think it's clear that if over 30 50-ton trucks are driving on the road every day, maintenance costs will be substantial. Maintenance costs for the Dalton Highway south of the Ambler Road junction will also increase.
323. 6. Explicitly address plans for road maintenance and deconstruction after the lifetime of the mines. ...6. How would the road be maintained, and how much would this cost annually? What would be the ongoing environmental impacts of continual maintenance?
324. Given the documented effects of thawing permafrost and thermokarst features across this road corridor, I will look for a realistic and detailed road maintenance plan that will address severe structural challenges and a long-term commitment under the DOT budget.
325. The Dalton Highway maintenance is a State expenditure. There are seven maintenance camps from Livengood to Deadhorse. There is tremendous cost to the State for wages, insurance, and retirement for the crews. For the work one week on and one off, the State pays for charters to fly the crews up and back. The State also pays for the equipment and fuel as well as parts and supplies that all have to be trucked up. All of the remote operations are not cheap. The Amber Road would be iust as expensive, but most likely more. There would need to be airfields built near the camps to change the crews out. There would need to be a minimum of three to four camps on the Ambler Road. Coldfoot would maintain the east first 60 miles, but the budgeting would need to be increased for the Coldfoot site. Most likely Coldfoot, John River, Alatna and Ambler would be the camp locations.
326. Principally, the EIS must explore how the road will be maintained and how the access on this road will be limited.

Issue 4: Maintenance and Operations, continued

327. Attention must be paid to long term maintenance costs of different modes and routes, and the implications of those costs on the threat that the mines and roadways will be abandoned without necessary maintenance, mitigation, removal and recovery. Consider the likelihood that for all the alternate routes and overland odes, that ANILCA section 1107, requiring complete restoration and restoration and curtailment of erosion will be delayed and ultimately abandoned.
328. In winter, roads will need to be kept free of snow and ice. How will this be done, and what impact does this pose for the environment? Will road maintenance crews use sand? If so, where will this come from and where will it be stored? Will there be salinity or turbidity impacts to streams, particularly during snowmelt or at creeks at the foot of downgrades? Will there be increased impacts of dust on vegetation and wildlife? If salt is used, the ion mixture could affect vegetation, aquatic insects, and potentially fish; tadpoles of the common frog are known to be impacted by salt levels of 500 mg/L. Would wood frog tadpoles also be susceptible? Testing should be conducted with different de-icing options using site-specific water from streams on the road route to determine the least toxic method, since the chemical make-up of natural waters is an important part of the degree to which ion mixtures may impact aquatic life.
329. Studying which route is most protective of watersheds considering gravel extraction for the road, placement of the road pad, road spurs, and potential silting issues, passageway protection of both the main stem of the Kobuk, but also the tributaries and potential long-term impacts to water quality from fugitive dust from both the expected truck traffic itself and the ore concentrate they are hauling. We have seen how the fugitive dust issue is real from the Red Dog road and the contamination of the areas near the road from ore concentrate and would expect that from the start there will be a requirement for the trucking operations to address this issue by securing the concentrate dust so it is not able to migrate from the trucks into the countryside along the road. While this seems like a commonsense issue, history has shown this to not be the case. In addition, trying to limit the amount of road dust that impacts the surrounding countryside and also is allowed to migrate into the watersheds is an important issue to address. Picking a route that minimizes stream and river crossings would seem to be a place to start....

Issue 4: Maintenance and Operations, continued

330. The EIS should describe measures that will be taken to minimize the chances of an accidental release, the emergency measures that will be implemented should such an event occur, and how potential adverse impacts from spills may be mitigated by effective containment and cleanup operations. We recognize that spill response in remote arctic conditions is quite challenging. These challenges must be considered when determining the most appropriate strategy for dealing with spills and releases in varying conditions and seasons, including freeze-up, the winter season, and break-up.
331. Finally, if any pesticides or biocides will be used during construction, operation, and maintenance of the project, the EIS should address any potential toxic hazards related to the use of such substances, and describe what actions will be taken to ensure that impacts from toxic substances released to the environment will be minimized.
332. Should mines be developed, chemical reagents will be brought in via the industrial road. Any mine that processes ore on site will require tons of chemicals annually. This may include sulfuric acid, sodium hydroxide, lime, nitric acid, copper sulfate, potassium permanganate and/or cyanide among others, depending on the ore being mined. Water treatment will also be needed, which will require several of the same reagents. The EIS needs to consider methods to reduce spills from, and clean up spills from, transport trucks carrying reagents, fuels, and oils. This should be considered in road design (road grades, berms, sinuosity and curves). At locations with higher risk, spill cleanup stations should be staged.
333. What's on the road doesn't stay on the road. If it doesn't infiltrate into the roadbed, it washes off into nearby vegetation, wetlands, streams, and rivers. Truck traffic will inevitably result in leaks of vehicle fluids (oil, gas, diesel, hydraulic fluid, antifreeze) which will wash into adjacent landscape. Applicants state that they expect minimal problems with spills because there were few on the Red Dog road; however, the terrain and length of the Ambler road is different than for Red Dog. At a minimum, the applicant should calculate the expected rate of different sized spills (e.g. <50 gallons, 50-500 gallons, > 500 gallons) as number of spills per mile, and the miles accumulate with the number of years the road is in operation. These estimates should be done accounting for the full route that cargo and ore concentrate needs to travel from port to mine.
- An average of eight spills per year has occurred on the Dalton Highway, with a high of 15 in fiscal year 2008, a similar number (13) in 2015 and a low of 2 in FY 2016. "Observers blame the wrecks on factors such as warming winters that increasingly glaze roads with ice, plus less highway maintenance amid Alaska's fiscal crisis." This caused enough concern that DEC held risk management trainings in Fairbanks and Anchorage in March/April 2017. There is no reason to believe the risk will be less for the proposed Ambler road. This is a testament to the need to design for the changing climate; to train trucking companies, drivers and employees,

including National Park Service employees, that may be first responders; and to place and maintain spill response equipment along the road. Spill response equipment needs to be sufficient to deal with both fuel and chemical spills, and needs to be in enclosed buildings kept free of snow and ice. All of this takes funding. State royalties from mining are extremely small and unlikely to pay for these types of necessary activities.

Issue 5: Mining Impact

334. a. Mining-related activities are connected actions that BLM is required to fully consider in the EIS. Mining-related activities in the Ambler Mining District need to be considered as connected actions in the EIS. 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 itself only further reinforces the fact that the mining-related activities need to be considered as connected actions. 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.” 61 Several of the Ambler Mining District’s hardrock deposits are being actively explored without road access. The clear purpose of this industrial road is to build a road for mine development.
335. Last, the proposed ROW would go to one mine in the Ambler Mining District. What further impacts would occur when other roadways, feeder roads, social trails, to other mines are made? What further reviews and permitting would take place? In order to avoid “segmenting the project,” the DEIS should identify and analyze reasonably likely scenarios for future expansion of the road network.
336. This proposed road is being built to access mines. Mine impacts must be studied. The same study needs based on climate change impacts for the road should be done for the actual mines. Their development footprint including their infrastructure should be documented in the EIS.
337. The Alaska Industrial Development and Export Authority (AIDEA) has submitted an application for an access road to the Ambler mining district for implied exploration and development of mining activity. This application should be denied at the onset. The true proposed action that needs to be evaluated is a mine with an associated access road. This proposal puts the cart before the horse.
338. Withhold decision until mining plans are submitted and investors are committed. The current process seems in the opposite order time wise.
339. the issues that arise because the road’s permitting is separate from the permitting of the mining operations—the road is of a piece with the mine and their impact must be considered together
340. the issues that arise because the road’s permitting is separate from the permitting of the mining operations—the road is of a piece with the mine and their impact must be considered together
341. When creating an EIS of the road, BLM must address that the most significant environmental impact of the road will be increased mining in Ambler District.

Issue 5: Mining Impact, continued

342. The EIS needs to consider "connected actions" as required in NEPA. These include impacts from all potential mines in the area, acid mine drainage effects on waters and fisheries, tailings impoundments, asbestos and airborne metal impacts on people and the natural environment, transport of heavy metals to Fairbanks and to port, and associated impacts and costs of the entire connected actions needed for the project.
343. Considering the environmental impacts of mining in the EIS is also unnecessary given BLM's limited jurisdiction over AMDIAP and mining. Courts, including the U.S. Supreme Court, have eschewed a "but for" causal relationship between a project and environmental effects that must be considered. *DOT v. Pub. Citizen*, 541 U.S. 752, 767 (2004). That is, an environmental effect need not be considered just because "but for" the project the environmental effect would not occur. Rather, courts consider the extent of the agency's control over a project when evaluating the breadth of indirect effects an agency must consider. *Ka Makani 'O Kohala Ohana Inc. v. Dep't of Water Supply*, 295 F.3d 955, 961 (9th Cir. 2002); *Winnebago Tribe of Neb. v. Ray*, 621 F.2d 269, 272 (8th Cir. 1980). BLM has little, if any, control over the actual development of minerals in AMD as those minerals are predominately State and Native Corp. minerals. Moreover, regarding the AMDIAP ROW itself, BLM controls just 24-linear miles of the AMDIAP, a significant portion of which will be conveyed to the State and a Native Corp. once the State and Native Corp. selections are finalized. BLM's jurisdiction is also limited because it may not deny approval of AMDIAP. Because BLM's jurisdiction is so limited, including lacking any control over mining, BLM need not consider the indirect effects of mineral development on AMDIAP's construction.

If BLM determines it must include some limited consideration of mining as an indirect effect, Trilogy advises that BLM's discussion focus on:

- General descriptions of mining methods and techniques,
- Estimated average production and life of mine/reclamation timeframe,
- Potential existence of auxiliary facilities and operations
- Description of potential mitigation measures for mining
- Estimated acres of lands impacted.

At most BLM should address these issues at a very high level in the EIS.

Issue 5: Mining Impact, continued

344. The EIS Should Include Little, if Any, Discussion of the Mining as an Indirect Impact. Trilogy first briefly mentions why mining is not a connected action with AMDIAP. As BLM's handbook states, "Connected actions are limited to actions that are currently proposed (ripe for decision)." BLM NEPA Handbook at 45. "Actions that are not yet proposed are not connected action" Id. Here, there is no proposal for approval of a federal permit. Trilogy hasn't even completed its pre-feasibility study, much less a bankable-feasibility study. Exploration and analyses must still be completed to determine the workability of the deposit. Until these studies are complete, development in the AMD is far from certain. Therefore, mining in the AMD is not a connected action. Even if mining is ultimately permitted, mineral development in the AMD would take place on State and Native Corp. land – no federal lands are impacted and, therefore, the BLM has no authority in permitting future potential mining projects in the AMD. BLM is "not required to include a non-Federal connected action together with a BLM proposed action as aspects of a broader proposal, analyzed in a single NEPA document." BLM NEPA Handbook at 45. For these reasons, mining in the AMD and AMDIAP are not connected actions.

The EIS also need not consider the indirect effects of AMDIAP's construction on mining because those affects are speculative, indefinite, and not reasonably foreseeable. Indirect effects are effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable." 40 C.F.R. 1508.8. Agencies "need not consider highly speculative or indefinite impacts." *Kleppe v. Sierra Club*, 427 U.S. 390, 402 (1976)). Mining in the AMD is the paradigm of a "speculative or indefinite impact."

Obviously, AMDIAP is meant to facilitate mineral development in the AMD. But the potential projects in the AMD are not far enough along in their planning process to make environmental analysis meaningful. Little engineering work has been done on mine design, and there is no bankable feasibility study. Consequently, possible future mineral development need not be discussed in detail. *Kleppe*, 427 U.S. at 410 n.20 ("[NEPA] does not require an agency to consider the possible environmental impacts of less imminent actions when preparing the impact statement on proposed actions.").

345. The EIS must evaluate not just the impacts of the proposed road, but also provide a detailed and comprehensive evaluation of all industrial activities that could ensue due to the presence of the road. This includes any/all potential mining activities in the region, and all potential impacts of such activities. It isn't enough to assess just the road, but the EIS must fully and fairly evaluate all activities that the proponents envision the road would facilitate in the region.

346. The Ambler Road probably should be tied to a development opportunity such as Trilogy's proposed economic PFS process; otherwise what is the source of initial development for the process (?)

Issue 5: Mining Impact, continued

347. This proposed road is being built to access mines. Mine impacts must be studied. The same study needs based on climate change impacts for the road should be done for the actual mines. Their development footprint including their infrastructure should be documented in the EIS.
348. CEQ regulations instruct agencies to consider impacts and actions, which are reasonably foreseeable (40 CFR 1508.7, 1508.8(b)). Because the purpose of the road is to provide access to allow for the exploration and development of mineral deposits in the Ambler Mining District, both exploration and mining activities and their associated impacts are reasonably foreseeable. Such activities may also be considered connected actions under 40 CFR 1508.25. Thus, in addition to considering the impacts of construction and operation of the road, the EPA supports the BLM's plans to develop Reasonably Foreseeable Development scenarios for exploration and mining activities and evaluate the potential impacts of exploration and development in the Ambler Mining District.
349. It is also our concern that increased barge and water craft traffic to and from the regional center (Kotzebue) that purposes or will serve in portion the industrial mining and support utilities complex will change the subsistence lifestyles of our people who depend on the Kobuk River Delta; and including the alteration of the marine life, waterfowl and birds, and land animals of the Delta.
350. The impacts associated exploration and development of any proposed Ambler mine needs to be considered in each of the alternatives. Separating the road from mine activities avoids assessment of environmental impacts associated with the stated objective of the project. AIDEA provides a guess as to the number of vehicle trips per day that would use the road. There needs to be a basis for the determination of vehicle trips that can only be offered by a mine proponent. This action should be presented as a mine with an access road, not a road with a potential mine. The tail is wagging the dog. If the access road were to be presented as an unlimited commercial road, it would need to identify a center of commerce, e.g. Kotzebue.
351. The DEIS must not simply evaluate the effects of a road, but must address the comprehensive impacts of the road and the necessarily connected actions. These must include the mining operations and the development of an extensive transportation infrastructure from the end of the Ambler Road to tidewater. Without the proposed mining in the Ambler Mining District there would be no Ambler Road. The specific impacts of the proposed mining must be evaluated in the DEIS, as well as the necessary road, rail and port improvements to get mined ore to processing facilities.

Issue 5: Mining Impact, continued

352. The road project is based entirely on accessing a copper ore district. Mining for copper, and other ores, is not only reasonably foreseeable, it is necessary and the sole purpose for the project. Therefore, the impacts of mining need to be analyzed. This will be a very large undertaking. The analysis should include impacts from different scales of mining (e.g. several small mines throughout the Ambler district) with different processing sites (e.g. several tailings and waste rock storage facilities) as well as environmental and economic costs of having a single ore processing facility that services several mines of different sizes. At a bare minimum, it needs to consider the development of the Arctic, Bornite, and other areas under recent exploration as indicated by Trilogy SEC filings.
353. The EIS must consider “connected actions” per NEPA regulations. Impacts of a road cannot be considered in a vacuum; other connected actions must also be considered. These include impacts from mines in the region, asbestos effects, acid mine drainage effects on waters, vegetation and fisheries, tailings ponds, transport of heavy metal ores to Fairbanks and to port, and the costs of all these activities.
354. The proposed Ambler road will also provide greatly improved access to existing mining claims and related activities on State lands located north of the road and south of the Gates of the Arctic National Park boundary. Because of access advantages created by the road in this region, more trails and mining activity can be expected in the future. When the Ambler road is opened to public travel, it will also allow for greatly increased ATV and snow machine travel up existing and future mining trails. It should be anticipated that there will be increased incursions of motorized hunters and recreationists the state lands and extend into the Gates of the Arctic Wilderness to the north. Such incursions will likely increase over time, and result in significant negative impacts to wilderness character, vegetation, visual aesthetics, wildlife and subsistence uses. We recommend that the draft EIS address this issue because it will affect Park and Wilderness lands as well as State lands.
355. The ore deposit near the Kobuk has the highest risk for Acid Mine Drainage (AMD). Any AMD from mining is toxic to fish. A study must show how to control and contain AMD in order to prevent permanent water contamination.
356. We recommend the EIS address the potential direct, indirect, and cumulative impacts of hazardous materials/wastes management and storage from the construction and operation of the proposed project, alternatives, and reasonably foreseeable actions (exploration and mining). Mining activities may involve the transport of hazardous materials. The EIS should, therefore, disclose the type and amounts of materials that will be used to support exploration and mining activities.
357. The mine(s) itself is not such a great idea either. Acid mine leakage and drainage would destroy water quality, endangering drinking water and fisheries.

Issue 5: Mining Impact, continued

358. It is our deductive conclusion and traditional knowledge that; ore body and mine contaminants, disturbed naturally occurring asbestos, sediment run-offs, and fugitive dusts settlements will be transported to our Delta water ways which is downstream from the proposed industrial development sites. It is evident that our Delta is the sedimentation catch basin of the Upper Kobuk Rivers, Lakes, and Streams, and to alter and add to the natural sedimentation particulates with Mine ore body caustics, increased run-off of natural occurring asbestos, and release of industrial and heavy equipment residual wastes into the streams and rivers will alter the micro-organisms, surface and benthic sedimentation, and water qualities of the Kobuk River Delta.
359. There is zero baseline data on concentrations of trace metals in small mammals, lichen, and moss, despite the applicant's acknowledgement of small mammals near the DeLong Mountain Terminal road with high loads of lead and cadmium. One simply can't assume that there are low levels of trace metals in soils and vegetation; baseline must be collected so that monitoring downwind can determine if there are environmental impacts.
360. It is important to note that many of the metals (e.g. copper, zinc, cadmium, arsenic, and mercury) that pose a risk to aquatic life do not need acid to mobilize, therefore geochemical analysis that indicates there is sufficient buffering to mitigate acid does not necessarily reduce the risk of metals moving into the environment. A mine does not need to be in progress for metal contaminants to mobilize; this can and does happen at the exploration stage. For example, one report found that exploration at the Pebble site that sulfidic, mineralized drill cuttings had been disposed of on the tundra and were acidic with high copper concentrations. The report also documented minerals, including zinc and arsenic, flowing out of unclosed drillholes at sites where drilling had ceased seven to nine years prior to the investigation. Given this, there is information that an EIS process may want to request from the mining exploration: how is drill waste disposed of, how are drill holes reclaimed, DNR inspection reports, whether there are drillholes that are difficult to reclaim, water and soil samples from uncapped boreholes, water and soil samples near drill waste disposal sites. These would inform monitoring and mitigation options for an EIS that would be relevant to the exploration and operations stages of a mine.

Issue 5: Mining Impact, continued

361. The VMS deposits are likely have (in addition to the known ores of copper, zinc, lead, silver, and gold) minor amounts of cadmium, mercury, arsenic and antimony (see table below, from Leybourne 2008).¹⁰³ These pose risks to aquatic life and human health. The exposure risks will be from mineralized tailings dust or uncaptured tailings and waste rock leachate and consider mitigation options. The EIS can request baseline data on metal concentrations (including the dissolved metal forms) in streams around the deposits as necessary to understand natural conditions that aquatic life is exposed to prior to mining, request some basic aquatic life studies (fish species life stage presence/absence and abundance around mineral deposits), and request windspeed and direction at the Arctic, Bornite, and other sites, which would be relevant to fugitive dust emissions.
362. In a general context the AIDEA website for the project only briefly mentions the Ambler Road and focuses on the larger benefits of the multiple mines and mining related activities that will result from the construction of such a road. CEQ regulations and 40 CFR 1508.7 require detailed analysis of such cumulative effects from reasonably anticipated activities including multiple mines and mining. This requirement does not appear to be something the EIS/EEA will address based on the scoping narrative provided and presentation materials from BLM and NPS. Cumulative effects need to be thoroughly analyzed and presented in order to meet legal content requirements, or a much clearer explanation of why or how this requirement is already being met provided.
363. The likelihood that this road will be extended across the Ambler, to other mine sites & on to the village of Ambler and beyond is highly likely. The scoping process needs to look at this likelihood and consider the impacts that this road could one day extend all the way to the Red Dog Mine Road north of Kivalina. It is highly likely, once this road is in place, it will be taken over by the State DOT and become part of the state road network. If built, this road will be part of a network of roads that will one day extend all the way north to Point Lay & Barrow. The scoping process should address the likelihood of this happening. What are the impacts of this road to subsistence users of this area if the area eventually become a state highway & is opened to the general public?
364. Then once the trucks hit the Haul Road there would be substantially increased maintenance on that road as well. The trucks would have to go through Fairbanks en route to Anchorage or to Nenana to load on boats, with substantial lead and other pollutants blowing off the loads along the way (Reference the Red Dog Mine lead pollution issues along their road). Having 10-20 are-laden trucks per day moving through Fairbanks would increase air pollution, environmental contamination, noise pollution, and road maintenance in town.

Issue 5: Mining Impact, continued

365. If the construction of the road allows mines of all sizes to form then an analysis of the impacts should include scenarios which include but are not limited to: acid mine drainage, power generation for mines, attendant air traffic, air quality issues, and the cultural changes related to industrializing the region.
366. As a retiree from the US Army Corps of Engineers Regulatory program, I am fairly familiar with NEPA requirements to evaluate all reasonably foreseeable environmental impacts of a proposed action, as well as all reasonable alternatives. Given that the stated purpose of the Ambler Road is to "support mineral resource and development in the Amber Mining District", reasonably foreseeable impacts must necessarily include those of the mines themselves, not just the access road. There is no mine plan currently available to do this.
367. It is unfortunate that the public process to consider the road to the Ambler River does not include a comprehensive view of the potential development and the road to the coast that AIDEA staff stated would be required prior to production. ...I hope to see a detailed review of cumulative impacts for future development this road will incur regardless if their proposals are on the table.
368. The only village along the entire 220-mile proposed road route that will connect to this road is the village of Kobuk via the road through Dahl Creek & Bornite. The likelihood that this Dahl Creek Road will be enlarged & improved & extended to the village of Shungnak, needs to be addressed in the scoping process, just as the likelihood that the road will someday be extend to the village of Ambler. The impacts of these likely extensions need to be addressed.
369. Wild River: With industrial road access to the lower Wild River valley, what is the likelihood that one of the active mines in the Wild Lake area would become a full-scale development & how would such a development affect the water quality of Wild Lake, Wild River, and Flat Creek (a major tributary of the Wild River that already has several small scale mining operations). These cumulative effects need to be studied. And how would this affect the property values of the people that own recreational cabins on Wild Lake?
370. Air, water, and soil pollution are persistent problems with mining operations and their access roads. Road dust, which may or may not contain metals, has negative effects on plants and animals. Fuel trucks often overturn on Alaska's highways; BLM should anticipate that as inevitable on an Ambler Road. When toxic materials leach into the surrounding land and water, or when tailings dams fail, communities pay the cost with their people's health; fish and wildlife pay the cost with their reproductive success or their lives, and if bonding is inadequate (as studies have shown is usually the case) taxpayers pick up the financial tab via EPA, DEC, and other agencies. BLM should consider all the costs of pollution to the region's people, its fish and wildlife, and government agencies.

Issue 5: Mining Impact, continued

371. Failure to vet the entire project from mine to the ocean port. The mines will not produce any income and the Ambler road project will fail to pay for itself (through tolls on mining vehicles) unless a route is cleared to take the ore concentrate all the way to the ocean. At the moment there is no viable plan for what to do with the concentrate after it reaches the Dalton Highway. Truck it through Fairbanks, stoplights and all? Truck it on a two lane road through "Glitter Gulch", the most crowded tourist spot in the state? Upgrade the railroad and build a new ore loading facility somewhere near Fairbanks (at what cost)? Build a rail or road accessible port at Point Mackenzie? Have the people along the route been notified? Have those costs been taken into account. Getting the concentrate to the Dalton is only the beginning of the problem of transporting the concentrate to the smelter.
372. The project as described fails to assess the impacts on the transportation system of the existing Dalton Highway and to sensitive landscapes and habitat in Southcentral Alaska. That infrastructure is inadequate to deal with the sort of volume of concentrate this project claims will be produced. There is no description of the competition for trucking space on the Dalton Highway between the plan to develop the Arctic Wildlife Refuge and the Ambler Mining belt. All this requires preliminary design and cost estimates, and environmental evaluation of the implications of those plans.
373. Need to address and evaluate connected actions. In the same way that mining in the Ambler Mining District needs to be addressed in the EIS, transportation infrastructure developments from the east end of a future Ambler road to tidewater must be addressed in the EIS. Ore is proposed to be transported on the Ambler road. The ore will not stop where an Ambler road meets the Dalton Highway: it will need to be transported to tidewater in Southcentral Alaska. The required transportation infrastructure improvements to get the ore to tidewater are also inextricably connected actions with the proposed ROW and wetland permits for an Ambler road. The EIS will need to address these connected improvements.
374. We additionally recommend the EIS address the impacts of mineral extraction activities beyond the terminus of the Ambler Road at the Dalton Highway, including anticipated plans for transporting and/or processing concentrate or ore that is not processed on-site. These are precisely the type of reasonably foreseeable impacts that NEPA was designed to address.

Issue 5: Mining Impact, continued

375. The Ambler Access project would have upstream and downstream effects beyond the direct effects of the road through over 200 miles of arctic wild lands. There is no reason to permit and develop this road unless credible mines are developed on the upstream side of the access project. Reasonably detailed mining plans are needed to evaluate the upstream connected actions. Acid mine drainage needs to be addressed as copper is known to be highly toxic to fish. Hauling heavy ore concentrate would need to continue about another 700 miles to port for shipment to smelters and processing plants. This project would not occur in a vacuum; impacts (negative and positive) to other transportation infrastructure such as highways, railroad, and port also need to be evaluated, including potential for fugitive dust emissions. Methods for transporting and handling heavy ore concentrate to a port in Alaska should be described and evaluated both environmentally and economically.
376. BLM must also consider the direct impacts on the Dalton Highway, other Alaska roads and residents and wildlife potentially affected by ore export. Because ore leaving the Ambler Mining District will travel down the Dalton Highway and other roads via truck, there will be impacts on those roads and nearby residents and wildlife that must be assessed. These impacts include the cost to the state of road damages through additional use, particulate and gaseous emissions' effects on nearby areas, the adverse effects of ore and mining-related chemical spills, and the impacts of additional road noise on nearby residents and wildlife.
377. Consider what additional damage to the Dalton Highway would result from the volume of heavy ore trucks necessary to make the gigantic costs of mining the Ambler belt economical.
378. Does the railroad have the capacity to move current freight from Fairbanks to Port MacKenzie (e.g. from Usibelli coal) and passengers as well as additional freight to and from Ambler mines? What is the extent of upgrades that may be needed if Usibelli, Fort Knox, Pogo, and the Ambler district all want to use a rail line from Fairbanks to Port MacKenzie? What are the likely costs – environmentally and economically?
379. Spills. Based on the minerals expected to be produced and the matrix they are in, it should be possible to identify the likely methods and chemicals needed to produce concentrates and pure products readied for transport. These should be included in the analysis to determine the impact of spills on the environment and the difficulty in completing reclamation actions. While spill experience from the DMTS is of some value, it is based on traffic levels and mix that is not typical of that expected for the Ambler Road and thus should not be relied for predictions of mishaps on the Ambler Road. Commercial traffic will be present, along with local traffic if the road remains restricted. As is likely, the road will be become public and will see a much greater variety and level of traffic. Under any scenario, the traffic to and from the Ambler Road will mix with traffic on the Dalton, Elliot, and Steese Highways and the Johansen Expressway.

Issue 5: Mining Impact, continued

380. The proposed road will increase traffic on the Dalton and Steese Highways and on the Johansen Expressway. The heavier mix of large commercial rigs and smaller vehicles will increase risks for both. The large vehicles will be hauling hazardous materials, including high explosives and cyanide. The impact on Level of Service (LOS) and resulting effects on traffic flows, speeds, travel times, and need to redesign and reconstruct intersections and signaling such as at the Steese and Johansen should be identified and costed out.
381. In addition to connecting with the Haul road, major improvements would need to be made from that point to tidewater, and construction of a port. The mine developers should have to demonstrate, with solid evidence, that they have or will have the financial resources to develop the mines and pay for the proposed road and the other necessary infrastructure. The development, operation, termination and long term monitoring of open pit mines in the Ambler Mining District will have major effects those should also be thoroughly addressed in the EIS.
382. The DEIS must not simply evaluate the effects of a road, but must address the comprehensive impacts of the road and the necessarily connected actions. These must include the mining operations and the development of an extensive transportation infrastructure from the end of the Ambler Road to tidewater. Without the proposed mining in the Ambler Mining District there would be no Ambler Road. The specific impacts of the proposed mining must be evaluated in the DEIS, as well as the necessary road, rail and port improvements to get mined ore to processing facilities.
383. Honesty about cumulative effects: With that in mind, the EIS scope needs to acknowledge and grapple fully with the many knock-on effects of the proposed road. The EIS should not exclude the mines' effects, for example. The mines would be a direct consequence of the road, and indeed rely on a subsidized road in the first place.
384. Because the proposed road is being developed to facilitate large-scale mining operations, it is critical that the EIS include extensive analysis of the planned mines in the Ambler Mining District. The road and future mining are connected actions. The EIS needs to analyze all the air, water, fish, wildlife, noise and land use impacts from mining and mineral processing facilities. This includes tailings disposal, power sources, water use, ore transportation and export (from Alaska) facilities, and chemical transportation, storage and use.
385. Evaluate power sources and the impacts of transporting fuel or building an electric grid or natural gas pipeline, mining coal, etc. Further mitigation could be required once power source is identified.

Issue 5: Mining Impact, continued

386. 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, gaslines, ports, and serious risks of acid rock drainage, spills, and other contamination from mining) need to be fully evaluated for the road project.
387. The development scenario needs to include at a minimum: Financing costs and how the toll amount will be determined. Effect to state economy if there were no operations in any given time period affecting the capability to repay loans. Effect to state economy if road is built and no mining takes place. Provide a realistic estimate for construction and maintenance based on the Dalton Highway and previously proposed road to Nome. Examine the effects of those costs to the State. Alternately consider assigning the ROW to the mineral operations companies as applicants, in lieu of AIDEA. Evaluate power sources and the impacts of transporting fuel or building an electric grid or natural gas pipeline, mining coal, etc. Further mitigation could be required once power source is identified. Transporting concentrate, number of truck loads, support vehicles, etc. Type of mines, which minerals (gold, silver, lead, copper, etc).
388. Evaluate what further impacts would occur when connections to other mines that AIDEA discusses as future developments are made? What further reviews and permitting would take place? These issues must be addressed in DEIS.
389. BLM should also evaluate the potential for sediment contribution and particulate matter from the ore trucks using the road, as well as any necessary mitigation measures to prevent contamination and other issues from those and other vehicles using the road. Trilogy has indicated at public meetings that it may employ so-called “state of the art” ore containers that minimize the potential for particulate fallout from trucks. However, there is no guarantee that they or other entities will ultimately use such measures. BLM should evaluate a full range of potential impacts from the ore trucks and should examine the potential for fallout in light of a range of potential mitigation measures.
390. BLM also needs to fully quantify the contribution of the mine and mining activities to climate change. Mine operations increase the loss of permafrost and rate of permafrost melting via greenhouse gas emissions and permafrost disturbance, similar to that described for the gravel road above. The risk of melting permafrost leads to a higher potential for mine instability and tailings dam failures. The impacts of stormwater releases, spills, and tailings failures are further increased due to increased frequency and rate of large storm events due to climate change. Designing such facilities for a 24-hour/100-year storm event is no longer sufficient.

Issue 5: Mining Impact, continued

391. The proposed mine site for the Arctic Deposit is spread over a distance of approximately 6 kilometers within the upper reaches of the Sub-Arctic Creek Valley. The proposed development consists of the following major infrastructure: roads and an airstrip; mill buildings and related services facilities including maintenance, truck shops, and assay lab; water supply and distribution; waste management; fuel storage; on site explosive storage; power supply; tailings storage facility and water management; water treatment plant; construction and permanent camp accommodation; waste rock storage facilities; and communications infrastructure. Impacts from expanded exploration, mine development, and mine operations at these prospects must be fully analyzed in the EIS. This includes impacts from processing facilities, particularly tailings disposal facilities, gaslines or other energy sources, ore transport and export facilities (including the impacts of fugitive dust), airstrips, and more. There will be a direct loss of habitat from the mine footprint, access road, power lines, and all associated mine activities that must be considered, as well as impacts beyond the mine footprint due to noise, blasting, and lights.
392. Mines create a host of water quality concerns, including runoff issues, effects on groundwater, and impacts to the watershed as a whole that BLM needs to consider. Trilogy is focusing primarily on two areas within the Ambler mining district, the Arctic and Bornite deposits. The rocks within the main deposit of the mining district — the Arctic Deposit near the village of Kobuk — have among the highest risk of Acid Mine Drainage, or AMD, of any type of ore. Mining massive sulfide deposits, such as that found in the Ambler Mining District, creates a risk of acid rock drainage and mobilization of metals, particularly copper which has numerous negative impacts on fish. Open-pit mining, which would be facilitated by the proposed road, would expose the Kobuk River and its tributaries to AMD and other potentially serious contamination issues. Risks associated with tailings facilities include, but are not limited to, water quality issues, water treatment in perpetuity, catastrophic failure events, and releases of contaminated water. BLM must consider the probability of fuel, chemical, ore, mine process water, concentrate, and other toxic or hazardous materials spills at the mines. Spills of these materials must also be considered along the transportation route as well, since they would likely need to be transported via truck. Changes to water quantity and hydrology are inherent in open pit mining, such as water use for milling, dust suppression, and groundwater pumping to dewater pits or underground tunnels. BLM must analyze adverse impacts to fish and fish habitat resulting from sediment, increased stream temperatures, toxic releases, loss of habitat through fill, changes to stream hydrology, and loss of flows.

Issue 5: Mining Impact, continued

393. BLM must also consider impacts from infrastructure needs that are inherent in the creation of a massive industrial district in a previously undeveloped area. There will be impacts from human activity and infrastructure like housing for workers, airstrips, and power generation. Depending on the energy source used there could be air and water quality impacts from a power plant, or impacts from a natural gas line, and associated climate change impacts. BLM must evaluate the impacts of all of these mining activities on wildlife and subsistence resources, and the cumulative effects from multiple mines.
394. BLM is required to consider the full range of cumulative impacts from increased access to the area. Even if BLM improperly refuses to analyze mining in Ambler as a connected action, all impacts from the mines need to be fully reviewed in the EIS since they are “reasonably foreseeable.” Moreover, road access will increase development in the area. 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, beyond those currently being considered by Trilogy. Besides reviewing the “direct and indirect impacts” from the gravel mines, the EIS needs to review the cumulative impacts of the gravel mines from such increased development, as well. BLM should evaluate these potential cumulative impacts from the road.
395. As noted in EPA’s cover letter, because the purpose of the road is to provide access to allow for exploration and development of mineral deposits in the Ambler Mining District, both exploration activities and mining activities are reasonably foreseeable actions, and also may be considered connected actions. Therefore, we support the BLM’s plans to analyze the impacts of exploration activities and mineral development activities (mine construction, operation, and closure) in the EIS. Development of Reasonably Foreseeable Development Scenarios for anticipated mining activity will also help to support the project description, for example, what is being transported, amount and type of truck traffic on the road, and length of time that the road will be in service.

Issue 5: Mining Impact, continued

396. Since the road proposal is being analyzed without a specific mine development proposal, we recommend a range of mine development scenarios be analyzed, including the possibility of multiple mines operating at the same time. Cumulative impacts of the road and exploration and mining activities should be considered in the EIS over all the temporal phases of the project (construction, operations, and closure). In addition, since some mining activities require long-term, and into perpetuity, post-closure monitoring, maintenance, and water treatment, the EIS should consider these kinds of requirements as a possibility for mines developed in the Ambler Mining District. Therefore, we recommend the EIS consider the potential impacts of a scenario in which the access road remains open beyond the currently estimated 50-year life to provide access for long-term post-closure activities.
397. The EIS must consider “connected actions” per NEPA regulations. Impacts of a road cannot be considered in a vacuum; other connected actions must also be considered. These include but are not limited to impacts from mines in the region, asbestos effects, acid mine drainage effects on waters, vegetation and fisheries, tailings ponds, transport of heavy metal ores to Fairbanks and to port, and the costs of all these activities. Evaluating culvert placements will be key to preserving existing fish runs.
398. Discuss the possibility of connections to the Arctic Strategic Transportation and Resources (ASTAR) project and associated impacts.
399. The EIS must consider Cumulative Impacts of this Project with the proposed Arctic Strategic Transportation and Resources (AST AR) Strategic Plan. The Alaska Legislature has funded reconnaissance work on this proposal which is in the Alaskan Arctic. The schedule for this proposal will be put forth in 2018 and 2019. The accumulation of impacts from both the proposed Ambler Road and proposed AST AR roads will significantly affect the arctic lands in Alaska.
400. Once the road is built, if there is any substantial mineral value developed, there will be pressure from the industrial users to pave portions or all of it.
401. If construction of the road is delayed beyond five years after a DNSI, ostensibly waiting for a mine proponent, a supplemental environmental review will be required.
402. Evaluate what further impacts would occur when connections to other mines that AIDEA discusses as future developments are made? What further reviews and permitting would take place? These issues must be addressed in DEIS.
403. The effects of Acid Mine Drainage could also contaminate this watershed & easily reach the upper Kobuk River in the Gates of the Arctic National Preserve only a few miles to the south.
404. The EIS is incomplete if it does not also take into account the reasonable outcome associated with road construction (in this case the stated goal), namely the construction of one or more large mines. NEPA requires analysis of these impacts.

Issue 5: Mining Impact, continued

405. The effects of mining have been devastating. Not only does it create a large scale amount of land disturbance, but those disturbances affect wildlife and destruction of their habitat. But along with the land disturbance itself, and the negative effects on wildlife, mining creates a serious problem to water quality and water quantity. Facilitating more mining in this area could have a devastating effect on rivers and streams, and the wildlife that depend on them. Many of the rock formations in the area are part of a sulfide deposit, and are highly likely to form acid mine drainage. This drainage can cause serious contamination in waterways that lasts hundreds - perhaps thousands - of years and can harm or kill fish and wildlife.
406. 1. Describe and quantify the environmental impacts of future roads connecting the initial 211-mile access road to individual mining prospects. These are reasonably foreseeable and significant impacts directly related to the Access Road. ...1. The 211-mile access road would not directly connect to any mine sites. Future roads would be constructed from prospects to the road in order to transport ore - otherwise, this would truly be a road to nowhere. Because the purpose of this road is to access mines, the scoping process for this road should include the actual mine access, not just a portion of the process. How many miles of roads would there be? What would be the total surface disturbance? How many roads would migratory caribou have to cross in order to complete their journey?
407. Quantify the expected duration of mining activities and how many years the road would be in use. ...5. How long would the mine be in operation? How many years would the road be used?
408. Since the purpose of this road is to access a mining district, impacts of the mines and related infrastructure (gravel pits, processing facilities, tailings disposal areas, ore/export terminals, gaslines, ports, etc.) must be accounted for in the impact analysis. What does AIDEA know about copper mining and long term water treatment issues? What is the history of acid mine drainage and containment around the world? These are important questions in this initial proposal phase. Copper-nickel mines can produce runoff that can generate acid that leaches hard metals and other contaminants from underlying rock, a problem that can linger for decades. Responsible decisions about whether to grant a permit for the right-of-way, and how to craft alternatives for that decision, must recognize the eventual intended use of the road and secondary activities the road is meant to facilitate—and identify mitigating measures.
409. How would the mined ore be shipped? An additional road to a Bering Sea port risks significant impacts to important fish and wildlife habitats and conservation units which could include Noatak National Preserve, Kobuk Valley National Park, Selawik National Wildlife Refuge, Selawik and Salmon Wild & Scenic Rivers, and Cape Krusenstern National Monument.

Issue 5: Mining Impact, continued

410. The MOU between the applicant AIDEA and NovaCopper (now Trilogy Metals, Inc.) recognizes that the road and the mines are inextricably linked, and are connected actions. Just as the Red Dog Mine Road EIS evaluated the impacts of the Red Dog Road and of connected mining activities, the Ambler Road EIS and EEA should, likewise, analyze mining and road—economics and impacts—as connected actions.
411. While AIDEA's application clearly outlines potential benefits of metal mining in this region (e.g. employment, leases, taxes, royalties; page 15-20 in Section 2 - Corridor Narrative Supplement), there is no consideration of adverse effects. These benefits are significant for the villages and state of Alaska, but the one-sided presentation of information is misleading. AIDEA states that adverse effects of sulfide metal mining may not impact the road corridor (see page 50- 51 of Section 2 - Corridor Narrative Supplement), but fails to mention risks and shortfalls associated with this style of mining. Our current technological short-fall in reclaiming sulfide metal mine tailings, and the subsequent need and cost associated with perpetual waste storage should be weighed against the benefits listed by AIDEA.
412. The SF 299 does not address noise from aircraft using the two proposed airstrips.
413. Evaluate power sources and the impacts of transporting fuel or building an electric grid or natural gas pipeline, mining coal, etc. Further mitigation could be required once power source is identified.
414. Evaluate what additional power sources will be required and the impacts of transporting fuel or building an electric grid or natural gas pipeline, mining coal, etc. Further mitigation could be required once power source is identified.
415. In spite of efforts to avoid it, there will be sediment introduced into stream courses by slope and embankment failures, landslides, solifluction and runoff from the road surface during storms and thawing. The location and quality of spawning and rearing areas down gradient from the road should be identified and evaluated.

Issue 6: Purpose and Need

416. The area north of the Mauneluk, extending all the way to the Ambler River and beyond (over 30 miles) is part of the mineralized zone known as the Ambler Mining District. There are a number of proposed mines in this area. This is the reason for this proposed road.
417. The Ambler Mining District is one of Alaska's richest mineral districts containing copper, zinc, lead, gold, silver and cobalt. The State of Alaska and NANA specifically selected and finalized selections of mineral rich lands in the AMO with the understanding that they would be allowed access to the lands under ANILCA Title II. In Governor Walker's recent State of the State speech he highlights the importance of mining in diversifying Alaska's economy and specifically mentions the Upper Kobuk and Ambler Mining District. If developers' exploratory work is successful, this work could lead to the development of this strategically important mineral district. This work is significantly hampered by the lack of surface access to the Ambler Mining District.
418. Specifically, the AMD is one of Alaska's richest mineral districts, with known mineral resources exceeding 10 billion pounds of copper, 5 billion pounds of zinc, 100 million ounces of silver, and over a million ounces of gold. Future exploration within the AMD will substantially increase its known mineral resources to the benefit of Alaska's economy. Both the State and Alaska natives specifically selected lands within the district to bring economic development to the region. And Trilogy and NANA Regional Corp. ("NANA") are jointly developing their lands mineral lands in the AMD under a partnership agreement that grants NANA royalties and an option to participate as an equity owner. The success of the Red Dog Mine foreshadows the AMD's potential.
419. Potential mines in the Ambler Mining District (AMO) could produce copper, cobalt and zinc - metals that are vital to public safety (zinc strengthens steel alloys used as guardrails along our public highways) and human health (zinc is added to fertilizers to replace zinc nutrients in soils); whereas copper and cobalt are both required to combat climate change.
420. Specifically, the Ambler Mining District is one of Alaska's richest mineral districts, with known mineral resources exceeding 10 billion pounds of copper, 5 billion pounds of zinc, 100 million ounces of silver, and over a million ounces of gold. Future exploration within the AMO will substantially increase its known mineral resources to the benefit of Alaska's economy. Both the State and Alaska natives specifically selected lands within the district to bring economic development to the region. The success of the Red Dog Mine foreshadows the AM D's potential.
421. ANILCA requires BLM approve AMDIAP

Issue 6: Purpose and Need, continued

422. This road is not in line with the BLM mission "to sustain the health, diversity, and productivity of America's public lands for the use and enjoyment of present and future generations".
423. The state calls on the BLM to continue to recognize in the AMDIAP EIS its responsibility to provide access across BLM lands to meet Congressional intent to provide access from the Ambler Mining District to the Dalton Highway. The application is consistent with the 1980 Alaska National Interest Lands Conservation Act (ANILCA) Section 201(4)(b), where Congress expressed its intent that there be 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 (i.e., the Dalton Highway). The BLM has long recognized this intent; in its 1989 Final Environmental Impact Statement (FEIS) for the Pipeline Utility Corridor Resource Management Plan the BLM identified the need for a "Ambler Mining District Transportation Corridor" across BLM lands to facilitate BLM's responsibility under ANILCA Sec. 201 (4)(b) to provide a right-of-way from the Ambler Mining District (AMD) to the Dalton Highway.² In the resulting 1991 Record of Decision (ROD), the BLM Alaska State Director directly addressed the intent of Congress for access across the BLM-administered public lands adjacent to the Dalton Highway by determining: ...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 3 is recognized and the BLM State Director will entertain an application for a right-of-way for access to these lands...⁴
- (2) Italicized language from the Utility Corridor Proposed Resource Management Plan and Final Environmental Impact Statement, prepared by the Bureau of Land Management, signed by the Alaska State Director on 27 September 1989. (3) The Prospect Unit was identified in the FEIS as within Townships 22, 23, and 24N, Ranges 14, 15, and 16W, Fairbanks Meridian (4) Italicized language from the Utility Corridor Resource Management Plan/Environmental Impact Statement Record of Decision prepared by the Bureau of Land Management, signed by the Alaska State Director on 11 January 1991.)

