Alaska District

U.S. Army Corps of Engineers, Alaska District

Record of Decision - Appendix A

Comments Received and Response to Comments

ConocoPhillips Alaska, Inc.
POA-2013-461
Greater Moose's Tooth 1

Public Involvement.

This appendix is a continuation of section 4.0 of the Record of Decision. A complete Department of the Army (DA) permit application was received from ConocoPhillips Alaska, Inc. (CPAI) on September 13, 2014. A public notice for the Greater Moose's Tooth 1 (GMT1) proposed project was issued for a 45-day comment period on September 15, 2014 and ended on October 30, 2014.

Comments received from the Public Notice and (US Army Corps of Engineers, Alaska District (USACE) Responses.

Forty one comment letters were received and are summarized below and followed by USACE responses to the comments received. All comments received were forwarded to the applicant for an opportunity to respond. The applicant provided responses to comments in table format, and USACE has provided responses to their comments in the same format for the sake of consistency.

1.1 Federal agencies.

1.1.1 US Environmental Protection Agency (EPA).

1.1.1.1 Cover Letter.

The EPA responded with a cover letter from the Region 10 Director of Office of Ecosystems, Tribal, and Public affairs and included 2 attachments: one was regarding concerns for the proposed action and the other concerning Alaska District Aquatic Site Assessments (ASAs).

The EPA cover letter raised concerns regarding policies and procedures. EPA was concerned with the timing of the comment periods for the BLM FSEIS and USACE Public Notice (PN) ; the absence of a mitigation plan; not having aquatic site assessments (ASAs) available for all alternatives precludes adequate opportunity for formal agency comment; and concerns over the methodologies used to assess the 2 available ASAs. Any review conducted on these documents beyond the public comment period would be informal (perhaps meaning of less significance to the USACE). Inclusion of this information in the PN would facilitate adequate review, shorten permit process time, provide better certainty to the regulated public, and provide the best possible protection for the environment. EPA requested USACE continue to solicit comments and expertise as new information becomes available. EPA stated they had alerted the USACE to these concerns in a March 7, 2014 letter regarding the Nuiqsut Spur Road project and again requested the opportunity to work directly with the USACE to resolve these policy issues.

USACE Response. We understand the EPA desire to have full and detailed project information available during the public notice comment period but often do not have ASAs and complete and detailed mitigation plans to distribute at the time. These documents and information are not required by the current regulations for a complete DA permit application and we must issue a PN with determination of a complete application within 15 calendar days. As these documents

became available, they were often provided to the EPA and other resource agencies for their use. If supplementary information is available, we include it or reference it as available in our PNs. We have taken note of the EPA concerns over policies and procedures and will address these issues on a programmatic basis and not attempt to resolve them all here on a specific project proposal.

1.1.1.2 Enclosure 1.

1. The EPA raised concern regarding the closure of the Public Notice period one day after the FSEIS was released by the BLM. They stated reviewing agencies and the public would have benefitted from being able to access technical information in the SEIS if the PN comment period were run concurrently, or after, the publication of the FSEIS.

USACE Response. USACE was required to issue the PN within the 15-calendar days of receipt of a complete permit application. The PN contained sufficient information as required by regulation.

2. The EPA stated the USACE should not issue the permit until a satisfactory mitigation plan has been received and the agencies given the opportunity to review and comment on it.

USACE Response. USACE made a determination the applicant's mitigation plan was complete as required by the 2008 mitigation rule. As EPA requested, the applicant's mitigation plan was sent to them and several other agencies and organizations by e-mail message on December 5, 2014 for informational purposes. It was made clear we were not soliciting comment on the applicant's mitigation plan as we did not believe it was necessary to obtain corrections or improvements to the mitigation plan. The applicant proposed two mitigation options in their DA permit application which was included in the PN. Option1 was for permittee responsible preservation in the Fish Creek Estuary and Option 2 was for purchase of in-lieu fee credits from The Conservation Fund. After the PN closed, the applicant provided a mitigation plan per the 2008 mitigation rule pursuant to §332.4.