Issue 6: Purpose and Need, continued

424. The reason that Congress mandated approval of AMDIAP is obvious: Congress knew at the time it enacted ANILCA in 1980 that the AMD had vast mineral wealth. Congress worried that by creating GAAR, it would cut off access to the AMD. To balance the conservation and development interests, Congress established GAAR but mandated approval of ROW connecting the Dalton Highway to the AMD, through GAAR. By ignoring ANILCA's mandate to approve this ROW, and claiming that it has the authority to deny approval of AMDIAP, BLM is single-handedly contravening Congress's clear and unambiguous mandate. BLM should follow what Congress wrote in plain English in Section 201(4) of ANILCA. The BLM cannot override the laws adopted by the Congress of the United States of America!
425. BLM Has Long Agreed that It Must Approve the Entire AMDIAP ROW. Until recently, BLM shared the view that ANILCA Title II requires approval of AMDIAP from the Dalton Highway to the Ambler Mining District. In 1991, BLM completed a five-year planning process that produced the Industrial Corridor RMP and record of decision ("ROD"). In these documents, BLM made unequivocal statements that Congress mandated approval of the entire AMDIAP ROW. Specifically, BLM stated:
- Providing access through the Industrial Corridor to the Ambler Mining District would satisfy "BLM's responsibility under ANILCA Sec. 201(4)(b) to provide a right-of-way from the Ambler Mining District to the Dalton Highway."
 - Regarding access, the RMP recognized that "BLM is directed to allow access from the Ambler Mining District to the Dalton Highway by Sec. 201(4)(b-e) of ANILCA."
 - BLM maintained in the ROD that, "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."
426. Unlike the National Park Service, which is obligated by the Alaska National Interest Lands Conservation Act (ANILCA) Section 201(4) to allow the road to cross the National Preserve, BLM has control over whether or not to allow the road to go over the land it manages. In this letter, we strongly urge BLM to take the "no action" alternative and deny AIDEA's application. In the unlikely event that you find that the benefits of the road would outweigh all of the costs and impacts to the State of Alaska and or lifeway, we suggest you consider the northern route and add a number of stipulations to reduce these costs and impacts.
427. While NPS is governed by Section 204 for the Gates of the Arctic National Preserve portion of the proposed road, BLM is not. BLM has discretion to approve or not approve a ROW permit for the Ambler Road. BLM does not need to approve this ROW if it's not economically feasible or for other reasons.

Issue 6: Purpose and Need, continued

428. AIDEA states that the companies mining in the Ambler Mining District, not the State of Alaska, would pay for the Ambler Road. Therefore BLM should withhold final decision until the applicant demonstrates an economically feasible project with bonding, viable loans and collateral for repayment, i.e. credit worthiness.
429. AIDEA stated at the public scoping meeting they have no lenders at this point in time, therefore it makes more sense wait to complete the EIS process when this project may be more of a reality. If BLM and other agencies continue with the EIS process and there are no mining plans, the public process has been a waste of state money, federal staff time and the public's time and efforts.
430. If the mining companies don't have the clearly demonstrated financial wherewithal to do those things, deny issuance of a ROW. The DEIS must demonstrate the economic viability of constructing a road, railroad or barging. The DEIS should look at the repayment schedule from one or more mines in the Ambler District.
431. If AIDEA is the primary issuer of debt for the road, it will be incumbent upon them to exercise due diligence for being repaid. Income from mining operations will be the prime source of tolling revenues to repay AIDEA. AIDEA's creditors will need assurances that either a) the income will be available, or b) AIDEA has access to other assets from the mine or mine owners to cover the debt. Alaskans do not want to pay for this road. No permit should be granted until the mining operations become viable.
432. BLM needs the applicant to show that they are financially able to design, build and operate the transportation system proposed. Concrete and convincing evidence needs to be provided from the mining companies that shows that their proposed mining operations in the District will produce the revenue to pay for the full financing and costs of the proposed Ambler Road—costs for engineering, permitting, construction, insurance, bonding, operation, as well as the commitment for removal and reclamation.
433. Alaska sorely lacks the infrastructure needed for economic and industrial development projects, making the state an expensive place to invest and often resulting in lost economic opportunities. Construction of roads, railways, energy projects, and other infrastructure helps make Alaska a more attractive place to invest.
434. A stated objective of AIDEA is to stimulate local economic growth if the access road leads to exploration and development of mineral resources. What if the access road is constructed and no mining activity occurs?
435. A stated objective of AIDEA is to stimulate local economic growth if the access road leads to exploration and development of mineral resources.

Issue 6: Purpose and Need, continued

436. Investing in local infrastructure, education, and jobs would be a more positive endeavor, as well as investing in tourism, which is a more sustainable and environmentally conscious investment in the community. For all of these reasons, I am passionately against this pursuit and hope that you do not move forward.
437. Critically examine AIDEA's claim that it needs a road for people in the region to do better economically. Some would contend, for example, that long-term improvements to people's condition will stem from better schools and protection of subsistence resources. For example, \$350 million is enough to provide the number and quality of teachers to raise the reading and math skills of the area's students from bottom of the barrel into the ranks of the rest of the U.S. Literate graduates are the best long term approach to economic development anywhere in the world.
438. Alaska sorely lacks the infrastructure needed for economic and industrial development projects, making the state an expensive place to invest and often resulting in lost economic opportunities. Construction of roads, railways, energy projects, and other infrastructure helps make Alaska a more attractive place to invest. The State's Industrial Authority, AIDEA, was formed to invest in infrastructure and development that would incentivize economic growth while providing a net return to the State of Alaska. AMDIAP is well worth evaluation to meet these goals. This project can provide responsible economic prospects for this region and for Alaska, while protecting the subsistence resources.
439. The development of a mine in the Ambler Mining District would contribute to a stronger and more diverse Alaska economy and would potentially be a significant benefit to Alaska Natives and NANA through 7(i), jobs, and dividends.
440. Whereas decisions for new transportation corridors should aim to protect the fiscal well-being of Alaska and minimize environmental and sociological impacts, and the proposed road would be counter to these goals.
441. We request that: 1. A statement be included in the Purpose and Need section of the project specifying that the project will minimize impacts to the WACH. Such a statement will demonstrate recognition of the critical value of this caribou herd for subsistence users and for other interested parties. It will also ensure that these values remain at the forefront of consideration if the project moves forward.
442. A statement should be included in the Purpose and Need section of the project specifying that the project will minimize impacts to anadromous and resident fish habitat.

Issue 6: Purpose and Need, continued

443. BLM should not limit its consideration of alternatives based on an arbitrarily set purpose and need statement. The EIS must provide a description of the underlying need and purpose to which the agency is responding in proposing the alternatives and the proposed action. The Revised Permit Application states that “the 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.” However, at the scoping meeting presentation, BLM stated that the purpose of the BLM action is to provide AIDEA with: (1) technically and economically practical and feasible surface transportation access across BLM-managed lands for mining exploration and development in the Ambler Mining District, and (2) authorization to construct, operate, and maintain associated facilities for that access. It is alarming that BLM added “economically practical” as a requirement for its decision. There is no requirement under NEPA or FLPMA that a federal action to issue of a right-of-way expressly consider economic practicability. The requirements for BLM under FLPMA are clear:

BLM must not issue a ROW that will do unnecessary damage to the environment. CEQ states that “reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant.” While economics are a consideration in alternatives analysis, it should not be the main driver behind the BLM's purpose and need statement. By having a purpose and need that is so focused toward economic factors, BLM may reject reasonable alternatives that are more protective of the environment because they are less economically desirable to the applicant. BLM should recraft its purpose and need statement to more closely reflect the requirements under FLPMA and NEPA, and to ensure that it does not rule out potential alternatives or important mitigation measures based on an overly restrictive purpose and need statement.

444. Given the proximity of the proposed road to several TCC member Tribal communities and the current sentiments that favor opposition to the project, it is recommended that the purpose and need statement for the EIS include a clause along the line of reasoning to “analyze and address the impacts to affected communities along the proposed Ambler Access Project.” Sentiments among directly impacted villages are such that the purpose and need statement of the EIS needs to consider the well-being of the communities.

Issue 6: Purpose and Need, continued

445. We recommend the EIS include a clear and concise statement of the underlying purpose and need for the proposed project, consistent with the implementing regulations for NEPA. In presenting the purpose and need, the EIS should reflect not only the BLM's purpose, but also the broader public interest and need for this project. Given the nature of this project, a concise purpose and need statement is of critical importance to setting up the analysis of a range of reasonable alternatives in the EIS.
446. The AMD contains significant deposits of copper, zinc, lead, gold, silver and cobalt.The district also contains significant cobalt, one of 23 minerals the U.S. Geological Survey listed as critical in an 862-page report, "Critical Mineral Resources of the United States – Economic and Environmental Geology and Prospects for Future Supply". President Donald Trump issued an executive order calling on federal agencies to devise a strategy to ensure America has reliable supply of these critical minerals. This executive order states: "It shall be the policy of the federal government to reduce the nation's vulnerability to disruptions in the supply of critical minerals, which constitutes a strategic vulnerability for the security and prosperity of the United States."
447. BLM should consider whether the United States even needs these proposed mines. Could the copper be obtained by more recycling? I have read that a ton of circuit boards can contain 30 to 40 times the amount of copper mined from a metric ton of ore in the United States. I have seen copper wiring dumped in our local landfill.
448. The BLM's draft project need is "to respond to a right-of-way application for surface transportation access to currently inaccessible, economically valuable mineral deposits in the Ambler Mining District," while the draft project purpose is to provide access for "mining exploration and development." We are aware that significant exploration activities have occurred in the Ambler Mining District without this road (Alaska's Mineral Industry 2016, Special Report 72 and Alaska's Mineral Industry 2015 Special Report 71, State of Alaska Department of Natural Resources, Division of Geological & Geophysical Surveys), which could raise questions as to whether the road is necessary to support exploration activities. In addition, in other instances, mine access roads have been evaluated in the same NEPA document as the mine proposal (e.g., Red Dog mine and road, Pogo mine and road). This approach may be more efficient in the long run, with an added benefit that a single NEPA document may make it easier for federal decision makers and the public to holistically understand the impacts of the project. We recommend the BLM carefully consider and document the stated purpose and need for the road -- to support exploration activities and mining activities -- while also taking into consideration the past and current exploration and the current lack of any specific mine development proposals.

Issue 6: Purpose and Need, continued

449. It has been pointed out at public scoping meetings that the agencies must evaluate AMDIAP with regards to climate change. AMDIAP will facilitate the exploration and potential extraction of hard rock minerals, not fossil fuels. Consequently, increased greenhouse gas emissions from AMDIAP are likely negligible. Thus, any consideration of the climate change effects of AMDIAP must acknowledge the benefits of permitting AMDIAP and facilitating the development of metals vital to meaningfully address global warming would far out way the impacts – especially given that Congress has already recognized the importance of developing the AMD as described elsewhere in this comment letter The AMD contains significant deposits of copper, zinc, lead, gold, silver and cobalt - all metals vital to combating the effects of climate change and global warming. If we are to meaningfully address global warming, the Paris Climate Change Accord recognized that three things must happen: 1) we must reduce the amount of carbon dioxide (“CO2”) entering our atmosphere from burning fossil fuels; 2) we must replace carbon based energy with cleaner, greener forms of energy – solar, wind, geothermal, hydroelectric, and nuclear; and 3) we must replace 20th century internal combustion engine (“ICE”) technology with 21st century technology in the form of hybrid and all-electric vehicles – this includes cars, trucks, buses, and rail transport. Executing a strategy to accomplish this will require a huge amount of numerous metals. See: The Growing Role of Minerals and Metals for a Low Carbon Future, World Bank Group Report, June 2017. For example, solar and wind based energy require 5 times the amount of copper to produce a megawatt of power than traditional power sources. Hybrid and electric vehicles require 3 and 4 times as much copper as ICE vehicles, respectively. By not developing the 10-billion pounds of copper known to exist in the AMD, Alaska would be responsible for adding an additional 1-billion tons of CO2 per year by not replacing coal-fired power plants with solar- or wind-based energy. Alternatively, the AMD’s 10-billion pounds of copper could be used to build 53 million battery electric vehicles (“BEVs”) and remove 267-million tons of CO2 per year from the atmosphere. Using the argument that these metals can be produced elsewhere is disingenuous and shirks our responsibility to the planet we call home.
450. Furthermore, not facilitating the development of the AMO results in Alaska being responsible for NOT addressing the effects of Climate Change by NOT producing metals that are vital to realizing the objectives set out in the Paris Climate Change Accord.

Issue 6: Purpose and Need, continued

451. It is an extraordinary risk with dwindling state dollars to adhere to the idea that “if we build it, they will come”. Rather, it would be much more appropriate and fiscally responsible to take the attitude that “if they can build it, we will come” – that is, if a company submits mining permit applications showing viable resources, then the State should consider potentially developing access – it should also consider having the mine developer fund access to the mines, as will occur at Donlin. The amount of infrastructure and cost required is stunning, when considering that there are currently no known economically viable mineral resources at this time. In this way, it is substantially different than infrastructure to support the Trans-Alaska Pipeline and associated road, or the DeLong Mountain Terminal industrial road. The bottom line should be that the road should not be advanced until and unless there are substantial viable mineral resources; without that, it is a substantial gamble with state money.
452. The money planned for this project would be much better spent to relocate Alaskan villages that are endangered by erosion and climate change.
453. Alaskans come first, and to heck with global corporations, here only for profit. The state has already spent \$22 million of state money just on planning literally. An EIS could go as high as \$6 million. This is crazy in an era where the state is essentially broke.
454. Alaska can no longer afford to maintain its existing infrastructure, but it, through AIDEA, is offering to build 220 miles of new road for private industry. I do not foresee the corporations even repaying the expense. There are too many ways to get out from under payment. If the corporations want the road for their mines, let them pay the full cost up front, not later.
455. The state cannot afford this project. The state has ponied up so far \$22 million. Some sources says the road will cost \$430 million not including \$8-10 million yearly operation and maintenance. Other sources state that the total cost of building, operating and maintaining is expected to be between \$844.0 and 906 million. Recent cost estimates say \$350 million for construction and \$10 million yearly operation costs. The state cannot afford the cost of the Environmental Impact Statement (EIS) under NEPA. Though the EIS is important and necessary, it would not be needed if the project was dropped. Alaska Governor Walker authorized AID EA to spend \$3.4 million to start the EIS. It could cost another \$4.2 to 6.8 million to finish. (endnote i) The EIS triggers a separate process with the National Park Service to get a right-of-way across the Park. Our basic public services in this state such as state troopers are hurting financially. We don't need to be spending state money to subsidize infrastructure that will benefit private industry. Let private industry spend the money.

Issue 6: Purpose and Need, continued

456. Although AIDEA identifies four major mineral deposits (Arctic, Bornite, Sun, and Smuckers) there are no “measured” resources at any of the Ambler District deposits, despite over 12 years of exploration by at least three companies. The difference between measured and indicated resources is important in SEC filing reports. Briefly, “measured resources” is what you know you have, “indicated resources” is what you may have, and “inferred resources” is what you guess you have. Arctic has indicated resources and Bornite has only inferred resources. There has been very little drilling effort; the majority of work has been on “re-logging and re-assaying” old drill cores, which has resulted in very little change in the “Indicated Resource” (see table below). There has been virtually no change in the Indicated Resources at the Arctic deposit, although there was a recent increase in Indicated copper at Bornite. It is not clear what led to the near tripling of Indicated Resources at Bornite from 334M lbs of copper to 913M lbs in 2016; no drilling was conducted in 2014- 2016, although re-assays were done. Similarly, in 2012, Trilogy expected a 4,000 tpd (tons per day) underground operation at Arctic; by 2013 they were announcing a 10,000 tpd open-pit 13-year operation, yet the actual resource estimates were virtually unchanged. For comparison, Placer Dome at Donlin had 2.2 million ounces of measured gold resources within 5 years of beginning exploration. Teck Cominco explored the Pebble area with about 25 exploration drill holes per year from 1986-1997. Northern Dynasty Minerals took over in 2002, drilled 45-259 holes per year and had measured estimates of 5 billion lbs of copper by 2005.¹²² In contrast, drilling over 14 years at Arctic has resulted in little change in the amount of Indicated resource, and recent increases at Bornite appear to be due to re-assaying old cores. This is not working to outline the depth and shape of the ore bodies to plan an economic endeavor. There is only a scattering of drill holes at Arctic and Bornite. This is not the type of effort and portfolio that inspires confidence. As an example of the tenuous nature of the deposits, the Sun deposit is not being explored, despite the former owner (now bankrupt) claiming the project was in “advanced exploration stage” with “indicated resources”; the company currently holding the lease is not exploring. The Smucker deposit is owned by Teck, and they are not exploring. The reported wealth of the deposits is primarily from historical, potentially unreliable, information and not from any recent, on the ground drilling. The Ambler Industrial Road, or alternative access routes, depend on several mines operating in order to pay enough road tolls to cover construction costs. This is simply not going to happen in the near future.

Issue 6: Purpose and Need, continued

457. A western road access should be considered with road construction payment made by Trilogy Metals if mineral resource development in Ambler is the true objective. The state already has a template with the Delong Mountain Transportation System. If the cost analysis was worth it, the corporation will pay for the road.
458. AIDEA has not been a responsible lead agency on this project. There is no long term funding, no investors, and no plan. The main purpose of their involvement seems to be creating project momentum without asking the hard feasibility questions and concerns.
459. Alaskans' money spent by AIDEA should not be used to fund this "private state road" for one corporation's extractive service.
460. In conclusion I want to refer to the Alaskan Constitution, which states "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 the people." If public funds are used for creating a road to facilitate the extraction of our natural resources we need to confirm that it is for the maximum benefit of Alaskans. Aren't we "the people" mentioned in this document? Not politician, business interest, and a few residents. If the road to Ambler is build with public funds shame on us!
461. Attention should be given to justifications for spending public funds and traversing public land to provide access for private use.
462. The State's Industrial Authority, AIDEA, was formed to invest in infrastructure and development that would incentivize economic growth while providing a net return to the State of Alaska. AMDIAP is well worth evaluation to meet these goals. If a road and/or mine is ultimately built, the potential benefits that could come with these projects are vast, such as jobs, including training and lifelong skills, economic diversification, and other opportunities. New mining operations in the area, should they come to fruition, can be of great economic benefit to Alaska and local communities.

Issue 6: Purpose and Need, continued

463. The application states that no non-surface transportation options are feasible. Barge transport is sporadic and dependent on variable river levels, thus is unreliable. Air transport is very expensive and cost prohibitive, particularly for bulk materials like ore concentrates. Mining equipment is bulky and heavy. Depending on the product or equipment proposed for transport, air transport is either unrealistic or impossible. Numerous studies corroborate that mining in Alaska is generally marginal, any best, with rare exception. Red Dog is an example of the unique successful exception and it benefits from being close to relatively inexpensive sea transportation and is able to produce 7-10% of the world's zinc. The Ambler Mining District is remote and holds no such advantages. The only way that any mines in this region could possibly be constructed and operated is if the proposed road is constructed and maintained. Therefore, to be legally sufficient, the EIS must thoroughly analyze several reasonable mining alternatives.
464. To conclude, the Ambler road may be a bad proposal, certainly environmentally and perhaps economically, as well, one that cannot even meet its proponents' assumptions and claims. The State cannot afford to subsidize private enterprises at the expense of traditional livelihoods like hunting and fishing. We may be better off economically and environmentally, for example, to forgo the road, sell AIDEA's assets, and use the proceeds to improve public education in the Alaska interior.
465. (Allakaket Tribal Council Passed Resolution 2013-43, whereas): Federal, State and local governments, as well as local residents and businesses will not benefit from the mining traffic that a private industrial mining road will bring.
466. For nearly thirty years, Red Dog, one of the world's largest zinc mines, has stood as a model of responsible resource development, founded on the principles of consensus, cooperation. The Mine currently has overall 60 percent shareholder hire when the contractors are included. The vision of the Red Dog Mine was a means to an end for leaders who saw the potential for a stronger economic future for the Iñupiaq of Northwest Alaska. Leaders boldly negotiated a means to develop the resources owned by NANA to stimulate the cash economy, create jobs, and a mechanism to support local municipal needs, specifically education. This same vision applies to the Upper Kobuk mineral interests NANA holds as well as the principles of consultation with local communities. If the Ambler Road is developed it has the potential to stimulate the local cash economy and increase local jobs by creating a more economically favorable environment for mineral development in the Ambler Mining District.

Issue 6: Purpose and Need, continued

467. We are concerned that this proposed private road is to access mines that do not yet exist, and therefore public need is speculative.
468. In 2012, NovaCopper was envisioning copper, zinc, and lead concentrates would be trucked to Fairbanks and shipped by rail to Seward.⁶ In the 2013 Arctic PEA, they made no mention of shipping by rail, and instead said concentrates would be trucked to Port MacKenzie, near Wasilla.⁷ No explanation has been given for the change. There is no cost estimate for sending ore to Port MacKenzie by rail, and no estimate of the cost to truck ore concentrate from the Brooks Range to Port MacKenzie, although estimates were provided on the cost to move ore concentrate by truck/rail combination to Seward. Truck to Fairbanks \$120/ton; Ship by rail to Seward \$34.41/ton; Port transfer costs \$16.47/ton; Total \$170.88/ton; Alaska law allows 80,000 lbs (40 tons) on the road. If the state would allow 40-ton concentrate trucks on the road, and if 370,000 tons of concentrate is to be trucked per year,⁹ this would be 9,250 trucks per year, or 50 trucks a day passing a single point on the road (coming and going, or 25 trucks per day one way). If 370,000 tons of concentrate per year are shipped, this is \$63.2 million in trucking costs. Transportation costs at Red Dog run \$82-\$85 million per year.¹⁰
469. Although it is more expensive to build a railroad than a road, it is cheaper to move freight by rail than by truck. The EIS should analyze the full costs of shipping ore for the proposed 50 years of the project, to include not only the initial cost of the road or railroad options, but also the maintenance of each and the total cost to move freight. The cost of trucking should include fuel and tires. Comparisons should include cost and labor opportunities of rail versus road (e.g. number of truck drivers needed annually versus number of additional railroad personnel). This is not out of scope; a fair comparison of alternative roads or railroads needs to consider full labor opportunities and full costs not only to the project proponent (AIDEA, mining companies) but to the State of Alaska (DOT, DEC, ADFG will regulate the project, clean up spills, and clean out culverts) and Boroughs (potential increased support businesses, potential increased port personnel, potential increased traffic volume, etc.).

Physical Environment

Issue 7: Geology/Topography/Soils

470. AIDEA 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. This is an enormous amount of gravel, but continued gravel mining operations are barely mentioned in AIDEA's application. Continual gravel mining and road maintenance means long-term disturbance, as blasting will need to occur every year, and involve the use of heavy equipment traversing the road to lay and grade the gravel. This will continue for the entire road length for the 50 year life of the road. Road removal is not discussed in AIDEA's application, but will necessitate more equipment and disturbance, and cause permanent damage to the landscape. BLM must analyze the impacts of this ongoing disturbance, and the impacts from eventual road removal.
471. BLM needs to fully assess the potential impacts to permafrost, as well as the mitigation measures necessary to prevent permafrost degradation from the project. AIDEA has failed to provide adequate information about existing permafrost conditions in the project area or actions that will be taken to stabilize permafrost overlain by the road. In its application, AIDEA states that "[c]urrent permafrost mapping is highly generalized and the extent and depth to permafrost is widely unknown." Surface vegetation insulates permafrost, and disturbance of this vegetation by laying gravel can speed permafrost melt and result in subsidence. Geophysical changes associated with road construction of the Ambler road will extend far beyond its gravel footprint. Due to flooding and thermokarst, the extent of road-related impacts are usually more than double the actual surface area of the gravel footprint. Long-term impacts resulting from fugitive dust from the road may contribute to an increased rate of permafrost degradation, which may adversely affect the stability of the gravel road over time. The decrease in albedo may cause higher temperatures and increase thaw rates along the road. This problem would be further exacerbated by climate change. BLM should closely examine not only existing permafrost conditions and how to mitigate against degradation of those conditions, but should also take into consideration the potential impacts of climate change and any additional measures that are necessary to account for rapidly changing conditions in the region.
472. Studies must be done to determine the extent of melting permafrost in the project area. What is the extent of the active permafrost, the continuous and discontinuous permafrost? This will have an effect on the foundation of the road. Mitigation for that must be planned. Also the EIS must consider how much the project construction, its footprint of gravel pits and work camps will cause permafrost melting by the vegetation disturbance, destruction, etc. The public is given to understand that the road structure will have to be built up 6 to 12 feet. How will the future permafrost melting affect the calculation of the appropriate road foundation?

Issue 7: Geology/Topography/Soils, continued

473. There does not appear to be an analysis of whether the identified borrow sites contain asbestos material, or whether the statement that such material can mostly be avoided is accurate.
474. Need for culverts to maintain natural drainage. Construction must also take into account local and indigenous knowledge regarding road height and areas to avoid.
475. Malamute Fork of the Alatna: From the headwaters of Henshaw Creek this proposed industrial road passes by Hart Mountain & enters the Malamute Fork of the Alatna River Valley. It appears the road will be on the permafrost bench above this major tributary of the Alatna River.
476. The Reed River: Draining from the granite flanks of Mt. Igikpak, the Reed River is a delicate clearwater stream. The granite soils make this valley easily erodible.
477. Truck traffic would be substantial and the heavy loads moving in and out over this boggy substrate would make the road extremely difficult to maintain.
478. West of the crossing of the Kobuk River on this proposed southern route there is a very steep grade to climb before dropping into the Reed River Valley. Is this grade reasonable?
479. Malamute Fork of the John: The grade out of the Malamute Fork of the John River up into the headwaters of Henshaw Creek is extremely great. Again, this is all heavily laced permafrost soils. How will the roadbed be maintained to prevent it from sinking into the permafrost or washing down the hill into the Malamute Fork of the John?
480. Gravel: The proposed road would require enormous amounts of gravel for construction and ongoing operations. According to its permit application, AIDEA expects to add two inches of gravel over the entire road length annually for the 50-year life of the road. AIDEA has not provided any indication of how it would test for or otherwise ensure that no asbestos-laden gravel would be used to build or operate this road. Additionally, the many gravel mines that likely would be utilized in the region would periodically have loud blasts, potentially near communities, when gravel is extracted. The mines themselves will cause drastic changes to vegetation, hydrology, and the permafrost regime in the region.
481. How much gravel mining will there be? Will there be one gravel pit for every 10 miles? What will be the impacts on the environment? Asbestos is commonly found in the local gravel that will be mined for this project. The release of asbestos and what will be the mitigation to prevent that release into the environment must be considered.
482. How much gravel mining will there be? Will there be one gravel pit for every 10 miles? What will be the impacts on the environment?

Issue 7: Geology/Topography/Soils, continued

483. The project would require at least 20 gravel pits. Every gravel pit is a mine in itself. I have seen several new pits appear on the Parks Highway, for far smaller road repair project. They are huge. Ten to forty acres each. How many acres of wetlands, forest, and tundra will disappear under that onslaught?
484. 2. Specify where the road materials would be sourced from, how they would be harvested, quantify how much would be needed, and describe impacts on nearby and downstream fisheries. ...2. There would be an enormous amount of gravel required to construct this road. Where would it come from? How would it be extracted (e.g. dynamite) and transported? What would be the overall surface disturbance? How would the removal and mining of the gravel affect fish resources?
485. Asbestos is commonly found in the local gravel that will be mined for this project. The release of asbestos and what will be the mitigation to prevent that release into the environment must be considered.
486. Also, asbestos is known to exist in area gravel. Are you ready for a 200 mile superfund site?
487. Evaluate the effects of copper, asbestos, lead and other contaminants on local people, fish and wildlife, workers and potentially tourists. Evaluate Naturally Occurring Asbestos in the gravel -- see the following map
http://dggs.alaska.gov/webpubs/dggs/mp/oversized/mp157_sh005_b5.pdf. Look at experience in Ambler community in digging a water line. Severe repercussions to workers could occur. The following may provide more information on the risks of asbestos especially from inhalation. <https://www.atsdr.cdc.gov/toxprofiles/tp.asp?id=30&tid=4>
488. Evaluate Naturally Occurring Asbestos in the gravel -- see the following map
http://dggs.alaska.gov/webpubs/dggs/mp/oversized/mp157_sh005_b5.pdf. Look at experience in Ambler community in digging a water line. Severe repercussions to workers could occur. The following may provide more information on the risks of asbestos to human health especially from inhalation. <https://www.atsdr.cdc.gov/toxprofiles/tp.asp?id=30&tid=4>
489. In areas where landslides seem highly likely, rock samples should be collected to determine if there is risk of a landslide exposing natural sulfide materials that could go acid upon weathering. General mitigation plans, particularly for locations near water bodies, could be developed.

Issue 7: Geology/Topography/Soils, continued

490. Acid mine drainage can complicate even initial stages. For example at Red Dog, rains and permafrost melt in the early years of mining caused acid mine drainage to flood into Red Dog Creek and contaminate the Ikalukrok and Wulik River; it was 15 years before the mining company took action. The EIS should analyze the potential for a similar issue to come up. This could possibly occur naturally if a landslide slips off a mountain, exposing mineralized bedrock above a stream. It could occur related to road or mine construction, through exposing bedrock or through activities that accelerate permafrost thaw or sinkhole development. Soils and rock analysis along the road and in the ore deposit areas would help determine risks and mitigation.
491. There are at least a dozen ore deposits related to volcanic massive sulfides (VMS), all in the Brooks Range. There are at least three deposits hosted in carbonate material, all in the Cosmos Hills, but the primary mineral associated with them is copper sulfides (chalcopyrite, bornite, chalcocite); also, much of the host rock is sulfidic, not neutralizing carbonate. "Stringer pyrite (iron sulfide) and locally significant sphalerite (zinc sulfide) occur above and around the copper zones, while locally massive pyrite and sparse pyrrhotite (iron sulfide) occur in association with siderite (iron carbonate) alteration below copper mineralization in the Lower Reef." Mine drainage is quite variable depending not only on the ore, but on the host rock as well (see chart below). Sulfides, whether hosted in VMS or carbonates, indicate a risk that acid mine drainage will develop unless enough carbonate host rock is present to neutralize the sulfide. Indeed, the strong presence of sulfides indicates any earth-moving activity (building roads, clearing areas for tailings facilities, digging exploration adits, drilling exploration boreholes, etc.) could result in acid generation. Monitoring and mitigation options and practices should be part of the EIS impact analysis and mitigation sections.

Issue 8: Land Use/Land Management

492. The EIS must evaluate provisions of Article 8 of the Alaska Constitution as follow: 2. General Authority: 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. 3. Common Use: Wherever occurring in their natural state, fish, wildlife, and waters are reserved to the people for common use. The proposed project may not comply with these constitutional provisions, and this needs to be evaluated in any EIS.
493. 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.
494. It is requested that you consider adding the following issues; The impacts on private land (ANSCA. Allotments and other privately owned) in the region.
495. A proposed Ambler Mining Road that severs Evansville Incorporated's land base would create a physical encumbrance that would adversely impact management and enjoyment of the land.
496. Cumulative Impacts of this Project with the proposed Arctic Strategic Transportation and Resources (ASTAR) Strategic Plan. The Alaska Legislature has funded reconnaissance work on this proposal which is in the Alaskan Arctic. The schedule for this proposal will be put forth in 2018 and 2019. The accumulation of impacts from both the proposed Ambler Road and proposed ASTAR roads will significantly affect the arctic lands in Alaska.
497. Discuss the possibility of connections to the Arctic Strategic Transportation and Resources (ASTAR) project and associated impacts.

Issue 8: Land Use/Land Management, continued

498. BLM must identify and consider a broad range of reasonable foreseeable future actions and fully evaluate them in this EIS. There are a number of other developments in the region that could further exacerbate the cumulative impacts from the project and that BLM should consider in the EIS. For example, there may be 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 Ambler Road 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. BLM should analyze the cumulative impacts of other potential development in the region in tandem with this development to fully assess impacts to subsistence use, wildlife and hydrology in the region. BLM must analyze all past, present, and reasonably foreseeable future actions in a broad geographic area, including all watersheds that the proposed corridor crosses. Past military developments in the Arctic have led to many contaminated sites, so BLM should evaluate how further asbestos contamination from gravel in the area will cause additive or synergistic impacts. Cumulative impacts of community development and expansion in the area may also lead to increased subsistence hunting pressure, habitat fragmentation, and disturbance to wildlife. BLM should look at impacts on the eastern end of the road, such as the proposed road to Umiat, which would likewise put pressure on caribou herds in the area. To the west, roads and pipelines from Chukchi Sea Outer Continental Shelf oil and gas production may also connect through this region, as shown in maps from the former Minerals Management Service. BLM should consider how all of these developments are likely to exacerbate the cumulative impacts to the region.
499. Cumulative Impacts – The EIS must evaluate the potential impact of the Ambler project in context with all other current and potential activities and projects in the region, including additional mines, Pt. Lay coal, ANWR and NPRA drilling, converting ice-roads to permanent gravel roads on the slope, etc.
500. There will be view-shed impacts to visitors on the Gates of the Arctic National Park and Preserve. How will this be mitigated?
501. The effects to Gates of the Arctic National Park, Kobuk Valley National Park and Noatak National Preserve, the Selawik National Wildlife Refuge and the Kanuti National Wildlife Refuge need to be included. These analyses must also include effects on subsistence, fisheries and caribou and wolf migrations, moose, air and water quality, and effects on the wilderness character of the Gates of the Arctic National Park and Gates of the Arctic Wilderness.

Issue 8: Land Use/Land Management, continued

502. The right of way crosses Gates of the Arctic National Preserve. I don't believe that a road is compatible with the purposes for which the Park and Preserve were established. The idea of being able to drive within a few miles of Walker Lake is an insult to everything Alaska stands for. The proposed right of way crosses at least one Wild and Scenic River. The Kobuk River is one of the crown jewels of the Wild and Scenic River system in Alaska. It seems unlikely to me that a road crossing would be compatible with the management plan for this river. The southern route alternative crosses the Kobuk River downstream from the section protected by the Wild and Scenic Rivers Act, so is much to be preferred to the northern route. It also gives Walker Lake a wider berth, which is a good thing. It looks like the road crosses the North Fork of the Koyukuk River as well, though the resolution of the map that I have access to is not good enough for me to be sure. The North Fork is another Wild and Scenic River, all the way to its confluence with the Middle Fork and should be managed for wilderness values.
503. The proposal claims none of the people with jobs in the mines or on the road would hunt or take the animals the local people use. While we strongly support this provision, there is no mechanism described for how this would be enforced, especially when the BLM and the NPS and other land managers would have to work through AIDEA to take care of problems that would likely occur. [Lacking such information, it is impossible to identify alternatives or propose mitigation when the project outlines are so incomplete.]
504. North Fork of the Koyukuk: Secondly, is it legal for this route to cross into the private Doyon land inside the designated wilderness boundary of the Park in this eastern portion of the Park? (ANILCA authorizes a transportation corridor across "The Boot" in western portion of the park, but not here.) This oversight needs to be addressed in the scoping process. The question whether it is legal to put a road inside the wilderness boundary of the Gates of the Arctic National Park, even though some of this is on private Doyon land needs to be addressed. Additionally, does AIDEA have permission from Doyon to propose this road across their lands? Can this access be denied since this proposed road is not for Doyon access? These legal questions that need to be resolved before this alternative should be considered in this EIS process.
505. This bad plan benefits one private company. It opens up the area to future mining companies. Do not sell our wild public lands short.

Issue 8: Land Use/Land Management, continued

506. The Kobuk Traditional Council, a self-governing federally recognized Tribe. We are concerned that we have not had enough information in the past few years about the proposed Ambler Road project and associated mines, which might impact and cross the lands selected by our Tribal members as Native Allotment holders, and across our village—selected Koovukmeut Inc. lands. The consents of the Native Village of Kobuk Traditional Council and the allotment holders are required prior to any mineral development on these lands. Therefore, we ask that the Bureau of Land Management (BLM) and the National Park Service (NPS) thoroughly analyze the impacts to the Native Village of Kobuk, and provide us with sufficient information about the Ambler Road and connected activity of the anticipated mining, so we may evaluate the "whole project"—for the anticipated 50-year life of the project—prior to making our decision on the road and anticipated mining across our lands. ASSOCIATED FOOTNOTES: (1.) The 2008 BLM Kobuk-Seward Peninsula Resource Management Plan (RMP), at p. 9, provides the BLM shall "consult as early in the agency's decision-making process as possible, to the greatest extent practicable and to the maximum extent permitted by law, with Federally Recognized Tribes in Alaska prior to taking action or undertaking activities that affect Federally Recognized Tribes, their assets, rights, services, or programs." The NANA Agreement and Plan of Merger, Article II, section 3 provides that our Traditional Council has the right to withhold consent to mineral exploration, development or removal within the ANCSA boundaries of the original Koovukmeut Inc. land selections. Therefore, early and informed BLM and NPS consultation with the Kobuk Traditional Council is necessary.
507. Compatible Land Use Issue. Gates of the Arctic National Preserve and Kobuk Wild River. The route will cross 20 miles of these places. The route should NOT go through these areas. These areas need to remain undeveloped in order to protect the resources of the area which are important to the state of Alaska. And these resources go beyond the immediate area. Congress created these places in order to preserve the remote and undeveloped condition for the best interest of the nation. An industrial road is totally inappropriate for these special areas.
508. NANA manages over 2.2 million acres of lands in Northwest Alaska. These lands were selected for community use, protection and access to subsistence resources, and to responsibly develop resources. Responsible development on NANA lands focuses on a return on investment to NANA shareholders in the form of dividends and jobs while ensuring protection and access to subsistence resources. Today, subsistence access remains the highest and best use of NANA lands.

Issue 9: Noise and Air Quality

509. There should be a study to ensure that the proposed Project does not violate National Ambient Air Quality Standards and state air quality standards. The current conditions of the area should be assessed. Study should quantify the short-term (construction) and long-term (operational) emissions.
510. Assess the additional fuel requirements of heavy trucks climbing up and down so many extreme slopes, and the secondary impact on air quality.
511. We recommend the EIS first characterize the existing conditions of air quality and air quality related values (e.g., visibility) to set the context for evaluating project impacts, including identification of sensitive receptors in the vicinity (such as communities, federal Class I Areas, and Sensitive Class II Areas). Next, the EIS should contain a comprehensive emissions inventory of criteria pollutants (in tons per year), greenhouse gas (GHG) emissions (in metric tons COC equivalents/yr.), and significant hazardous air pollutant (HAP) emissions. If projected emissions are significant, near-field and far-field air quality modeling should be conducted to assess project-related air quality and visibility impacts.
512. Any Discussion of the Effects of AMDIAP on Climate Change Must Acknowledge the Overwhelming Benefits the Project Will Have on Combating Climate Change. AMDIAP will facilitate the exploration and potential extraction of hardrock minerals, not fossil fuels. Consequently, increased greenhouse gas emissions from AMDIAP are likely negligible. Thus, any consideration of the climate change effects of AMDIAP must acknowledge the net benefit AMDIAP will have on climate change.
513. It has been pointed out at public scoping meetings that the agencies must evaluate AMDIAP with regards to climate change. AMDIAP will facilitate the exploration and potential extraction of hardrock minerals, not fossil fuels. Consequently, increased greenhouse gas emissions from AMDIAP are likely negligible. Thus, any consideration of the climate change effects of AMDIAP must acknowledge the benefits of permitting AMDIAP and facilitating the development of metals vital to meaningfully address global warming would far out way the impacts – especially given that Congress has already recognized the importance of developing the AMD as described elsewhere in this comment letter

Issue 9: Noise and Air Quality, continued

514. The AMD contains significant deposits of copper, zinc, lead, gold, silver and cobalt - all metals vital to combating the effects of climate change and global warming. If we are to meaningfully address global warming, the Paris Climate Change Accord recognized that three things must happen: 1) we must reduce the amount of carbon dioxide ("CO2") entering our atmosphere from burning fossil fuels; 2) we must replace carbon based energy with cleaner, greener forms of energy – solar, wind, geothermal, hydroelectric, and nuclear; and 3) we must replace 20th century internal combustion engine ("ICE") technology with 21st century technology in the form of hybrid and all-electric vehicles – this includes cars, trucks, buses, and rail transport. Executing a strategy to accomplish this will require a huge amount of numerous metals. See: The Growing Role of Minerals and Metals for a Low Carbon Future, World Bank Group Report, June 2017. For example, solar and wind based energy require 5 times the amount of copper to produce a megawatt of power than traditional power sources. Hybrid and electric vehicles require 3 and 4 times as much copper as ICE vehicles, respectively. By not developing the 10-billion pounds of copper known to exist in the AMD, Alaska would be responsible for adding an additional 1-billion tons of CO2 per year by not replacing coal-fired power plants with solar- or wind-based energy. Alternatively, the AMD's 10-billion pounds of copper could be used to build 53 million battery electric vehicles ("BEVs") and remove 267-million tons of CO2 per year from the atmosphere. Using the argument that these metals can be produced elsewhere is disingenuous and shirks our responsibility to the planet we call home.
515. The EIS should also consider the additional strain on fish and wildlife species, and whole ecosystems, brought on by climate change. Any potential impact on caribou or fish, as well as projections of road building and maintenance in light of rapidly thawing permafrost, must be studied taking into account the best scientific projections of a warmer future.
516. The minerals produced from this activity are essential to state, national and global moves toward more energy-efficient societies. That energy efficiency requires manufacture of everything from vehicles to new energy production and transmission components that require the minerals that will be produced from the Ambler District, done under the rule of law and associated strong environmental and regulatory frameworks of the United States and the State of Alaska, versus other jurisdictions around the globe that too often have lower standards and are dependent on child labor.
517. Climate change impacts should be addressed in the EIS. Issues like thawing permafrost are expected to continue to manifest and even become more dramatic and these impacts as it relates to the potential for dust creation, thaw slumps, and trucking accidents which allow concentrate to be spilled on the surrounding countryside and into the waters passing near or under the road should be included in the EIS.

Issue 9: Noise and Air Quality, continued

518. There are no references in AIDEA's application (Section 2 Corridor Narrative Supplement) to the effects of climate change on the construction or maintenance of the proposed road. For example, page 28 describes bridges and culverts being constructed to a minimum standard capable of handling 50- and 100-year floods. AIDEA does a good job here using high-water events as the minimum standard for construction, but this terminology is losing its meaning as we have 100-year floods multiple times in a decade. An estimation of what the '100-year flood' of 2050 or 2075 will be is required given the rapid environmental shifts observed in the region over the last 25 years, and the anticipation of even greater change in coming decades.
519. Permafrost melting as a function of warming annual Alaskan temperatures is another serious concern requiring consideration by state and federal agencies. It is good that AIDEA identified that nearly half of the proposed and alternate pathways are underlain by permafrost (Table 15 – Permafrost along the corridor from the Dalton Highway to Ambler) and that degrading permafrost is a threat to construction and requires methods aimed towards maintaining frozen ground under the road (page 36, paragraph 5 - 6; page 31, section f). These sections also need to contain estimates of how much permafrost will melt due to warming annual temperatures during the lifetime of the road, as well as mitigation strategies for the potential and likely damage to the road. Also, simply protecting the permafrost directly under the road may not be sufficient mitigation if the surrounding area experiences widespread melting and resultant subsidence and erosion.
520. Consideration of mining-related traffic, dust, and noise are addressed in AIDEA's application (page 5 & 20-22 of Section 2 Corridor SF299 Supplemental Narrative; Appendix 3D – Noise Analysis Report), however, there are no references to the greenhouse gas emissions associated with road construction and any increase in hardrock mining that might result from the road. Emissions associated with this project would be significant, drawing from road and mine construction, reclamation, transport of fuel, supplies, and personnel. In particular, hardrock mining is very energy intensive. For example, diesel and diesel-generated electricity required to move ore to and through a crushing mill at the Arctic Prospect alone (estimated at 17 million tons of ore in the Preliminary Economic Assessment by Nova Gold; page 5 of Section 2 Corridor Supplemental Narrative) would require around 45 million gallons of diesel fuel, releasing around 500,000 tons of CO₂ (calculations based on 342,200 BTU/ton processed¹; 130,000 BTU/gallon of diesel, and 2.2 pounds of CO₂/gallon of diesel). Note, this estimate does not account for energy used in construction, reclamation, and transportation of supplies, personnel, fuel and ore.

Issue 9: Noise and Air Quality, continued

521. It has been pointed out at public scoping meetings that the agencies must evaluate AMDIAP with regards to climate change. AMDIAP will facilitate the exploration and potential extraction of hard rock minerals, not fossil fuels. Consequently, increased greenhouse gas emissions from AMDIAP are likely negligible. Thus, any consideration of the climate change effects of AMDIAP must acknowledge the benefits of permitting AMDIAP and facilitating the development of metals vital to meaningfully address global warming would far out way the impacts – especially given that Congress has already recognized the importance of developing the AMD as described elsewhere in this comment letter The AMD contains significant deposits of copper, zinc, lead, gold, silver and cobalt - all metals vital to combating the effects of climate change and global warming. If we are to meaningfully address global warming, the Paris Climate Change Accord recognized that three things must happen: 1) we must reduce the amount of carbon dioxide (“CO2”) entering our atmosphere from burning fossil fuels; 2) we must replace carbon based energy with cleaner, greener forms of energy – solar, wind, geothermal, hydroelectric, and nuclear; and 3) we must replace 20th century internal combustion engine (“ICE”) technology with 21st century technology in the form of hybrid and all-electric vehicles – this includes cars, trucks, buses, and rail transport. Executing a strategy to accomplish this will require a huge amount of numerous metals. See: The Growing Role of Minerals and Metals for a Low Carbon Future, World Bank Group Report, June 2017. For example, solar and wind based energy require 5 times the amount of copper to produce a megawatt of power than traditional power sources. Hybrid and electric vehicles require 3 and 4 times as much copper as ICE vehicles, respectively. By not developing the 10-billion pounds of copper known to exist in the AMD, Alaska would be responsible for adding an additional 1-billion tons of CO2 per year by not replacing coal-fired power plants with solar- or wind-based energy. Alternatively, the AMD’s 10-billion pounds of copper could be used to build 53 million battery electric vehicles (“BEVs”) and remove 267-million tons of CO2 per year from the atmosphere. Using the argument that these metals can be produced elsewhere is disingenuous and shirks our responsibility to the planet we call home.

Issue 9: Noise and Air Quality, continued

522. NEPA requires agencies to assess the climate effects of direct greenhouse gas emissions from a project, such as emissions from construction activities, the indirect environmental impacts, such as degraded air quality, and the long-term cumulative impacts caused by the project's development and continued activity. Here, BLM must analyze and quantify the direct, indirect, and cumulative impacts of emissions produced from road construction, maintenance and operation. This requires information on vehicle and aircraft traffic, operations at maintenance stations, and emissions from gravel mining and mining operations at the Ambler Mining District. BLM must also consider the greenhouse gas emissions which will result from future mines in its cumulative effects analysis.
523. The affected environment sets the "baseline" for the impacts analysis and comparison of alternatives. Excluding climate change effects from the environmental baseline ignores the reality that the impacts of proposed actions must be evaluated based on the already deteriorating, climate-impacted state of the resources, ecosystems, human communities, and structures that will be affected. This EIS must include comprehensive baseline data to characterize the existing environment, including seasonal and climatic changes over multiple years. Effects from climate change are already occurring and are expected to increase, resulting in shrinking or altered water resources, increased precipitation, extreme flooding and other weather events, invasion of more combustible non-native plant species, soil erosion, changes in season length, loss of wildlife habitat, and changes to migratory and other biological patterns.
524. As noted above, BLM also needs to take into account the potential risks of permafrost degradation and other climate-related impacts on the project. Any infrastructure and mitigation measures must be designed in a way that accounts for these changing conditions and adequately addresses potential impacts that could cause the degradation of that infrastructure and the environment over time. Thawing permafrost and temperature changes can lead to settlement or subsidence of infrastructure, frost heaving of structures and pilings, and the failure of foundations and pilings. Given the number of river and stream crossings with this project, there are also significant concerns related to accelerated erosion and other changes to riverbanks that could undermine the integrity and effectiveness of any bridges and culverts, and could significantly degrade water quality. BLM must consider all of these risks to the siting, design, and construction of any infrastructure. Site-specific information about existing permafrost conditions will be key to agencies' ability to analyze the need for and potential effectiveness of any measures. It is deeply troubling that AIDEA has yet to obtain the necessary information about permafrost conditions in the region.

Issue 9: Noise and Air Quality, continued

525. Prospective effects of climate change to the landscapes of the Upper Koyukuk Valley include widespread thawing of permafrost, changing hydrological regimes, river erosion, frequency and magnitude of wildland fires and landslides. These natural landscape processes are imminent factors bringing instability to the natural and human environments of the Upper Koyukuk River valley. The proposed alignment of the road project area crosses the transition zone between continuous and discontinuous permafrost. Temperature models for Alaska demonstrate heightened shifts to warmer summer high temperatures and elevated winter low temperatures in the boreal forest region of Interior Alaska. The projected consequences are widespread thawing of permafrost and consequent subsidence of the ground surface on a landscape scale. Observed elsewhere in Interior Alaska, which includes the Lower Koyukuk and Upper Tanana river valleys, warmer temperature regimes during the 20th century are believed to have caused subsidence of entire riparian zones. The lowering of bottom-land landscapes due to the thawing of permafrost has direct consequences on hydrological regimes, including changes in channel morphology, flood behavior of rivers and related riverbank erosion. Episodic changes in flood behavior can also be forced by landscape degradation caused by large wildland fires. The widespread wildland fire pattern of the latter 20th century has been attributed to hotter, drier conditions and has resulted in denuded landscapes that are particularly vulnerable to massive slope movements (i.e., landslides). The many factors of landscape evolution in permafrost terrains pose novel engineering and maintenance challenges along the 211 mile-long Ambler road. Collectively, the climate impacts projected throughout the use-life of the Ambler road pose significant threats to the stability of the landscape over which the entire routing is planned.
526. According to the National Climate Assessment (NCA), Alaska's climate has warmed twice as fast as the rest of the nation, bringing widespread impacts including receding sea ice, melting glaciers, thawing permafrost, rising ocean temperatures, and ocean acidification. The NCA also indicates climate change in Alaska will strongly affect Native communities. We recommend the description of the affected environment include any projected future changes, which may affect the proposed project, including the consideration of future climate scenarios, such as those provided by the NCA (See <http://nca2014.globalchange.gov>). If projected changes could exacerbate the environmental impacts of the project, these likely impacts should also be considered as part of the NEPA Analysis.

Issue 9: Noise and Air Quality, continued

527. Existing scientific information exists to show the significance of climate change with the recently released Climate Science Special Report (CSSR) which is volume one of the Fourth National Climate Assessment (NCA4).iii Chapter 11 is titled “Arctic Changes and their Effects on Alaska and the Rest of the United States.” <https://science.2017.globalchange.gov/> The term arctic refers to north of the Arctic Circle. The following are data which should be used to assess climate change impacts in the EIS.
- Key finding with Very High Confidence. The annual average near-surface air temperatures across Alaska and the Arctic have increased over the last 50 years at a rate more than twice as fast as the global average temperature. This variability exceeds the inter-annual variations caused by decadal variations. (p. 303 of CSSR)
 - Especially strong warming has occurred over Alaska’s North Slope during the autumn. In Utqiaguik (formerly Barrow) since 1979 the increased warming exceeds 7 degrees F (3.8 C) in September, 12 degrees F (3.8 C) in October and 10 degrees F (5.5 C) in Novembers. It is very likely that arctic surface temperatures will continue to increase faster than the global mean through the 21st century. (p. 305)
 - Snow cover has significantly decreased in Alaska over the last decade. The May 2016 statewide snow coverage of 372,000 square miles was the lowest on record dating back to 1967. 2015 was the second lowest and 2014 was the 4th lowest. The declining snow cover is expected to continue affected by both anthropogenic forcing and evolving arctic ecosystems in response to impacts. The observed tundra shrub expansion and greening affects melt by influencing snow depth, melt dynamics and local surface energy budget. (p. 310)
 - A key finding with high scientific certainty is that rising Alaska permafrost temperatures are causing permafrost to thaw and become more discontinuous. This process releases additional carbon dioxide and methane and resulting in amplifying feedback and additional warming. The permafrost warming rate varies regionally. The colder permafrost of the North Slope is warming faster than in the Interior. The continued permafrost degradation and the transition from continuous to discontinuous is expected over the 21st century. Alaska’s permafrost contains rich and vulnerable organic carbon soils. A possible significant and potentially uncontrollable release of carbon could provide a lot to the global carbon cycle. (p. 303, 305, 316)
 - Recent measurements that cold season (after snowfall) permafrost emissions are greater than summer emissions has shown that permafrost thaw is occurring faster than models have been predicting due to poorly understood deep soil, ice wedge and thermokarst processes by the models . (p. 315)

- Permafrost temperatures across the North Slope at various depths ranging from 39 to 65 feet (12-20 meters) have warmed between 0.3 degrees and 1.3 F (0.2.-0.7 C) per decade from 1975-2015. Permafrost active layer thickness increased across much of the arctic with significant permanent thaw slumping indicating significant ongoing thawing and rapid future thawing. (p. 314)

Issue 9: Noise and Air Quality, continued

528. Consider the impacts of rapid global warming taking place in northern Alaska on the design, construction, maintenance, and eventual restoration of the roadway.
529. It is known that running heavy equipment through or building on boreal peatlands decreases carbon storage, and equipment and building on permafrost speeds up permafrost thaw and methane release. The EIS analysis should map landscape areas with high carbon storage and explore mitigation options. An estimate for greenhouse gas emissions should be calculated, despite the federal requirement to do so being rescinded in March 2017; at the very least a mention of greenhouse gases should be made in Section 2 of the Corridor Narrative. If a carbon tax is instituted at the state or federal level during road permitting, how will this affect the economics of the road?
530. The EPA recommends the EIS evaluate how the construction and operation of the proposed road, alternatives, and reasonably foreseeable exploration and mining activities, could affect air quality and what measures may be needed to mitigate significant impacts. Such an evaluation is necessary to ensure compliance with state and federal air quality regulations, and to disclose the potential impacts from temporary oil cumulative degradation of air quality. To address potential air quality impacts, the EIS should consider whether the direct, indirect, or cumulative impacts of project-related air emissions would result in any adverse impact on air quality or air quality related values.
531. Fugitive dust that blows off of ore trucks is full of toxic heavy metals. In this state, industry has never prevented this type of dust from occurring. The EIS must evaluate this.
532. 9. Our objective at the Peace of Selby Wilderness Lodge - for the past 30 years - is to provide a quiet place of relaxation for our guests from around the world. The Ambler Access Road corridor is within approximately 3 miles from our Lodge on the northeast corner of Narvak Lake - and within approximately 2 miles from our cabin on the north shore of Nutuvukti Lake. Ore trucks traversing the Ambler Access Road - would be noisy, and emit plumes of dust thereby destroying the peaceful environment we try to provide at our Lodge.

Issue 9: Noise and Air Quality, continued

533. Fugitive dust is defined as particulate matter that is generated or emitted from open air operations (emissions that do not pass through a stack or a vent). The ADEC Air Quality Division regulations direct a “a person who causes or permits bulk material 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” (18 AAC 50.045). The majority of complaints ADEC receives are due to road dust. While unpermitted activity suspected of violating ambient air standards can be given violations, the difficulty lies in establishing measurable limits and a measurable correlation between the source and a violation. This requires modeling studies, collecting meteorological data and development of parameters that could be performed across the state. The State of Wyoming regulates fugitive dust by taking instantaneous opacity readings, but this would require having personnel in the field to take these readings. Most EISs require an applicant to address fugitive dust, but it is important to also discuss what agency will be responsible for enforcement of this mitigation measure. There are a few activities that typically result in pollution that requires a minor air quality permit under 18 AAC 50.502(b): Asphalt plant; Rock crusher; Incinerator; and Thermal soil remediation unit. Of these activities, only the rock crusher permit and incinerator are likely to be involved in this project.
534. The average annual temperature in the Arctic (land above the Arctic Circle) has increased twice as fast as the rest of the world in the last 50 years. Thus, we are seeing climate change stress in the project area. These are issues that affect socio-economic-environmental resources both currently and cumulatively. The depth of analysis of such impacts in the EIS should be thorough because they are significant.
535. Fugitive dust that blows off of ore trucks is full of toxic heavy metals. In this state, industry has never prevented this type of dust from occurring. The EIS must evaluate this.

Issue 9: Noise and Air Quality, continued

536. Potential air pollutant concerns for the proposed project include:
- (2) Operation of heavy machinery and equipment during construction and operations will be accompanied by the emission of fossil fuel combustion exhausts always associated with such equipment. Such exhausts will include oxides of nitrogen, oxides of sulfur, ozone, carbon monoxide, and particulates;
 - (3) Fugitive dust emissions may be generated from road construction and operation as well as reasonably foreseeable mining activities. In addition to human health effects, dust blown from the roadway can settle onto vegetation or waterbodies, impairing their health as well. Proper road design and construction, including location, drainage, and surfacing, can greatly reduce dust emissions from roads (see <http://www7.nau.edu/itep/main/ntaa/docs/tribal-air-resources/FAQRuralDust150226.pdf>); and,
 - (4) Hazardous air pollutants may result from fuel combustion and ore processing. The National Air Toxics Assessment asserts that a large number of human epidemiology studies show increased lung cancer associated with diesel exhaust and significant potential for non-cancer health effects (see <http://www.epa.gov/ttn/atw/nata>). Also, the Control of Emissions of Hazardous Air Pollutants from Mobile Sources Final Rule (66 Fed. Reg. 17,230, March 29, 2001) lists 21 compounds emitted from motor vehicles that are known or suspected to cause cancer or other serious health effects. In addition, some mining and ore processing activities may result in mercury emissions, which can lead to mercury deposition and potentially toxic mercury methylation in adjacent water bodies. The EPA recommends the EIS disclose whether hazardous air pollutant emissions would result from project construction and operations, discuss the cancer and non-cancer health effects associated with air toxics and diesel particulate matter, and identify sensitive receptor populations and individuals, who are likely to be exposed to these emissions.
537. There should be a study to ensure that the proposed Project does not violate National Ambient Air Quality Standards and state air quality standards. The current conditions of the area should be assessed. Study should quantify the short-term (construction) and long-term (operational) emissions.
538. There does not appear to be any baseline data on air quality (particulate matter, ozone, etc).
539. There does not appear to be any baseline for wind speed and direction, which would affect impacts from dust.
540. A study should be done regarding the noise impacts from construction and the up to 400 vehicles per day that are predicted after that. Dalton Highway traffic runs 24 hours a day. The assumption is that this will hold true for this proposed road.

Issue 9: Noise and Air Quality, continued

541. P. 30, SF 299- The noise mitigation section states that “contractors could use the following techniques reduce construction noise”. “Could” means won’t, contractors will use the equipment they currently own and use on other highway construction projects. This results in constant beep-beep-beep of backup from backup alarms, loud bangs and crashes from material dumped into grizzlies or crushers, continuous loud noises from the crushers, and noises from loading gravel trucks. The location of stationary noises is usually dictated by constraints imposed by their intended purpose, rather than being subject to operator choice. Examples are generators and compressors, pumps to fill water trucks, and crushers. These usually start early in the morning and will disturb humans and animals. Some mitigation is possible by restricting the times when daily maintenance and operating activities take place and by period restrictions during important seasons for wildlife. A greater assurance of mitigation will obtain by requiring the equipment techniques noted rather than just stating that they “could” implement them. Not doing so will result in significant adverse impacts in some circumstances. Noise potential will continue throughout the life of the road caused by periodic maintenance and construction, reconstruction and realignment activities.
542. The noise of the road and the mine operations would be detrimental to wildlife. As stated by the National Park Service in “Effects of Noise on Wildlife,” “Sound, just like the availability of nesting materials or food sources, plays an important role in the ecosystem.” The document goes on to state: “. . .a growing number of studies indicate that animals, like humans, are stressed by noisy environments.” When wildlife is stressed, it alters nesting, feeding, and mating patterns. These patterns can in-turn affect flora pollination and distribution. Flora and fauna of Alaska have evolved with the extreme weather to survive harsh conditions. Adding noise and destruction of habitat will adversely affect the fragile ecosystem. Noise and equipment will also negatively impact recreation and hunting in the area. Wildlife will stay away from the noise reducing sightings by visitors and those seeking animals for food. Additionally, a service road that adventurers and hunters must avoid will break-up land use, possibly reducing availability.
543. Evaluation of the impacts on noisescape and viewshed on neighboring protected landscapes, including Gates of the Arctic National Park & Preserve and the Kobuk Wild & Scenic River.
544. A study should be done regarding the noise impacts from construction and the up to 400 vehicles per day that are predicted after that. Dalton Highway traffic runs 24 hours a day. The assumption is that this will hold true for this proposed road. The road dust will have an impact.

Issue 9: Noise and Air Quality, continued

545. Extrinsic sound, such as road noise, would be audible for tens of miles. The 2015 AMBLER MINING DISTRICT INDUSTRIAL ACCESS ROAD ENVIRONMENTAL SOUND ANALYSIS report prepared to evaluate noise concerns indicate that in 2/5 of the sound testing areas disruptive sounds counter to the natural environmental noises expected were present. Further, some areas identified moderate noise that, based on plan, would be continuous, 24-hour activity, while even faint, occasional noise, such as a passing single-engine small plane, extrinsic noise is reported by remote wilderness landscape recreators and subsistence users be A significant impact on experience conditions for users of the area.

Issue 10: Water (Waterways/Rivers/Tributaries/Watershed)

546. In order to evaluate possible contaminants in dredge and fill materials, a pre-testing evaluation should be conducted to determine if there are sources of contamination and harmful quantities to the aquatic environment by man-induced discharge activities (subpart G, 40 CFR 230.60). An example specific to this project are naturally occurring deposits of asbestos within the proposed Ambler Road Corridor, however the other potential sources of contaminants should be examined as well.
547. AIDEA does not provide any information about ice or snow roads in its application, which will be needed for gravel mining and road construction. Ice roads have impacts that persist into other seasons and can severely alter hydrology and the natural thermal regime, and can have a wide variety of ecological aspects. 50 BLM must evaluate the impact of these ice roads to local hydrology and vegetation.

Issue 10: Water (Waterways/Rivers/Tributaries/Watershed), continued

548. The information provided by AIDEA is woefully inadequate for USCG to do the analysis legally required by their agency. The USCG requires information on direction and strength of currents, the heights of the high and low water marks, and may impose necessary conditions relating to the construction, maintenance, and operation of these bridges in the interest of public navigation. Regarding bridge construction, AIDEA simply states: "Bridges would be constructed from pre-cast concrete bulb-tee girders with an approximate maximum span length of 140 feet. Bridge spans larger than 140 feet would require the placement of in waterway concrete piers. Bridges would be constructed from each bank following the completion of the approach embankments." There is not nearly enough information here for USCG to impose conditions relating to the construction, maintenance of operations of these bridges, or make any determination relating to AIDEA's ability to operate these bridges in a manner that protects the public interest. Given the volatility of seasonal river heights in this region, it is critical that bridges be well-designed and follow sound construction techniques. Further, there is no information on bridge clearances over navigable waters, and AIDEA merely provides a typical bridge design where the high water mark for any hypothetical waterway is stated as "variable. There is no discussion of stream flow or direction of currents, bridge construction or reclamation techniques. The bridges that will need piers driven into waterway are not identified. This lack of important information is unacceptable. As described in more detail above, several navigable rivers that will require USCG-permitted bridges are important for recreation, and include two congressionally designated Wild Rivers. Moreover, these waterways are critical transportation systems for subsistence hunters. The conclusory statements and generalized drawings provided by AIDEA raise serious doubts about its ability to design, construct and maintain bridges that protect public navigation and the environment. Finally, AIDEA has chosen to utilize lower-cost culverts rather than bridges in some instances. Both BLM and the USCG need to review and analyze those decisions to see if they are appropriate to minimize environmental impacts.
549. We recommend the EIS describe aquatic habitats in the affected environment (e.g. habitat type, plant and animal species, functional values, and integrity) and the potential environmental impacts of the proposed action, alternatives, and reasonably foreseeable actions (exploration and mining) on these resources. The impacts to aquatic resources should be evaluated in terms of the areal (acreage) or linear extent to be impacted and by assessing the expected change in functions they perform.

Issue 10: Water (Waterways/Rivers/Tributaries/Watershed), continued

550. Future precipitation patterns must be modeled. Modeling results could show how road operations must be planned to predict future flooding by waterbodies. After all, the road will cross 2900 streams, 11 major rivers, and 1700 acres of wetlands. Reference should be made to the situation with the Sagavanirktok River that parallels the Dalton Highway. Past extreme flooding of the highway has posed a safety issue and highway restriction. The solution will be quite expensive.
551. Future precipitation patterns must be modeled. Modeling results could show how road operations must be planned to predict future flooding by waterbodies. After all, the road will cross 2900 streams, 11 major rivers, and 1700 acres of wetlands. Reference should be made to the situation with the Sagavanirktok River that parallels the Dalton Highway. Past extreme flooding of the highway has posed a safety issue and highway restriction. The solution will be quite expensive.
552. The Division of Spill Prevention and Response (SPAR) is responsible for protecting Alaska's land, waters, and air from oil and hazardous substance spills by preventing, responding to and ensuring the cleanup of unauthorized discharges of oil and hazardous substances. For the AMDIAP, the SPAR Division's main involvement is in the area of spill response. Spill response regulations can be found at 18 AAC 75.
- The focus of spill prevention in the context of the AMDIAP rests with federal agencies. Requirements for fuel tanker trucks with a capacity of 3500 gallons or more fall under the responsibility of the Federal Motor Carrier Safety Administration (FMCSA), U.S. Department of Transportation (US DOT). US DOT sets financial responsibility requirements for shippers and requires them to have a written spill response plan for responding to discharges. In the event of a spill, the responsible party is liable for the costs of spill cleanup. If the cost of the cleanup exceeds the amount of financial responsibility coverage available, the state may be forced to cover the cleanup costs from the "Prevention Account" that receives funding through a surcharge on refined fuel sold, transferred or used at the wholesale level, or the "Response Account" that receives funding through a surcharge on crude oil produced in the state.

Issue 10: Water (Waterways/Rivers/Tributaries/Watershed), continued

553. Mineralization in Ambler mining district is of the type conducive to creating acid mine drainage which poses great risk of contaminating waters down stream of these mines that will last in perpetuity. The Kobuk River has a rich diversity of highly productive fish populations that will be threatened. These abundant fish resources have sustained local people who have been living in the area for many thousands of years. Kobuk river fish remain very important for subsistence and will continue to be used in the future. This critical water quality issue must be addressed in accordance with NEPA regulations requiring consideration of cumulative impacts. We recommend that these deficiencies be corrected in all of the remaining steps of this NEPA process.
554. The EIS also needs to analyze the impacts of road-related contamination during road construction and operation. Roads and their associated industrial operations can introduce heavy metals, salts, and fuels into waterways. This road also may contain asbestos due to the composition of nearby gravel and soils.
555. BLM must also consider the impacts from contamination on the road related to both construction and operation. Roads may introduce heavy metals, salts, organic molecules, and ozone into waterways, and will increase the risk of oil spills due to vehicle traffic fuels. This road is also likely to contain asbestos due to the composition of nearby gravel sources. Given the anticipated flooding over every spring and summer during Phase I of the project, these impacts will be exacerbated. Such flooding has the potential to further disperse any contaminants from the road into nearby waterbodies and soils. Further, bridge maintenance may contribute lead, rust, and the chemicals from paint, solvents, and abrasives and cleaners into local waterways. This will have negative impacts on water resources in the area the road traverses that BLM must fully analyze.
556. Building an east-west road through the heart of some of the wildest, most pristine, and beautiful country in Alaska (and the world) to access minerals already abundantly available elsewhere from developed mines, is a short-sighted idea at best. The damage-- environmental, social, and aesthetic--will be irreversible. Lessons worldwide show what happens when sulfide deposits are mined. Despite assurances, sooner or later, acid leaching is virtually inevitable, and the havoc it will wreak on a super-productive, 350-mile-long clearwater drainage such as the Kobuk will be devastating. Research shows the severe impact that even small amounts of leaching can have on returning anadromous fish species, which are numerous in this drainage, and an invaluable resource to residents who depend on them as they have for untold centuries.

Issue 10: Water (Waterways/Rivers/Tributaries/Watershed), continued

557. Consider the effect of the proposed gravel road crossing numerous streams. These streams constantly change banks and riverbeds. A gravel roadway can be like a dam when these rivers and streams change routes and overtop their banks as they do. The scale of this challenge will far exceed anything experienced at Red Dog or even the Alaska Pipeline because those routes largely parallel rivers and watersheds, while this one as proposed will cross numerous tributaries of the Koyukuk River, the John River, the Alatna River, and the Kobuk River.
558. We recommend the EIS describe the existing water resource conditions (groundwater and surface water quality and hydrology) and potential environmental impacts of the proposed action, alternatives, and reasonably foreseeable actions (exploration and mining). Both road construction and operation have the potential to contribute significant sediment to streams and may interrupt the surface and subsurface flow of water. The introduction of sediments to stream systems can alter thermal processes, consequently degrading water quality, and impacting fish and their habitat. Roads also contribute to habitat fragmentation and wildlife disturbance, as well as the introduction or exacerbation of invasive plant species. In addition, water quality is one of the EPA's principal concerns at mine facilities due to the presence of acid generating and metal-leaching waste materials (waste rock, tailings, pit wafts) that are exposed to the environment over long periods of time. Therefore, we recommend the proposed project, alternatives, and reasonably foreseeable actions be evaluated for their potential to alter stream and wetlands discharges, or degrade riparian habitat and water quality.
559. Section 303(d) of the CWA requires states to identify waterbodies that do not meet water quality standards and to develop water quality restoration plans to meet established water quality criteria and associated beneficial uses. We recommend the EIS disclose which waters may be impacted by the project, the nature of potential impacts, and specific pollutants likely to impact those waters, if applicable. It should also include any waterbodies potentially affected by the project that are listed on Alaska's most current EPA-approved 303(d) list. The EIS should describe existing restoration and enhancement efforts for those waters, how the proposed project will coordinate with on-going protection efforts, and any mitigation measures that will be implemented to avoid further degradation of impaired waters. Currently, the Kobuk River is listed as a Category 3 waterbody in the Alaska Department of Environmental Conservation's Alaska's Final 2012 Integrated Water Quality Monitoring and Assessment Report, December 23, 2013, and given a high priority for water quality assessment.

Issue 10: Water (Waterways/Rivers/Tributaries/Watershed), continued

560. Anti-degradation provisions of the CWA apply to those waterbodies where water quality standards are currently being met. In certain high quality waters, the anti-degradation provisions prohibit degrading water quality unless it is determined that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In high quality waters that constitute an outstanding national resource, water quality must be maintained and protected [40 C.F.R. § 131.12]. We recommend that the project evaluation within the EIS consider how the CWA antidegradation requirements will be met.
561. Finally, since construction and operation of the proposed road may impact sources of drinking water, and the Alaska Department of Environmental Conservation manages the state's Drinking Water Protection Program, the EPA recommends the EIS identify any public or private drinking water sources for communities within the project area, activities that could potentially affect drinking water wells or source water areas, potential contaminants that may result from the proposed project and mitigation measures that would be taken to protect drinking water sources.
562. The construction of roads and associated infrastructure may also compact the soil, thus changing hydrology, runoff characteristics, and ecological function of the area, affecting flows and delivery of pollutants to waterbodies. Therefore, we recommend that the EIS include a detailed discussion of the cumulative effects from this and other projects on the hydrologic conditions of the proposed project area and transportation corridor(s). The NEPA document should clearly depict the reasonably foreseeable direct, indirect, and cumulative impacts to groundwater and surface water resources. For groundwater (if applicable), the potentially affected groundwater basins should be identified and any potential for subsidence and impacts to springs or other open waterbodies and biologic resources should be analyzed.

Issue 10: Water (Waterways/Rivers/Tributaries/Watershed), continued

563. There is, shockingly, virtually no baseline on water quality or metal levels in fish.¹⁸ Instead, the applicant relies on a variety of former studies. A literature review is the normal start for research, not the full extent of data collection. The “water quality studies” done in conjunction with fish studies included extremely minimal information – turbidity, temperature, dissolved oxygen, pH, TDS, specific conductivity, and alkalinity. Within that, there could be wide variation – alkalinity ranged from 11 – 130 mg/L,¹⁹ indicating waters extremely sensitive to toxicity from dissolved metals for water bodies at the lower end of the range. The EIS needs to require baseline data on the metal content in water bodies impacted by the project, and particularly within the Gates of the Arctic National Park and Preserve. Noting that metals were generally “within expected background range” is entirely insufficient. Analysis needs to include a suite of metals (total and dissolved forms), in addition to factors that affect metal toxicity (alkalinity, hardness, dissolved organic carbon, pH), and fish health (dissolved oxygen, water temperature). Fish tissue should be collected at key sites for key species to determine baseline levels of metals.
564. The route will cross more than a dozen major rivers and over 100 smaller streams. A study that characterizes the aquatic habitats and fish assemblages at the potential stream crossings within a 200 meter (650 foot) buffer zone along the alignment should be done. Water quality flow and data should be taken. These base parameters are needed to determine future pollution and mitigation.
565. Public access will enable a proliferation of small miners and placer mining and its negative effect on water quality. The only impaired water quality in the vicinity is the Hogatza River and its impairment is attributed to placer mining. The EIS must address this potential.
566. North Fork of the Koyukuk: Actually the engineering problems of this crossing have not been adequately addressed. There is a high water channel south and east of the main Koyukuk channel where this crossing is proposed. Are they going to have two bridges here? One extensive curved bridge? How much will this bridge alone cost? Will these bridges be able to withstand 100-year floods which seem to be happening with more frequency the last few decades. How will these bridges affect migrating salmon runs? This crossing could be one of the most complicated engineering designs along the entire road, and one of the most likely to fail. Consequences of a catastrophic flood need to be considered in the scoping process. This area has already received hundreds of millions of federal dollars from the floods of 1994.

Issue 10: Water (Waterways/Rivers/Tributaries/Watershed), continued

567. John River Valley: The John River heads along the Continental Divide at Anaktuvuk Pass. It drains into the main Koyukuk River five miles below Bettles. The proposed road crosses the John River about 12 miles upstream from the Koyukuk confluence, just below the confluence of the Malamute Fork of the John River. The John is a huge river, one of the major tributaries of the upper Koyukuk. It has a serious history of flooding. How they are going to build a bridge across this section of the John River that will withstand 100-year floods is beyond me. This area is very prone to flooding. Massive amounts of gravel are going to be necessary to raise the road bed across this section of river & even then what will protect the bridge from becoming isolated in a major flood?
568. The use of rip-rap should be compared to the use of other bank-stabilization methods that may be friendlier to aquatic life, such as root wads and trees, as are used at Klukwan and other locations.
569. According to AIDEA, the first phase of construction would result in a seasonal road, with restricted access during spring break-up to minimize roadway damage. Use of the Phase I pioneer road will be restricted from April through August, "due to the shallow embankment construction and spring break up conditions." It is concerning that AIDEA does not intend to construct a road which can withstand typical seasonal conditions, and which does not have the structural integrity to support vehicles each spring. As stated above, it's not clear how AIDEA intends to restrict road access, and unauthorized use could lead to significant road and environmental damage. Even if access is restricted, water flooding over the road would likely lead to increased contamination and sedimentation, increased hydrological impacts with the road acting as a dam, and decreased road integrity over time. During summer months when permafrost is most vulnerable, the road will likely remain unstable. AIDEA's plan to build this shoddy Phase I road poses a significant risk that it will degrade the hydrology and other conditions across a massive region and will ultimately pose a serious hazard to public safety and the environment. BLM must evaluate all aspects of AIDEA's plan related to the "seasonal" use of a year-round gravel road in a wetland area, and evaluate these significant adverse environmental and safety impacts.
570. Data on peak stream flows is not completed; this will impact culvert and bridge sizing. Peak stream flow for a 50-year road must account for anticipated changes in precipitation and flooding as a common-sense economic measure (see "Impacts of Environment on the Road" – "Climate"). Sizing bridges and culverts for a 50- to 100-year flood is very likely highly inadequate.

Issue 10: Water (Waterways/Rivers/Tributaries/Watershed), continued

571. Water resources, including wetlands and fish: The proposed road is likely to have significant adverse impacts on the hydrology of the region. AIDEA has provided almost no information about the aquatic resources in the region and how a project of this scale would likely change nearby hydrology and habitat. The road would bisect and fill thousands of acres of wetlands and involve thousands of streams and waterbody crossings. The EIS must analyze the project's impacts to surface seasonal water flow including the resulting quality and quantity from construction and operation of the road, as well as the potential changes to hydrology of rivers and streams at crossings. It is troubling that AIDEA has yet to complete detailed hydrological studies to understand the existing hydrological conditions in the region, including peak flow levels. This deficiency raises serious doubts and questions about AIDEA's unfounded assertions in its permit application that the project would have only minimal impacts on existing hydrological conditions.
572. The EIS must analyze impacts to surface seasonal water flow, including quality and quantity from construction and operation of the road, potential changes to hydrology of rivers and streams at crossings, scouring, erosion, and other impacts to geomorphology in the project area. It is particularly troubling that AIDEA has yet to complete detailed hydrological studies and work to even understand the existing hydrological conditions in the region, including potential peak flow levels. This raises serious doubts and questions about AIDEA's unfounded assertions that the project will have only minimal impacts on the existing hydrological conditions. There is no information on how the culverts in the road will be added or upgraded during different phases of construction. Removing and replacing culverts would have serious adverse effects on these waterbodies. The impacts of any changes to these or other structures during the various phases of the project must be carefully analyzed in the EIS.
573. There is little to no analysis of the indirect impacts to wetlands – which should include impacts related to a lowered water table and blocked or reduced water flow from the main road, spur roads, airfields, and water withdrawal locations. Similarly more needs to be discussed about groundwater blockages. Design options are suggested, but it is not clear whether options such as a “subsurface layer of porous rocky substrate” could be installed if the issues with groundwater became evident only after the road was constructed and in use.
574. The road is intended, in part, to reach water sources. Presumably water will be needed for road construction and possibly for road maintenance (e.g. dust suppression). If possible, water withdrawals should all be outside the boundaries of the Gates of the Arctic National Park and Preserve. The environmental impact on streams, wetlands, and fish, birds, and wildlife associated with wetlands and streams needs to be assessed, particularly if there are drawdowns that affect streamflow or lower the water table.

Issue 10: Water (Waterways/Rivers/Tributaries/Watershed), continued

575. The need to contain contaminants from snowmelt could be at odds with the need to move snow off roadways to prevent heat sinks; in the latter, hydrologic movement is encouraged and in the former containment is encouraged. Because hydrologic movement is critical, there should be monitoring to determine whether snow removal does release sediment and/or contaminants into wetlands, stream water, stream sediment, or vegetation.
576. Areas potentially impacted by road construction or operation activities, including water withdrawal sites, should be mapped for groundwater upwelling sites which are critically important for fish spawning.
577. Fish may be directly impacted by the noise of blasting. ADFG guidelines for fish protection from blasting must be followed both in the construction of the road and in the removal of the road, bridges, and culverts. Fisheries biologists should be consulted to determine the seasonal or diurnal times when blasting would be least damaging to fish and fish embryos. They should locate spawning beds, rearing areas, and migration corridors on each waterway, prior to blasting. Blasting pressure needs to be limited, based on proximity to fish habitat. If there are costs associated with following guidelines, these need to be considered in the economic analysis of both routes.
578. Road construction and maintenance will likely take large quantities of water from adjacent lakes, ponds, rivers, and streams. What limitations will be placed on these de-watering activities?
579. There will be potential sedimentation, pollution, and dust impacts to all streams being crossed, including the designated W&SR Kobuk River. How will this be addressed?
580. A large 2006 study found that more than 60% of large U.S. mines failed to meet downstream water requirements.¹ The Bureau of Land Management (BLM) needs detailed information about baselines for all the species who live in the region, baselines for water quality in streams and other groundwater. After a strong establishment of baselines, precautions to maintain the health of the ecosystem must be taken seriously. (1 <http://www.aktrekking.com/pebble/news/ComparisonsReportFinal.pdf>)
581. We also have concerns regarding impacts that the proposed road will have on the Kobuk National Wild River.

Biological Environment

Issue 11: Wetlands and Vegetation

582. The proposed project would permanently impact approximately 1,906 acres of wetlands and open waters, and 77,004 linear feet of streams with discharge of 10,402,016 cubic yards (cy) of earthen fill materials. An additional 307 acres of wetlands and open waters, and 324,115 linear feet of streams would be temporarily impacted. In order to discharge fill in waters of the U.S. including wetlands, and cross navigable waters this proposed action would require Department of Army (DA) authorization from our office.
583. Under the 404(b)(1) Guidelines, when a proposal is not "water dependent," meaning that it does not need to be located in or near special aquatic sites, such as wetlands, to serve its basic purpose, it is presumed that there are practicable alternatives available with less impacts to waters of the U.S. that would be less environmentally damaging, unless documented otherwise. The overall project purpose is used for determining practicable alternatives under the 404(b)(1) Guidelines. The overall project purpose must be specific enough to define a permit applicant's needs, but not so restrictive as to preclude all discussion of alternatives. The Corps must evaluate practicable alternatives that meet the overall project purpose
584. As detailed above in our NEPA and FLPMA discussions, there are still many essential pieces of information regarding gravel mining, bridge and culvert construction and maintenance, ice roads, project components, and hydrological impacts which AIDEA has not addressed. These deficiencies must be addressed and the missing information contained and analyzed in the draft EIS for the USACE to consider in its 404 permit application.
585. According to USACE regulations, when there is a proposed discharge, all appropriate and practicable steps must first be taken to avoid and minimize impacts to aquatic resources. For unavoidable impacts, compensatory mitigation is required to replace the loss of wetland, stream, and/or other aquatic resource functions. USACE should not merely rely on the proposed avoidance and design criteria contained in AIDEA's application, many of which are simply requirements of other permitting agencies, and not actual mitigation measures. USACE should independently consider what additional measures are needed for the length of the industrial gravel road to minimize and avoid impacts to wetlands. We also encourage a robust and transparent analysis of needed compensatory mitigation, and close coordination with other federal agencies like the Environmental Protection Agency and U.S. Fish and Wildlife Service in determining the appropriate calculation for impacted aquatic resources and associated mitigation credits.

Issue 11: Wetlands and Vegetation, continued

586. USACE should require a full wetlands delineation for the entire length of the road, as well as alternative routes under consideration during the NEPA process. 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.
587. USACE must carefully consider whether the nation's waters may be significantly degraded by the proposed project. Direct and indirect impacts to jurisdictional wetlands and waters of the United States will be inevitable from this project. As stated above, this road would cross 2,900 streams, 1,794 acres of wetlands, and 11 major rivers. These water crossings alone have the potential to significantly degrade waters in the area. 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. The seasonal nature of the pioneer road, and annually flooding it, will have major impacts to hydrological systems in the area, as will adding two inches of gravel to the road for annual maintenance. The USACE must consider the impacts of the road beyond just construction, as the ongoing flooding and maintenance have the potential to significantly degrade the environment.
588. The US Army Corps should assess alternatives, including the No Action Alternative, as the Least Environmentally Damaging Practicable Alternative with an emphasis on least environmentally damaging.
589. USACE's 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." As described above, the EIS must consider impacts from the development of mines in the Ambler district because the purpose of the road is to provide industrial transport for mining companies. The same applies to USACE's permit. USACE 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 USACE. Mining activity is clearly "reasonably related" to the proposed road project, and will require a USACE permit. Thus the EIS should contain sufficient information for USACE to evaluate the impacts from mine development.

Issue 11: Wetlands and Vegetation, continued

590. Vegetation is impacted on road corridors by dust, altered snow accumulation and snow melt. Vegetation is permanently removed from cut banks and the areas under embankments and the running surface and shoulders. The overall project footprint is estimated at 4,471 acres (SF 299 Table 2) and that results in a substantial loss of primary productivity and that does not include the impacts resulting from the mining that this project will enable.
591. Excavation at the necessary gravel mine sites would result in loss of the existing vegetation and wetlands within the gravel mine footprint, 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. The scale of this industrial road, coupled with development of open pit mines in the Ambler Mining District, means USACE should consider the potential for significant degradation, and the basis for this analysis should be contained in the draft EIS.
592. Roads – including the main industrial road, frontage roads, and spur roads – may have swaths cleared on either side as a preventative measure, to help avoid collisions with wildlife. The EIS should analyze the effectiveness of such cleared buffers around the industrial road, frontage road, spur roads, and airfields, and include the pros and cons of whether the clearings actually attract wildlife that seeks out primary succession plants such as willow; impacts of herbicides, if used to keep plant growth down; impacts of hydro-axe and other clearcutting machinery on permafrost, soils and wetlands if machinery is used to maintain clearings; and so forth.
593. A road will bring invasive species into watersheds which are currently unaffected. We do not know the ecological ramifications of invasive species in the northern boreal forest.
594. The Dalton Highway has resulted in becoming a corridor for several invasive plant species. Potentially every flowing waterbody crossed could become a conduit for their spread. How will the spread of invasive plant species be limited along the proposed Ambler Road corridor, which will tear a gash for 211+ miles across pristine habitat?
595. How will the spread of invasive plant spp be prevented? It's clear that use of gravel have brought invasive plants such as white sweet clover and vetch to Fairbanks and the Dalton, outcompeting our identity-bearing wild fireweed.
596. Invasive species come with road-building, and once they arrive, species like white sweet clover are difficult, if not impossible, to stop. We have seen that happen here. BLM should consider what effect such species will have on other plants, herbivores, and the river bars that they would also be prone to invade.

Issue 11: Wetlands and Vegetation, continued

597. Vegetation disturbance and destruction provide perfect pathways for the establishment of non-native species. These species are commonly called invasive. The negative connotation of the word invasive causes a momentum for entities to want to spray herbicides to control them which causes toxic pollution of land and waters. Then the plants acquire herbicide resistance. The process becomes an endless cycle.
598. A study must be done to determine the current prevalence of invasive vascular plants in the Project area and any nearby disturbed areas. Assessment of the risk of the spread of these plants on the road itself and the waterways accessed as a result of Project development should be considered. The Dalton Highway has highly aggressive invasive plant presence that is affecting the waterways now.
599. Mitigation Response to Impact (of invasive species): Best management practices for workers and construction equipment have to be established and implemented strictly.
600. The disturbance created by the road construction and maintenance creates a corridor through which noxious invasive plants can spread and infest large areas. The Dalton Highway is presently suffering from White sweetclover (*Melilotus alba*) infestations. There is concern that it will spread from the highway to streams along gravel bars, displacing native vegetation to the detriment of wildlife. Highway vehicles and, particularly, heavy equipment, unless thoroughly cleaned before transport, are vectors for invasive plants in material sites and highway rights-of-way.
601. To reduce the risk of the spread of invasive species, only certified weed-free straw and reclamation material should be used for reclamation of areas during and after construction, and for any BMPs to reduce sediment or stormwater runoff. Hazard analysis critical control points should be established. Truck tires should be washed before entering the road. Equipment that will be used in streams and rivers should be cleaned. Some mitigation options are specified in the Donlin Gold Invasive Species Management Plan. The BLM Alaska Invasive Species Management Policy and Permit Requirements should be adopted for the access route(s).
602. First, there need to be surveys to establish whether invasive species are present along the road alternative routes, particularly within the Gates of the Arctic National Park and Preserve. Then, monitoring and mitigation options need to be set out.
603. Non-native vegetation should be avoided in revegetation of disturbed areas. I personally have seen where squirrel grass, non-native to the area, was planted on some pads at the Pebble mining exploration site, and it was spreading. This may have been done to establish vegetation quickly, or it may have been applied if native vegetation was not "taking". Native vegetation alternatives should be used.

Issue 11: Wetlands and Vegetation, continued

604. Analysis should include how, or whether, climate amplifies the potential for invasive species – terrestrial and aquatic – to gain foothold in the region if they are brought in unintentionally (or through negligence) by project activities.
605. There is a literature review but no independent study of lichen.
606. Vegetation and Permafrost: The EIS must analyze the impacts to local vegetation and browsing wildlife from use of this road, and include an analysis of the road's impacts on permafrost. It is critical that existing permafrost not be compromised due to the presence of the road. Roads can spread high levels of dust onto nearby vegetation unless trucks are enclosed or have secure truck bed covers, exacerbating impacts to vegetation and permafrost along the road corridor. Additionally, road construction and vehicles are common ways for non-native vegetation to spread, e.g., from the Dalton Highway into this remote region.
607. The methods that will be used to manage vegetation along the right-of-way are not identified. If herbicides are used, then there will be significant environmental damage, particularly to waterways. These risks and impacts need to be quantified and addressed in the EIS.
608. AIDEA also requested a jurisdictional determination from USACE based on its two preliminary wetlands delineation reports. The USACE made a preliminary determination that AMDIAP would cross waters over which USACE had jurisdiction and that the preliminary wetlands delineation reports "successfully depict the waters of the U.S." The EIS should rely on all of AIDEA's data and analyses, and USACE's analysis and determination. There is very little, if any, field work and analysis remaining to do with respect to wetlands and the BLM EIS.

Issue 12: Wildlife and Fish

609. In the scoping letter, ADF&G provided Kobuk River aerial survey chum salmon counts for periodic years between 2001-2014.
610. Besides work done by ABR, Inc. in 2012 at proposed stream crossings, and the work the Division of Habitat Division performed out of Bettles in 2014,² there have been very few baseline projects related to fish (distribution, growth rates, habitat, etc.) in the region. Little is known about the spawning and migration habits of the whitefish species that travel into the Koyukuk River. However, each year tens of thousands of whitefish are taken by subsistence fishermen in the communities along the Koyukuk River. Yukon River Chinook salmon runs are improving in the Yukon River drainage and they are beginning to be documented in Iniakuk Lake.
(1:2012 Anadromous Fish Surveys within the Brooks East Corridor Survey Area, Alaska, June 2013; 2: 2014 Fisheries and Aquatic Inventory of The Koyukuk, John, and Wild rivers, Ambler Mining District, June 2015, 2014 Fisheries Investigations along the Proposed Ambler Corridor, November 2015)
611. The Shungnak River is not documented as supporting anadromous species of fish; this is believed to be due to a large waterfall near its confluence with the Kobuk River. Juvenile Dolly Varden have been documented in the Shungnak River (Parker 2017), however it is unclear whether they are resident or anadromous forms.
612. In the Yukon River drainage summer chum salmon also support vital commercial and subsistence fisheries, with drainage-wide run sizes in the millions. A radio-telemetry study was conducted on summer chum salmon within the Yukon River in 2014 and 2015. The percent of tagged fish that returned to the Koyukuk River to spawn ranged from 22 to 27 percent. Thus, the Koyukuk River appears to be the largest single contributor to the summer chum salmon run on the Yukon River. The chum salmon tagging study showed fish regularly entering the John River, but the other rivers in the proposed road corridor have not been consistently monitored as part of these studies.
613. The Koyukuk River drainage Chinook salmon run is smaller than the chum salmon run, contributing potentially 3-5% to the overall drainage-wide run, however this species has been defined as a Stock of Concern (see SOA Sustainable Salmon Policy 5AAC 39.222) for many years and is highly prized among subsistence users throughout the drainage and into Canada. Therefore, ADF&G recommends AIDEA identify any spawning and rearing locations of this particular stock within the proposed corridor.

Issue 12: Wildlife and Fish, continued

614. Wildlife, including the Western Arctic Caribou Herd: Roads and aircraft have direct and indirect impacts on wildlife that need to be analyzed in the EIS. Roads in the Arctic have at least six major ecological impacts that must be looked at: habitat avoidance and displacement, altered movement, vehicle-related disturbance, geophysical changes and dust fallout, hydrological changes, and introduction of pollutants. (Sullender, B. Ecological Impacts of Road- and Aircraft-Based Access to Oil Infrastructure. Audubon Alaska (July 2017), p. 16. Retrieved from http://ak.audubon.org/sites/g/files/amh551/f/road_aircraft_access_report_final_0.pdf.) Roads and aircraft both stress caribou which results in less energy available for feeding, mating, and calving. Further, caribou may suffer direct mortality from roads through traffic collisions, increased pressure from hunting, and increased predation risk by wolves due to clear-cutting in the road corridor and more efficient travel routes into caribou range. The Western Arctic Caribou Herd, a critical subsistence resource for dozens of communities, migrates throughout the region of the proposed road and mining district. The herd is the largest in Alaska. Because of its importance to many communities and the herd's role as a natural asset to the state, it is essential that the EIS carefully analyze the likelihood and types of impacts to the herd.
615. This road would intersect the migratory routes of three caribou herds, including the Western Arctic Caribou Herd. This intersection of migratory routes could have significant negative impact on the health of these herds, one being leading to a population decline that would disrupt the entire ecosystem.
616. Research data collected on other industrial roads in Alaska have shown that large proportions of migratory caribou are impacted, slowed, or diverge routes away from roads (<http://www.sciencedirect.com/science/article/pii/S0006320715302147>). A road of this scale and size will unquestionably impact the movement of the Western Arctic Caribou Herd. This could potentially impact hunting for locals and outside hunters alike and could result in greater impacts in productivity and size of the herd itself. The Western Arctic Herd is currently losing population rapidly, and a new threat to their already fragile population should not be risked.

Issue 12: Wildlife and Fish, continued

617. The road itself, according to ADFG research by longtime caribou biologist Jim Dau, WILL (not may) have a negative impact on the movements of the Western Arctic Caribou herd, which is already in severe decline. The road's eastwest course bisects traditional migration paths grooved into the land. Satellite collar tracking shows that pregnant cows are often deflected by such disturbances and end up calving in areas with far lower survivorship for their young. The further reduction of the WAH, still one of the largest ungulate herds in the world, will inflict a great and irreparable hardship on the Inupiat; and in a broader ecological sense, sacrificing the well being of this herd for a mine with a projected 10-year lifespan is unconscionable. Of course, this one mine and one road will result in much more development to already known deposits, transforming the front edge of the western Brooks Range into a sprawling rural industrial park.
618. Assess the differences of conditions of a roadway mostly parallel with caribou migrations and rivers, and one that would cross multiple rivers and twice-yearly would bisect the migration route of the largest migration of a herd of mammals in the United States.

Issue 12: Wildlife and Fish, continued

619. One of the greatest concerns regarding the development of the Ambler Mining District Industrial Access Project (AMDIAP), and associated development of the Ambler Mining District (AMD) is concern for potential impacts to the migration of caribou, principally the herd migration of the Western Arctic Caribou Herd (WACH). Infrastructure development in Alaska and Canada within caribou ranges is nothing new. There are decades of research on caribou whose ranges extend near and through development for oil and gas on the North Slope of Alaska, the Dalton Highway, mining and power generation in Alaska and the Yukon, and local communities. In fact, "Of the seven large (>30,000 animal) caribou herds in Alaska, four herds have infrequent contact with major roads (WAH, TCH, Porcupine Herd, Mulchatna Herd), and three have regular contact, often including a large proportion of the individuals in the herd (Central Arctic, Nelchina, Fortymile). Of the herds that do have significant seasonal interactions with roads, in each case, connectivity between seasonal ranges appears to be maintained (Boertje et al., 2012, Arthur and Del Vecchio, 2009)". That is a key point: although there is some evidence indicating that under some conditions, a minority of individual caribou may exhibit behavior indicating delays before eventually crossing a road (Wilson, 2016), the herd does cross and connectivity between seasonal ranges is maintained. More research is needed to understand why individuals in some herds cross roads and infrastructure more readily than individuals in other herds, why some years exhibit slow crossing behavior while others do not, and why some individuals demonstrate reluctance while others in the herd do not. Research on the North Slope oil fields indicate that even during the most vulnerable season for caribou, calving season, caribou and development can coexist and even thrive. While the exact reasons for the population explosion of the Central Arctic Caribou Herd (CAH) beginning in the 1970's is due to a complex set of factors, it should be noted that development of the North Slope for oil and gas during that timeframe did not prevent the population increase from under 5,000 animals in 1970 to a peak of over 70,000 in 2010. While studying the CAH, Cronin (1998) writes that "There is some evidence from radio telemetry data of avoidance of oil field areas during the post calving period. However, after calving, especially when mosquito or oestrid fly harassment is severe, many caribou ignore human activity and congregate on and around oil field structures and on gravel roads." Further, Cronin writes "Although oil field development may impact individual caribou through disturbance or impedance of movements, herdlevel impacts of the oil fields are nor apparent. The herd is the unit of management, and management objectives are being met. The experience in northern Alaska's oil fields indicates resource extraction and wildlife populations can be compatible when managed properly." The Denali National Park sees an abundance of visitors each year; both human and wildlife. From 1972 to 1997 there was an increase from 45,000 visitors to 350,000 Park visitors annually. Using observational data,

Burson (2000) concluded that “the mean number of caribou, grizzly bear, and Dall. [Note: this email was truncated. The full text is copied here. It ends mid-sentence. There is reference at the top to 'comment letter and articles attached.'

Issue 12: Wildlife and Fish, continued]

620. Each of the three caribou herds' migratory routes this road project has the potential to disrupt is based on a different set of drivers and environmental factors. The impacts to caribou can't be seen as a one-size-fits-all stamp. Each herd should be considered separately.
621. In relation to caribou migration it may be worth considering whether the northern linear design would more likely turn caribou in an easterly or westerly direction for long distances, while the southern "W" shaped design may be less likely to do this both because the shape may encourage them to cross sooner if they bounce off the bottom and turn westerly or easterly and because it is more southerly which may contribute to allowing slightly more southerly momentum of the migration before disrupting it. Of course, this is all speculation, but it these types of considerations that should be taken into account while deciding on the route.
622. While data suggests that a minority of individual caribou may be influenced by infrastructure such as roads, the factors around which caribou will be affected, and when requires further research. Infrastructure and development has occurred in caribou ranges for decades and the herds have continued their seasonal migratory patterns. Best practices should be used to minimize caribou disturbance created by the proposed AMDIAP road and mineral development of the Ambler Mining. District. Scientific research and anecdotal evidence suggest that caribou herds and development can coexist, while a lack of data is present suggesting the opposite. [The commenter provided the following attachments: "Effects of roads on individual caribou movements during migration Article in Biological Conservation, March 2016; "Response of reindeer and caribou to human activities by Scott A. Wolfe, Brad Griffith & Carrie A. Gray Wolfe; NORTHERN ALASKA OIL FIELDS AND CARIBOU: A COMMENTARY by Matthew A. Cronin et.al.; Effects of oil field development on calf production and survival in the Central Arctic herd Technical Report. January 209 by Stephen Arthur and Patricia A. Del Vecchio; Fortymile Caribou Herd: Increasing numbers, declining nutrition, and expanding range. Research · by Rodney D. Boertje, Craig L. Gardner, Kalin A. Kellie, and Brian D. Taras in WILDLIFE TECHNICAL BULLETIN 14 2012; The Effect of Vehicle Traffic on Wildlife in Denali National Park S.L. BURSON et.al. in ARCTIC VOL. 53, NO. 2 (JUNE 2000)

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623. Risks to caribou from roads include impeding migration routes, habitat fragmentation, and possibly local extinctions. Increased noise levels from road and air traffic in the region may lead to caribou avoidance of the road and displacement from their historical range. Roads create ambient stress in caribou, which results in less energy available for feeding, mating, and calving. Further, caribou may suffer direct mortality by traffic collisions, increased pressure from recreational hunting, and increased predation risk by wolves due to clear cutting in the road corridor and more efficient travel routes into caribou range.
624. Proposed Project will intersect with three caribou herd migratory routes. Studies should be done on project effects on migratory behavior, population dynamics and health. Previous studies have shown that caribou will unwillingly cross roads. Delays and changes in migration can result.
625. Caribou movement and migration would be hindered by the road and the huge truck traffic.
626. Winter range for caribou is found within both alternatives for the road construction. Research also indicates that caribou are stressed during winter months due to resource limitations, and this project would further stress the western arctic caribou herd.
627. The DOT alternatives analysis provided a summary of impacts to caribou in a table that simply noted “more” or “less” impact; this was carried through to the Revised ROW application. Although briefly mentioned, these do not give weight to the different types of caribou range that alternatives would cross (migratory habitat vs winter habitat vs calving habitat) nor does the map showing caribou range include caribou range use west of the Ambler project.

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628. Western Arctic Caribou Herd

The proposed road is within the migration corridor of the Western Arctic Caribou Herd (WAH) which is a significant subsistence resource in the region. Roads and other disturbances have been known to influence migration patterns of caribou (Wilson et al. 2016, Beauchesne et al. 2013, and Leblond et al. 2013), and have the potential to increase the efficiency of predators. (Whittington 2011). In the draft EIS, ADF&G would expect to see direct and indirect impacts from the AMDIAP identified, including:

- An evaluation of current WAH movement corridors and connectivity between seasonal ranges.
- A discussion of mitigation efforts that will be made to minimize disturbances to the WAH during all phases of the road project including surveying, construction, operation and maintenance.
- A discussion of the mitigation efforts and or structures that will be used to maximize caribou movements across the road and minimize avoidance of the road.
- The final road route should consider the best alternatives available to minimize caribou deflection through the utilization of topography, vegetation and the potential for small scale road routing (i.e. bends and curves) as a mitigation tool.
- Consider the relevant potential impacts to caribou by increased predator efficiency in the project area
- Quantify the potential for vehicle caused caribou mortality.

629. Mitigation Response to Impacts (on caribou migration): Wildlife overpasses must be considered to enable migration. Examples from the lower 48 can give insight into how many overpasses and at what distance between them should be considered.

630. Caribou and fish study: Similar to what NSB required for the development of ConocoPhillips's CD4 satellite at Alpine, there should be a plan to study caribou and fish before the road and once it is implemented. The study could be supervised by BLM scientists with input from village residents. AIDEA should submit a Caribou Study Plan that includes GPS monitoring of the herds in the area, and a plan for conducting fish counts near spawning areas. Annual written reports should be submitted summarizing the study work and results. Additional mitigation could be required as a result of this study.

631. Wildlife overpasses must be considered to enable migration. Examples from the lower 48 can give insight into how many overpasses and at what distance between them should be considered.

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632. Proposed Project will intersect with three caribou herd migratory routes. Studies should be done on project effects on migratory behavior, population dynamics and health. Previous studies have shown that caribou will unwillingly cross roads. Delays and changes in migration can result.
633. We request that: 2. The best-available information, including both scientific studies and traditional knowledge, be used to analyze potential impacts to caribou. The Working Group's primary focus is promotion of a viable and sustainable caribou herd, the habitat it requires, and the people who use and depend on it. For this reason, we are greatly concerned about anything that degrades or fragments caribou habitat. We are also concerned about the potential of the Ambler Road to alter caribou movement patterns. It is important that the full footprint of the road and associated infrastructure be clarified, including road width, gravel sources, number and locations of airstrips, anticipated traffic levels, and more. Impacts to be analyzed should include changes in movement, distribution and population size in response to infrastructure, disturbance and hunting pressure. Scientific studies considered should include both those conducted in Alaska (e.g., Wilson et al., 2014; Wilson et al., 2016) and elsewhere (e.g., Leblond et al., 2013; Panzacchi et al., 2013) and should consider the physical footprint of infrastructure (Wilson et al., 2014), behavioral responses to infrastructure and traffic (Wilson et al., 2016), and environmental effects that may extend beyond the footprint of development, such as dust covering vegetation (Myers-Smith et al., 2006; Boulanger et al., 2012; Chen et al., 2017).
634. Pursuant to ANILCA requirement "to 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" (ANILCA §201(4)(a)) I am worried about the impacts to wildlife should the road be constructed, and because of this, I am requesting that thorough research be conducted to minimize the impact to wildlife within the current proposed project area. The effects of roads and mining infrastructure detrimentally impact caribou-and as shown on the map of caribou ranges for the Ambler Road EIS, the western arctic caribou herd's total range encompasses the entire project area.
635. Roads cause changes in wildlife movement. Caribou are known to avoid roads or change their migratory patterns around them. The applicant agrees this can happen but states there will be no population-level impacts. The road will likely be an additional stressor on top of other stressors that they face, such as increasing impacts from climate change (e.g. starvation when lichen are frozen under layers of ice after winter rains), and could realistically allow additional hunting pressure.

Issue 12: Wildlife and Fish, continued

636. The routes taken by migratory animals, particularly caribou, need to be mapped and discussed – possibly through a combination of resident interviews and collared tracking research. Once known, wildlife overpasses, with natural vegetation, should be built to facilitate safe crossing for large mammals. Fencing should be discouraged if it would allow predators to trap prey animals against the fence or facilitate predator “herding” of prey animals along a fenceline, or if fencing would inhibit the movements of smaller animals; some fencing together with wildlife overpasses could be effective. Mitigation options may include speed limits, travel in convoys, travel only during daylight hours, and closing the road during significant migrations. Economic and environmental analysis of these and other options should be clearly laid out with benefits and negatives clearly discussed.
637. Jim Dau, retired ADF&G biologist from Kotzebue, re-analyzed caribou migration data from the vicinity of the DMTS and found impacts to that species that extended 30 miles away causing animals to shy and linger for protracted periods before continuing on to cross the road. The result was that when they commenced moving again, they transited the route rapidly and substantially shortened the time available for subsistence harvesters. One could also speculate that the situation also imposes elevated stress levels on the animals.
638. Much research indicates that the loss of permafrost will significantly change the forage for species like the caribou, and will also change the environmental conditions for musk ox, caribou and other iconic mammals of the Arctic. I feel we should do no additional activities in this part of Alaska in the hopes of building, not disintegrating, resilience of these species into the future. I am asking that the impacts to wildlife be specifically addressed in the EA and EIS for this project.
639. Wild River: The Wild River valley is already fairly heavily used by mining interests. During the winter a winter trail is opened up that accesses a number of claims not only at Wild Lake, but also up Flat Creek & on Michigan Creek. With a bridge crossing the Wild River 5 miles up from its junction with the Koyukuk, additional winter trails will penetrate up both sides of the Wild River accessing even more new claims. The cumulative effects of this long term increase in mining activity have to be address in the scoping process. What effects will this increase in mining activity have on the water quality & fisheries?

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640. We request that: 5. Analyses of impacts on the WACH take into account not just the Ambler Road, but the cumulative effects of all road and other development projects within the WACH range on both the herd and people who depend upon it, especially subsistence hunters. The effects of a given project on caribou and people need to be considered not only in light of their own development footprint (including construction), but in combination with the effects of other existing and reasonably foreseeable developments within the herd range. Thus, the effects of existing infrastructure, such as the Red Dog mining road, and potential infrastructure, like roads proposed as part of the Arctic Strategic Transportation and Resources project, should be considered. The possibility of future extensions to the Ambler Road should also be evaluated, such as expansion to the west to connect with shipping access or with nearby communities.
641. Do a baseline study on fish and wildlife before the road is built.
642. A significant salmon run reaches far into the headwaters of the Hogatza River. How will this proposed road affect these salmon runs? The small creek draining from Nutuvukti is an incredible grayling fishery. What effect will the road have on this fisheries?
643. We have three critical sheefish and whitefish spawning areas near Allakaket.
644. Headwaters of the Forks of Henshaw Creek: Henshaw Creek supports one of the largest runs of salmon on the Yukon River system. How will the effects of this industrial road in the headwaters of the East Fork of Henshaw Creek affect this major salmon run?
645. The SF299 Application states that “all perennial rivers and streams are assumed to provide fish habitat and crossings would be designed to provide fish passage” and “crossings of wellestablished ephemeral channels likely to provide fish habitat during seasonal flow periods would also be designed to provide fish passage.” In addition, sampling for fish presence should occur prior to final bridge/culvert design to enable the ADF&G to provide specific advice for work windows and crossing locations.
646. ADF&G currently has little information on Norutak Lake, a large lake very close to the road along the alternate route. If it becomes a source of water for road construction and maintenance or is a source of freshwater fishing, ADF&G would recommend AIDEA perform baseline fish/water investigations at the lake.

Issue 12: Wildlife and Fish, continued

647. The proposed road is likely to have significant adverse impacts on the existing hydrology of the region. The proposed road would cross 2,900 streams, 1,907 acres of wetlands, and 11 major rivers. This will impact countless acres of wetlands that provide habitat for salmon, whitefish, sheefish and other species of extreme importance to the ecosystem and local communities. Roads across wetlands can disrupt fish habitat by restricting or changing the flow of surface water, introducing contaminants, and changing the temperature regime. Improperly installed or poorly maintained culverts, as well as the road itself (which will act like a dam) can prevent fish movement necessary for finding food and cover, and for spawning. Roads constructed through streams significantly impede or may altogether block fish movements. If properly sized, installed, monitored, and maintained, culverts can potentially mitigate the impacts of roads on stream crossings. But, due to the site-specific nature of fish populations in the Arctic, just one ineffective culvert can restrict access to key seasonal habitat and thus impact a whole fish population. Culvert and bridge failure on the North Slope is not uncommon, and this negatively impacts waterways and fish habitat. Moreover, the physical barrier imposed can significantly alter hydrology and intercepts natural water flow, which is a driver of connectivity for fish. BLM should ensure that any culverts are designed in a way that ensures adequate conditions for fish passage.
648. The road would impact countless acres of wetlands and waterways that provide habitat for salmon, whitefish, and sheefish, species of great importance to local communities. Roads can disrupt fish habitat by restricting or changing the flow of water, introducing contaminants, and changing the temperature regime. Improperly installed or poorly maintained culverts, as well as the road itself – which would act like a dam – can prevent the fish movement necessary for finding food, cover, and spawning locations.
649. Fish movements may also be affected if copper enters waterways.
650. How will this road affect the salmon runs up the John River. The scoping process needs to evaluate the long term impacts this road and its associated increase in mining activity will have on these fisheries resources.
651. There is a large salmon run that goes all the way up the Atlanta to at least Kutuk River. What effects will this road have on these salmon runs? I have caught sheefish down the Alatna, a few miles below Helpmejack Creek. Several species of white fish caught in the Alatna are important subsistence resources for the people living in Alakaket & Atlanta. How could the road or future increased access to outsiders affect these subsistence fisheries resources?
652. The rivers impacted by the Ambler road development have populations of sheefish, chum, and King Salmon. The potential impacts to fish species that are a substantial subsistence food source and source of recreational visitors to the region should be directly addressed in the EA and EIS for this project.

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653. Address adverse impacts to Sheefish and Chum Salmon spawning habitat in the Alatna River, Kobuk River, Henshaw Creek, and the Malmuit Fork of the John River due to changes in water quality and quantity resulting from development of the Ambler Road, road usage, and road maintenance.
654. Acid mine drainage, from minerals located in sulfide based deposits, will seriously affect the ability of salmon, char, whitefish, grayling and the world famous Kobuk River Sheefish to migrate to their spawning grounds.
655. There will be potential impacts to spawning inconnu (sheefish), chum salmon, grayling, and other fish species, from sedimentation, dewatering, and pollution, as well as overfishing by mine/trucking personnel. How will this be addressed?
656. Baseline data on abundance and distribution of native cold-water fish species and projected changes to each as a result of road construction. This must also include baseline data on sediment loads and projected changes post construction. A discussion of mitigation options, costs and financing options for each species should be included in the analysis. In addition, a discussion of projected changes in human use of the fishery should be included, along with options to limit any potential negative impacts.
657. The route will cross more than a dozen major rivers and over 100 smaller streams. A study that characterizes the aquatic habitats and fish assemblages at the potential stream crossings within a 200 meter (650 foot) buffer zone along the alignment should be done. Water quality flow and data should be taken. These base parameters are needed to determine future pollution and mitigation.

Mitigation Response to Impacts: The establishment of culverts that will really enable fish passage must be considered. Keeping the culverts free of debris must be figured into the yearly operations budgets. This is extremely important.
658. It appears that substantial baseline data needs to be collected before a comparative analysis of the two road alignments, or other possible alternatives, can be conducted. For example, there appears to be no actual determination of the aquatic life in the streams and rivers in the Gates of the Arctic National Park and Preserve that would be crossed.

Issue 12: Wildlife and Fish, continued

659. Additionally, scientific literature demonstrates a correlation between road development and adverse cumulative effects to wildlife habitat. Specifically, the development and operation of roads has been associated with wildlife habitat fragmentation; decline in water quality and quantity; changes in hydrology and increased sedimentation in stream networks; disruption to wildlife migration patterns; disturbance to the rearing of offspring; wildlife avoidance of areas effected by excessive habitat disturbance; and increased wildlife mortality due to roadkill, hunting, and habitat conversion. The materials presented in each of these resources need to be considered and analyzed in the forthcoming draft environmental impact statement.
660. While probably not affecting population levels at a regional level, roads are proven to cause a decrease in populations of many species numbers and diversity due to direct mortality and to disturbance. As happens along the Dalton Highway, truck drivers will harvest wolves, wolverines and other animals. Maintenance station personnel will hunt, trap and mine. Hunting pressure will increase with aircraft access and, with general public access, significantly rise, affecting population numbers and subsistence use.
661. Roads and aircraft have direct and indirect impacts on wildlife that need to be considered in the EIS. Direct impacts can be broadly classified as disturbance (behavioral change) or displacement (avoidance of a previously used area). Indirect impacts include habitat alteration or changes in food abundance. Roads have at least six major ecological impacts in Alaska's arctic that BLM will need to consider in depth: "habitat avoidance and displacement, altering movement, vehicle-related disturbance, geophysical changes and dust fallout, hydrological changes, and introduction of pollutants." BLM must fully analyze the potential for such impacts from this 211-mile long road. This region is already affected by climate change, and habitat fragmentation due to the road may further increase the vulnerability of fish and wildlife in the area. As discussed further below (Wetlands and Fish Impacts), given the size of the project and the number of water crossings, BLM should also consider the potential for the proposed road to impede water flow and negatively impact fish habitat.

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662. Recent actions by the Department of the Interior have removed protections for migratory birds. Will the National Park Service, which is under the Department of Interior, require strong mitigations to reduce unintentional impacts on migratory birds in the Gates of the Arctic or along the entire access road, now that regulations have been removed? In the past, companies that refused to incorporate mitigation risked criminal prosecution. With that threat potentially removed, how will AIDEA work to keep trucking companies and others that use the road accountable? AIDEA should not assume that they would need to consult with a single organization, such as Trilogy, the company developing the mine site that is the destination of the road. If they subcontract, there could be different trucking firms or contractors moving everything from food for commissaries to chemical reagents, in addition to mining equipment and ore shipments.
663. In general, roads are linked to declines in populations of birds and mammals as well, with impacts extending from one to ten miles from the road itself.
664. The analysis should also look at the impact of lights on wildlife, including the potential for streetlights, camp lights (if there are maintenance or work camps along the road), and headlights.
665. Of the animals prevalent in each area, which ones are most active at dusk/dawn? Which are most active at night? Which are most active in daylight? During what season are different species most active or most at risk? What drives movement – breeding? Young needing to move into new territory? Changes in food availability or denning habitat? What species are most susceptible to collisions (porcupine? moose and caribou? low-flying birds?) and why? This information would inform mitigation options for direct impacts with regards to when truck traffic should operate. Mitigation options for imposing speed limits should be considered against whether there would be an increase in the number or size of trucks on the road.
666. For some birds, movement and behavior will be affected by noise, particularly if road noise masks their own calls used for mating, foraging, and alerting others to predators. Road noise is known to affect the number of eggs birds lay.
667. Although large mammals are generally the focus of vehicle-animal collisions, other species need to be considered, including small mammals and birds. Are there specific routes that passerines are known to take? Will the road pass through nesting or denning habitat where wildlife may be more active? Where along the route would the road cross migratory mammal and bird routes?

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668. P. 47, SF 299- The Application addresses baseline accumulations of heavy metals in small mammals and nesting birds near the DMTS. The test results showed lead levels 20 times at greater concentrations and cadmium levels that reached three times the concentrations at the reference sites. The study concluded that the sampled species are not suffering biological effects. However, these species are low in the food chain and bioaccumulation is far more likely to be of concern and needs to be investigated.
669. The EIS needs to consider potential impacts to the wood frog (*Rana sylvatica*). The wood frog is not only known to reside in the Brooks Range, but has been there so long it is part of Koyukon legends. In Southcentral Alaska, proximity to roads are one of the predictors of wood frog deformities (see chart below), potentially through contributing metals run-off. In the Arctic, few deformities were observed – and roads were 160 km from collection sites. In general, amphibians are most at risk in the spring when they try to move from hibernation locations to breeding areas; is this a potential issue for wood frogs?
670. The EIS should include analysis of effects to populations of fish and wildlife, alteration of substrate, water levels, water flow, water quality, migration corridors, food supply, a change in breeding and nesting areas, and travel corridor associated with aquatic ecosystems.
671. Our wildlife and wild heritage is suffering from enormous neglect and increased pressures placed upon our wildlands like we have never seen before. The enormous greed for the extraction and exploitation of our resources found in our wildlands is taking a toll on our wildlife and on their loss of habitat. Climate change is also taking a toll on the survival of many species.
672. Roads have a negative effect on most wildlife species, except the few, such as ravens, who profit from roadkill—and there would probably be plenty of roadkill by huge, slow-to-react ore trucks and fuel tankers. Alaska is fortunate indeed to have so much land that is not fragmented by roads. This is not the case in the South 48, where there are attempts to connect (usually at considerable expense) some of the fragments for wildlife. Various wildlife species need large home ranges; others need to be able to migrate. Road noise also affects species, particularly songbirds. BLM should consider how road-kill, fragmentation, and noise will affect both migratory and non-migratory species.

Issue 12: Wildlife and Fish, continued

673. Impacts to Wildlife Pursuant to ANILCA requirement “to 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” (ANILCA §201(4)(a)) I am worried about the impacts to wildlife should the road be constructed, and because of this, I am requesting that thorough research be conducted to minimize the impact to wildlife within the current proposed project area. The effects of roads and mining infrastructure detrimentally impact caribou-and as shown on the map of caribou ranges for the Ambler Road EIS, the western arctic caribou herd’s total range encompasses the entire project area. In addition, winter range for caribou is found within both alternatives for the road construction. Research also indicates that caribou are stressed during winter months due to resource limitations, and this project would further stress the western arctic caribou herd. Finally, much research indicates that the loss of permafrost will significantly change the forage for species like the caribou, and will also change the environmental conditions for musk ox, caribou and other iconic mammals of the Arctic. I feel we should do no additional activities in this part of Alaska in the hopes of building, not disintegrating, resilience of these species into the future. I am asking that the impacts to wildlife be specifically addressed in the EEA and EIS for this project.
674. The Western Arctic Caribou Herd: The Western Arctic Caribou Herd is the largest caribou herd in Alaska. The majority of the herd crosses the Kobuk farther down the valley in the Kobuk Valley National Park, in the vicinity of Onion Portage. However, those caribou that do cross in this upper valley are the vanguards of potential expansion of the herd. Presently the herd is shrinking. At one time caribou from this herd extended east beyond where the pipeline haul road is today. If this proposed road is built, how will it limit the potential growth & expansion of the Western Arctic Caribou Herd into this traditional territory all the way to the pipeline haul road?
675. The Southerly Route: From Helpmejack Creek the southern alternative passes through the Helpmejack Hills, crosses several upper tributaries of the Hogatza River, passes by Norutak Lake & drops into the upper Kobuk River 12 miles below the Walker Lake outlet. The Western Arctic Caribou Herd uses the Helpmejack Hills, Norutak Hills & the Lockwood hills as winter habitat. How will a road cutting across the caribou migration routes in this area affect the caribou from reaching these winter ranges?
676. There is a growing body of research from ADF&G showing that some caribou avoid roads. Even if the Western Arctic Herd were thriving I would have concerns about the proposed road’s impacts on caribou. Given the precipitous decline of the herd a road through wintering habitat seems particularly dangerous.

Issue 12: Wildlife and Fish, continued

677. BLM needs to consider the full range of potentially serious impacts a project of this scale could have on the migratory behavior, habitat, and health of the Western Arctic Caribou Herd. The proposed road would cut east to west through a significant portion of the migratory range of the Western Arctic Caribou Herd, one of North America's largest existing wild caribou herds. Risks to caribou from roads include impeding migration routes, habitat fragmentation, and possibly local extinctions. Increased noise levels from road and air traffic in the region may lead to caribou avoidance of the road and displacement from their historical range. Roads create ambient stress in caribou, which results in less energy available for feeding, mating, and calving. Further, caribou may suffer direct mortality by traffic collisions, increased pressure from recreational hunting, and increased predation risk by wolves due to clear cutting in the road corridor and more efficient travel routes into caribou range.
678. Migration and movement of the Western Arctic Herd in relation to the Red Dog Mine access road have been studied over a number of years. Only a small portion of the Western Arctic Herd migrates near that road, so there is no evidence of herd-level alteration of its fall migration (1). [1: BENJAMIN SULLEN DER, AUDUBON ALASKA, ECOLOGICAL IMPACTS OF ROAD- AND AIRCRAFT-BASED ACCESS TO OIL INFRASTRUCTURE 22 (July 2017), available at [Biological Environment](http://ak.audubon.org/sites/g/files/amh551/£'road_ aircraft_ access _report _final_ 0. pdf.] Still, in some years, caribou are considerably delayed in crossing roads: for individuals that came within nine miles of the road, roughly 30% of collared caribou changed their usual rates of travel and took about ten times longer to cross it. BLM should carefully study the potential impacts on caribou migration of an east-west road structure and fully assess the potential negative impacts to the Western Arctic Herd and, relatedly, the potential impacts to subsistence.</p><p>679. What are the potential disruptions of the Central Arctic and Western Arctic caribou herd migrations, as well as impacts to several other game and non-game wildlife species?</p><p>680. An evaluation of projected impacts and interruption of caribou migration routes, based on a review of existing literature. This review should include an evaluation of how the proposed project could impact food security, due to project-related changes in caribou distribution or abundance.</p></div><div data-bbox=)

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681. Alatna Hills Caribou Winter Range: The Alatna Hills, south of the Malamute Fork of the Alatna, are a winter range for portions of the Western Arctic Caribou Herd. How will this road, bisecting the winter range from the summer range, affect this herd? People from Allakaket & Alatna hunt caribou in these hills when the caribou are here. How will this road impact their subsistence hunting? Caribou are very sensitive to road development and traffic. Studies have been done on the short 65-mile-long Red Dog Mine road. Although the majority of caribou cross farther to the west, in the Kobuk Valley, historically caribou from this herd have used the winter ranges north and south of the Koyukuk River, not only in the Alatna hills, but also in the Kanuti National Wildlife Refuge. Potential impacts from this road on the caribou must be addressed. Future growth of this herd in its eastern winter range could be seriously restricted if this road goes through. What are the potential impacts on the future expansion of this herd into these traditional ranges?
682. The proponent's statements regarding impacts to the Porcupine caribou herd and subsistence activities in general have been hotly disputed by local residents and experts, and should be carefully scrutinized for accuracy.
683. The proposed road would "fragment" the landscape. As conservation biology tells us, smaller habitats are more vulnerable to population declines. A road may not seem like much, but it represents a fundamental increase in fragmentation, especially since much of it passes through state and native lands which could be sold off in the future for other settlement and development. The BLM must consider this as a future possibility.

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684. It is impossible to overstate the importance of caribou to our members. Their absence in the annual subsistence cycle would irreversibly change the character of the culture and impose major hardship on the people as it would be impossible to replace the quantity and quality of food that caribou currently provide. The major consideration with the road and the route selection would be to minimize the impact to their ability to freely migrate from the northern Brooks Range in the fall to their southern wintering habitat and back again in the spring and a road running east to west in the middle of this migratory route is a serious cause for concern. This type of migration impact has already been documented in regards to the much shorter Red Dog road. The related issue of habitat fragmentation is also detrimental to caribou and development and this road and the expected related spur roads, along with the increasing ability to develop future roads connected to this road in the future, is of serious concern for the long-term health of the western Arctic caribou herd. It has also to be kept in mind that even with the proactive approach taken along the relatively short Red Dog road in regards to stopping traffic while caribou are near the road there are still demonstrable impacts. It is unknown if such a strategy will, or even could, be put in place on the Ambler road, given the differing ownership and political affiliations of the mine developers in the Ambler District, in addition to the totally different logistical challenges in regards to the hauling season and distances that would be covered by the trucks. It also needs to be kept in mind that while it is practical to stop trucking on the Red Dog road due to its short length and nearby facilities on both ends, which would be totally different on the Ambler road, it also is exclusively tundra/willow habitat and herds of caribou can be relatively easily spotted at a distance. This will not be the case on the Ambler road, where both the topography and the spruce dominated areas will make it impossible in many places along the road to even observe caribou until they are right next to the road, but of course the caribou will still be able to smell, feel and hear the road and its associated traffic well before they reach it. Analyses of impacts to the western Arctic caribou herd should take into account the Ambler Road and the cumulative effects of other roads within their range and include the impacts to the people that depend on them.

Issue 12: Wildlife and Fish, continued

685. Caribou Herd (WACH). Infrastructure development in Alaska and Canada within caribou ranges is nothing new. There are decades of research on caribou whose ranges extend near and through development for oil and gas on the North Slope of Alaska, the Dalton Highway, mining and power generation in Alaska and the Yukon, and local communities. In fact, “Of the seven large (>30,0animal) caribou herds in Alaska, four herds have infrequent contact with major roads (WAH, TCH, Porcupine Herd, Mulchatna Herd), and there have regular contact, often including a large proportion of the individuals in the herd (Central Arctic, Nelchina, Fortymile). Of the herds that do have significant seasonal interactions with roads, in each case, connectivity between seasonal ranges appears to be maintained (Boertje et al., 2012, Arthur and Del Vecchio, 209)”. That is a key point: although there is some evidence indicating that under some conditions, a minority of individual caribou may exhibit behavior indicating delays before eventually crossing a road (Wilson, 2016), the herd does cross and connectivity between seasonal ranges is maintained. More research is needed to understand why individuals in some herds cross roads and infrastructure more readily than individuals in other herds, why some years exhibit slow crossing behavior while others do not, and why some individuals demonstrate reluctance while others in the herd do not. Research on the North Slope oil fields indicate that even during the most vulnerable season for caribou, calving season, caribou and development can coexist and even thrive. While the exact reasons for the population explosion of the Central Arctic Caribou Herd (CAH) beginning in the 1970’s is due to a complex set of factors, it should be noted that development of the North Slope for oil and gas during that timeframe did not prevent the population increase from under 5,0 animals in 1970 to a peak of over 70,0 in 2010. While studying the CAH, Cronin (198) writes that “There is some evidence from radio telemetry data of avoidance of oil field areas during the post calving period. However, after calving, especially when mosquito or oestrid fly harassment is severe, many caribou ignore human activity and congregate on and around oil field structures and on gravel roads.” Further, Cronin writes “Although oil field development may impact individual caribou through disturbance or impedance of movements, herd-level impacts of the oil fields are not apparent. The herd is the unit of management, and management objectives are being met. The experience in northern Alaska’s oil fields indicates resource extraction and wildlife populations can be compatible when managed properly.” The Denali National Park sees an abundance of visitors each year; both human and wildlife. From 1972 to 1977 there was an increase from 45,0 visitors to 350,0 Park visitors annually. Using observational data, Burson (20) concluded that “the mean number of caribou, grizzly bear, and Dalshep observed did not decline ($p > 0.301$) from 1973 to 1977”, and “adverse behavioral responses to traffic (e.g., running from vehicles) occurred in less than 1.3% of observations for each species.” Further, Burson concludes, “increased

traffic on the park road apparently has not caused significant changes in abundance, distribution, or behavior of caribou, grizzly bear, Dal sheep, and moose in the park road corridor.” Wolfe (20) summarized a great deal of scientific literature regarding caribou and infrastructure and wrote that, “Infrequently traveled transportation corridors resulted in low numbers of road-kills, did not deter road crossings by caribou, and had no observable effect on traditional migration routes, annual distribution or energetic costs. Traditional migrations have continued across constructed railways or roads in Newfoundland, Yukon, British Columbia, and Alaska” (Wolfe, 20).

Issue 12: Wildlife and Fish, continued

686. Additionally, scientific literature demonstrates a correlation between road development and adverse cumulative effects to wildlife habitat. Specifically, the development and operation of roads has been associated with wildlife habitat fragmentation;¹ decline in water quality and quantity;² changes in hydrology and increased sedimentation in stream networks;³ disruption to wildlife migration patterns;⁴ disturbance to the rearing of offspring; wildlife avoidance of areas effected by excessive habitat disturbance;⁶ and increased wildlife mortality due to roadkill, hunting, and habitat conversion.⁷ The materials presented in each of these resources need to be considered and analyzed in the forthcoming draft environmental impact statement.

1. Ana Benítez-López, Rob Alkemade, and Pita A. Verweij, The impacts of roads and other infrastructure on mammal and bird populations: A meta-analysis, In *Biological Conservation*, Volume 143, Issue 6, 2010, Pages 1307-1316.
2. Stephen C. Trombulak and Christopher A. Frissel, Review of Ecological Effects of Roads on Terrestrial and Aquatic Communities, In *Conservation Biology*, Volume 14, Issue 1, Pages 18-30.
3. Richard T.T. Forman and Lauren F. Alexander, Roads And Their Major Ecological Effects, In *Annual Review of Ecology and Systematics*, Volume 29, 1998, Pages 207-231.
4. Scott A. Wolfe, Brad Griffith, and Carrie A Gray Wolfe, Response of reindeer and caribou to human activities, In *Polar Research*, Volume 19, Issue, 1, 2000, Pages 63-73.
5. Ingunn Vistnes and Christian Nellemann, Avoidance of Cabins, Roads, and Power Lines by Reindeer during Calving, In *The Journal of Wildlife Management*, Volume 65, No. 4, 2001, Pages 9 15-925.
6. Ingunn Vistnes, Christian Nellemann, Per Jordhøy, and Olav Strand, Wild reindeer: impacts of progressive infrastructure development on distribution and range use, In *Polar Biology*, 2001, Volume 24, Issue 7, Pages 531-537.
7. D. A. Walker and K. R. Everett, "Road Dust and Its Environmental Impact on Alaskan Taiga and Tundra," *Arctic and Alpine Research*, vol. 19, no. 4, 1987, Pages 479-489.

687. Numerous studies have documented impacts of roads and vehicle traffic on wildlife. Mortality due to vehicle collisions, disruption of wildlife migration patterns, increased hunting and trapping pressure, contamination of fish habitat from chemical and fuel spills, and increased stream sedimentation are all likely to occur from the proposed road. Since this road may be used to haul mineral ore concentrates, there is a risk of harmful heavy metal accumulation in fish and wildlife, especially for species at the top of the food chain. The draft EIS must address this in describing impacts and identifying mitigation measures.

Social Environment

Issue 13: Cultural/Historic Resources

688. Archaeological site probability modeling is very useful for making the best use of resources when surveying large tracts of land for cultural resources. This modeling should explicitly attempt to address how past humans may have used of the region at different times and with different resources. Hypothesis testing should be employed, coupling the archaeological and paleoenvironmental data, to generate testable locations of where people may have lived at different times, and to get at how people lived in the past and why they utilized the locations on the landscape that they did. It is hoped that the survey planners stay abreast of the biological, ethnographic and other studies being conducted concurrently that can provide data to refine these exploratory and explanatory models.

Coupled with the model information on high and low probability areas given to the crews should be explanations of why areas are modeled high probability. Crew chiefs need to know what makes an area high probability in order to better plan survey of that area.

Probability modeling is a commonly used tool for finding the kinds of archaeological sites that we are already aware of. But in Alaskan archaeology we are regularly finding site types that we previously were unaware of: ice patches in alpine areas utilized by prehistoric caribou hunters; raised beach terraces in southeast Alaska with mid or early Holocene archaeological sites, etc.

Consequently, part of any survey should include use of some type of random sampling, possibly stratified random sampling, to test a variety of location types, in an attempt to ensure that unknown site types are not missed.

Attention to stratigraphic markers in guiding archaeological field testing provides verifiable interpretation and repeatability of data. Soil profiles show what soil horizons are in the region, and may include paleosols and volcanic ash falls as well as periods of high and low sediment deposition. Examining locations across the project area that have exposures of deep Aeolian sediments will develop an understanding of the types of soil profiles that will be encountered on the project and the possible depth of sediments that can be expected, helping ensure that early cultural horizons which are deeply buried will not be missed. This examination should take place at the start of the field season so the crews have this information to guide their later testing, and in locations that are near sources of high aeolian sediment, to get good stratigraphic separation and help show how deep of testing may be required.

Issue 13: Cultural/Historic Resources, continued

689. Without coupling of the archaeological data with paleoenvironmental data, the archaeological data is left largely un-interpreted, generating little explanation of lifeways or human-environmental interaction. Recent concern with climate change encourages us to compare our archaeological data to past climatic conditions and fluctuations, to better understand how human societies have dealt with past climate change. Because of this need for paleoenvironmental data, lake core and bog core data should be utilized. If not already available, bog cores should be taken in the project area. These cores will generate chemical signatures and ages for tephra, past vegetation types and frequency through microfossil and pollen data, and sediment source and wind regimen through particle analysis, etc. (DNR-OHA included a two-page attachment summarizing the deep testing methodology for archeological surveying).
690. Under the National Historic Preservation Act, BLM will be required to conduct Section 106 Review on all lands affected by the proposed action. The project's Area of Potential Affect (APE) should be defined to include all locations that have the potential to be impacted by the construction of the proposed road and any ancillary features (i.e. gas and utility, bridges, culverts, spur roads, etc.), and areas downstream of river crossings. The scope of the report needs to be the entire project regardless of land status. The report needs to clearly indicate where an archaeological inventory has been conducted and where inventory data is lacking within the APE. Community outreach is critical to identifying potential sites.

Issue 13: Cultural/Historic Resources, continued

691. TCC staff, Tribal leaders of Upper Koyukuk villages and ANCSA corporation representatives attended the January 2018 cultural resources roll-out meeting for the Ambler road in Anchorage. During that meeting, the results of previous cultural resources surveys clearly demonstrate many discrete heritage sites located in and near the project footprint on federal and public lands. Though the identification of discrete sites is fundamental in cultural resources management practices, the Tribal communities perceive cultural resources on a landscape scale reflecting their traditional land domain. Part of this world-view is rooted in the traditional hunting and gathering way-of-life and the inherent practices of pursuing migrating fish and game, and seasonally ripe edible plants where they could be harvested in different seasons throughout the year. Ethnographic place-names in the Upper Koyukuk River reiterate the broad historic and contemporary use areas in the traditional wild food economy. As mentioned in the Anchorage cultural resources session, collections of sites or discrete places of use across the landscape conform to concepts of managing cultural landscapes, traditional cultural places and traditional cultural districts. The BLM and their third-party contractor ought to take time to learn how decedent communities perceive cultural resources and be sympathetic to this worldview reflected across customary and traditional use areas (i.e., traditional land domains). The preparation of a programmatic agreement for the project needs to include the perspectives of Tribal cultural values and associated traditional cultural knowledge of respective land domains.
692. Cultural resources: Prior to road construction, there must be consultation with Allakaket so that the route minimizes interference with sites of particular importance for subsistence, historical, or cultural reasons as well as allotments in the area. Allakaket maintains a map of such sites that is not available to the public, but Allakaket will share information as needed to avoid conflict. This is similar to NSB' system for protecting Critical Sites.
693. Archeological sites in the vicinity of Norutak need to be evaluated. This was a major portage route between the Kobuk & the Koyukuk Valley.
694. Avaraart Lake & the Mauneluk River: Mauneluk was a mythical shaman that is represented in the oral traditions of the Kobuk River people. The Mauneluk River is named after this mystical figure.
695. I will expect to see full compliance with Section 106 of the National Historic Preservation Act including comprehensive inventory on the ground, professional site documentation and National Register significance evaluation and nomination/listing of applicable properties. Because the area of potential effect is an important native homeland and subsistence base, there must be comprehensive consultation with Native groups and full evaluation of the entire area to be impacted as a cultural landscape. This includes impacted watersheds.

Issue 13: Cultural/Historic Resources, continued

696. Building a road can also be considered a disruption to cultural and historic values. The land and the qualities of it, specifically its undeveloped nature, are inseparable from the culture and history of Alaska Native peoples and of anyone living a subsistence lifestyle in the area.
697. Data Gaps: there are many but one example is meeting requirements for full compliance with National Historic Preservation Act and State cultural resource preservation. Compliance means comprehensive survey, government to government consultation, evaluation of every site for National Register eligibility, identification of cultural landscapes, long term preservation plans, site data recovery where rerouting not feasible, Given the scope and lack of much prior work, this compliance will require a substantial amount of attention.
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699. Cultural and Archeological Resources. All alternative routes should be field surveyed in advance of the EIS analysis to determine the values that are at risk. In the absence of such data, the impacts and potential mitigation measures cannot be adequately assessed. To state that these surveys will be completed in advance of construction removes from the decision maker, the opportunity to consider in the decision process, the least damaging alternative for these resources. In addition, salvage of artifacts and materials from sites, places a continuing storage burden on the museum. The unavoidable destruction of the provenance, obviates the opportunity to recover more data that will be made possible by the development of improved equipment and techniques in the future. In addition, the state may not require salvage of sites on state lands. Similarly, areas of cultural or religious significance, locales for gathering plants of medicinal use and so on must be identified in advance in order to evaluate and compare impact and mitigation potential between alternatives.

Issue 13: Cultural/Historic Resources, continued

700. Currently, Congress has declared in ANILCA a special value to the Nation of the subsistence way of life of the local rural people of Alaska. Of that subsistence way of life, this northern Interior way of life is distinctive, and of special value to the Nation. This way of life depends on the skill of the local people of dealing with the lean years, the shifting populations of many different kinds of subsistence species. The unique ability that emerged over thousands of years, to move from one species to another depending on circumstances is crucial, and a special value of this way of life to all the people of the United States. Assess the loss to the United States of its cultural diversity if northern Interior Alaska becomes a Rust Belt of lost opportunity and despair as a consequence of this project when the ore is played out or abandoned.

Issue 14: Economics

701. It (the proposed Ambler Road) has an estimated cost of \$190 million to \$300 million. Alaska is not going to have that kind of discretionary funds for quite some time. In the specifics of a December 26, 2014, directive, Alaska Governor Walker ordered agency leaders to “cease all discretionary spending,” “not incur new or additional expenses or obligations,” and “not spend any unencumbered or unobligated funds that have been appropriated to the agency by the Legislature” for all of the six mega projects.
702. The development scenario needs to include at a minimum: Financing costs and how the toll amount will be determined. Effect to state economy if there were no operations in any given time period affecting the capability to repay loans. Effect to state economy if road is built and no mining takes place. Provide a realistic estimate for construction and maintenance based on the Dalton Highway and previously proposed road to Nome. Examine the effects of those costs to the State. Alternately consider assigning the ROW to the mineral operations companies as applicants, in lieu of AIDEA.
703. This road would be built using public funds only to serve private industry operating in the mining district. This type of transaction is similarly unacceptable, especially given the current fiscal crisis facing the State of Alaska.
704. The road will provide for development of the Ambler District resource opportunities as well as many others along its route and this will provide for the gradual replacement of our (Alaska’s) dependence on oil/gas to hard rock and possibly other/coal resources: o The economy of Alaska is in peril and should be considered in this analysis. Employment opportunities are diminishing drastically and leave little opportunity for the younger folks in our state other than to move to other out-of-state venues; this is unacceptable o There are many opportunities along the length of the proposed access that are incredible including guide services, mining, timber(?), peat, whatever(?) – these should be included in the analysis.
705. The mining company proposing this project, Trilogy Metals, is not a US based company, let alone Alaskan. Most of the profits will quickly leave the state to enrich a foreign corporation. While a very few jobs will remain, those few jobs will come at the cost of long-term sustainable employment for guides, local businesses that support tourism, bush pilots, hotels, and other travel-related companies. Industrial mining and roads are NOT compatible with tourism in the region.

Issue 14: Economics, continued

706. Alaska needs to diversify its economy to off-set lost revenues caused by the dual trend toward a low-carbon “green” economy and low oil/gas prices. Alaska’s mineral resources can help off-set this lost revenue. Specifically, the Ambler Mining District is one of Alaska’s richest mineral districts, with known mineral resources exceeding 10 billion pounds of copper, 5 billion pounds of zinc, 100 million ounces of silver, and over a million ounces of gold. Future exploration within the AMD will substantially increase its known mineral resources to the benefit of Alaska’s economy. Both the State and Alaska natives specifically selected lands within the district to bring economic development to the region. The success of the Red Dog Mine foreshadows the AMD’s potential. ...When surface access is provided to the AMD, the AMD may one day be a successor to the highly successful Red Dog Mine.
707. Development of the important mineral resources in the Ambler Mining District will benefit Federal and State treasuries, as well as ANCSA Corporations through Title 7i mineral revenue sharing provisions of ANCSA Federal Law. - The economic activity associated with this mineral development will create much-needed jobs, economic and social opportunity in rural communities where such opportunities are limited and scarce.
708. The State will lose tremendous amounts of money for construction and maintenance. Current cost of construction and maintenance projections are highly flawed. The State cannot afford to be squandering money at any time, but especially now. The State Department of Transportation Planning Division chronically and vastly underestimates the stated cost for new road construction. This agency uses this strategy to get the project started. The Manley to the Yukon River "Road to Nome" section is an example. Actual cost after completion will be three times the DOT initial stated estimate. Using that typical ratio as the minimum understated costs for the Ambler Road, due to very large river crossings and extensive permafrost requiring use of geotextile, the Ambler Road would cost at least three times the DOT lowballed estimate. The Ambler Road would most likely cost at least minimum of 1to L.2 billion dollars. This is not accounting for the cost of airfield access for some of the maintenance camps, and the camps themselves. The camps and equipment to maintain the road would be tens of millions of dollars. The absolute minimum cost of the crew and equipment would be at least 11 million annually, taking into account the cost per mile of the Dalton Highway of \$49,000, last figures found. Total State expenditure is needed to truly calculate the tariff rate and viability. There is no realistic cost of construction and maintenance, so AIDEA cannot make a realistic projected tariff per load hauled over the Ambler Road. If the tariff is too high the companies will not use the Road.

Issue 14: Economics, continued

709. This region today is arguably one of the most pristine wilderness areas left in the world. Yet the mining that this proposed project would facilitate will, without doubt, permanently destroy this precious wilderness character. From a Benefit/Cost standpoint, the region is worth far more over the long term just as it is, and should be conserved as such for future generations.
710. This project easily would cost over \$1 billion when all costs are included. The Alaska Industrial Development and Export Authority (AIDEA), the project applicant, states on its Ambler Road funding page that “the total cost of construction, operation, and maintenance, and the cost of funds for AIDEA, would be between \$844.9 and \$906.0 million over the 30-year life of [the Ambler Road]” (in 2014 dollars). These figures do not include reclamation costs and are not adjusted upward to the year of construction – note that construction costs increased nearly 10% from 2014 to 2017.
711. In developing its draft EIS, BLM should ensure that it has the most updated construction cost figures, including costs per mile and bridge costs, as well as updated operations, maintenance, financing and reclamation (currently unavailable) costs, from AIDEA.
712. In summary and not including the cost of bridges, the AIDEA/Cardno 2015 report showed the cost to be \$1.36 million per mile or \$1.40 million per mile (2017 dollars), AIDEA’s unpublished, updated analysis showed the cost to be \$1.73 million per mile (2017 dollars), the Alaska DOT/DOWL HKM 2011 report on the proposed Ambler road showed the construction cost to be \$1.5 million per mile (2011 dollars) or \$1.70 million per mile (2017 dollars), and the Alaska DOT/DOWL HKM 2011 report on the similar road to Nome road project showed the cost to be \$1.66 million per mile (2011 dollars) or \$1.88 million per mile (2017 dollars). The relatively low cost per mile developed by Cardno and submitted to BLM may be highly problematic. BLM should work with AIDEA and its contractors to understand how the Ambler Road construction and operations and maintenance cost estimates have been developed and updated, including for bridges, and to ensure that the latest cost numbers are included in the Right of Way application and made available to the public on AIDEA’s website.
713. Additionally, as has been the case for the Knik Arm Bridge and Juneau Access, BLM should require the state to undertake an independent cost analysis of the project before proceeding. When project proponents and their contractors who may receive additional work develop project costs, there is an incentive to low-ball the costs in order for the project to proceed through the permitting phase.
714. Estimates for road construction vary from \$350 million to \$1 billion, and financing of the mines has not been revealed. To do a thorough analysis of economics of this project, we ask that the costs of construction and operation of road, the anticipated mines, as well as mine and road abandonment and reclamation be evaluated in the EIS and the EEA.

Issue 14: Economics, continued

715. AIDEA needs to show that its road construction cost estimate is the most likely. That is, \$1.7 million per mile is the most likely cost among a range of possible costs. And, AIDEA should justify the amount and likelihood of the other costs associated with the road. They include DOT maintenance, pollution control, pollution and disturbance abatement, and protection of wildlife and public safety. A rigorous defense of cost estimates is needed in order to understand the project's impact on the human environment, much of which is measured in economic terms.
716. Enforcement of activities associated with the Ambler Road development will require increased federal and Alaska State costs required to monitor and police activities along this new road, plus the associated increase traffic on the Dalton, Elliot, and Steese Highways. How will these cost be recouped?
717. A review of enforcement options which include an analysis of the annual budget required for each.
718. The Dalton, Elliot, and Steese Highways currently endure huge maintenance costs. Additional heavy equipment and ore truck traffic from the Ambler Road development and associated mine development will exacerbate road impacts, plus increase road safety concerns. Who will pay for the increased maintenance costs to these public highways and how will safety be addressed?
719. The cost alone of removing the road in the future seems like a financial burden that would cancel out profits.

Issue 14: Economics, continued

720. The EIS must conduct a Comprehensive Economic Assessment (CEA) comparing the total economic value of the mining future vs. the wilderness, intrinsic, and subsistence values secured by a No Action Alternative for the project. We understand that the mineral resources in the Upper Kobuk Mining District are relatively limited, compared with other high value deposits globally. Some sources suggest a total of 2 million – 3 million tons of minerals, including copper, zinc, lead, gold, silver, could be recovered from the region. This is truly nominal in relation to other deposits around the world, including the much larger deposits still available down at Red Dog. This begs the question – why destroy one of the world’s last great wild places for so little in value? Regardless, the Comprehensive Economic Assessment (CEA) of the project must assess the total value of this small amount of minerals, time and cost to produce and market, and alternative sources for the minerals. As well, the CEA must evaluate the actual future need for this small amount of mineral production given the increase in closed-loop mineral sourcing in material manufacture, increases in mineral use efficiency, and global mineral production resources elsewhere. It will become clear that this small amount of minerals in the Upper Kobuk is simple not needed in production. Further, the CEA must fairly and effectively evaluate the value of the Non Action Alternative, that is, leaving the region’s wilderness intact, as it is today. For this, the EIS process must conduct a non-market, Contingent Valuation analysis to assess the total sustainable economic value of the region’s wilderness resources over centuries. This must include a Willingness-to-Pay/Willingness-to-Receive assessment of the American public regarding the long-term intrinsic and wilderness value of the region that would be impacted by the proposed project. Wilderness areas such as that found in this region are diminishing fast globally. The CEA must project the future value to humanity of such areas, undamaged by industrialization such as that proposed by this project. It is abundantly clear that a fair and accurate Comprehensive Economic Assessment of the two different futures proposed for the Upper Kobuk will demonstrate far greater overall value from a No Action Alternative than any development alternative. This is why we worry that such an assessment will not be conducted properly, in order to get to the Development decision proponents desire. Thus, the CEA must be conducted independently, and subjected to independent peer review.
721. The loss of wildlands must be evaluated. Globally we are losing wildlands at a tremendous rate. That means wildlands become increasingly valuable. This loss must be reviewed.

Issue 14: Economics, continued

722. AIDEA's claim that the proposed road will increase State revenues is flawed because economically the overall cost to the State does not pencil out against the revenues that would come to the State. Access to prospects does not guarantee economic viability of extraction. What if the State invests in road construction but no-one comes to extract? Other instances where the State seeded extraction development with large-scale infrastructure support differ, in that those infrastructure projects were initiated with pre-determined, economically viable, "shovel ready" projects. Not so here. Is effort bystrapped federal and state agencies, and funding already spent to get us only through scoping, the best use of staff capacity and dwindling resources? BLM decision-makers should have the courage to recognize that, while the agency has inherently created a bias toward continuing on a fool's errand, where the decision to not build the road is a less favorable option than continuing down a path of more spending and effort, this is still a time to "quit while you are ahead." If the mines go bankrupt, the Feds and the State will be left holding the debt and the destruction.
723. Economics: Any declines in subsistence resources would have significant impacts to the area's economy because store-bought food alternatives are expensive. These economic impacts should not be dismissed with claims that nearby residents would benefit from wage employment and, therefore, the effects from the project would be low. The road would not connect directly to any communities, making it illogical to assume that nearby residents would benefit from lower costs for food, fuel, or other local needs, or that those residents would experience increased employment.

Issue 14: Economics, continued

724. C. Asserted positive impacts on ANCSA corporations must be further explored and clarified. AIDEA's right-of-way application asserts that "[e]ffects on ANCSA corporations are expected to be positive." Ambler Mining District Industrial Access Project Corridor SF299 Supplemental Narrative, p. 20. It explains that "Native corporations have the potential to gain revenues from land leases, material sales, and by providing goods and services associated with road construction and operations." *Id.* NANA Regional Corporations, it further states, "would also benefit indirectly from mining-related revenues generated in the Ambler Mining District and Native corporations in the region could benefit from providing goods and services to the mining companies conducting exploration and operations in the District." *Id.* While the proposed project may positively impact certain ANCSA corporations, this is unlikely to be true as to all ANCSA corporations. At this time, we remain unaware of any positive economic impact, either direct or indirect, to Doyon from the proposed project. Because the proposed Ambler road crosses the Doyon region, Doyon has closely monitored the project development of the Ambler road and has met with representatives from the State of Alaska, including from the Department of Natural Resources, AKDOT, AIDEA, the Department of Fish and Game, as well as the Governor's office. To date, Doyon has neither endorsed nor opposed the road project. Doyon has not, however, agreed to the use of its lands for the road. As a for-profit corporation, Doyon has analyzed the route for economic benefits from both the road and the proposed mine sites, and currently Doyon does not expect the road to materially benefit Doyon economically, directly or indirectly.
725. AIDEA's application provides a biased view of economic benefits to the state and local communities. The road will not connect with any communities, making claims by AIDEA that they will reap benefits of easier access and cheaper fuel and commodities patently false. BLM should evaluate the findings in the recent study done by National Parks Service. 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. 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. BLM must consider the economic benefits of the No Action alternatives to both local communities and state taxpayers. Pursuant to the Federal Lands Policy Management Act, if BLM is unable to grant a ROW that does "no unnecessary damage to the environment," then it must select the No Action alternative. Therefore, BLM should closely analyze this alternative in the draft EIS, and not merely pay it lip service.

Issue 14: Economics, continued

726. The ROW application proposes that commercial supplies could be delivered along the road to staging areas where communities could access it. Quantities of fuel, heavy freight and bulky supplies will require more than snow machine, ATV or human transport and the straight line distance from the proposed road ranges from 8 to 91 miles, roads. Connecting the communities with the Ambler Road will be the only practical means of transport. As stated in the application, “Potential to develop businesses to support the road construction and operation and to support mineral exploration and development” if consummated, will in all likelihood, require roads. The application touts the potential to reduce fuel and freight transportation costs, but fails to note that connecting roads and the cost to construct them will also be required to gain the benefit. These same connection to the state’s road system will also facilitate the importation of drugs, alcohol and other prohibited contraband into these communities. The socio-economic costs and environmental effects of the connecting roads or “trails” must be part of the EIS analysis. A cost-benefit computation is required before economic benefits can be claimed.
727. For example, Red Dog has resulted in \$1. 7 Billion in proceeds paid NANA with over \$1 Billion of these payments redistributed to other Alaska Natives as 7i and 7j distributions as required by the Alaska Native Claims Settlement Act (ANCSA). In addition, Red Dog has also made payments in excess of \$1 Billion to the State of Alaska (General Fund) and AIDEA directly as the owner of the DMTS infrastructure. In addition to these payments to the State of Alaska, the local Northwest Arctic Borough and School District have received in excess of \$175 million in payments to support local health, education and welfare. Red Dog employment and contracting support over 650 jobs totaling \$30 million in annual wages to Alaskans with over 50% of jobs going to NANA shareholders. At a national level, Red Dog provides 70% of the US domestic production of zinc - a metal that is vital to a modern life.
728. What are the financial implications for the state? Because the Ambler Road project is not funded with federal dollars in order for it to be a non-public road, any shortfalls in revenues to pay for construction, operation, maintenance, and debt servicing would be paid by the state. The assumptions behind projected revenues need to be made public by AIDEA and included in the draft EIS, as well as any commitments by mine operators to pay those costs. Without a Letter of Credit – as was the case for the much shorter Red Dog Mine road – the state should not take on the risk of paying for this expensive road’s total costs at a time when the state cannot balance its annual budget.
729. Estimate the costs to State and federal governments for these basic services.

Issue 14: Economics, continued

730. The economics of whether this road can pay for itself without more than one mine being developed at a time. How are tolls on this road ever going to pay off the bonds for construction of this road when the tolls for one mine don't even pay for the annual maintenance of this proposed road. The scoping process needs to evaluate the economics of how many mines really need to be developed in order to pay off the bond holders for construction of this road. These bond appear to be guaranteed by the State of Alaska. What assurance does the state have that sufficient mines will be built over the life of the bonds so that the state will not be held responsible for this payment? As a minimum the scoping process should analyze the effects of the minimum number of mines necessary to pay off the costs of these bond holders over the life of the bonds.
731. The mining company, Trilogy Metals, does not have enough confidence in their prospect to fund and maintain the access road during the life of the project.
732. The state has spent tens of millions in studies on this project and is flat broke...spending money from our oil-based savings account! In my opinion, the Federal Government is enabling AIDEA and the State of Alaska to frivolously expend needed cash on this project by participating in the EIS and possible approval of permits.
733. In your examination of the purpose and need for the road, please arrange for AIDEA to demonstrate that the likely economics of the proposal meet its own assumptions. The EIS effort itself rests on AIDEA's assumption that the road is an economically smart move for the State.
734. Some would say that the public, in the form of AIDEA, should not be in the business of subsidizing business. They might point out that the mining proposals themselves are not financially feasible if they cannot justify the cost of access. Private access for private gain should be a private cost. That is, road access cost should be internal to the mines feasibility calculations. Would private capitalization for the road project still let the mines demonstrate economic feasibility? Or is the State, through AIDEA, making an otherwise financially bad mining enterprise possible by favoring it at the expense of other local values? Those existential questions underlie the assumptions that AIDEA proposes the EIS team accept when it comes to the project's impact on the human environment.
735. Construction, maintenance, and upkeep of the road for the indefinite future will cost the state and federal government hundreds of millions. Any notion that the mining company will somehow pay it back is folly, and history has proved this over and over.

Issue 14: Economics, continued

736. 4. Quantify the economic impacts on the state budget and directly assess what would happen if the mining companies did not uphold their end of the bargain. ...4. How much would this road cost? How would it be funded? What would be the loss to the state if mining did not proceed as expected, or if extraction netted lower than predicted results? Rather than citing mining companies' optimistic projections, the BLM should bound their estimates using confidence intervals and include a worse-case scenario with no revenue from mine-related taxes. Global commodity markets are notoriously volatile, and if the global price of copper dropped, or a significant copper mine in another region came online, the economic viability of the proposed Ambler Mining District would be compromised.
737. The commission finds the Road is not proven to be economically viable. Application for the Ambler Access Road is premature. There is no agreement with AIDEA with any company to assure that the tariffs will pay for the Road. There is no realistic idea what the tariff rate would be for mining companies. Without a real idea what the tariff rate will be there will be no signed agreement by any company to use the Ambler Access Road.
738. The State receives very little royalty from mineral extraction. Selling access needs to have signed agreements to assure cost recovery.
739. There is no agreement between the Alaska Industrial Development and Export Authority and the mining companies to guarantee that the Ambler Road will be used. There is no assurance to the State AIDEA Board that this Road would be profitable to the Alaskan economy, or that the Ambler Road would pay for itself eventually.
740. AIDEA has not been a responsible lead agency on this project. There is no long term funding, no investors, and no plan. The main purpose of their involvement seems to be creating project momentum without asking the hard feasibility questions and concerns. There is only vague project and financial information for public consumption. It starts out as a 1 lane pioneer road and will become a 2 lane gravel road at some unknown time. AIDEA claims that Trilogy Metals is agreeing to pay \$9.7 annually for 12 years. But there is no written legal agreement for this. AIDEA claims that it will be a toll road.
741. None of the mineral studies made public indicate whether, for example, the revenue the mining companies would make from the ore will be sufficient to pay for a vast roadway maintenance and restoration challenge and pay the costs of preventing waste and drainage from toxic ore pits from destroying the wilderness species in the Kobuk River. As a result, there is no way to assess the risk to Alaskan and federal taxpayers to ultimately pay the costs of healing a damaged region if copper prices collapse. [Lacking such information, it is impossible to identify alternatives or propose mitigation when the project outlines are so incomplete.]

Issue 14: Economics, continued

742. BLM should require the applicant to demonstrate an economically feasible project with bonding, viable loans and collateral for repayment, i.e. credit worthiness. BLM should require the applicant to show the ability and capacity to design, build and operate the transportation system proposed. Concrete and convincing evidence needs to be provided from the mining companies that show that their proposed mining operations in the District will produce the revenue to pay for the full financing and costs of the proposed Ambler Road – costs for engineering, permitting, construction, insurance, bonding, operation, as well as the commitment for removal and complete reclamation.
743. Alaska government yet again seems poised to disregard economic feasibility and has the belief that an infrastructure project is “economic development.” The Ambler road just simply fails the "arm's length" economic viability test....Alaska government likes to believe that if subsidized enough, a project will become viable. History shows otherwise...I encourage the BLM (and NPS), who manage lands through which the proposed Ambler road would pass. to consider the lasting impact to the lands, the economic likelihood of mine development in the Ambler district, the very real possibility that the proposed Ambler road would not be used and thus become a management issue during times of limited agency budgets, the future management of road maintenance and access issues if built, and the social impact to Alaska Natives and wildlife. BLM (and NPS) should reject the AIDEA proposed Ambler road.
744. Need for proof that mining is economically feasible and mining companies will pay for the proposed road. The permanent changes to the land and its people by construction of a road to the Ambler Mining District would be done for speculative mineral development. No road right of way (ROW) should be issued by BLM, or wetlands permits issued by the Corps of Engineers, unless the affected mining companies and AIDEA clearly demonstrate and prove that such mineral development can and will pay the full costs of such a road, including permitting, design, construction, operation and reclamation. Detailed and credible mine feasibility studies must be done of the prospective mines in the Ambler Mining District to provide the information needed to show whether the mines can fund the full costs of the proposed road. Binding commitments from the mining companies to fund the full costs of the proposed road must be in place before BLM or the Corps of Engineers issues permits or other authorizations for road construction.
745. There is only vague project and financial information for public consumption. There is not a time line for the project phases.

Issue 14: Economics, continued

746. There are broad assumptions regarding the capital markets for the development of an ore body at the far western end of the proposed industrial road. In general terms, the road project will assume a feasible mining project over decades to amortize the construction and maintenance costs, and the feasibility would be built on tolls as the primary source of revenue. Because the road depends on success of the mining project, an exhaustive economic feasibility review of the Ambler Mining District is recommended.
747. Road costs and financing are critical and should be part of the draft Environmental Impact Statement (EIS), as has been the case for other projects which include cost in their Purpose and Need statements. In this instance, TWS recommends that the EIS Purpose and Need specify that the Ambler Road would proceed only with a clear commitment by mine operators to repay the state all the construction, operations, maintenance, financing and reclamation costs of the project.
748. Additionally, the EIS needs to analyze the adverse impacts to the state of this currently unfunded, expensive project. If AIDEA, as a state entity, must repay bond purchasers because a mine(s) in the Ambler Mining District goes bankrupt or otherwise cannot or will not provide sufficient toll revenue to cover road construction, operations, maintenance, financing, and reclamation, there would be quantifiable, adverse financial impacts to the state. For example, if the state needs to provide money to AIDEA to repay bonds, that money cannot be used to fund schools, transportation projects in other parts of the state, to ensure a higher Permanent Fund dividend, etc.
749. Mines are prone to closure when metals prices drop. I have watched the price of copper, the metal in bornite, fluctuate in the past 15 months from \$2.19/lb. to \$3.31/lb. and back down to \$3.21/lb (this Monday's price). Over time, it will go up and down again. This could mean that Alaska would be left with an expensive, damaging road with its purpose gone. BLM should consider what would happen then. Would it be re-purposed as a public highway? How could closure possibly be total and permanent?
750. BLM needs the applicant to show that they are financially able to design, build and operate the transportation system proposed. Concrete and convincing evidence needs to be provided from the mining companies that shows that their proposed mining operations in the District will produce the revenue to pay for the full financing and costs of the proposed Ambler Road—costs for engineering, permitting, construction, insurance, bonding, operation, as well as the commitment for removal and reclamation.

Issue 14: Economics, continued

751. the North Slope experience including economic benefits and environmental consequences (benefits – jobs, permanent fund dividends, tax reductions, etc.) should be discussed in depth; having worked on the North Slope for 6 years, I found that the caribou there congregated around the production facilities to avoid predators and to access higher elevations (pipe crossings, roads, etc.) to avoid blood sucking insects; the environmental studies and economic benefits are well known, but need to be reiterated for those that proclaim “disaster” Access to Red Dog – same comments as above in North Slope issues, other than I did not work there.
752. According to the BLM Fact Sheet, the road is projected to cost \$350 million; and then \$10 million expected annual maintenance costs. Past remote projects show a strong trend of costing significantly more than estimates. We must probe how realistic this estimate is. Does AIDEA think that sufficient jobs and revenue will be created to justify this expenditure?
753. Why are we using public funds, when we are considering taxation options and raiding the PFD’s, to fund a project that will benefit private business interests. Others have voiced that this project would provide royalties to the state coffers and high paying jobs for our rural residents. The amount of realized money coming to the state would not come close to offsetting the estimated cost of \$190 - \$400 million for building the road.
754. According to the June 2015 edition of the Fact Sheet Production Royalty Division of Mining, Land & Water published by the Alaska department of natural resources. “The production royalty is three percent (3%) of net income as determined under the Mining License Tax Law AS 43.65 and regulations 15 AAC 65.If the Ambler mine made 12 million a year in income it would take 33 and a third years of that high production to breaking even on the road! At that point the State of Alaska would go in the positive balance. That is unless the state was required to pay for maintenance and upgrades on this road or if there was less than 33 years of copper to extract or the price of copper drops
755. The corporation (Trilogy Metals) should pay for the road

Issue 14: Economics, continued

756. BLM needs the applicant to show that they are financially able to design, build and operate the transportation system proposed. Concrete and convincing evidence needs to be provided from the mining companies that shows that their proposed mining operations in the District will produce the revenue to pay for the full financing and costs of the proposed Ambler Road—costs for engineering, permitting, construction, insurance, bonding, operation, as well as the commitment for removal and reclamation. If they don't have the clearly demonstrated financial wherewithal to do those things, deny issuance of a ROW. The DEIS must demonstrate the economic viability of constructing a road, railroad or barging. The DEIS should look at the repayment schedule from one or more mines in the Ambler District. If AIDEA is the primary issuer of debt for the road, it will be incumbent upon them to exercise due diligence for being repaid. Income from mining operations will be the prime source of tolling revenues to repay AIDEA. AIDEA's creditors will need assurances that either a) the income will be available, or b) AIDEA has access to other assets from the mine or mine owners to cover the debt. Alaskans do not want to pay for this road. No permit should be granted until the mining operations become viable.
757. I also worked as a fishery biologist on the Susitna Hydro Dam studies back in the 80's in which AIDEA was a partner. This project proposal failed due to basic economics in which the State of Alaska would have been footing much of the bill - in billions of dollars. The proposal to build a road to Ambler by AIDEA seems to have very similar shortfalls as the Susitna Hydro Dam Project, especially with the lack of research on construction costs and maintenance. A full cost analysis needs to be presented with any permit application.
758. The responsible mining company needs to be financially capable of funding the entire project through completion in order to avoid a "spec" road being built for the purpose of mining that is never used for this purpose.
759. There has not been a comprehensive analysis of the real cost of the Ambler Access Road. The State Department of Transportation (DOT) Planning Division chronically underestimates new road construction to get initial funding. Alaska Industrial Development and Export Authority (AIDEA) has not actually had an independent cost analysis made as to real roadbed and bridge construction as well as the true annual maintenance costs.
760. The project cost estimates are not adequate, because they fail to estimate the realistic compliance needs to meet the standards of the prevailing law, including what should be unavoidable mitigation under §810 of ANILCA. [Lacking such information, it is impossible to identify alternatives or propose mitigation when the project outlines are so incomplete.]
761. If the mines that are accessed by this road project go bankrupt or become economically unfeasible, the state will be left with the bill and the clean-up of the waste and pollution. That is the pattern that has been established with large megaprojects.

Issue 14: Economics, continued

762. AIDEA claims that Trilogy Metals is agreeing to pay \$9.7 million annually for 12 years. But there is no written legal agreement for this. AIDEA claims that it will be a toll road.
763. The state cannot afford this project. The state has ponied up so far \$22 million. Some sources say the road will cost \$430 million not including \$8-10 million yearly operation and maintenance. i Other sources state that the total cost of building, operating and maintaining is expected to be between \$844.0 and 906 million. Recent cost estimates say \$350 million for construction and \$10 million yearly operation costs.ii The state cannot afford the cost of the Environmental Impact Statement (EIS) under NEPA. Though the EIS is important and necessary, it would not be needed if the project was dropped. Alaska Governor Walker authorized AIDEA to spend \$3.4 million to start the EIS. It could cost another \$4.2 to 6.8 million to finish. (endnote i) The EIS triggers a separate process with the National Park Service to get a right-of-way across the Park. Our basic public services in this state such as state troopers are hurting financially. We don't need to be spending state money to subsidize infrastructure that will benefit private industry. Let private industry spend the money. If the mines that are accessed by this road project go bankrupt or become economically unfeasible, the state will be left with the bill and the clean-up of the waste and pollution. That is the pattern that has been established with large megaprojects. i Alaska Dispatch News article, "Alaska can't afford Ambler Road", 1/24/2017. ii Alaska Public Radio Network 11/19/2017 story about the Fairbanks scoping meeting.
764. There is simply not enough money to maintain a road this long, particularly with all the maintenance problems caused by melting permafrost. The mining companies would assume no risk at all, while the State, which already can barely afford to provide education and police protection, is left with most of the risk.
765. 1. The State of Alaska has a deficit of \$2 Billion -and cannot properly maintain the roads that are currently in the system; let alone build another 211 miles of road that the State is unable to maintain.
766. Determine how emergencies will be handled and who will pay for these services. Estimate the costs to State and federal governments for these basic services.
767. Provide a realistic estimate for construction and maintenance based on the Dalton Highway and previously proposed road to Nome. Examine the effects of those costs to the State.

Issue 14: Economics, continued

768. Alaska gains little in taxes from mining. Its base tax structure has remained nearly the same since 1955. In 2012, it collected less than \$41 million from mining license taxes. In contrast, Alaska fisheries paid about \$53 million in the same year. From 2001 to 2011, mineral production increased from just under \$1 billion to \$3.5 billion and paid \$307.5 million in taxes for the period, an average of under \$28 million per year. Alaskans pay no state income or sales taxes, and according to a study cited in the Anchorage Daily News several years ago, the state loses money on mining. Mining attracts new people to the state who create increased demands for state services. Since the increased population does not pay proportionately higher taxes (indeed pay no taxes), no additional funds accrue to the treasury and the taxes the industry pays, are insufficient to cover the increased cost. Mining operations making a profit of less than \$40,000 per year pay no tax while mines making more than \$100,000 per year pay a flat \$4,000 plus 7% of the net income over \$100,000.
769. Alaska bases its tax on profits, which is unusual compared to other states. Consequently, any reimbursement payment to AIDEA for the road would be costed against any taxes owed thus further reducing the state's income. The result is that Alaska would wind up paying for a portion of the road under the best of circumstances. The Alaska Miners Association maintains that much of the mining resources are hard to get to, require expensive infrastructure, large amounts of power, and that it is difficult to get skilled workers. The Council of Alaska Producers states that mining is not a high margin business. This underscores the challenge facing mine developers. Given the hurdles faced by mining in this remote place, high transportation costs, the uncertainties regarding reserves and the economics of production, it is abundantly evident that the state faces a high risk of bearing the bulk or the entirety of the cost of this subsidy for industry
770. The "proven business model" listed by the project proponent is only somewhat applicable to the Ambler road proposal. While the DeLong Mountain Terminal road to Red Dog is an access road to a mine, there are serious differences including: Red Dog had known, proven mineral reserves while the extent of economically minable material in the Ambler region is speculative at best and the Ambler road would be four times as long as the Red Dog road. Additionally, the ore grade in the Ambler District may be much lower than at Red Dog; the stripping ratio (waste rock to ore) at Arctic is 8.4 in comparison to Red Dog (0.8), Pebble (expected to be 2.2), or Donlin (expected to be 5.5). This means more uneconomic rock will need to be moved per unit of economic rock, increasing costs.
771. As proposed, the mining companies, for whom the road is being built, will have no obligation other than to pay a yet-to-be-determined toll. They appear to carry none of the risk of costs for inadequate road or culvert construction, or for spills that will inevitably occur. Issue 14: Economics, continued

Issue 14: Economics, continued

772. Proper maintenance – including cleaning out culverts regularly, maintaining bridges and spill response stations, ensuring ongoing testing for and eradication of invasive species, and testing wetlands or streams for contaminants – needs adequate and ongoing funding. Monies need to be available to repair the road after mudslides, avalanches, or thaw events. Monies will be needed to clear the road from snow drifts. Who will pay for this, particularly if tolls do not cover the costs? Will it be the federal taxpayer? The state taxpayer?
773. The road is expected to be needed for up to 50 years. The EIS needs to explore what occurs under scenarios of less than 50 years, for example if exploration does not lead to proven mineral reserves, if mining begins but operators go bankrupt (on 5, 10, 20 year timeframes), if an early temporary closure is needed (e.g. if metal prices drop but are expected to rebound). All of these have severe potential economic impacts on the ability to pay back construction costs, maintain the road, or close and reclaim the industrial road, spur roads, airfields, etc.
774. A reserve fund and precautions should be taken to ensure funding for spill response and training, as well as road maintenance, road closure, and road reclamation if there is an unexpected shutdown of the mine(s), early temporary shutdown, or mining company bankruptcy. Mining truck traffic is anticipated to be the only source of income – if the anticipated costs for proper construction to build the road in a manner that anticipates climate change and the anticipated costs for monitoring and maintenance are unlikely to be covered by toll fees, the road should not be built.
775. The EIS needs to clearly and independently assess the cost per mile, cost of bridges and associated infrastructure, cost of fish-friendly culverts, and include appropriate contingency costs, as informed by “comp” roads¹¹³ as well as DOT and other analyses.
776. Financing costs and how the toll amount will be determined. Effect to state economy if there were no operations in any given time period affecting the capability to repay loans. Effect to state economy if road is built and no mining takes place.
777. What type of P3 contract does AIDEA anticipate using for the AMDIAP construction and O&M (will it be Design-Build-Operate-Maintain)?
778. Will it be one large prime contract for the entire construction and O&M? (your estimates put construction between \$305-\$347 million and O&M at \$270 million for a total of \$575-\$617 million over the projected 30-year life of the mine). Or will it be broken down into smaller contracts for construction (road sections, bridges and staging areas, etc.) and life of the project O&M (security, road maintenance, etc.)?

Issue 14: Economics, continued

779. Commenter submitted a copies of the following documents: Ambler Mining District Industrial Access Road Preliminary Economic Impact Study DRAFT Report (February 2014) by McDowell Group; An Assessment of Potential Mining Impacts on Salmon Ecosystems of Bristol Bay, Alaska (2014) by EPA; NovaCopper Inc. NI 43-101 Technical Report on the Bornite Project, Northwest Alaska, USA (March 18, 2014) by BD Resource Consulting, Inc.; Ambler Mining Region Economic Impact Analysis (February 2, 2015) by Cardno
780. Road costs and financing must be considered as these will have important, negative impacts on the state economy. It is not clear that the revenue from this project will break even with the cost of development or risk to the environment. AIDEA's cost estimate for construction of the full build-out of the two-lane access road is \$350 million-plus; operations and maintenance costs are expected to range from \$8 to \$10 million per year. AIDEA claims the total cost of construction, operation, and maintenance, and the cost of funds for AIDEA, would be between \$844.9 and \$906.0 million over a 30-year life of the Ambler Road. 27 Reclamation costs have not been quantified.
781. BLM must account for the construction, operations, maintenance, financing and unknown reclamation costs of the project, and should not rely exclusively on AIDEA's cost projections which may vastly underestimate the project costs. BLM should consider costs for similar road projects, and earlier projected costs for the Ambler road, which have inexplicably decreased in AIDEA's most recent economic assessment. As has been done for the Knik Arm Bridge and Juneau Access, there should be an independent analysis of road costs prior to proceeding with this project.
782. The cost per mile differences [from various AIDEA and DOT&PF reports cited by the commenter] need to be explained and reconciled, and the total cost should be updated for 2018. Any shortfalls in toll revenues to pay for construction, operation, maintenance, and debt servicing will likely be paid by the state. This will have a large negative impact on Alaska's already-struggling economy. The assumptions behind projected toll revenues need to be made public by AIDEA and included in the Draft EIS, as well as any commitments by mine operators to pay those costs.

Issue 15: Recreation and Tourism

783. North Fork of the Koyukuk: The direct impacts of floaters having to pass under a massive set of bridges (two bridges are likely necessary to get across the Koyukuk at this very constricted crossing) need to be addressed.
784. Wild River: Over 50 parcels of private land & a dozen recreational cabins are located on Wild Lake, at the head of Wild River. What effects will the increase of winter road access to the upper Wild River valley & the resultant increase of mining activity, more winter trails, and more active mining claims have on these recreational homesites? Who are these people? Have they been consulted or notified about the proposed impacts upon their recreational property?
785. The Reed River: The majority of recreational use in this valley consists of backpackers hiking up the Reed River & over Angiaak Pass into the Noatak River Valley inside the Gates of the Arctic National Park. This is a fairly popular route, passes a hot springs, and is also an entry point for climbers seeking to climb Mt. Igikpak. For the most part the road would probably not disturb these backpackers because most fly in farther up valley. What effects will this road have on subsistence users of this area?
786. Beaver Creek: This is not a creek. Beaver Creek is a substantial river in its own right. The vast majority of recreational use starts on this river by flying into Minakokosa Lake. Immediately below the outlet you leisurely paddle into Beaver Creek. What is unique about Beaver Creek is that it offers an easy 8-day float trip down the upper Kobuk. Starting a river trip here avoids the canyons of the upper Kobuk, so this is a trip that can easily be done by fairly inexperienced people, including families with young people. The impacts of the proposed road on a float trip down Beaver Creek from Minakokosa Lake are probably minimal. However, if someone wanted to start farther up Beaver Creek they would be faced with dust and traffic for about an 12 mile section of river where this road parallels Beaver Creek. Is this necessary? Is there a better alternative? How would this road affect the subsistence users of this area?

Issue 15: Recreation and Tourism, continued

787. John River Valley: East of the John River, cutting through the Ninemile Hills, are the remnants of the Hicel Highway. After passing through the Ninemile Hills this, yet used winter trail ascends Timber Creek, to the east of the John River and ends at Crevice Creek, an active hunting lodge & outfitter operation. There are old mining claims here as well as on the west side of the John River. With this proposed industrial road so close to these & other claims, additional mining trails are likely to extend up both sides of the John River & open up even more areas to mineral exploration. The cumulative effects of this potential increased mining activity needs to be addressed in the scoping process. How will this affect the existing & potential recreational activities in this area. How will these mining trails affect the hunting guides, wilderness guides, dog mushing guides and other recreation related businesses operating in this area? The John River is probably the second most heavily used recreational river.
788. Malamute Fork of the John: The Malamute Fork of the John River flows out of the foothills of the Brooks Range just north of the proposed industrial road. This is a very wild drainage. Few people use this area. Some hunting guides & trapping operations use it. Having a road along its flanks could seriously alter the remote character of this drainage. I don't know exactly where they plan to locate this road. There are very steep slopes on both sides of the lower Malamute Fork of the John. It is almost all permafrost. How they will keep this road from thawing and stuffing down the hillsides into the river is beyond me. These impacts need to be evaluated. What is going to stop the road in this section from ending up in the river, and what effects will this have on the river & its fisheries resources?
789. Selby & Narvik Lakes: Selby & Narvak Lakes are located just inside the Gates of the Arctic National Preserve in the upper Kobuk. The fly-in tourist lodge on Narvak Lake is only three miles from the proposed road. Dust & noise from industrial traffic will be seen & heard from this lodge. The small stream that drains into the upper end of Narvak Lake could become contaminated from silt & mineral concentrate from industrial truck traffic along this road. Studies should be done to determine what effects this kind of contamination could have on fish species that live in the Selby & Narvak lake system & how this could affect the tourism business & subsistence resources of this area.

Issue 15: Recreation and Tourism, continued

790. Does the BLM have enough socioeconomic data to adequately assess the economic impacts from a post-road, post-development, diminished, recreation and tourism value for the region? Evaluations of the economic impacts of tourism in an increasingly visited Arctic and Subarctic are woefully absent. The Alaska Resident Statistics Program (Alaska Resident Statistics Program, AK Dept of Transportation, USDA Forest Service, USDI National Park Service, Bureau of Land Management) shows a much higher number of Alaskans travel to recreate and hunt in Northern AK than previously thought BECAUSE it is remote and inaccessible. Visitor and resident land use motivations are under-documented. World recreation economic statistics show an insatiable hunger for remote frontier regions. Does BLM have adequate international arctic tourism data to evaluate this demand? The road would bisect one of the last large remote undeveloped areas of our nation (and of the world). As world tourism sets its sights on America, it's clear this undeveloped condition is not only in FERVENT demand, it cannot be reclaimed, restored, replaced.
791. The road will bring an irreversible change to the conditions that support local and regional economic opportunities for rare tourism. Local, regional residents cherish area's existing remoteness conditions and which are in increasing demand by world. As more clamor for a pristine place to go to in the future, I'd rather we be addressing how to maintain conditions due to the impacts of crowding rather than impacts from a failed corporate fantasy that suckered the State and Federal government into a fool's errand. Why would we take that State asset renowned on a world scale and shrink it? Why would we make our frontier that much smaller, less remote and wild, and more accessible for a weak economic strategy that doesn't pencil out?
792. Wild River: During the fall heavy hunter traffic uses the Wild River as a hunting corridor. Hunters fly into Trout Lake, right below Wild Lake & hunt the river as they float. What effects will the proposed road have on these hunter's wilderness hunting experience? What cumulative effects will the road have on the moose population as this road transitions from a private industrial road to a public road, opening much of this area up to outside hunters. What effects will this potential increase in hunting traffic have on the subsistence users of in the villages of Bettles, Evansville, Allakaket & Alatna?
793. The Ambler Road would negatively impact hunters, the big game species they pursue and would change both the habitat and character of the area in unacceptable ways.

Issue 15: Recreation and Tourism, continued

794. I am also very concerned about the effects of increased access to mining claims north of the Malamute Fork of the Alatna in the vicinity of Mettenpherg Creek, Colorado Creek, Roosevelt Creek, Cummings Creek & the Iniakuk River. There are scattered old claims right up against the southern boundary of the Gates of the Arctic National Park in this area. Increased access due to this industrial road will lead to a proliferation of new winter trails to these claims, where none have been before. What cumulative effects could these developments have on the Park, the recreational uses in this area & these clear rivers?
795. Alatna River: The Alatna River is the most popular river float trip on the south side of the Brooks Range. A designated National Wild & Scenic River, the Alatna River starts along the Continental Divide near the headwaters of the Killik & Noatak Rivers. It flows for 60 miles through the Gates of the Arctic National Parks, past the spectacular Arrigetch Peaks & beautiful Takahula Lake before exiting the Park onto state lands south of the park boundary. The proposed Alatna River crossing, three miles upstream from the Malamute Fork of the Alatna junction is only ten miles from the park boundary and only 15 miles from beautiful Takahula Lake. The scoping process needs to address the long term implications that it is very likely this industrial road will eventually be turned over to the State of Alaska and be made a public highway. This kind of increased access would seriously threaten the integrity of the entire Alatna River Valley inside the Gates of the Arctic National Park. Jet boats & other types of motor boats could access not only the upper Alatna inside the Park, but also the Malamute Fork of the Atlanta and the lower Alatna.
796. From a recreational standpoint the Manueluk River flows out of the Gates of the Arctic National Park and into what is known as the Ambler Lowlands. Although this river does not receive a lot of recreational use, because it is difficult to access, with the invention of pack rafts, more and more people are hiking across the mountains from the Noatak, inside the Gates of the Arctic National Park & floating these south flowing rivers. It is a short portage from the Mauneluk River to Avaraart Lake where they can be picked up by float plane and returned to Bettles. Obviously, if this area becomes heavily developed as a mining district this type of activity will be frowned upon, if not completely restricted. The scoping process needs to address the concerns about how development in this region will affect the recreational potential in this area. What kind of mitigation can be taken to insure people can continue to float these rivers?

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797. Iniakuk Lake: Iniakuk Lake is one of the most beautiful lakes on the south side of the Central Brooks Range. A fly-in tourist lodge is located on this lake. It operates summer & winter. In addition to fishing, backpacking & canoeing tours in the summer this lodge operates dog mushing tours during the winter. What effects will an industrial road within two miles of the outlet of this lake have on this lodge & its business? What long term effects will the likely opening of this road to the public have on the wilderness nature of this lodge?
798. Iniakuk River & Mettenpherg Creeks: Mettenpherg Creek & the Iniakuk River are two clearwater rivers that flow out of the mountains into the Malamute Fork of the Alatna River. Both of these rivers are access corridors into the the Gates of the Arctic National Park. Dog mushing tours run from Bettles up the Malamute Fork of the John River, across to the Malamute Fork of the Alatna, all the way to Iniakuk Lake. Other mushing tours have run up Mettenpherg Creek into the Gates of the Arctic National Park near Ernie Lake. Obviously this proposed industrial road will seriously affect the ability of such tours. The proposed industrial road actually follows these old trapline and mushing trails completely obliterating over 40 miles of historic routes. The scoping process needs to address the loss of these old trails & needs to guarantee continued public access to this area.
799. Middle Fork of the Koyukuk: This is one of the heaver used sections of river in the Central Brooks Range, because of its road access from Coldfoot & other locations. Under the existing alternative anyone floating the Middle Fork of the Koyukuk would be in almost continuous view of trucks and traffic along their float. Dust would be visible. The quite nature or this section of the Middle Fork would be disturbed. Studies need to be done to determine how many people float this section of river annually. What guiding businesses would be affected? How would they be affected? Would recreation use on this section of river be reduced? What kind of economic impacts would this have on their businesses? Would anyone want to float this section of the Middles Fork of the Koyukuk with pretty much continuous truck traffic as close as a half mile away?
800. Many people float the North Fork [Koyukuk River], primarily for its wilderness values. A few float the Middle Fork (which will definitely have a bridge across it if the road is built) for the same reason.

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801. The Kobuk River is a designated National Wild & Scenic. It is one of the most popular fishing & floating rivers in the Brooks Range. It is world famous for its fishing for the Kobuk River Sheefish, often referred to as "The Tarpon of the North". In addition to Sheefish, there are at least three species of salmon, several other species of whitefish, grayling, pike & burbot. The Kobuk River is unquestionably the richest river system in Alaska's arctic. That is why there are five native villages located on the mid & lower portions of this river. People have lived here for thousands of years. In addition to fisheries... moose, caribou, wolves, black & grizzly bears, and a variety of other smaller wildlife & fur bearers are found here.
802. Equally disturbing however, is the fact that most people that float the Kobuk start at Walker Lake. If the more southerly alternative route crossing "The Boot" is selected, floaters will have their "wild river experience" interrupted ten miles farther down the river where the road will parallel the river for several miles before floating under the bridge to continue on with their "wilderness" experience. These impacts need to be addressed in the scoping process. From a recreational & wilderness standpoint this Wild & Scenic River should not be disturbed until well below the Pah River, where most floaters pull out. This proposed road should not enter the upper Kobuk until it gets below the Pah River.
803. John River Valley: The John River is probably the second most heavily used recreational river on the south side of the Central Brooks Range. Inside the Gates of the Arctic National Park it is a designated National Wild & Scenic River. Some people fly commercially directly to the village of Anaktuvuk Pass and float the entire river from there to its confluence with the Koyukuk River (approximately 150 wilderness miles). Even more people fly from Bettles, Coldfoot, or Fairbanks & land near the Hunt Fork of the John River, floating for about 100 miles down the John River. How will this industrial road impact the visitor experience as they leave the park before they enter the Koyukuk River? How many people a year will be affected? Will they be able to use the road as egress at the end of their river trip? What effects will having to pass under this bridge & seeing the industrial traffic have on their wilderness experience?
804. Malamute Fork of the Alatna: The Malamute Fork of the Alatna is a wonderful clearwater river that flows along the southern flanks of the the Brooks Range. At the present time this river does not get a lot of recreational use. A few hunters fly into here and float down the main Alatna. Other hunters land at lakes and get their annual moose out of this area. This area offers a real high quality wilderness hunting experiences. Trappers from Bettles use the area. How will an industrial road affect the wilderness hunting experience presently available in this area now? How will this proposed road affect the subsistence trapping here? Will trappers be able to use the road to access their traplines? What impacts will this road have restricting their access to their traplines?

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805. But from a recreational standpoint, crossing the Kobuk River anywhere above the Pah River completely alters the wilderness experience of people floating the Kobuk River.
806. North Fork of the Koyukuk: The North Fork of the Koyukuk, a designated National Wild & Scenic River, flows out of the Gates of the Arctic National Park & joins the Middle Fork of the Koyukuk 12 miles upstream of Bettles. The North Fork is one of the most popular float trips in the Gates of the Arctic National Park. On this river visitors pass right between the namesake of the park, "The Gates of the Arctic", then continue on down the North Fork to the Middle Fork Junction. The North Fork's close access to Coldfoot and Bettles makes it one of the least expensive wilderness river trips in the Park. People can fly into the upper North Fork or the Tinayguk River (another designated Wild & Scenic River in the Park) from Bettles, Coldfoot or Fairbanks. During the scoping process the number of float trips & number of people floating out of the Park and into the main Koyukuk must be determined & the associated direct impacts, indirect impacts & cumulative impacts need to be determined. How will this proposed road affect the wilderness experience people have floating out of the Gates of the Arctic.
807. Potential impacts on the human use characteristics (subpart F 40 CFR 230.50) should be addressed including recreational and commercial fisheries, water-related recreation, aesthetics, national parks and wilderness areas, and wild and scenic rivers.
808. Wild River: Wild River is a small river that drains into the Koyukuk two miles upstream from Bettles. It is the most accessible, fly-in rivers in the region. It is only a 30 minute air charter from Bettles making this river one of the least expensive float trips in the region. Throughout the summer numerous parties of canoes, rafters & other nature lovers fly into Wild Lake and float the 75 miles of this delightful little clearwater stream. There are good numbers of graying on this river. Salmon run up and spawn in this river. The proposed road will cross the river about 5 miles up from its confluence with the Koyukuk. The effects of this road, the bridge crossing the river & industrial traffic will forever alter the wilderness character of this classic, small, clearwater river? What impacts will the road have on these wilderness experiences? What effect will metal concentrate dust have on the fisheries resources of this river. What impacts will this have on the salmon runs?

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809. The proposed northern route would unacceptably undermine the wilderness purposes and values of the National Park by locating the route immediately adjacent to the wilderness boundary and Walker Lake, one of the largest wilderness lakes in the National Park System. A road constructed in this location would compromise opportunities for wilderness recreation and lead to the loss of wild and undeveloped character, the loss of solitude, and the loss of scenic and environmental integrity. The outflow area directly south of Walker Lake is a popular put-in place to prepare for wilderness float trips down the Kobuk River. These trips are promoted around the world as the area is renowned for its scenic beauty and solitude. The potentially significant impact of wilderness visitors confronting heavy ore truck traffic during this experience must be fully assessed in the DEIS.
810. The disruption caused by the Road to Ambler would seriously degrade BLM's ability to uphold the recreational portion of its management responsibility in return for development benefits that would go nearly entirely to the developers of the proposed mine.

Issue 16: Social Impact

811. Arctic terrain is notoriously fragile, and the animal and fish resources finite. They will be severely degraded by so-called sportsmen from urban Alaska and beyond. I try to imagine the Inupiaq people of the upper Kobuk faring well in this brave new world; and I cannot.
812. While the impact on Alaska Native or rural-preference, local subsistence opportunities and lifestyles is well documented, what often is overlooked or glossed over is the irreparable affects to the personal identities of Northern Alaskans who continue to live in Alaska precisely because of the vast, remote conditions allowing for close, intimate access to those opportunities that public lands are meant to preserve for all Americans. The long-term quality-of-life effects for both local subsistence users AND for other Alaskans should be adequately evaluated using rigorous multidimensional social science so the true costs of an industrial, 220-mile road for open pit copper mining can be approximated. With each blow diminishing the unique lifestyles and opportunities for remote recreation, it becomes harder for many to justify living in Alaska when its living conditions become so much closer to those common in "the lower 48." Nonetheless, social costs stemming from its construction will be borne by subsistence users; Over the past 30 years the ADFG Subsistence Division has documented that per capita harvests of subsistence foods, including meat from large mammals such as caribou, are significantly lower for communities along the Alaska road system than for communities in roadless areas for many reasons. Thus, the proposed AAP isn't just about potential threats to caribou (and moose, fish, etc.). It's also about the social implications of accelerating Indigenous peoples' transition from traditional subsistence ways to a cash economy. ...local communities and other Alaskans that depend on the lands and waters for their physical, spiritual, and cultural sustenance will be harmed for generations to come. I am deeply concerned about the impacts this proposed road construction and mining activities will have on the region, and on the people who wish to come to the region for its uniqueness on a world scale.
813. We request the BLM to carry out a robust outreach and government-to-government effort during the entirety of this project. We are always willing to engage and communicate with BLM to influence this project in a way that is most protective of the resources our members depend on. Please contact us at any time to provide draft materials, or ask any questions that we may be able to assist with as it relates to the Ambler road and be sure to keep us informed of the formal process and commenting opportunities that are expected to arise.

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814. An ecological risk assessment—considering the most sensitive indigenous people's receptors—is warranted to determine how likely, and the extent to which, our people and the environment may be affected because of exposure to one or more environmental stressors such as chemicals, land change, disease, invasive species and climate change from a project of this size, duration and scope. We recommend the assessment include a conceptual site model (CSM) for the road, and the mines, that considers the sources, fate and transport and exposure pathways and receptors (ingestion, inhalation, dermal, dietary) for elders, non-elder adults, youth and child populations, including sensitive populations (i.e. asthmatics). We ask that the conclusions be presented to each potentially affected community, prior to any decision on this project.
815. Building AMDIAP would greatly facilitate developing the Ambler Mining District with further exploration and development. This would result in employment opportunities in the mineral exploration and mining sectors – science and engineering based jobs along with all the other jobs that mining supports. These are well paying jobs – average salary for jobs in the mining sector in Alaska pay over \$100,000 per year. That is a salary that one can raise a family on. Alaska needs these types of high paying jobs. In addition, these jobs are consistent with a subsistence lifestyle so Alaska native can work, earn a good salary to support their family and maintain a traditional, subsistence lifestyle that supports preservation of their cultural heritage. I think it is important for young people in Alaska, and specifically in rural communities, to have access to good paying jobs. Permitting and building AMDIAP will facilitate exploration and development of the Ambler Mining District and the jobs that go it.

Issue 16: Social Impact, continued

816. In compliance with NEPA and with Executive Order 12898 on Environmental Justice, actions should be taken to conduct adequate public outreach and participation that ensures the public and Native American tribes understand the possible impacts to their communities and trust resources.

Executive Order 12898 requires each Federal agency to identify and address disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations, low-income populations, and Native American tribes. The EPA also considers children, the disabled, the elderly, and those of limited English proficiency to be potential Environmental Justice communities due to their unique vulnerabilities.

The Council on Environmental Quality has developed guidance concerning how to address Environmental Justice in the environmental review process (EO 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations February 11, 1994. <http://ceq.hss.doe.gov/nepa/rees/ej/justice.pdf>). In accordance with this guidance, the EPA recommends that the EIS address the following points:

- Identify low income, minority, and Alaska Native communities that may be impacted by the project;
- Describe the efforts that have been or will be taken to meaningfully involve and inform affected communities about project decisions and impacts;
- Disclose the results of meaningful involvement efforts, such as community identified impacts;
- Evaluate identified project impacts for their potential to disproportionately impact low income, minority, or Alaska Native communities. Disproportionate impacts should be identified in relationship to a reference community;
- Disclose how potential disproportionate impacts and environmental justice issues have been or will be addressed by the lead agency's decision making process;
- Propose mitigation for the unavoidable impacts that will or are likely to occur; and,
- Include a summary conclusion, sometimes referred to as an 'environmental justice determination', which concisely expresses how environmental justice impacts have been appropriately avoided, minimized or mitigated. We also recommend particular attention be given to consideration of the dependence of local communities on local and regional subsistence resources, access to those resources, and perception of the quality of those resources. Additional information and tools for environmental justice analysis can be found on EPA's website at:

<https://www.epa.gov/environmentaljustice>.

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817. There are a number of issues related to public health BLM should consider in the EIS. Impacts to public health could result through changes in diet and nutrition, exposures to contaminants from construction and mining, safety, acculturative stress, and economic impacts. BLM must closely analyze the impacts from traffic, construction, gravel mining, and any mining activities on air quality in the local communities. Moreover, public health in much of Alaska is already under stress from climate change, with health implications such as 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 (1) BLM should consider the health impacts of this project in the context of the changing climate. [1: STATE OF ALASKA, DEP'T OF HEALTH & SOCIAL SERVS., ASSESSMENT OF THE POTENTIAL HEALTH IMPACTS OF CLIMATE CHANGE IN ALASKA VI-VII (2018).
818. There is naturally occurring asbestos in the bedrock along portions of the proposed route and near the Ambler Mining District. Building this road will requires asbestos-laden gravel be mined from nearby soils, harming our lands, waters, and air, and our health. Mining in the Ambler District will use and produce chemicals, heavy metals and toxins produced that will further hurt the health of local communities. A third-party should complete a full Health Impact Assessment for this project, and not just rely on biased information from the State and mining companies who wish to see this project move forward despite the cost.
819. As NSB required for the rezone of ConocoPhillips's CD4 satellite at Alpine, a Health Impact Assessment should be conducted the meets the standards of the Alaska Health Impact Assessment Program (<http://dhss.alaska.gov/dph/Epi/hia/Pages/default.aspx>). It should take into account the potential for reduced subsistence diets and increases in access to alcohol and drugs.
820. The Alaska Department of Health and Social Services (ADHSS) recommends a robust discussion and analysis of potential health impacts from the proposed ANDIAP during the NEPA process, either as a section within the EIS or as a resource document for the EIS. Such an inclusion of health in the EIS process can be achieved by an Alaska Health Impact Assessment which is a structured planning and decision-making process that analyzes the potential positive and negative impacts of a project on the public's health. Health impact assessments are performed prior to project implementation.

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821. A Health Impact Assessment (HIA) is an important tool that can help developers and policymakers understand both negative and positive health effects of a proposed project. It can help developers enhance positive effects and reduce negative effects of a project in a manner that fits Alaska's unique environmental, cultural, social, and public health context. When health impacts are understood in advance, they enable opportunities to contribute to improving health status in communities, reducing future health care costs, and lowering potential mitigation costs. HIAs can also provide some assurance to the public that human health has been carefully considered in decision making.
822. In Alaska, funding and completion of an HIA is strictly voluntary. Neither Alaska law nor federal law mandates the completion of an HIA for any purpose, including for major resource development projects. HIAs for resource development in Alaska are typically done as part of the NEPA process, when a lead federal agency determines that the impacts to human health should be evaluated as part of the EIS process. The HIA Program at DHSS provides guidance on conducting HIAs in Alaska and can work with the lead permitting agency help state and federal agency policy-makers and project applicants understand when an HIA may be helpful and how to integrate an HIA into the EIS process.
- If the HIA is planned to be included as an appendix or reference for the EIS, a draft HIA should be available concurrent with publication of the draft EIS. If revisions are required, the revised HIA should be available along with the final EIS.
- Additionally, ADHSS has in the past been requested to provide information on the potential health impacts related to climate change during the NEPA process, as federal agencies have begun to incorporate a more detailed discussion of climate change considerations into the EISs. ADHSS recently released an Assessment of the Potential Health Impacts of Climate Change in Alaska, a report that provides a broad overview of the potential adverse human health impacts of climate change in Alaska and to present monitoring recommendations, development of measurable and objective indicators, and examples of adaptation strategies. DHSS recommends utilizing this report if agencies need additional human health information related to the potential impacts of climate change in Alaskan rural communities.
823. State of Alaska DHSS provided several HIA resource links:
<http://dhss.alaska.gov/dph/Epi/hia/Pages/default.aspx>
<http://dhss.alaska.gov/dph/Epi/hia/Documents/AlaskaHIAToolkit.pdf>
http://www.epi.alaska.gov/bulletins/docs/rr2018_01.pdf

Issue 16: Social Impact, continued

824. Public health: The EIS needs to analyze the impacts to public health from changes in diet and nutrition, air pollution from the asbestos-laden gravel and soil/dust in the region, noise from gravel and mineral mine blasting, and potential water quality changes. As the lead agency for the EIS, BLM should require a full Health Impact Assessment (HIA) (See <http://dhss.alaska.gov/dph/Epi/hia/Pages/default.aspx>)
825. Because the state (i.e., AIDEA) is the applicant, BLM should require an independent contractor rather than the state develop the HIA.
826. We also recommend impacts to area users be identified, as well as any strategies employed to communicate risks or actual emergencies to those users. As part of this analysis, the EIS should use scientific and traditional knowledge to describe the potential health effects and the effects on the perceived palatability of eating contaminated foods.
827. Consistent with Sections 4321 and 4331 of NEPA, and the goals of Executive Orders 12898 and 13045, if human health could be impacted by the proposed project, we recommend the BLM undertake a screening process to determine which aspects of health (including, but not limited to public, environmental, mental, social, and cultural health) could be impacted by the project. Depending on the results of the screening, an analysis of health effects, such as a health risk assessment or Health Impact Assessment, may need to be conducted to determine the direct, indirect, and cumulative impacts to health. This analysis may need as much time to complete as the Draft EIS, so we recommend early screening is essential to ensuring a timely analysis. We further recommend the BLM partner directly with local, state, tribal, and federal health officials to conduct the appropriate analysis, and to determine appropriate and effective mitigation of health impacts.
- To appropriately evaluate health impacts, specific health data that may not be routinely collected as part of the scoping process may be required. To ensure that the necessary data are available for this evaluation, the EPA recommends that it is important to involve public health professionals in the NEPA process. For large projects, this should occur early in the process, such as before or during project scoping and/or prior to submitting permit applications. / Public health data and expertise for prospective health impact analysis, or for providing input on health issues, may be available from local and state health departments, tribal health agencies, or federal public health agencies such as the U.S. Centers for Disease Control and Prevention's National Center for Environmental Health, U.S. Agency for Toxic Substances and Disease Registry, or Indian Health Service.

Issue 16: Social Impact, continued

828. The framework known as Health Impact Assessment is a combination of procedures, methods, and tools that enables systematic analysis of the potential positive or negative effects of a policy, plan, program, or project on the health of a population and the distribution of those effects within the population. A HIA identifies the appropriate actions to manage or mitigate health effects from the proposed project. Conducting a HIA is currently the only widely-accepted methodology or framework used to provide agency decision makers with information about how a specific policy, project, or program may affect human health. / The World Health Organization and the U.S. Centers for Disease Control and Prevention support the use of HIAs as a tool to address health impacts when policies, programs, or projects are being developed. Many other countries have successfully used HIAs for these purposes. The International Finance Corporation, a member of the World Bank Group, has adopted HIAs as the standard for evaluating health and requires it of any projects for which it provides funding.
829. Guidelines for conducting a HIA are available from various sources. The World Health Organization has links to many of these (see <http://www.who.int/hia/about/guides/en/>). The International Finance Corporation has also developed detailed guidelines for conducting HIA (see <http://www.ifc.org/wps/wcm/connect/a0f1120048855a5a85dcd76a6515bb18/HealthImpact.pdf?MOD=AJPERES>). In addition, the State of Alaska has developed Technical Guidance for Health Impact Assessment, also known as the "Alaska HIA Toolkit" (see <http://dhss.alaska.gov/Epi/hia/Documents/AlaskaHIAToolkit.pdf>).
830. We note the adverse health effects from projects or programs are often more far-reaching than is commonly recognized by project proponents and non-health agencies considering development decisions or planning land-use policy. Contaminant exposure or cancer risks are common areas for impact assessment; however, numerous other health impacts that could occur as a result of a new project, program, or policy are often overlooked. For example, we recommend this EIS should consider how income from new jobs can result in positive or negative health impacts, for example by increasing socioeconomic status or by generating rapid social and community change.
831. It is becoming more common for large projects in Alaska to have an associated state-written Health Impact Assessment. The HIA should include a full analysis of health effect categories for communities along proposed alternative routes, and at least a minimal analysis, including categories "Accidents and Injuries" and "Exposure to potentially hazardous materials", for additional communities along the transportation route along which ore would travel to a port.
832. Evaluate the effects of copper, asbestos, lead and other contaminants on local people, fish and wildlife, workers and potentially tourists. Human health is a major concern for this project and must be carefully analyzed by health care professionals.

Issue 16: Social Impact, continued

833. Construction of the road will require gravel. The proposed gravel extraction areas are not small – running 50 acres to over 100 acres for most of the over 40 extraction sites. Analysis of both routes should determine whether borrow sites contain material with asbestos, the environmental impacts of gravel pits and spur access roads. Soil can also contain asbestos. There are different types of asbestos, with different risks associated with them. There are also minerals like taconite which have fibers and can cause similar health problems. I was unable to find information in the ROW application on whether soils and gravel have been tested to determine the presence and types of asbestos and minerals with asbestos-like fibers. All borrow sites and selected soils should be tested for asbestos using appropriate method detection limits (0.1% to 0.25%), applying the California Air Resources Board Method 435, and applying wet sieving to obtain the most “fines”. This testing needs to be included in soils, gravel, and bedrock analysis. This has been an issue at Ambler since at least 2007 when Maniilaq requested a health review, yet there is still no information supplied by AIDEA. In the federal health review, ATSDR recommended closing all access to gravel pits and recommended that no gravel from the Ambler pit should be used on roads. The study only looked at gravel extraction within Ambler, but it is highly suggestive that asbestos will be an issue at gravel pits used to construct the road, and gravel extracted to build out mine facilities.
834. The EIS should make it clear that the State is not liable for health impacts related to asbestos, due to HB 258. This should be stated in a project-related Health Impact Analysis, and mitigation options analyzed not only to reduce asbestos exposure but to handle health claims.
835. We know host rock for some deposits contains amphibolite material, which could contain asbestos fibers. Based on this and the expectation that gravel quarries will have asbestos, monitoring and mitigation for worker health can be analyzed in a Health Impact Assessment.
836. The proposed ROW goes to one mine in the Ambler Mining District (which seems to connect to Kobuk). It is essential to evaluate impacts specifically to Kobuk if they become road connected to the Dalton.
837. Evaluate the effects of copper, asbestos, lead and other contaminants on local people, fish and wildlife, workers and potentially tourists. Human health is a major concern for this project and must be carefully analyzed by health care professionals.

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838. Importantly, there is naturally occurring asbestos in the bedrock along portions of the proposed route and near the Ambler Mining District. 32 If asbestos-laden gravel is used in the 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 42.23 million cubic yards of gravel for construction and maintenance. Given the size of this project and the high occurrence of asbestos-laden soil in the region, it will be difficult, if not impossible, for AIDEA to locate sufficient asbestos-free gravel sources for construction of this project. 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. AIDEA has provided no indication how it will test for or ensure that no asbestos-laden gravel is used in the construction of this project.
839. It is also deeply troubling that the State of Alaska has a waiver in state law related to tort liability for use of asbestos-laden soil. 33 There is a serious concern with this project that AIDEA will attempt to cut corners or save on costs by using contaminated soil since there is the potential for the state and others to avoid liability for exposing individuals to this health hazard. AIDEA may not summarily deny that it will use asbestos-laden gravel, and BLM cannot avoid analyzing the significant adverse health impacts to road users and local communities based on AIDEA's bare assertions. BLM needs to fully analyze the potential impacts and risks associated with the use of contaminated gravel.
840. BLM should require a full Health Impact Assessment be completed for this project. Because the State (i.e., AIDEA) is the applicant for the project, BLM should require that an independent contractor rather than the State complete the Health Impact Assessment.

Issue 16: Social Impact, continued

841. In a broad perspective, the collective impacts to the Upper Koyukuk River communities may be best addressed in the framework of a Health Impact Assessment (HIA). Considering the multiple facets of community and behavioral health posed by the scale of the Ambler road project, a full-blown HIA may better reflect predictable impacts compared to conventional sociological and/or anthropological approaches. HIAs have become common practices for systematically understanding impacts to the human environment. In recent years, the Health Impact Project (an NGO based in Washington, DC) has issued guidelines and methodologies for conducting HIAs prepared in the context of NEPA. Comparative literature on the subject from other large industrial projects in Alaska is relevant to the Ambler road project. Studies conducted by the State of Alaska Health Impact Assessment Program provides conforming health metrics for small villages and analytical parameters for assessing impacts to human health among remote village residents. HIAs also provide opportunities to incorporate possible improvements to health infrastructure in small villages, potential use of health and emergency services in remote communities that may be available to external projects such as the Ambler road, and to scope potential partnerships with village clinical services.
842. Disruption of subsistence activities may affect social and kinship ties, many of which are based on the harvesting, distribution, and consumption of subsistence resources. BLM must also analyze adverse effects to cultural systems beyond those related directly to subsistence.
843. All the routes must be evaluated for impacts on the local way of life, impacts on subsistence resources, and social effects of large numbers of mineral and transportation workers potentially changing forever the coherence and distinctiveness of local communities and culture.
844. There is a long history of disadvantageous deals by state and federal government taking such high value lands from Native groups and Tribes for some short term development opportunity largely favoring people who lived nowhere near the sacred or high value lands. Often quick-money schemes have divided Native peoples themselves, between the business leaders and the local people who feel the real loss and impacts. These experiences in the past often have led to long-term sense of cultural betrayal and demoralization. Evaluate in the DEIS the impacts of cultural fragmentation from inserting a development project from Outside that has the potential of dividing local from Regional cultural cohesion and confidence in Native leadership, and the effect on local people when outsiders ignore the high values of lands such as these that already have been described by the Congress in the very highest preservation recognition categories available to the Nation.

Issue 17: Socioeconomics

845. The proposed Ambler Road is a project whose time is way overdue. Access to western Alaska via the road system is non-existent in our state – something that seems hard to comprehend in the 21st century. Not only would the road open up access to valuable resources and create jobs for rural Alaskans, it would make provide villagers with alternative access to emergency medical services when weather prohibits flying, and it would provide another way to deliver much needed fuel, food and other supplies. Perhaps a gasline could be constructed in the road's right of way, as well. ANILCA clearly states that federal lands can be crossed to reach our resources. Now is the time to make this happen.
846. Private individuals operating recreation guiding services will lose business opportunities due to this project. A person testified at the Fairbanks scoping meeting stated that he may lose 50% of his income. The effect on these small operators should be determined and analyzed.
847. Law enforcement authority needs to be stated for the proposed ROW. Determine how emergencies will be handled and who will pay for these services. Estimate the costs to State and federal governments for these basic services.
848. As an Alaskan I urge the BLM to include in the Draft EIS the social and economic benefits of developing infrastructure and diversifying economic opportunities in the area, including potential job opportunities that would likely result in reduced out-migration, helping to maintain rural schools and services, and protect cultural values.
849. How can we secure preferential terms within the contract procurement process for the local region (the Koyukuk River region and our five communities of Huslia, Hughes, Allakaket, Alatna and Bettles/Evansville) which will be most affected by this unprecedented infrastructure development project?
850. Would a sole-source contract be a possibility for a locally-owned contractor such as K'oyitl'ots'ina, Limited (KCorp)? KCORP is the consolidated ANCSA village corporation for four of the Koyukuk River villages of Huslia, Hughes, Allakaket and Alatna. The corporation is also a very large federal contractor (O&M contracting and construction) with current contracts in dozens of U.S. states and territories. The corporation is most likely the largest village corporation (in terms of revenue, net income and company size) by-far in Interior Alaska.
851. If not what about a 10% price evaluation preference in full and open competition and subcontracting? (This is similar to what the U.S. SBA HUBZone program offers) For example if KCORP bids at \$600 million - with a 10% price evaluation preference a KCORP led proposal would come in at \$540 million. While still full & open competition, this would give KCORP (and in turn the people of the Koyukuk River region) a significant advantage in attracting and putting together a possible winning team - more so if the procurement will be Lowest Price Technically Acceptable (LPTA).

Issue 17: Socioeconomics, continued

852. Local government taxation. As you may have heard we have had some discussions on forming a new borough within the interior region, or a Yukon-Koyukuk Borough. Unfortunately that has not gone over well with many of the communities (my opinion has always been that a Koyukuk River only borough is the best option). There have also been some discussions on annexing into the Northwest Arctic Borough or North Slope Borough. But the likelihood of that is probably low. Would it be possible for the local tribes within the region (5 tribes mentioned before) to develop some type of PILT agreement for this project?
853. This will be something that our region (and our children and grandchildren) will be a party to for decades to come. Historically in rural Alaska sub-regions, natural resource development and large projects have served as the anchor industries for economic development (Red Dog mine in the Northwest Arctic, oil & gas in the North Slope, etc.). But the Koyukuk River region has never had an opportunity similar, until now. Employment opportunities and poverty are a struggle within our communities. Significant involvement in a prime contract of this size would be huge for us. In addition, I think our village corporation KCORP is a well-suited entity to serve as the representative for our region through the life of the project.
854. We anticipate the project will result in varying direct and indirect employment opportunities for Northwest Alaska residents. We also anticipate there will be local and corporation revenues generated from this project. While employment opportunities and local revenues generally increase a community's standard of living (even temporarily), there can also be negative impacts to families, communities, and cultures from project development, especially in areas where residents are participating in traditional cultural practices. We recommend the socioeconomic impacts associated with this project, as well as cumulative impacts, should be fully evaluated and disclosed in the EIS.
855. If a road and/or mine is ultimately built, the potential benefits that could come with these projects are vast, such as jobs, including training and lifelong skills, economic diversification, and other opportunities.
856. I urge the BLM to include in the Draft EIS the social and economic benefits of developing infrastructure and diversifying economic opportunities in the area, including potential job opportunities that would likely result in reduced out-migration, helping to maintain rural schools and services, and protect cultural values.
857. I own a small environmental consulting firm, located in Anchorage, Alaska and have had the privilege to work in the Ambler Mining District (AMD) for over 7 years. During that time I have seen firsthand the strong environmental practices that NovaCopper and then Trilogy Metals have used during mineral exploration. I have also seen the jobs created and the people who were able to provide for their families in a region that is scarce for jobs, due to employment provided by NovaCopper, Trilogy Metals, and other mining related companies.

Issue 17: Socioeconomics, continued

858. I also hope to see a socioeconomic analysis followed by effective public outreach that clarifies for the affected communities who would have access to the road, how the villages would be connected or not connected, and any changes in the cost of goods given the access, seasonal use, and maintenance of the road.
859. AIDEA's claim that the proposed road would be needed to create new jobs shows a clear lack of understanding of the complexity of rural unemployment in Alaska and its root causes. If this "need" is cited in BLM's EIS, supporting references documenting social science research that incorporates socio-cultural bases for resident employment preferences must also be cited. Here is what I have known and experienced from 20 years of living and working in rural communities in Northern Alaska: 1) other much less investment-intensive and environmentally-destructive ways to create new jobs (such as promoting and hosting international tourism) are more compatible with the most predominant socio-cultural bases for resident employment preferences; and 2) the reasons for the area being known for high unemployment will not be addressed by this proposed road/development project. The option for 5-10 years of menial, low-paying work for rural residents of the region already exists--IF residents are willing to leave their villages to find a 9am-5pm alternative to a subsistence lifestyle. The reason residents don't take that option now is the economic benefits of leaving their communities don't outweigh the social costs—and this project offers no new option. If the road were to actually go directly through any one of the villages such as Bettles/Evansville, Alatna, Alakaket, Ambler, etc, the notion that the proposed road might benefit job creation for locals might be plausible, in that this could lead to creating "hub community" economic benefits for the communities that directly intersect with the road. The hollowness of the promise of local community economic benefit is evident when residents of all of those villages vehemently oppose the road (ten communities, Tribes, and other entities have submitted resolutions of opposition), and the road going even nearer to their communities than is proposed, in spite of those potential economic changes being laid out for them by distant developers. Ultimately, communities will experience the negative impacts of being near an industrial road, and bear none of the benefits that might come from being connected to the road.
860. We request that: 4. The social and economic costs/benefits of road access to previously roadless communities be analyzed. Such analysis should consider projected changes in reliance upon and costs of commercial goods, including food and fuel, compared to costs associated with a subsistence-based culture and economy. Analyses should include the findings of the recent National Park Service study (Guettabi et al., 2016) and of other studies, including potential village health impacts.

Issue 17: Socioeconomics, continued

861. The social and economic costs/benefits of the road to the community of Kotzebue should be included in the EIS for ... the expected impact to the community from an increase in users of transportation, fuel, food, hotel and other amenities that Kotzebue will likely provide during the construction of such a large project. There is only a finite amount of many of the goods and services that Kotzebue has and a rapid rise in demand on these will impact the local residents of the community. This is based on our experience with other large projects that were partially, or fully, based out of Kotzebue in the past.
862. We ask that the number and kinds of jobs anticipated to be created by the road and mines for our Village residents be provided as part of the economic analysis.
863. Doyon urges BLM to reach out to all of the impacted communities and other impacted stakeholders, such as village corporations and Native allotment land owners. Community response to the road has been mixed, expressing both support and opposition. Concerns and questions for opportunities have been raised, including environmental impacts of the Ambler mine, opportunities for spur roads, public access for residents, public access for non-residents, costs of development and maintenance, project timelines, potential for lower energy and supply costs, possibility of jobs, and enforcement of hunting and fishing regulations along the route. All of these issues, and other community concerns, must be fully identified, assessed, and addressed as part of BLM's review of the proposed project.

Issue 17: Socioeconomics, continued

864. D. Socioeconomic and other impacts on rural communities—beneficial and adverse—must be specifically identified and assessed. Doyon has significant concerns that, although isolated rural communities in the vicinity of the right-of-way will bear the greatest burden of the project's impacts, it is not clear how and to what extent they will enjoy any of the benefits of the project or how these impacts would be mitigated. As it reviews and assesses the proposed project and alternatives and the potential effects thereof, BLM must meaningfully consider project impacts on local communities and how these impacts can be mitigated. As an industrial road, the project “would not be open for public access”, 82 Fed. Reg. at 12119. Local residents generally would not be permitted to use the road. While we understand that local communities or businesses might be provided an opportunity to obtain authorization by the road operator to make use of the road, subject to approval and environmental and safety controls, and that communities might be permitted to construct spur roads, it seems unlikely that such an all-season industrial access road will accommodate any meaningful community or commercial use not directly associated with the development or operation of the mine. See SF 299 Corridor Narrative Supplement, p. 1 (“Access to the road would be controlled and primarily limited to mining-related industrial uses, although some commercial uses may be allowed under a permit process.”); *id.*, p.5 (“Other permitted traffic at times could include commercial deliveries of goods for local communities or commercial transport for local residents and emergency response authorized through access permits. . . . The traffic level for these local community and emergency response operations would likely total less than one truck or bus per week.”). AIDEA’s right-of-way application for the project asserts that “the road is expected to provide several benefits to residents of the region.” Ambler Mining District Industrial Access Project Corridor SF299 Supplemental Narrative, p. 16. According to the application, these include:

- Increased employment and income opportunities in the short term and long term in these areas where few employment opportunities exist. These opportunities are associated with road construction and operations as well as in mineral exploration and development.
- Potential for communities to develop businesses to support the road construction and operation and to support mineral exploration and development.
- Potential for communities to use the road to reduce fuel and freight transportation costs to reduce the high cost of living in these rural areas.
- Indirect benefits from increased revenues to the Northwest Arctic Borough and NANA Regional Corporation, which are used to support many social services in the region. *Id.*, p. 16-17. Additional “public benefits” identified by AIDEA include:

- Direct employment and wages related to road construction and operation and maintenance activities;
- Indirect employment and wages related to mineral exploration and development activities in the Ambler Mining District,
- Revenues to local and State government from mineral exploration and development activities in the District;
- Revenues to Alaska Native Corporations and their shareholders from mineral exploration and development activities in the District; and
- Opportunities for rural residents to continue to live in their communities while having the ability to generate income and the possibly to create new economic opportunities based on proximity to road access.”
- Id., p. 15.

These purported benefits, and whether and the extent to which they would be enjoyed by rural communities along the project route, should be scrutinized and assessed in greater detail as part of BLM’s consideration of AIDEA’s application. In addition to assessing impacts on the natural and cultural resources of importance to the isolated rural communities, BLM must assess the socioeconomic impacts of the proposed action and alternatives. How and the extent to which the proposed project and alternatives will have economic, social, or health and welfare effects, including, but not limited to, impacts on employment and local tax bases, education, crime, and recreation, all must be given meaningful consideration and analysis in BLM’s review process. Further details on these potential impacts—both beneficial and adverse—should be made available to the public early in the review process so that local communities along the route and their residents can provide educated comments and better inform BLM’s decision making process.

Issue 17: Socioeconomics, continued

865. Given that the road will traverse the traditional lands of multiple Alaska Native villages, the project ought to derive a revenue sharing arrangement with the impacted villages for commensurate adverse socioeconomic impacts. The swathe of socioeconomic and socioecological impacts would include (but not limited to) human and behavioral health, wild food economies, encroachment, trespassing, competition for resources relating to food security and community sustainability.
866. As a community and economic development consultant I am concerned that this project will do harm to the economy and subsistence livelihoods of residents in the region and Alaska as a whole. The project will have negative impacts on the wild resources that Northern communities depend on while bringing no benefits to their economic condition. These environmental resources from fish to caribou, rivers to mountains, are uniquely wild and unadulterated in this region. It is this rare, undisturbed, uninterrupted natural beauty that attracts tourists and gives Alaska its reputation as the top destination for adventure seekers, and fishing, hunting, and wildlife enthusiasts. The road and its impact on the ecosystem of the region will tarnish the Alaska brand. The short term gains for those involved in the road and mining will be small in comparison to the long term losses to the ecosystem, quality of life, subsistence livelihoods, tourism and reputation.
867. My business is one of dozens of other businesses that operate in the Brooks Range, including other wilderness guiding businesses, hunting guides, lodges, B & B's, fishing guides, birding guides, dog mushing businesses, flying services & many other businesses that operate in the area that will be affected by this road. The area around Bettles is world famous as the jumping off spot for the Central Brooks Range. There are several lodges in Bettles & several more on lakes in the adjacent area. At least two charter flight services are base out of Bettles & many more use the area from Fairbanks & Coldfoot. The area is not only heavily used in the summer, but it is increasingly more popular in the winter time. Dog mushing tours based out of Bettles. Northern Light tours are also growing in popularity. The lodges run at full capacity during the month March and the season is extending through most of the winter. / To my knowledge there have been no studies done on the impacts this road will have on all these businesses. I would be surprised if there has even been a list of businesses that this proposed road will affect. Studies need to be done to determine what existing businesses will be affected. How these businesses will be affected. The economic losses to these business need to be tallied. How does this road benefit these businesses? Will these businesses be able to use the road to transport clients? How much will that cost? Will these costs be more or less than the existing means of access which is by charter air service.

Issue 17: Socioeconomics, continued

868. 1. My livelihood is at risk: I am a wilderness guide and lead trips each summer to the wild central and western Brooks Range. Visitors from across the world visit places like Gates of the Arctic, Kobuk Valley, and Noatak Preserve because of the wilderness. An industrial road through this region threatens the sustainable jobs that this area provides.
869. BLM should require a socioeconomic study and subsistence study, not unlike what NSB required for ConocoPhillips's development of the Alpine field to the east of the Native Village of Nuiqsut. The study should project the cost of a reduced subsistence harvest and health impacts, and weigh this against the long-term economic benefits. The study should be conducted with guidance from the leadership of each village within 50 miles of the road or mining district, and village participants should be compensated for their time.
870. 3. Describe and quantify the economic and subsistence impacts on communities that utilize resources from the Brooks Range. Because the road would directly intersect migration route of the Western Arctic Caribou Herd (WACH), every village that uses the WACH for subsistence would be affected. ...3. The proposed road would displace wildlife (e.g. caribou and moose) that hunters rely on for subsistence. An excellent paper by Guettabi and others suggests an average household in Allakaket would suffer annual loss equivalent to \$10,000 due to the introduction of a road. Although this analysis assumes that the road would be open to the public and would introduce out-of region hunters, it provides a great framework that the BLM should follow up on when assessing the economic impacts of the proposed Ambler Access road. Guettabi, M., Greenberg, J., Little, J., & Joly, K. (2016). Evaluating potential economic effects of an industrial road on subsistence in north-central Alaska. *Arctic*, 305-317.
871. Subsistence Lifestyles of Native People. Research, paid and supported by the National Park Service, one of the agencies responsible for overseeing the comments regarding development of the Ambler road, illustrates that the subsistence way of life would be irrevocably, negatively impacted by the Ambler road and subsequent development of the mine in the region (<https://www.adn.com/arctic/2016/10/05/ambler-road-would-cost-villagers-dearly-in-food-newstudy-says/>) . I support the subsistence way of life in Alaska, and relating back to ANILCA, the law used to justify the development of the Ambler Road, ANILCA was supposed to protect the subsistence way of life. ...Therefore, I am requesting that a thorough economic analysis be conducted on the potentially adverse impacts to regional food systems due to the Ambler road project as part of the EEA and EIS.

Issue 17: Socioeconomics, continued

872. Economic- The Ambler Road would damage my livelihood. I own and operate a wilderness guide service offering trips in Gates of the Arctic National Park. Increased recreational use in the region and a change in public perception about the wilderness values of the region would alter our operations and potentially reduce the volume of business. I believe it would harm many other business in the region as well. Wilderness tourism relies on wilderness. Wilderness tourism can contribute to northern economies indefinitely.

Issue 18: Subsistence

873. If BLM concludes in its initial analysis that subsistence uses would be significantly restricted, additional notice and hearing requirements apply and BLM must consider whether: - such a significant restriction of subsistence uses is necessary, consistent with sound management principles for the utilization of the public lands, - the proposed activity will involve the minimal amount of public lands necessary to accomplish the purposes of such use, occupancy, or other disposition, and - reasonable steps will be taken to minimize adverse impacts upon subsistence uses and resources resulting from such actions.
874. A major concern is that the proposed road lies perpendicular to seasonal caribou migrations. The potential for disruption of normal migratory movements must be addressed in the analysis. The hunting of migrating caribou along the Steese and Taylor highways (40-Mile herd), Richardson highway (Nelchina herd), for example, have contributed to population declines in the past. Concentrations of hunters along the proposed road may have similar effects that could impact caribou populations and conflict with local subsistence hunting.
875. The Council stated its opposition to the Ambler Road Project, citing numerous adverse impacts to subsistence resources and Federally qualified subsistence users in the Western Interior Region, specifically: • Adverse impacts to migration of the Teshekpuk Caribou Herd and Western Arctic Caribou Herd due to habitat fragmentation resulting from development of the Ambler Road, road usage, and road maintenance;
876. A recent analysis the Red Dog mine road shows that some caribou of the Western Arctic herd are deflected or delayed during their seasonal migrations. The consequences of such interactions are not entirely understood, however, similar reactions can be expected to occur if this road is built. The draft EIS must address the caribou migration issue that is specific to this road proposal. The analysis must also consider the cumulative effects of other proposed roads within the range of the Western Arctic herd. For example, the Arctic Strategic Transportation Resource Project (ASTAR) proposes an extensive network of roads across the National Petroleum Reserve – Alaska which would further fragment the range of the Western Arctic caribou herd. Residents of some forty villages rely on these caribou for subsistence, and thus a broad consideration of cumulative effects of roads is warranted in the draft EIS.
877. Avaraart Lake & the Mauneluk River: This area is fairly heavily used for the sport hunting of moose & for subsistence purposes. How will the mining development affect these important resources? What kind of cumulative effects will acid mine drainage have on the fisheries & subsistence resources of the Mauneluk River?

Issue 18: Subsistence, continued

878. Healthy and abundant sheefish and salmon require pristine watersheds free from silt and contaminants, in addition to sufficient water flows and unfettered access to the most remote parts of the Kobuk River for their annual spawning runs. Salmon are critical to our members, representing a major source of income and subsistence resources necessary for their continued quality of life and livelihood. Sheefish are a major part of the annual cycle of subsistence for our members as they are commonly harvested near Kotzebue for the majority of the year. They somewhat uniquely represent an egalitarian resource, in that they are easily harvested for much of the year by the entire community because of their proximity and without requiring scarce, or expensive, methods and means. Whitefish that feed in the summer in coastal lagoons of Kotzebue Sound and continue to be harvested as a treasured food by our members, also use the Kobuk River and its tributaries for spawning and overwintering purposes, as do Dolly Varden char. The social and economic costs/benefits of the road to the community of Kotzebue should be included in the EIS for these reasons
879. Adverse impacts to Federally qualified subsistence users resulting from the influx of non-Federally qualified users accessing the road to hunt for finite subsistence resources.
880. Adverse economic impacts to Federally qualified subsistence users who shoulder the burden of increased cost and competition for food while subsidizing private mining exploration.
881. Research, paid and supported by the National Park Service, one of the agencies responsible for overseeing the comments regarding development of the Ambler road, illustrates that the subsistence way of life would be irrevocably, negatively impacted by the Ambler road and subsequent development of the mine in the region (https://www.adn.com/.../ambler-road-would-cost-villagers-dea...) . I support the subsistence way of life in Alaska, and relating back to ANILCA, the law used to justify the development of the Ambler Road, ANILCA was supposed to PROTECT the subsistence way of life. It provides for national parks and preserves in which subsistence hunting, fishing, and gathering can still be done, where people can still live on and with the land. The Ambler road and mine developments would negatively impact whitefish, salmon, caribou, musk ox, the myriad tundra plant species such as blueberry and crowberry, on which Native Alaskans in the region depend on for year-round food. Without these foods available, they will have to rely more on government assistance, and that includes programs that are currently being de-funded or severely underfunded by our Congressional delegations. Therefore, I am requesting that a thorough economic analysis be conducted on the potentially adverse impacts to regional food systems due to the Ambler road project as part of the EA and EIS.

Issue 18: Subsistence, continued

882. The administration of Gates of the Arctic National Park and Preserve deemed me a "local rural resident valid subsistence user". I am a 43 year resident of the Upper Kobuk region - with properties at Narvak Lake, Nutuvukti Lake, and Minakokosa Lakes. Narvak Lake is my home-and my long time place of business, the Peace of Selby Wilderness Lodge.
883. The Haul Road was and is the lifeblood of the oil development that has highly benefited the State of Alaska. The road was maintained for the industrial traffic, with permits to go north of the Yukon check point Permits were issued to people who actually lived or had property associated to the road north of the Yukon and industrial users, including hunting guides, miners, and utility personnel. The hunters in Fairbanks figured out right away they could stake a mining claim on the North Slope for \$12 and get a permit to go North of the checkpoint as industrial users. There were eventually hundreds of hunters hunting the North Slope after 1981, when the BOG opened the 10-mile wide corridor to archery hunting. The Ambler road will see the same thing except on a faster time scale. There are no restrictions outside of the 5 mile wide Dalton Highway Corridor Management Area (DHCMAJ, nor have any been proposed. The hunters will now pay a \$35.00 mining claim fee in the Ambler area for an access permit. The "miners" will bring airboats, jet boats, powerful ATVs and snow machines to hunt all the way to the coast The big boats the hunters have now and are using to hunt the Yukon and other rivers will be able to access wildlife and fisheries down the Kobuk River and along the coast north of Kotzebue, as well as the Koyukuk River drainages. This "Road to Resources" has been talked about in the Alaska Outdoor Council, (AOC) and Sportsman for Wildlife groups for years. The Ambler Road will expand the terrain devastation and high competition combat hunting seen on the Denali, Steese, Taylor, Glenn and other roads in Alaska. ...The political push for the Ambler Road is the affluent and politically powerful urban sport hunters of Alaska.
884. Public access on the proposed Ambler road will create significant conflicts between subsistence users and urban based sport hunters. It will also focus increased harvest mortality on caribou, moose, bears, wolves and fur bearer species. Such changes caused by the road will greatly disrupt traditional subsistence practices and create hardship for local residents. This fact is a major reason why all of the communities in the region have voiced strong opposition to this proposed road. The socio-economic aspects of increased public access for hunting and fishing must be thoroughly reported and accurately assessed the draft EIS.
885. It also poses serious problems for local residents dependent on subsistence resources throughout the region.

Issue 18: Subsistence, continued

886. The scoping process should consider the long term effects the eventual opening of this road to the public will have on the subsistence hunting resources of this area north of the towns of Bettles & Evansville. This area is also used for subsistence by people from Alakaket & Alatna.
887. Subsistence harvesters often avoid areas of development. As a result, avoidance areas will extend far beyond the immediate footprint of the road, causing the loss of subsistence use areas across a broad area.
888. Please evaluate the findings in the recent study done by National Parks Service. 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 (1). [1: U.S. DOI NATIONAL PARKS SERVICE, EVALUATING DIFFERENCES IN HOUSEHOLD SUBSISTENCE HARVEST PATTERNS BETWEEN THE AMBLER PROJECT AND NON-PROJECT ZONES (August 2016) p. 39.]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. 3 Subsistence hunting and harvesting activities are central to the cultural identity and social cohesion of the communities in the region. BLM needs to do a full study in each of the impacted communities to fully assess the subsistence, socioeconomic, cultural, and other impacts to the region.
889. Exemplified in ADF&G Harvest Data, which when analyzed, showed road connected Native Alaskan communities have a 31-39% decrease in subsistence harvest with no change in personal income (1). [1: JIM MAGDANZ ET. AL. THE PERSISTENCE OF SUBSISTENCE: WILD FOOD HARVESTS IN RURAL ALASKA, 1983-2013 (May 2016). P.44 and Table 10 available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2779464]
890. The citation given within the SF299 Consolidated Right-Of-Way Application for subsistence harvest information is from the Ambler Mining District Subsistence Gap Data Memo prepared by Stephen R. Braund and Associates (SBR&A). Since its publication in 2012, several applicable subsistence studies have been conducted and published that would be appropriate to include during the EIS process. Recently published comprehensive survey data listed below include mapping of land use areas, which may be a consideration when deciding upon a corridor. The 2012 SBR&A data gap memo compiled spatial data from other reports, and more recent information will expand this data set. The SF299 supplemental narrative included the 8 communities which are closest to the proposed alignment, the following list of applicable research includes all the communities covered in the SBR&A subsistence data gap memo as those which may experience impacts due to the construction of the road.

Issue 18: Subsistence, continued

891. The State of Alaska included citations of five reports that provide comprehensive survey information not included in the 2012 SBR&A data gap memo including demographic, economic, and sharing pattern information. Additional search and harvest areas were mapped for several different resource categories per community (including salmon, non-salmon fish, large land mammals, small land mammals, birds and eggs, and vegetation). Local and traditional knowledge of wild resources and subsistence practices are presented in these reports to contextualize baseline subsistence information. Local comments and concerns regarding a number of topics were documented, including resource health and availability, climate change, and development.
892. The EIS should make subsistence a top priority. The focus of the EIS should be on the limited access road and what impacts, if any, the road would have on subsistence resources and activities. We encourage BLM to be thoughtful in how to integrate its work on the EIS with the requirements of ANILCA Section 810. Please develop an approach that is efficient and which minimizes overlap and the potential for confusion between the EIS and 810. Last, it is critical that the conclusions reached in the EIS and 810 report be consistent on subsistence issues.
893. ADF&G data collected after 2007 have a mapping component as well as harvest information. Mapping is not as specific as those found in comprehensive studies (respondents are asked about general areas of harvests within uniform coding units), but does give some insight into land use patterns. ADF&G listed out four additional studies in their scoping comments.
894. Public concern for the impacts of large-scale road project development on Federally qualified subsistence users in the Western Interior Region is well-established through substantial oral testimony delivered on the record by Pollock (P.J.) Simon, Jr., First Chief of Allakaket Village at the Council's February 21-22, 2017 public meeting in Fairbanks. The Council amplified its concern for the impacts of large-scale road development on Federally qualified subsistence users in the Western Interior Region in its FY2017 Annual Report to the Federal Subsistence Board. In its report to the Federal Subsistence Board, the Council noted opposition to the modification of PLO 5150 to allow State selection of Federal public lands in the existing Dalton Utility Corridor under the BLM Central Yukon Resource Management Plan.
895. Subsistence resources and uses in the area being crossed by the ROW need to be determined before a decision is made. To help evaluate the impacts of a road to subsistence activities, use the latest information from Jim Magdanz study that showed significant effects, https://papers.ssrn.com/sol3/Papers.cfm?abstract_id=2779464
896. Chief among the assertions may be that AJDEA's proposal to trade one resource for another is smart. The EIS will examine how the road will damage habitat and subsistence resources, likely for an indefinite length of time. Subsistence resources will likely be traded for copper under the proposal.

Issue 18: Subsistence, continued

897. A Section 810 analysis needs to be done. Hunting patterns could be changed substantially and fisheries could also be affected from the road as well as from new users.
898. Language in the TAPS authorization is relevant to the rendering of stipulations in record of decision for the Ambler Road. Section 30 of the TAPS agreement addresses impacts to subsistence economies adversely effected by the pipeline project. Around the time of the TAPS ROW renewal in the early 2000s, one of the TCC member villages located in the vicinity of Yukon Crossing (the TAPS bridge across the Yukon River) filed a Section 30 subsistence claim over the depletion of wild food resources. Their claim for relief was a direct result of prolonged and accelerated competition for subsistence resources by non-local users as a consequence of increased public access to the Yukon River along the Dalton Highway. Apparently, the petition for subsistence relief submitted to the DOI received no official response. The Section 30 clause in the TAPS agreement is a relevant point of concern and should be fully explored in the affected environment of subsistence economies in the BLM EIS Ambler process and in the NPS EEA analysis. Considering that the proposed road would be an appendage of the TAPS corridor, an analysis of statutory and regulatory incongruence between the TAPS authorization, the BLM Utility Corridor Resource Management Plan and the proposed Ambler road permitting process is timely.
899. As the lead federal agency, the BLM will tier into its analysis the NPS EEA results and right-of-way permit stipulations for the 20-mile segment across Gates of the Arctic National Park and Preserve. In their preliminary analysis, NPS found that average families would be impacted one-third to two-thirds of their annual income by reduced subsistence harvests. Though the metrics can be debated, the overall conclusion suggests a substantive negative impact that out-weighs positive effects. Should this premise be duplicated in the EIS analysis, stipulations in the final record-of-decision must include language to conserve wild food resources that sustain traditional subsistence economies (i.e., the subsistence way-of-life) in accordance with the provisions of the Alaska National Interest Lands Conservation Act (ANILCA).

Issue 18: Subsistence, continued

900. The proposed Ambler road will introduce enormous challenges for those people living in rural communities of the Kobuk and Koyukuk river valleys that rely on fish, wildlife, plants, berries and wood for their subsistence way of live. Many of the challenges have already been mentioned: contamination of fish and wildlife habitat as well as the creatures themselves that are harvested for food. Disturbance of migrating caribou, collisions with vehicles traveling on the road will work to reduce or impede local hunters' ability to harvest food. A major impact will occur as a result of competition for limited game stocks caused by influx of hunters from outside the region. Such competition will be greatly enhanced by the convenient access provided by the proposed road. Studies have found that a relatively high amount of asbestos occurs in source material for road construction in the area of the proposed road. The draft EIS must address this issue and the associated health risks that may be created by building and operating the Ambler road.
901. We are concerned with the impacts to traditional uses in the area and believe that a detailed analysis on existing and projected use of the area for hunting, fishing and other recreational uses should be included, along with a discussion of options to prevent and/or mitigate any loss of opportunity.
902. Terms and conditions should provide that no access is permitted during periods of caribou and wolf migrations through and across the proposed industrial roadway. This triggering mechanism should be incorporated into the Annual Performance Plan. The evaluation of this provision as a mitigating measure should fully assess the impacts of roadway use or suspension as required by §810 of ANILCA. Included should be the recognition that this region of Alaska is one of the most significant for subsistence ways of life, and studies demonstrate that subsistence users require multiple options and flexibility to sustain that way of life in such a harsh region. Any loss of flexibility and choice needs to be carefully assessed.
903. Subsistence resources and uses in the area being crossed by the ROW need to be determined before a decision is made. To help evaluate the impacts of a road to subsistence activities, use the latest information from Jim Magdanz study that showed significant effects, https://papers.ssrn.com/sol3/Papers.cfm?abstract_id=2779464
- A Section 810 analysis needs to be done.
904. Many of the mining claims in the Ambler area drain into the Kobuk River, which is home to fish species that are crucial to locals' subsistence. Rivers, streams and entire watersheds in the region will be at high risk for disastrous contamination.

Issue 18: Subsistence, continued

905. The fish and wildlife resources of the area will be highly affected by mobile hunters and fishers launching boats and all-terrain vehicles from the Ambler Road. One only need to look at the Fortymile caribou hunt in the fall from the Steese and Taylor Highways to see what the Ambler Road will be when the Western Arctic Herd tries to cross the road. The herd already has maximum use by subsistence hunters and a few sport hunters. Road access hunters will usurp the Western Arctic Caribou Herd allocation to an entirely new road access user group. Road access will allow large boats to be launched in the Kobuk drainages to hunt all of the drainages and the Chukchi coast. Moose populations will be affected up and down the Koyukuk Wild, John, Alatna, and Kobuk Rivers by boat and all-terrain vehicles, accessing from the Ambler Road. Local subsistence hunters will have their seasons and bag limits vastly reduced once large numbers of non-local hunters usurp the allocation. The other communities in the Northwest Region and Western Interior that rely on the Western Arctic and Teshukpuk Caribou herds will also be affected by the reallocation of bag limits including Anaktuvuk Pass, Allakaket, Alatna, Ambler, Hughes, Huslia, Bettles, Evansville, Kobuk, Shungnak, and Wiseman/Coldfoot.
906. Sheefish population spawning grounds on the Kobuk, Alatna, and Koyukuk Rivers will be highly affected. The Sheefish are highly sought-after fish for sport use already. These large, and most important fisheries on the south slope of the Brooks Range will be very near the Road alignment. Additionally, grayling and whitefish species like pike also have spawning grounds in the Alatna River. There is a real possibility for copper sulfide and other toxic mining chemicals to be released into the Kobuk River and other watersheds. Hotham Inlet, {Kobuk Lake}, and Kotzebue Sound are extremely important estuaries for tom cod, smelt, herring and other small fish in large biomass. Humans as well as sheefish, arctic char, salmon and other larger fish rely on this biomass. Marine mammals including seals and beluga whales use these small fish also. The food chain would be in jeopardy if toxic mining waste were spilled into the Kobuk River watershed. The annual subsistence harvest of fish is hundreds of tons. This fishery and marine mammals are extremely important resources shared by thousands of people of the NANA Region for subsistence. There are the same concerns for the food chain and spawning grounds of the Koyukuk River Drainage. The king salmon spawning grounds on the South Fork Koyukuk River and on Henshaw Creek are of utmost concern. Human subsistence use of the fishery resource in the Koyukuk and Yukon watershed is also in the hundreds of tons annually. An ANILCA Title VIU section .810 analyses would show extreme detriment to subsistence users on Federal public lands and all of Northwestern Alaska.

Issue 18: Subsistence, continued

907. The people of the Western Interior Region are blessed with abundant fish and wildlife resources that have sustained families and defined cultural identity since time immemorial. Residents of the Western Interior Region of Alaska have a Customary and Traditional Use Determination for Sheefish (*Stenodus nelma*) and Chum Salmon (*Oncorhynchus keta*). Additionally, the Federal Subsistence Board has recognized the customary and traditional use by residents of the Western Interior Region of the Western Arctic Caribou Herd in Unit 21D (encompassing numerous communities, including Huslia, Koyukuk, Galena, Nulato, Kaltag, and Ruby) and Unit 24 (encompassing numerous communities, including Wiseman, Coldfoot, Evansville, Bettles, Alatna, Allakaket, Hughes, Huslia, Galena, and Koyukuk).
908. The Council amplified its concern for the impacts of large-scale road development on Federally qualified subsistence users in the Western Interior Region in its FY2017 Annual Report to the federal Subsistence Board. In its report to the Federal Subsistence Board, the Council noted opposition to the modification of PLO 5150 to allow State selection of Federal public lands in the existing Dalton Utility Corridor under the BLM Central Yukon Resource Management Plan.
909. The Council emphasizes that the impacts of developing the Ambler Road Project will have adverse and far reaching effects within at least 50 miles of each side of the road. These impacts include noise disturbance to terrestrial and aquatic wildlife resulting from increased motorized off-road vehicle traffic and boat use extending up the coast and into the Kobuk River Drainage. The increased motorized off-road vehicle traffic and boat use resulting from development of the Amber Road will also have significant adverse impacts up and down the Koyukuk River, John River, and Alatna River drainages.

Issue 18: Subsistence, continued

910. While the area in question is only infrequently visited by our tribal members, sheefish, salmon and caribou - three of the most critical resources to the Tribe, are dependent on the continued health and wellbeing of this area. Sheefish which spend much of the year near Kotzebue in feeding mode, migrate to the upper Kobuk for spawning, as do whitefish and Dolly Varden trout. Salmon which support the critical Kotzebue Sound commercial fishery and a robust subsistence fishery, conducted near Kotzebue during July and August, also use the upper Kobuk for spawning. Caribou which are the mainstay for Kotzebue cultural, nutritional and spiritual connection to the country use the entire Region at various times of the year. The migratory nature of these species should be taken into account so that communities not located directly adjacent to the proposed road (like Kotzebue), but who rely on the migratory resources using this area, are overtly acknowledged as directly impacted with a vested interest in this project and are included alongside the affected communities with closer proximity to the actual road for the purpose of impacts. The best-available information, including both scientific studies and indigenous knowledge, should be used to analyze potential impacts to these and other resources.
911. Subsistence: The communities near the proposed road rely heavily on subsistence foods. Given the high cost of non-subsistence foods in these remote communities, the greater nutritional value of subsistence compared to processed foods, and concerns associated with subsistence food scarcity, any decrease in subsistence resources would have disproportionate impacts on quality of life in the affected communities. During the winter, the road would become the easiest route through this region of deep snow and, as a result, predators, prey, and hunters would all travel the route, likely ensuring a dramatic decline in prey populations. Noise, traffic, and road infrastructure would reduce the availability of key community resources such as caribou, waterfowl, and furbearers including wolves and wolverines. Affected areas would extend far beyond the immediate road footprint, causing the loss of subsistence use areas across a broad region.
912. Subsistence resources and uses in the area being crossed by the ROW need to be determined before a decision is made. To help evaluate the impacts of a road to subsistence activities, use the latest information from Jim Magdanz study that showed significant effects, <https://papers.ssrn.com/sol3/Papers.cfm?>

Issue 18: Subsistence, continued

913. E. Subsistence use and access must be protected.

As noted above, Doyon's mission is to promote the economic and social well-being of our present and future shareholders, to strengthen their Native way of life, and to protect and enhance our land and resources. Subsistence hunting and fishing is critically important to our shareholders and to our Native culture. For thousands of years, Alaska Natives in the project area have depended upon wild plants, fish, and animals for subsistence. Subsistence activities remain an important part of the traditional Native culture and a primary source of nutrition for residents of remote rural villages. In ANILCA, Congress found that "the continuation of the opportunity for subsistence uses by rural residents of Alaska, including both Natives and non-Natives, on the public lands and by Alaska Natives on Native lands is essential to Native physical, economic, traditional, and cultural existence and to non-Native physical, economic, traditional, and social existence," and it included substantive provisions to protect such opportunity. 16 U.S.C. § 3111(1). The proposed project is likely to affect access and activities that could adversely impact these customary and traditional uses. As proposed, public access to and use of the road would be highly restricted (though, as noted above, there is no assurance that this would remain the case); there would be no public use of the road, including for access to subsistence opportunities. No hunting or fishing would be allowed on the right-of-way. Subsistence activities near the road, even outside of the right-of-way, could also be restricted due to safety concerns. The potential for unauthorized use of the road and right-of-way, as well as possible future authorized public use of the road, presents additional concerns. For instance, unauthorized individuals could use the road to access areas that would not otherwise be accessible, and compete for subsistence resources traditionally used and relied on by residents of the local community. The potential risk of such impacts and how they are appropriately mitigated may be different during Phase I, when the road is being used on a seasonal basis from August through April, than during the other road phases, when the road is being used on a year-round basis. It can also be anticipated that the road will be opened to public access when mine activities are completed. We understand that AIDEA anticipates that it will need to employ guards at the road entrance, and that AIDEA is exploring fiber optic-based technology might be used to make sure the road is closed to the public and non-permitted uses. While AIDEA has stated that it will work with Doyon on additional measures and security patrols during hunting season to prevent unauthorized access, these are important issues that must be appropriately considered and addressed during BLM's review and decision making process. AIDEA's right-of-way application acknowledges the potential for subsistence impacts, but studies suggest that impacts on subsistence use and access are likely to be more significant than suggested by the application.

Issue 18: Subsistence, Comment 913, continued

According to the Ambler Mining District Industrial Access Project Corridor SF299 Supplemental Narrative:

Residents of Bettles and Evansville use areas in the vicinity of the communities for gathering subsistence resources. In particular, ADF&G has identified areas along the Alatna, John, and Koyukuk Rivers as subsistence use areas for these communities (Braund & Associates, 2012). The proposed road may affect subsistence harvests in the immediate vicinity of the road. Ambler Mining District Industrial Access Project Corridor SF299 Supplemental Narrative, p. 18.

Residents of Alatna and Allakaket gather subsistence resources from a very wide area including the lower Koyukuk valley and particularly up the Alatna River. The proposed road may affect subsistence harvests in the immediate vicinity of the road. Overall impacts on subsistence resources (fish, wildlife, etc.) however are expected to be low and only in close proximity to the road itself, affecting only a small area compared to the overall availability of areas usable for subsistence harvests.

Documented traditional use areas for subsistence harvest for Hughes are south of the proposed road corridor and minimal effects on the community's subsistence use are anticipated. Huslia is located 90 miles from the road corridor and minimal effects from the road are anticipated on the community's subsistence uses. *Id.*, p. 20. An August 2016 National Park Service Natural Resource Report, however, concluded that the proposed road "could have substantial impacts on subsistence production of affected communities." *Evaluating Differences in Household Subsistence Harvest Patterns between the Ambler Project and Non-Project Zones*, Natural Resource Report NPS/GAAR/NRR—2016/1280 (Aug. 2016), p. 41. Addressing the additional outside stresses that road construction could impose upon subsistence resources and the additional competition that the road could create for these finite resources upon which these remote communities are heavily reliant, this report concluded that households in communities currently off the road system could face a potential significant loss of subsistence production after road construction. *Id.*, p. 39-41. As it proceeds with its review and decision making process, BLM must carry out its obligations under ANCSA and ANILCA to ensure that subsistence uses and access to subsistence resources are protected. As part of this effort, Doyon urges BLM to actively and meaningfully consult with Alaska Native village and regional corporations and engage proactively with rural communities in order to address any concerns regarding potential impacts to subsistence use and access, as well as other matters of importance to local communities.

Issue 18: Subsistence, continued

914. The proposed road may impact subsistence by impacting user access across the road and potential avoidance of traditional subsistence use areas. Noise, traffic, and infrastructure associated with the project could affect the availability of key resources such as caribou, waterfowl, and furbearers including wolf and wolverine. Spills to water resources or that reach water resources, such as fish-bearing streams, could spread and thus have a wider potential impact area, such as an entire watershed. A new gravel road could complicate access to traditional hunting areas, if construction results in the road being too steep and high to cross on a snowmachine or four-wheeler. Subsistence harvesters often avoid areas of development due to concerns about contamination and because of residents' discomfort about hunting near human or industrial activity. As a result, avoidance areas will extend far beyond the immediate footprint of the road, causing the loss of subsistence use areas across a broad area. BLM must also fully assess potential negative impacts of aircraft traffic on subsistence resources and hunters in the area resulting from the new airstrips. During winter, it's possible that wildlife in the region may utilize the road, making the wildlife more accessible to subsistence hunters. While this may be helpful to subsistence hunters in the short-term, it may result in depletion of wildlife populations over the long-term.
915. For purposes of analysis, BLM should assume the public will be able to access the road, as AIDEA has provided no information on how they will restrict public access. Unrestricted access and illegal road use may lead to increased hunting pressure. Further, poaching by construction workers should be considered. Though Trilogy Metals stated that hunting by employees during work hours will be prohibited, it's unclear how they or any other future mining company will restrict hunting by its employees during their leisure time. Even if road use is limited to industrial access and poaching is limited, the estimated 400 trucks per day on a long industrial road has the potential to greatly impact subsistence hunting and harvesting success. Subsistence hunting and harvesting activities are central to the cultural identity and social cohesion of the communities in the region. BLM needs to do a full study in each of the impacted communities to fully assess the subsistence, socioeconomic, cultural, and other impacts to the region.

Issue 19: Wilderness

916. The Aldo Leopold Wilderness Research Institute was contracted by the National Park Service to evaluate the potential impacts to wilderness characteristics of Gates of the Arctic National Park, should the Ambler Road be constructed. The findings of this report illustrated that the wilderness characteristics of GAAR would be severely diminished. However, the National Park Service was told to stop funding this project, and therefore, the results of this project were not made available to the public. The author of this report was also one of my employees at the time of working on this project, so I am directly invested in this research being used as part of the evaluation process for the right-of-way permit. As part of my comment, I would like to be put on record for requesting that this report be finalized, published in a public journal, and made available and incorporated into the EEA and Environmental Impact Statement for this project. AIDEA DID NOT ADDRESS WILDERNESS CHARACTER IN THEIR PERMIT APPLICATION.
917. The most lucrative value overall of this landscape is its rareness and uniqueness on a world scale BECAUSE of its remote, undeveloped condition. To bring infrastructure is to destroy its greatest worth. The EIS should be careful to consider this value scale adequately.
918. The DEIS also needs to evaluate: ...The effects to Gates of the Arctic National Park, Kobuk Valley National Park and Noatak National Preserve, the Selawik National Wildlife Refuge and the Kanuti National Wildlife Refuge: These analyses must include effects on subsistence, fisheries and caribou and wolf migrations, air and water quality, and effects on the wilderness character of the Gates of the Arctic National Park and Gates of the Arctic Wilderness. Impacts to areas in Gates of the Arctic eligible for wilderness designation must be addressed.
919. We recognize that the routes for the proposed road to the so-called Ambler mining district do not cross lands that are currently designated as Wilderness, however, we are very concerned about the effects this road would have on adjacent designated Wilderness in Gates of the Arctic National Park as well as wilderness eligible lands within Gates of the Arctic National Preserve that the road would cross.
920. This proposed road will have profound adverse effects on “de-facto” wilderness lands covering a vast region of northwestern Alaska.

Issue 19: Wilderness, continued

921. My first years as a wildlife biologist were spent exploring the wildest parts of Alaska, and they have changed me in ways that I will carry with me the rest of my life. There is absolutely no price that can be put on the ability to change a person's life through direct experience with the natural world. There is also nowhere else in the world like Alaska. Still largely intact ecologically, we maintain some of the oldest wildlife migrations in the world in our caribou herds. We celebrate the solstices and changing of seasons only possible when you are connected to landscape and living a part of it each day. It may seem that Alaska is SO BIG that a small road, relative to the large protected areas surrounding its gash on the landscape, would hardly be impacted. However, it is important to remember that it is Alaska's BIGNESS that allows it to host the BIGGEST mammal species in North America, the largest herds of mammals, the largest landscapes of permafrost and Native People still following traditional ways and incorporating those ways into the 21st century. We have watched large, and formerly wild landscapes across the globe be changed by human activities in mere decades. We have also seen the tremendous opportunities for protecting and restoring landscapes through other global actions such as the recent decision by the Chilean government to create NEW national parks. Instead of figuring out clauses within compromised legislation to punch holes, drill holes, and build roads through our national parks and other wild landscapes, let's instead find a way to work together to protect these places, the people who live in and near them, and the values that we all appreciate in knowing that they exist, whether or not we will ever be able to see them and breathe them in our lifetimes. In fact, let's look beyond our own lifetimes, and try to save some places so our future generations may be able to engage in the same dialogue about the same places that we are so generously allowed to do today.
922. Solitude, subsistence, intact ecosystems, and thousands of years of cultural history are essential reasons for the existence of the Gates of the Arctic National Park and Preserve. The EIS should analyze and describe specifically how each route will impact each of these priorities in the section of road that crosses the Park, and over what timeframe. Impacts are unavoidable – only the scale and frequency are unknown.
923. Roads and habitat disturbance are the major cause of biodiversity loss in Canada; this will likely apply to Alaska as well. "Just a single road through a large, continuous block of intact habitat opens an area up to further resource use, wildlife exploitation, land conversion, motorized and non-motorized recreation, and continued expansion of the road network." (Cooke 2017)

Issue 19: Wilderness, continued

924. ANILCA, in creating Gates of the Arctic National Park, declared that it shall be managed: "To maintain the wild and undeveloped character of the area, including opportunities for visitors to experience solitude, and the natural environmental integrity and scenic beauty of the mountains, forelands, rivers, lakes, and other natural features; to provide continued opportunities, including reasonable access, for mountain climbing, mountaineering, and other wilderness recreational activities; and to 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." (ANILCA §201(4)(a)) The Aldo Leopold Wilderness Research Institute was contracted by the National Park Service to evaluate the potential impacts to wilderness characteristics of Gates of the Arctic National Park, should the Ambler Road be constructed. The findings of this report illustrated that the wilderness characteristics of GAAR would be severely diminished. However, the National Park Service was told to stop funding this project, and therefore, the results of this project were not made available to the public. I believe this research should be used as part of the evaluation process for the right-of-way permit. As part of my comment, I would like to be put on record for requesting that this report be finalized, published in a public journal, and made available and incorporated into the EA and Environmental Impact Statement for this project. AIDEA DID NOT ADDRESS WILDERNESS CHARACTER IN THEIR PERMIT APPLICATION.
925. Impacts to areas in Gates of the Arctic eligible for wilderness designation must be addressed.
926. The complete impacts of the mining must be considered as part of this industrial road proposal. The project propose to bring in more workers than the entire populations of all the nearby villages. Existing technology for copper-lead-zinc open and deep pit mining does not avoid levels of toxic pollution that can be expected to destroy the wilderness species of the Kobuk River, and the congressionally mandated character of the Kobuk Valley National Park and the Selawik National Wildlife Refuge downstream. The effects on the Kotzebue Sound fishery are not considered but must be.

Issue 19: Wilderness, continued

927. P. 40, SF 299-Wilderness- The submission appears to downplay the impact on wilderness values by referring to the fact that ANILCA placed the designated wilderness boundary north of the Preserve and allowed for the created a transportation corridor. The negative impact on the area's inherent, though undesignated wilderness characteristics will be substantial and will exist for a considerable distance from the road. The sound of large trucks and heavy equipment will carry for long distances, particularly well since sound travels uphill better than downhill and the road will be generally located at lower portions of the landscape. The lights of vehicles and equipment on the road will be visible for great distances at night. Similarly, the road surface, cut banks, and embankments will generally contrast in tone and texture from the surroundings to the extent that they are not or cannot be mitigated through revegetation. Large rock cuts will remain visible for the long term.
928. A road to the Kobuk River might create opportunities for additional commercial transportation as well as recreational activities. Those impacts need to be evaluated, including consideration of the Congressional purposes of "wilderness recreation" for the Preserve as well as the Park, and "undeveloped" character of the Preserve and Park.
929. The loss of wild public and subsistence recreation, including hunting and fishing experiences, on a large swath of Alaska public lands from noise, degraded view-sheds, and direct displacement due to four mining developments and road activities. Can additional areas be protected to mitigate this loss of remote, wild backcountry hunting and fishing experiences?
930. The Brooks Range is unique worldwide and if the cost of building the road was put into sustainably building tourist opportunities, the people of Alaska and America could benefit greatly.
931. There will be a loss of outstandingly remarkable values (ORV) for the 110-mile long designated portion Kobuk River which is part of the National Wild and Scenic River System (W&SR). Will there be an opportunity to mitigate this loss by designating another river within the Brooks Range with similar ORV's to replace it?
932. The proposed 211 mile-long road will traverse the southern slopes of the Brooks Range crossing 2,900 waterways from tributary streams to major rivers that lace their way through countless acres of wetlands in an intact Arctic ecosystem of remote wildlands. ...It will cross tributaries of the North Fork of the Koyukuk, Tinayguk, Alatna, and John Wild & Scenic Rivers and other Koyukuk tributaries flowing into the Kanuti National Wildlife Refuge and supporting its resources. We believe that it is important to maintain the integrity of these Conservation System Units for the purposes that they were established.
933. The route would cross the Gates of the Arctic National Preserve and the Kobuk Wild and Scenic River. The project would be degrading resources instead of "preserving" them, and it sure as heck wouldn't be "wild and scenic".

Issue 19: Wilderness, continued

934. 2. River impacts: The proposed road will cross numerous rivers and streams, including several that are National Wild and Scenic Rivers. These waterways support not just sustainable fisheries for the nearby villages but also provide for recreation opportunities. I have floated the Alatna, John, and Koyukuk Rivers. These are spectacular examples of roadless, wilderness rivers. Rivers inaccessible by road are incredibly rare, and valued by many. They lure visitors, and provide clean water to communities. These should not be undervalued, and should be protected.
935. Regardless of route selection, the Ambler road will cross the Kobuk River, a designated Wild River under the National Wild and Scenic Rivers Act (celebrating its 50th anniversary in 2018). Transportation systems authorized under ANILCA which occupy, use, or traverse any National Wild and Scenic Rivers System unit shall be subject to such conditions as necessary to assure that the stream flow of, transportation on, such river are not interfered with or impeded, and that the transportation system is located and constructed in an environmentally sound manner. I am requesting that the EA and EIS directly address the potential implications of hydrologic degradation of the Kobuk River, and how AIDEA will assure no negative impacts to the stream flow, or any natural qualities of the Kobuk River. If they cannot prove this information, then it seems the road would not be legal pursuant to the 1968 National Wild and Scenic Rivers Act. Especially notable is the proposed infrastructure (bridges, roads) next to and across waterways, which should definitely be addressed in any permit application, and was not done so by AIDEA.
936. North Fork of the Koyukuk: It seem strange to me how this proposed alternative is even legal without an act of Congress since the proposed road crosses into the wilderness boundary of the Park several miles below the North Fork/Middle Fork junction in this eastern portion of the park. There is a small sliver of National Park Service wilderness designated land, just south of the Doyon land inside the wilderness boundary. Does this proposed route cross into this piece of National Parks Service designated wilderness?
937. The true VALUES of wilderness are destroyed when roads bisect wild lands. The WILDERNESS needs to be preserved for future generations. We have so little true wilderness left.

Issue 19: Wilderness, continued

938. The right of way cuts through prime wilderness, some of the best and most complete wilderness remaining in the state. This wilderness is important now and will only become more important as time goes by. I would like for future generations to not have to blame us for its absence or degradation. Irrevocable development of the proposed road corridor is inconsistent with the conservation goals of Gates of the Arctic park and preserve. Specifically, the wilderness aspect that is highly valued there will be fundamentally harmed. Areas of true wilderness that are truly remote are increasingly rare. The road risks completely removing the wilderness qualities of a large area of land by its proximity, bringing noise, air pollution, disruption of animal species, and increased human traffic. I recently traveled along the Noatak River with a friend whose parents had made the same trip thirty years before. There are fewer and fewer places one could expect to remain unchanged after decades. Building a road would change this area.
939. Once a wilderness is bisected by a road or by any mechanical device to carry out commerce or to fulfill recreational demands, wilderness is no longer true wilderness. We are having these discussions literally as I write these comments here in Montana. The need and purpose of wilderness is not just to fulfill a recreational use, it is to fulfill a purpose to preserve a land for its own intrinsic value, a value that cannot be cheapened by dollar signs. The purpose is for man to be the “visitor” and where natural forces and elements dominate as God made them in order to keep the natural world in balance. The Gates of the Arctic and Kobuk River areas were set aside as wilderness, and should remain so. The country's remaining tracts of wilderness need to be preserved intact for future generations, not sacrificed for private financial gain.
940. Impacts to areas in Gates of the Arctic eligible for wilderness designation must be addressed.
941. BLM needs to analyze the potential adverse impacts to wilderness values in the region. The proposed road route would cross through Gates of the Arctic National Preserve. Gates of the Arctic's 7-million-acre wilderness covers vast terrain, including the jagged peaks of the Brooks Mountain Range, glacier-carved valleys, boreal forest, Wild and Scenic Rivers, and stretches of polar desert without roads, trails or formal campgrounds. AIDEA's proposed route runs adjacent to — and at times within yards of — the designated Wilderness boundary of Gates of the Arctic National Park. This National Park and Preserve is this nation's “premier wilderness” and was created specifically to preserve the vast intact landscape that is unbroken by roads or trails. Although the Preserve is not designated as Wilderness, it is an intact arctic landscape that possesses many of the intrinsic values and qualities of wilderness.

Issue 19: Wilderness, continued

942. The image of Alaska as a pristine landscape with genuine wilderness on a large scale is a big part of why visitors want to come to this state. Also, a substantial number of visitors, hikers, bird-watchers, hunters and river runners come to this area specifically because of its wilderness character. For the most part, villages near the proposed road would like for the surrounding areas to remain as they are. Local people count on subsistence activities in the area, and many people make their livings from guiding, transporting or outfitting people from outside the region who are attracted to the landscape for its current values.
943. I have personally traveled through this region, backpacking and kayaking along the Alatna River for over 180 miles. As an Alaskan, I have many wilderness opportunities around me, but the character of the Brooks Range is special and drew me to this area in particular. Simply put, if this road were built, I would not have chosen this trip. The significant financial contributions (transportation to Coldfoot, charter flight from Coldfoot, supplies in Allakaket, flight from Allakaket and Bettles) I made in this region would not otherwise come to this area. The road would permanently alter the wilderness character of this entire region.
944. Obviously the wilderness experience for people floating both the North & Middle Forks of the Koyukuk will be severely disrupted, not only before this junction, but also from here on down the Koyukuk to Bettles. It sounds like our trips will not be able to pull out at this point. (The proposed road is private, for industrial users only.) We will continue floating to Bettles with road traffic to the north. It will not be the quiet, peaceful last night camping & last day of floating on down to Bettles. The chance of this portion of the Koyukuk River ever being designated a Wild & Scenic River, with an industrial road on either side of the river, will pretty much be eliminated. These impacts need to be incorporated into the EIS.
945. Importantly, the route for the Ambler Road crosses the Kobuk Wild River. Under ANILCA Section 1107, a system approved pursuant to ANILCA that “occupies, uses, or traverses any area within the boundaries of a unit of 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 or utility system is located and constructed in an environmentally sound manner.” The ANILCA section related to the Ambler Road crossing of Gates of the Arctic in no way limits BLM’s obligation to consider and ensure the stream flow of the Kobuk River is in no way interfered with or impeded. BLM must consider impacts to the river’s stream flow and use for recreational, subsistence, and other purposes.

Issue 19: Wilderness, continued

946. The agencies should also consider the consistency of such a road crossing with the Wild and Scenic Rivers Act. The policy for designated Wild Rivers provides that these rivers “shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations.” Free flowing is defined as “existing or flowing in natural condition without impoundment, diversion, straightening, rip-rapping, or other modification of the waterway.” AIDEA intends to use riprap within rivers at bridge crossings, 36 which is directly inconsistent with WSA requirements. BLM and the National Park Service must consider the effects of a road crossing these wild areas and any negative impact to these Wild Rivers, and associated wilderness recreation. AIDEA’s has not gathered sufficient information about the hydrology of these or any rivers in the project corridor (e.g., historical flood levels, etc.). This information is necessary to ensure that any crossing does not impede, divert, or modify the waterway and that BLM is able to take into consideration such information to ensure that any mitigation measures are effective.
947. AIDEA’s preferred route would be within sight and sound of many areas that are treasured for their wilderness qualities and used by visitors, such as campers and canoeists on Walker Lake, river rafters on the Kobuk Wild River, and guests at Iniakuk Lake Wilderness Lodge. Industrial activities, including noise and dust from industrial trucks passing nearby, may displace visitors and substantially reduce the wilderness values of the region, and may have economic impacts as well.
948. Wilderness and Wild and Scenic Rivers: The proposed road would cross the Gates of the Arctic National Preserve, an area that qualifies as federally designated Wilderness. It also would cross the portion of the federally designated Kobuk Wild River passing through the Preserve. Visitors from around the globe are drawn to this region for its outstanding wilderness recreation in an intact Arctic ecosystem. Industrial activities, including noise and dust from industrial trucks passing nearby, would displace and/or frustrate visitors and substantially reduce the wilderness characteristics of the region. Moreover, wilderness lodges and water and land-based guiding businesses depend on this remote, wilderness region for their livelihoods. The EIS must assess how the proposed road would adversely impact these important, protective designations.
949. This area, the Central Brooks Range, is one of the last large undeveloped regions left in the Arctic. This is one of its unique appeals. This is part of the reason people go on our trips, to fly into a remote roadless area and experience its vast untouched reaches. The scoping process needs to address how this road will change this unique character of this country.

Other Topics

Issue 20: Other Impact Topics

950. Cumulative Impacts – The EIS must evaluate the potential impact of the Ambler project in context with all other current and potential activities and projects in the region, including additional mines, Pt. Lay coal, ANWR and NPRA drilling, converting ice-roads to permanent gravel roads on the slope, etc.
951. The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity and its intended use on the public interest (33 CFR 320.4). To the extent appropriate, the public interest review would include consideration of policies as described in 33 CFR 320.4(b) through (r), which include conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain value, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, consideration of property ownership, needs and welfare of the people. Evaluation of the probable impact that the proposed activity may have on the public interest requires a careful weighing of all the factors that are relevant to the project. The benefits that reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. The decision whether to authorize a proposal, and if so, the conditions under which it will be allowed to occur, are therefore determined by the outcome of this general balancing process of these factors. As a cooperating agency, the Corps intends to use the existing and affected environmental information gathered during the EIS to evaluate public interest factors. The Corps also considers all comments received during the public process, whether in response to a Public Notice or a Public Hearing. In so doing, the Corps must determine that a proposal is not contrary to the public interest in order to issue a permit.
952. Discuss the increased fire risk if this road is built.
953. Discuss the increased fire risk if this road is built.
954. Problems such as providing access to our subsistence resources to outside hunters, environmentally damaging the land, and turn our pristine land to an economic highway. We must start preserving our land for our future generation. We cannot continue to destroy our land for a short term benefit.
955. The biggest problem will be the long-term impacts associated with mine development on the southern flanks of the Brooks Range just north of Beaver Creek. The Sun deposits are located just to the north of the proposed Beaver Creek Crossing. If a mine eventually goes in near here, huge amounts of heavy equipment activity, blasting, and a gaping hole in the earth will be visible on these mountains.

Issue 20: Other Impact Topics

956. Landscape views will be irreparably altered; aurora-watching views will be irreparably altered; both diminished or destroyed by the dust/air quality and light and noise pollution from road traffic. Note that at 3000 feet above ground level one can see Point Thomson from Atigun Pass-- 118 miles away. The proposed road would be visible for tens of miles.
957. The majority of the route passes through areas of significant visual quality, rendered even more valuable because of the absence in most circumstances of any human disturbance. In designated conservation units and particularly for designated wilderness, preservation of pristine viewsheds is of the highest order. The SF299 states that visitors to The Preserve would be fairly sensitive to the scenic quality of the area. In actuality, the majority of road users, when the road is open to the public will be fairly sensitive and those users who are seeking a recreation experience in the vast untracked wilderness of that part of Alaska will be highly sensitive and greatly offended by the damage to visual and wilderness values. Revegetation of fill areas and cut banks will help mitigate visual impacts if and where effective. Large areas of bright green grass will contrast with the darker colors and different textures of conifers and thus be of limited mitigatory value. Large rock cuts that contrast with surrounding textures and tones will significantly and adversely affect visual resources. A technique that has been utilized to blunt this effect is coloring the cuts to temper the tonal contrast. Dust clouds, and at night, headlights will render the road as visible even where vegetation and lower terrain seemingly screen the road itself. Strong consideration should be given to rerouting the road so as to mask it using terrain features.
958. The visual impact of bridges would be reduced by using designs such as enclosed box girders, softened textures and blending colors for the concrete or the metal structure.
959. The entire route (except where already analyzed using NPS methodology), including the material sites, and the mining district should be subjected to the analytical and mitigatory protocols of the BLM VRM system.
960. Discuss the increased fire risk if this road is built.

Issue 21: Mitigation (or Conditions of Permit)

- | 961. | Issues Number | Issues Identification |
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| 962. | | <p>The ROW needs to provide that, twice-annually, during the wolf-caribou migration, the roadway is closed to road access, particularly by ore trucks. The DEIS should consider the alternative scenarios of truck caravans being permitted during migrations, and a system where there is no mining road access, or access by alternative transportation system like rail, during this sensitive time of the year. If the alternative transportation systems have less impact on migratory species and their predators and the people dependent on use of these species, that should also be assessed in the DEIS. Consider if there are higher up-front costs balanced by less long term cost and fewer impacts on the natural and healthy dynamics of the wildlife species.</p> |

The limited information and conclusory statements about minimal negative impacts in AIDEA's application made it difficult to suggest meaningful mitigation measures.

Nonetheless, there are a wide range of potential mitigation measures BLM should fully examine in the EIS. Some of the mitigation measures BLM should consider include: Dust control measures; Road speed limits of 15 miles per hour when caribou are within 0.5 mile of the road and overall speed limits of 30 miles per hour to ensure safety; Contracts with the local communities for use of the road; Requirement of natural gas vehicles; Implementation of a roadkill monitoring system; Use of a protective road cover to prevent asbestos contamination; Bridges in the area should be built to withstand a 500-year flood event; Control noxious weeds and invasive species using methods which do not negatively impact waterways and wildlife; and Establishment of a time period during peak caribou hunting season when aircraft use will be suspended.

Issue 21: Mitigation (or Conditions of Permit), continued

963. Finally, we recommend the BLM evaluate and incorporate enforceable BMPs and mitigation measures into the EIS and Record of Decision. We recommend implementing measures to reduce criteria and GHG emissions and offer the following for consideration as components of a construction air pollutant emissions control plan.
- Evaluate the use of the latest on-road and non-road diesel engines with ultra-low sulfur diesel:
 - o Diesel engines that meet the latest EPA Tier 4 regulation as listed in 40 C.F.R. Part 1039
 - o Retrofit non-compliant engines to achieve Tier 3/Tier 4 standards (A list of EPA verified diesel retrofit technologies can be found at <https://www.epa.gov/verified-diesel-tech/verified-technologies-list-clean-diesel>;
 - Consider the use of alternative fuels (A list of alternative fuel resources can be found at <https://www.epa.gov/state-and-local-transportation/clean-fuels-alternative-fuel-options-related-links-state-and-local>);
 - Establish idling limit (e.g., 5-10 minutes per hour) and install idle-reduction technologies (IRTs) (A list of EPA verified idle-reduction technologies can be found at <https://www.epa.gov/verified-diesel-tech/smartway-verified-list-idling-reduction-technologies-irts-trucks-and-school>) and,
 - Prohibit any tampering with engines and require continuing adherence to manufacturers' recommendations.
964. Red Dog Road will most likely be kept in perpetuity to treat the tailings pond in perpetuity to address acid drainage. Chemicals must be moved over the road because flying them in would be prohibitively expensive. Also, other ore deposits are likely to be developed in the region. ANILCA Section §1107(a)(2) requires the removal, restoration and revegetation of any road; mitigation requirements sufficient to assure complete restoration are essential, and ROW terms and conditions need to include a bonding requirement to assure that complete funding will be available.
965. Do not allow the sale, extraction or use of gravel from federal lands. My understanding of the DeLong Mountain Transportation System is that NANA sold gravel, from pits inside the legislative boundaries of Cape Krusenstern National Monument. The ROW holder should not be able to get paid for gravel it got rights for as part of the ROW they were granted. Terms should be clear the ROW will not convey surface or subsurface materials on federal lands.
966. Review the agreement on the DeLong Mountain Transportation System to see what terms and conditions would apply in this case and evaluate improvements to any terms and conditions that were implemented.
967. Should mines be developed, ore concentrate will be transported along the road. The applicant appears to intend to use covered ore transport trucks to "minimize the loss of concentrate"; this must be required from an environmental standpoint.

Issue 21: Mitigation (or Conditions of Permit), continued

968. Every company transporting cyanide should be required to sign on to the International Cyanide Management Code before being allowed to move cyanide along the road and particularly through the Gates of the Arctic. Transportation is the number one reason behind cyanide spills.
969. If gold is found that is naturally bound up with mercury in the ore, captured liquid and solid mercury may need to be transported out of the region, as will need to be done at the Donlin mine. The EIS should ensure that companies apply the military-style “seven layers of protection” for any containers moving mercury through the park.
970. Review the agreement on the DeLong Mountain Transportation System to see what terms and conditions would apply in this case and evaluate improvements to any terms and conditions that were implemented.
971. An EIS could provide a tentative range of mine development risks and mitigations, similar to the EPA’s assessment of the Bristol Bay Watershed. At the low end of the range could be the build-out of the Arctic and Bornite projects, at the high end could be development of the 15 or more known deposits. The locations are known so generalizations can be made about the roads between mine projects that could be needed and their environmental impacts, about the extent of additional gravel mining that might need to occur to lay down pads for mine facilities, and about the feasibility of impacts from one versus multiple processing plants.
972. We suggest some mitigation measures that could be permit stipulations or best management practices in a record of decision. We draw examples from what the North Slope Borough (NSB) has done in its rezoning and permitting processes to allow for resource development while protecting its residents' lifeways.
973. The State encourages the BLM to ensure the EIS provides the necessary clarity to the public on how human health, wildlife, and the state’s lands and waters are protected by both the State and federal regulatory agencies.
974. BLM must adhere to the requirements of FLPMA governing issuance of ROW permits in addition to being the lead federal agency for the NEPA process. FLPMA provides that rights-of-way “shall be granted, issued or renewed ... consistent with ... any other applicable laws.” BLM must require AIDEA to submit ROW or other special use permit authorizations and require that all mandates of FLPMA Title V and its implementing regulations are adhered to.
975. There should be no storage area within the Gates of the Arctic National Park and Preserve that would be specifically for storing quantities of these fluids (chemical reagents).
976. Inclusion of discussion on how the loss of roadless habitat could be mitigated through protection and limits on future development on other lands within the migration corridors.

Issue 21: Mitigation (or Conditions of Permit), continued

977. On January 21, 2011, CEQ issued final guidance on the Appropriate Use of Mitigation and Monitoring. This guidance seeks to enable agencies to create successful mitigation planning and implementation procedures with robust public involvement and monitoring progress. The EPA recommends the EIS identify the type of activities, which would require mitigation measures during construction, operation, maintenance, and closure phases of this project. In addition, we recommend identifying whether or not implementation of the measure is required by the BLM or any other governmental entity, and what entity will be responsible for implementing the measure. To the extent possible, mitigation goals and measureable performance standards should be identified in the EIS to reduce impacts to a particular level or adopted to achieve an environmentally-preferable outcome.
978. During the construction of any road, local subsistence guides should be hired to ensure that construction does not interfere with subsistence or migration. A sample requirement can be drawn from NSB permits for onshore development. Commentor provided a number of sample requirements.
979. The proper applicant should provide evidence of feasibility, sustainability, and existing wherewithal to bear all maintenance and restoration costs: No ROW should be issued if the mining companies/users have not demonstrated in advance the capability – through bonding, or loan guarantees by banks or other such sureties or conventional guarantees of good practice – of paying for design, development, permitting, maintenance, remediation and complete restoration. No U.S. Army Corp of Engineers Section 404 Wetlands Permit or BLM or NPS ROW permit should be issued without this evidence. Any failure of performance would create enormous liabilities for the federal agencies. If an unsustainable or undercapitalized effort of this magnitude and risk fails, taxpayers will be on the hook for environmental remediation costs. In short, BLM cannot gamble that the mining operators or financiers are following all the roadway rules. BLM must certify the financial foundation and environmental capacity of the mining and roadway operators in advance.
980. Community Mitigation Fund: A mitigation fund should be set up to provide a certain level of funding to each community within 50 miles of the road or the mining district, so long as either is in place. This fund could be used by each village's leadership at its discretion to cover the various indirect costs and impacts that are not addressed above (i.e., providing gas to hunters that must now travel farther). NSB imposed a similar requirement for the CD4 and CDS rezone.

Issue 21: Mitigation (or Conditions of Permit), continued

981. We recognize that actual mining development would be a long way off, even if this road is approved, but we want to point out that the bonds under state and federal law to cover damage from mining can hardly be expected to cover actual cleanup costs. There is a long history of mining companies in the United States shifting assets, declaring bankruptcy, and leaving the public with cleanup costs. In this case, BLM can expect to bear a portion of these cleanup costs, as part of the mining district would be on BLM land. BLM should do its own study to estimate the costs of a spill from a truck, acid mine drainage, or other impacts, and require a bond to cover this amount. A separate bond should be in place that local people can access traditional foods in the event their subsistence resources are damaged. An example is NSB's oil spill contingency plan requirement for offshore development, which required a developer to establish a bond or similar secured financial assurance instrument of \$25 million payable to NSB for the benefit of subsistence users within 50 miles of the project. In the event of a spill, money would automatically be allocated to NSB to pay for (1) transportation required to relocate hunters/fishers and their equipment to alternate subsistence sites and to safely return them along with their equipment and harvest; (2) alternate subsistence food supplies to replace subsistence resources that are otherwise unavailable and transportation of food supplies; (3) reimbursement of funds expended by whaling captains in preparation for a whaling season that has been curtailed by an oil spill; and (4) counseling and cultural assistance for residents within 50 miles of the source of the oil spill to handle disruptions to their lives and culture.
982. Jobs: Job training should be provided to all interested residents of villages within 50 miles of the road, at no cost to the residents. Training could be for construction jobs as well as truck-driving or longer-term jobs.
983. Mitigation measures should be considered that include temporal and spatial restrictions on road use that would avoid or minimize adverse impacts of road traffic during caribou herd migrations.
984. Determine how emergencies will be handled and who will pay for these services.
985. A mitigation measure should require funding for up to two public safety officers (training and salary) for any village that desires such assistance to fight drugs and alcohol. There should also be funding for an additional state trooper to patrol the road, and for search and rescue/emergency response. Anyone using the road (contractor, mining operator, trucker, etc.) should submit to BLM proof of an insurance policy that provides coverage of search and rescue. As an example, NSB Commercial Recreation Permits require applicants to obtain a \$100,000 liability insurance policy (under which NSB is a beneficiary) to cover the cost of NSB search and rescue operations, or proof that the applicant has its own emergency service capability.

Issue 21: Mitigation (or Conditions of Permit), continued

986. Firearms and off-road vehicle restrictions: Similar to the restrictions along the Dalton Highway, no shooting with firearms should be allowed within five miles of any road. No launching of boats, four-wheelers, or snowmachines should be allowed from the road or within five miles of it, but vehicles originating from points beyond 5 miles should be allowed to cross through the road corridor.

Issue 21: Mitigation (or Conditions of Permit), continued

987. EIS should identify terms and conditions included in the ROW permit in order to minimize impacts on subsistence, social impacts, natural resources and parklands. EIS should also analyze the impacts of including (and not including) such mitigative measures as part of the Alternatives. Suggested ROW terms and conditions follow: + Provide only a permit for a Right-Of-Way, no interest in lands. That is the intention of the law, and the only way to manage to avoid damage as Congress provides. // + Provide that the ROW is non-transferrable. Transferability will undermine accountability and compliance, and encourage deceptive ways to shut down operations in order to avoid compliance. It may be impossible to hold everyone accountable in the chain of holding the ROW. If a ROW with an interest in lands is created for BLM administered lands, this will exacerbate these problems, while the ROW by permit that the Congress provides for the Kobuk portion of the Gates of the Arctic National Preserve in ANILCA § 201(4)(b) will allow much easier management of conditions for all parties. If a ROW for BLM lands as an interest-in-land is considered, fully evaluate in the DEIS the potential impacts on the resources or local residents from a less responsive communication and management system. // + Require an annual performance plan and report among the terms and conditions, to assure compliance. Provide further that this provision is to be included in an Annual Operations Plan, or Annual Performance Plan, governing full compliance. If the terms of the Operation Plan are violated, provide a system of warnings, suspension of operation, and ultimately for repeat and uncorrected violations, termination of the ROW permit. // + The BLM should require that a ROW permit be issued for a specific term commensurate with the anticipated period of viable mining operations. // + Limit the terms of the ROW permit to access directly related to mining of the Ambler mineral belt only. For the National Preserve, Congress already provided in ANILCA § 201(4)(b) for the ROW permit to be restricted to mineral access to the Ambler belt only. ?? + Provide that all management and compliance cost of the government agents be entirely born and guaranteed by the ROW permit holder. // + Prior to issuing the ROW permit, develop and approve a bonding and escrow system to assure that all costs are guaranteed. // + Provide a complete program in advance of issuing the ROW permit for full compliance with §1107, particularly for subsection (a)(2) the requires the “restoration, revegetation, and curtailment of erosion of the surface of the land.” Restoration in Arctic Alaska is difficult, and requires planning, resources, and professionalism. To verify that this program can in fact lead to the complete removal, restoration, and revegetation of the ROW, the program needs to be peer-reviewed and certified by an independent group. The escrow and bonding program, called for above, shall include in advance all costs necessary to implement this plan to be fully compliant with §1107.

Issue 21: Mitigation (or Conditions of Permit), Comment 987, continued

BLM needs to develop a plan that clearly requires restoration and includes the standards of what constitutes sufficient dismantlement, restoration and reclamation of the road corridor before approving the ROW. There would need to be a cost estimate provided by ROW applicant/roadway operator, and approved by the NPS and BLM.

A Restoration Fund in Escrow needs to be Required and Created. The costs for restoration must be included in the tolls and retained in escrow. The ROW permit holder should be required to maintain those funds in an altogether separate escrow account so money would be available at the time restoration occurs.

The applicant is proposing a phased development of road access, beginning with minimal road construction (a "pioneer road"), then an improved one lane road and lastly a two-lane road. It should be a built-in assumption of the terms and conditions for any issued ROW that the proposed two-lane road will ultimately be built, and the terms and conditions of the ROW must require the holder to do comprehensive mitigation from the start of construction.

Anything short of these provisions is an invitation to the mine operator(s) to develop non-compliant access, cherry pick and remove the ore, declare bankruptcy, and leave either Alaskan and/or U.S. taxpayers to deal with cost of remediation and reclamation.

Provide that if the mode of transportation authorized is not built within a set period of years of issuance of any ROW permit, the permit shall be reviewed and either terminated or, only provided subject to updated terms and conditions, and a further environmental analysis, revised to reflect all new information or technologies.

Prior to issuing the permit, develop, review and approve a joint operation plan in coordination with the National Park Service, coordinating work and responsibility so that all terms and conditions, mitigations and ameliorations in this process are fully complied with.

Provide that no public access from the Dalton Highway is permitted. Include as a condition of the permit, provision that no miners or operator's employees will compete for subsistence hunting and fishing whatsoever with the local people.

Provide for company disciplinary review for any employee violating these standards, and include in the company's disciplinary review committees trained representatives of the local rural residents so that complete transparency while adhering to necessary confidentiality are maintained.

Provide that no access be permitted during periods of caribou and wolf migrations through and across the proposed industrial roadway. This triggering mechanism for closures, upon notice by NPS or U.S. Fish and Wildlife Service authorities, should be incorporated into the Annual Performance Plan.

If road is not built within a specified timeframe, retain the right to review and revise terms and conditions with any new data and to terminate the ROW permit.

Issue 21: Mitigation (or Conditions of Permit), Comment 987, continued

Law enforcement authority needs to be stated for the proposed ROW.

Estimate the costs to State and federal governments for these basic services.

Determine how emergencies, including spills and fire, will be handled and who will provide and be responsible for the costs of these services.

Evaluate what additional power sources will be required and the impacts of transporting fuel or building an electric grid or natural gas pipeline, mining coal, etc. Further mitigation could be required once power source is identified.

Terms and conditions should provide that no access is permitted during periods of caribou and wolf migrations through and across the proposed industrial roadway. This triggering mechanism should be incorporated into the Annual Performance Plan.

Do not allow the sale, extraction or use of gravel from federal lands. My understanding of the DeLong Mountain Transportation System is that NANA sold gravel, from pits inside the legislative boundaries of Cape Krusenstern National Monument. The ROW holder should not be able to get paid for gravel it got rights for as part of the ROW they were granted. Terms should be clear the ROW will not convey surface or subsurface materials on federal lands.

Issue 21: Mitigation (or Conditions of Permit), continued

988. Provide that no public access from the Dalton Highway is permitted. Include as a condition of the permit, provision that no miners or operator's employees will compete for subsistence hunting and fishing whatsoever with the local people.
989. AIDEA proposes to incorporate the abatement and wildlife interaction protocols used on the Delong Mountain Transportation System (DMTS) into operation of this road. The proposed road will be significantly longer than the DMTS (210 vs. 52 miles) and has the potential for more trucks per day during peak operations, therefore we would expect that not all DMTS wildlife protocols would be appropriate or feasible.
990. What will be the limitations for hunters and visitors to the public lands that need to cross this industrial road corridor via floating, mushing, or hiking? What limitations will there be to snow machine users using the shoulder to access areas that have basically been inaccessible up until now to users living outside of Units 23 and 24?
991. We also believe that BLM should look at permit conditions as part of the EIS and most of the above would help guide specific permit conditions that mitigate to the maximum extent possible the negative impacts to the environment and resources that this area currently provides. Once draft permit conditions are developed they should be provided to the communities and other stakeholders at the earliest point possible for feedback and modification so that they result in the most protective conditions possible. In addition, there should be an ongoing process of permit review and modification for the life of the project, but especially rigorous in the early years as much of what informs their initial development will be somewhat speculative and as is always the case, there are issues that arise that for one reason or another were not thought of, or unknowable, at the time of their initial development. Along these lines we strongly recommend the formation of a local permit advisory council made up in part by local residents from the communities being impacted by the road for the life of the project and that this should be introduced in the EIS.
992. Require the road to be closed to all uses including ORVs not directly related to mining operations, monitoring or public safety. Prohibit the use of firearms similar to the Dalton Highway restrictions.

Issue 21: Mitigation (or Conditions of Permit), continued

993. Include an Annual Performance Plan and report among the terms and conditions, to assure compliance. Terms and conditions should provide that no access is permitted during periods of caribou and wolf migrations through and across the proposed industrial roadway. This triggering mechanism should be incorporated into the Annual Performance Plan. The evaluation of this provision as a mitigating measure should fully assess the impacts of roadway use or suspension as required by §810 of ANILCA. Included should be the recognition that this region of Alaska is one of the most significant for subsistence uses and practices, and studies demonstrate that subsistence users require multiple options and flexibility to sustain that way of life in such a harsh region. Any loss of flexibility and choice needs to be carefully assessed.
994. BLM must fully assess how mitigation measures will be adopted and implemented over time, and ensure that continued funding is available for monitoring to assess the effectiveness of project designs and any mitigation measures in protecting resources. We listed several necessary baseline studies in Section I.B. to determine impacts from the project — these studies are not mitigation measures, but are necessary to ensure mitigation measures are effective. BLM should work with the other cooperating agencies and impacted communities to identify necessary studies to monitor fish and wildlife populations, habitat, and ecosystem processes and functions that will be potentially impacted by development; ensure public involvement and transparency in the use of the best available science for evaluating the effectiveness of mitigation measures; and maintain a high standard of oversight for any industry-funded scientific studies related directly to the proposed road project. BLM should use adaptive management strategies and evaluate the effectiveness of management actions and mitigation measures at least every 5 years and provide clear mechanisms and processes for implementing any necessary corrective measures. This is critical considering the long-term to indefinite life of the proposed road.
995. To assure the most responsive, arms-length management and compliance with the terms and conditions of the ROW, the applicant should be changed from AIDEA to the mining and transportation company actually doing the work. Only in that way can the project viability and compliance be assured. This is clearly most consistent with the intent of ANILCA envisioning the operator as the applicant. Given Alaska's fiscal situation, this would make more economic sense.
996. If road is not built within 5 years, retain the right to review and revise terms and conditions with any new data and to terminate the ROW permit.

Issue 21: Mitigation (or Conditions of Permit), continued

997. Require the road to be closed to all uses including ORVs not directly related to mining operations, monitoring or public safety. Prohibit the use of firearms similar to the Dalton Highway restrictions. Include an Annual Performance Plan and report among the terms and conditions, to assure compliance. Terms and conditions should provide that no access is permitted during periods of caribou and wolf migrations through and across the proposed industrial roadway. This triggering mechanism should be incorporated into the Annual Performance Plan. Review the agreement on the DeLong Mountain Transportation System to see what terms and conditions would apply in this case and evaluate improvements to any terms and conditions that were implemented.
998. An environmental monitoring program should be designed to assess both impacts from the project and whether mitigation measures being implemented are effective. We recommend the EIS identify clear monitoring goals and objectives, such as what parameters are to be monitored, where and when monitoring will take place, who will be responsible, how the information will be evaluated, what actions (contingencies, triggers, adaptive management, corrective actions, etc.) will be taken based on the information. Furthermore, we recommend the EIS discuss public participation, and how the public can get information on mitigation effectiveness and monitoring results.
999. Include an Annual Performance Plan and report among the terms and conditions, to assure compliance.
1000. The EIS should also require regular monitoring of vegetation, and if vegetation appears to be impacted, go further and research impacts to wildlife, including caribou and birds if they use the vegetation for food, nesting, or rearing. The EIS should require monitoring where the road crosses streams and rivers, to determine if there are physical impacts (bank erosion, scouring) , chemical impacts (detectable copper or other trace metals, or hydrocarbons), or biological impacts (invasive plants or aquatic species). This should include regular vegetation, soil, sediment, and water sampling and may include tissue, feather, and fecal sampling of potentially impacted species.

Issue 21: Mitigation (or Conditions of Permit), continued

1001. The applicant is proposing a phased development of road access, beginning with minimal road construction (a “pioneer road”), then an improved one lane road and lastly a two lane road. It should be a built-in assumption of the terms and conditions for any issued ROW that the proposed two lane road will ultimately be built, and the terms and conditions of the ROW must require the holder to do comprehensive mitigation from the beginning phase. Phased development, which is proposed to be funded only phase by phase, may never get beyond stage one or two. BLM should require extensive mitigation (including reclamation) for each phase. Unless this is done, there would be long term, unmitigated impacts to BLM lands, state and Native owned lands, the preserve/park and other lands and waters if development stopped at phase one or two. A seasonal partly constructed road that would not serve the mines, would degrade the southern flanks of the Brooks Range and create many negative impacts, which need to be considered.
1002. Determine how emergencies, including spills and fire, will be handled and who will provide and be responsible for the costs of these services.
1003. Terms and Conditions must include the requirement that the whole project, especially including the removal and restoration and revegetation of the roadbed, is bonded or otherwise guaranteed or underwritten by private sources before the ROW can be issued. The environmental assessment must include the scenario that the project is undercapitalized, collapses, and the taxpayer must bear the cost of remediation, the likelihood of such taxpayer funded restoration in view of the failure of the Federal Government, the States and the accountable private parties to even pay for Superfund Sites needs to be included in your assessment, and the risk analysis of the gap between such a failure and the high standards of protection to resources the law requires.
1004. Terms and conditions of the Annual Performance Plan should provide that no access is permitted during periods of caribou and wolf migrations through and across the proposed industrial roadway. This triggering mechanism should be incorporated into the Annual Performance Plan. The evaluation of this provision as a mitigating measure should fully assess the impacts of roadway use or suspension as required by §810 of ANILCA. Included should be the recognition that this region of Alaska is one of the most significant for subsistence uses and practices, and studies demonstrate that subsistence users require multiple options and flexibility to sustain that way of life in such a harsh region. Any loss of flexibility and choice needs to be carefully assessed.
1005. The permit application does not explain how the road would be kept private. The permit application does not say how any of the cost will be recouped and if it is not for the public I would demand 100% being recouped including interest costs. Issue 21: Mitigation (or Conditions of Permit), continued

Issue 21: Mitigation (or Conditions of Permit), continued

1006. Adequate bonds should be part of any construction and operational phase. In the past, limited bonding allowed mining operations to walk away from mining sites with the taxpayers having to pay for the restoration. The same should be applied to the road. If the road remains in private hands, and if mining operations are abandoned, a restoration plan and mechanisms to pay for restoration and elimination of the road should be part of any approval process.
1007. Restoration and Restoration Fund Should be Required. Restoration should be explicitly required. AIDEA has publicly stated the road will be reclaimed and restored. BLM and NPS and others need develop a plan that clearly requires restoration and includes the standards of what constitutes sufficient dismantlement, restoration and reclamation of the road corridor before approving the ROW. There would need to be a cost estimate provided to AIDEA. A Restoration Fund Needs to be Required and Created. The costs for restoration must be included in the tolls. AIDEA should be required to maintain those funds in a separate escrow account so money would be available at the time restoration occurs. Having a plan and escrow account did not occur with the Haul road and it provides a valuable lesson for better practices. Red Dog Road will most likely be kept in perpetuity to treat the tailings pond in perpetuity to address acid drainage. Chemicals must be moved over the road because flying them in would be prohibitively expensive. Also, other ore deposits are likely to be developed in the region. ANILCA Section §1107(a)(2) requires the removal, restoration and revegetation of any road; mitigation requirements sufficient to assure complete restoration are essential, and ROW terms and conditions need to include a bonding requirement to assure that complete funding will be available.

Issue 21: Mitigation (or Conditions of Permit), continued

1008. The project identifies a 50-year life span and to paraphrase, the application materials state that restoration methods are expected to improve during this period so the subject will not be reviewed in-depth until the applicant is ready to remove facilities. Numerous other NEPA EIS efforts have set the precedent that this is insufficient analysis. Based on such federal precedent and the legal requirements of planning and restoration, the EIS and EEA should address: 1) ensuring restoration funding for both aforementioned site-specific restoration research and actual implementation of restoration (i.e. include an explicit funding plan for restoration), 2) stockpiling of removed topsoil and aggregate in a weed-free setting for use in restoration including funding for maintenance of said stockpiling during the period of operation, 3) analysis of how public pressure to open the road to public use at the conclusion of the 50-year period will be managed as such pressure can reasonably be expected with such a project and an established period of extended use even if not by the public, 4) explicit identification of mitigation actions for loss of (cultural, natural, subsistence, ...) resource value(s) such as through direct monetary payments, additional research support, additional land protections/additions, etc.; both during operation and after restoration has concluded. These efforts should individually call out the individual land management units impacted given the divergent authorizing purposes of these entities.
1009. Restoration and Restoration Fund Should be Required. Restoration should be explicitly required. AIDEA has publicly stated the road will be reclaimed and restored. BLM and NPS and others need develop a plan that clearly requires restoration and includes the standards of what constitutes sufficient dismantlement, restoration and reclamation of the road corridor before approving the ROW. There would need to be a cost estimate provided to AIDEA.
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1011. What will happen to the Ambler Road after the 50-yr expected life of the road ends? Will it be reclaimed or will it be opened to the public? If it is opened to the public, how will costs for maintenance, law enforcement presence, signage, etc. be paid for?

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1012. Furthermore, the scoping study needs to critically examine and test AIDEA's claim that the road will be re-claimed at the end of its life. Examples abound of failures of bonding to cover the costs of closed mines and other industrial sites. As part of its claims regarding the length of time of the road's effects, AIDEA should show how the reclamation steps will be enforced. Perhaps placing the full amount of the reclamation work in a reserved fund or in the form of a large bond would suffice. Alaska is littered with sites whose promoters' early promises were soon ignored. Accepting them at face value should not be part of the EIS.
1013. BLM should analyze scenarios for each affected resource wherein the road is removed and reclaimed, and where the road remains permanently. AIDEA alleges that this road will be permitted as a temporary road, and will be reclaimed at the end of the project life; however, historically many gravel roads are left in place due to continued use, cost, and the negative environmental effects of removal. Abandonment and reclamation of project facilities would involve reclaiming mine sites, and removing gravel roads, facility pads, bridges, culverts, and airstrips. Revegetation of abandoned facilities could be accomplished by seeding with native vegetation or by allowing natural colonization, but there is a low likelihood that the area would be restored to its original condition. Road abandonment and reclamation would impact a broad range of resources, particularly soils, permafrost, vegetation, wetlands, and hydrology. There would also be impacts to subsistence resources, hunting and access from removal. Cumulatively, maintenance of the road could lead to synergistic increases in development in the surrounding regions, and longer-term impacts in the Ambler Mining District because the road could continue to be used for future development.
1014. Some mining states, including Minnesota, require companies to post "financial assurance" in the form of bankruptcy-proof financial instruments that would pay for mine closure and environmental cleanup if a developer or its successors should fail or walk away — as many mining companies have in other places. Negotiations should adjust the amount annually, based on the potential costs of closing the mine in each year of operation. That means the initial costs are low, then rise over time as the mine gets larger, and then decline as site reclamation is completed. Responsible alternatives to the proposed project (granting a right-of-way for a 211-mile roadway on south side of Brooks Range from Dalton Hwy to Ambler River open only for mining-related industrial use) must require the private developers assume the full costs and initiate promptly the actions that will insure mitigating the effects, including the material-producing gravel quarries mobilizing naturally-occurring asbestos, a known carcinogen; ore trucks dispersing toxic heavy metal dust; and acid mine drainage poisoning the waters downstream with toxic heavy metals.

Issue 21: Mitigation (or Conditions of Permit), continued

1015. Restoration and Restoration Fund Should be Required. Restoration should be explicitly required. AIDEA has publicly stated the road will be reclaimed and restored. BLM and NPS and others need develop a plan that clearly requires restoration and includes the standards of what constitutes sufficient dismantlement, restoration and reclamation of the road corridor before approving the ROW. There would need to be a cost estimate provided to AIDEA. A Restoration Fund Needs to be Required and Created. The costs for restoration must be included in the tolls. AIDEA should be required to maintain those funds in a separate escrow account so money would be available at the time restoration occurs. Having a plan and escrow account did not occur with the Haul road and it provides a valuable lesson for better practices.
1016. The applicant is proposing a phased development of road access, beginning with minimal road construction (a "pioneer road"), then an improved one lane road and lastly a two lane road. It should be a built-in assumption of the terms and conditions for any issued ROW that the proposed two lane road will ultimately be built, and the terms and conditions of the ROW must require the holder to do comprehensive mitigation from the beginning phase. Phased development, which is proposed to be funded only phase by phase, may never get beyond stage one or two. BLM should require extensive mitigation (including reclamation) for each phase. Unless this is done, there would be long term, unmitigated impacts to BLM lands, state and Native owned lands, the preserve/park and other lands if development stopped at phase one or two. A seasonal partly constructed road that would not serve the mines, would degrade the southern flanks of the Brooks Range and create many negative impacts, which need to be considered.
1017. Red Dog Road will most likely be kept in perpetuity to treat the tailings pond in perpetuity to address acid drainage. Chemicals must be moved over the road because flying them in would be prohibitively expensive. Also, other ore deposits are likely to be developed in the region. ANILCA Section §1107(a)(2) requires the removal, restoration and revegetation of any road; mitigation requirements sufficient to assure complete restoration are essential, and ROW terms and conditions need to include a bonding requirement to assure that complete funding will be available

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1018. The applicant is proposing a phased development of road access, beginning with minimal road construction (a “pioneer road”), then an improved one lane road and lastly a two lane road. It should be a built-in assumption of the terms and conditions for any issued ROW that the proposed two lane road will ultimately be built, and the terms and conditions of the ROW must require the holder to do comprehensive mitigation from the beginning phase. Phased development, which is proposed to be funded only phase by phase, may never get beyond stage one or two. BLM should require extensive mitigation (including reclamation) for each phase. Unless this is done, there would be long term, unmitigated impacts to BLM lands, state and Native owned lands, the preserve/park and other lands and waters if development stopped at phase one or two. A seasonal partly constructed road that would not serve the mines, would degrade the southern flanks of the Brooks Range and create many negative impacts, which need to be considered.
1019. The EIS should address these topics: effects of the new road on Fairbanks' & Dalton Hwy commerce & recreation and on subsistence uses; affects from dust along road; prevention, monitoring, & eradication of all invasive species establishment; adequate sized & appropriate sloped culverts that allow free passage of all aquatic organisms; exit strategy when road is no longer needed.
1020. Acid drainage can result in the need for a water treatment plant in perpetuity – which in turn could provide a reason for the mine access route to remain in place and not be reclaimed. An alternative that could be analyzed in the EIS would be the option to fly in reagents and personnel. Regardless of the route in, if acid drainage and perpetual water treatment are determined to be highly likely, it will significantly increase the reclamation bond. For example, when Red Dog determined they would need in perpetuity water treatment, which was not initially expected, the reclamation bond rose from \$21 million to \$305 million;¹⁰¹ it is currently at \$558 million.¹⁰² The bond amount would not be set until there was a mining permit application, but knowing a large bond would be required would put further financial pressure on Trilogy (or other companies, if they come in), making the full scale of the project – mine and access to it – less tenable.
1021. Where water quality data exists, it indicates generally very high quality, including many oligotrophic bodies. Aside from construction, use and maintenance of the road will result in sediment-laden runoff which will adversely affect water clarity and, if severe, spawning gravels. The EIS must address this adverse effect and potential mitigation measures to ameliorate or avoid the impact. Among these could be, but not limited to, settling basins, use limitations during inclement periods and absorptive barriers.

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1022. The EIS should also disclose, under Section 402 of the CWA, any construction project disturbing a land area of one or more acres requires a construction stormwater discharge permit under the Alaska Pollutant Discharge Elimination System (APDES) permit program. We recommend the EIS document the project's consistency with applicable storm water permitting requirements and should discuss specific mitigation measures, which may be necessary or beneficial in reducing adverse impacts to water quality. We also recommend the proposed road be designed with appropriate Best Management Practices for the ongoing prevention of sediment runoff concerns.
1023. For unavoidable potential impacts to wetlands and aquatic resources, we recommend the EIS discuss the means to further minimize impacts. For any remaining potential impacts, the EIS should include information regarding a compensatory mitigation plan that complies with the Compensatory Mitigation for Losses of Aquatic Resources, Final Rule (40 C.F.R. Part 230, Subpart I). The regulations establish performance standards and criteria for the use of permittee-responsible compensatory mitigation, mitigation banks, and in-lieu fee programs to improve the quality and success of compensatory mitigation projects for activities authorized by Corps permits.
1024. Applicants for an individual CWA § 404 permit must prepare and submit mitigation plans containing the items described in 40 C.F.R. §§ 230.94(c)(2) through (c)(14). The level of detail of the mitigation plan should be commensurate with the scale and scope of the impacts. Applicants who intend to fulfill their compensatory mitigation obligations by securing credits from approved mitigation banks or in-lieu fee programs need only provide the items described in paragraphs (c)(5) and (c)(6), as well as the name of the specific mitigation bank or in-lieu fee program to be used.
1025. We further recommend compensatory mitigation plans developed to offset the aquatic resource impacts of individual infrastructure components also be included in the EIS. Please note that compensatory mitigation may be required by the Corps under a CWA § 404 permit is separate from, and may be in addition to, proposed project impact mitigation under NEPA.

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1026. In order to evaluate impacts to wetlands, assessment reports and wetland mapping of type are required to compare alternatives as well as the evaluation of avoidance and minimization of impacts. When evaluating a proposal with significant impacts to waters of the U.S., consideration must be given to avoid and minimize effects to those waters (33 CFR 320.4(r), 33 CFR Part 332, 40 CFR 230.70-77, 40 CFR 1508.20 and 40 CFR 1502.14). The 404(b)(1) Guidelines establish a mitigation sequence that provides a framework to ensure that the environmental impacts of permitted actions are minimized to the extent practicable. Under this framework, there is a three-step progression for mitigating potential adverse impacts to the aquatic environment associated with a proposed discharge - first avoidance and then minimization. In order to determine if project element locations, such as maintenance facilities, air strips, bridge crossings, and material sites can be shifted to avoid or minimize impacts, a functional or aquatic site assessment is required. This also applies to locating temporary construction camps and staging areas. In addition to site location avoidance measures, methods for developing and reclaiming material sites are valuable mitigation measures that should be considered when developing reclamation plans. Only upon clear demonstration of compliance with the first two steps in the mitigation sequence does the Corps take the third step and consider compensation for unavoidable impacts to aquatic resources. It must be understood that compensatory mitigation may not be used as a method to reduce environmental impacts in the evaluation of the least environmentally damaging practicable alternatives.