3. The EPA questioned the impact criteria used for vegetation and wetlands in the SEIS, stating that the impact criteria for differentiating between alternatives for vegetation and wetlands were not meaningful and relied too much on the impact to one rare vegetation type (Cassiope dwarf shrub tundra) but did not capture differences in other impacts to vegetation and wetlands across alternatives.

USACE Response. See sections 5.5.2 and Appendix B of the USACE ROD for more detailed technical analysis.

4. The EPA determined the following impacts would occur to vegetation and wetlands:
a. Alternative C will impact more than twice the acreage of Alternative A (1,368.7 acres vs. 595.3 acres).
b. Alternatives A and B will impact similar amounts of acreage (595.3 acres vs. 613.7 acres).
c. Alternative D will impact about half the acreage of Alternative A (275.9 acres vs. 595.3 acres).

USACE Response. These appear to be EPA acreage calculations as they differ from the FSEIS. We have calculated direct and indirect impacts differently from the EPA and BLM.

5. The EPA determined the road access required under alternatives A, B, and C will perpendicularly cross the hydrologic gradient, the topographic gradient, and the wind direction gradient. The intensity of impacts to hydrology is less for Alternative D, and the extent is more localized for Alternative D, compare to the other three alternatives.

The EPA stated Alternative D would be the LEDPA, but it presents other potentially significant adverse environmental consequences deserving consideration. The lack of year-round access a road would provide for emergency response and increased disturbance of wildlife (notably birds and caribou) resulting from higher levels of air traffic under this alternative.

USACE Response. We have determined Alternative A to be the LEDPA in accordance with the discussion in the ROD.

6. The EPA commented on hydrology impacts per alternatives presented in the DSEIS. They noted a linear project or consolidated makes a difference in hydrologic impacts. From a hydrology standpoint, Alternative D (road less) would be the LEDPA.

USACE Response. We understand the hydrology impacts associated with linear projects constructed over the landscape a distance of miles would likely affect more aquatic resources and watersheds. The LEDPA decision would involve much more than hydrology.

7. The EPA commented on the process of developing the ASAs. The ASA for Alternative A was provided coinciding with the Public Notice issuance. The Alternative B ASA was provided on October 20, 2014 and no ASAs have been prepared for Alternatives C or D. To have ASAs for only two of the Alternatives results in a lopsided analysis of the Public Notice. The EPA encouraged the USACE to further assess the aquatic resource functions associated with Alternatives C and D during completion of the LEDPA analysis.

USACE Response. None of the ASAs were required by the USACE regulatory program rule or policy but voluntarily provided by the applicant per our request and those of resource agencies, including the EPA. The agencies were invited to, and participated in, the development of the ASAs through an extensive coordinated process involving teleconferences, meetings, and review of draft documents coordinated by the applicant and USACE. The FSEIS and the other information listed in our ROD are fully sufficient to analyze the alternatives.

8. EPA questioned the use of the ASA methodology and stated future projects will need to formulate an aquatic resource assessment methodology that is specific to the permafrost-driven ecosystems of the Arctic Coastal Plain. Specific comments included:
a. EPA proposed an edge effect analysis to incorporate the interspersion of habitats on the landscape. This should augment the General Habitat Suitability function.
b. During the site visit of July 8, 2014 the EPA noted Alternative B contained wetter and more interspersed wetlands than Alternative A and the ASAs corroborated this. The EPA also stated additional culverts would be required for Alternative B due to the greater amount of thaw basin geomorphology and associated ground wetness. The EPA then provided tables showing a quantitative comparison of the interspersion factor between Alternatives A and B for gravel pads, the access road, and the pipeline. Then a factor for water and wetland type crossings per acre was calculated showing Alternative A was less (3.85) per Alternative B (4.16). The EPA equated this to providing additional value to wildlife habitat diversity. The EPA stated there would be greater impacts to wildlife habitats under Alternative B and encouraged USACE to consider the potential fish habitat impacts that may be caused by Alternative A compared with the potential avian habitats potentially impacted by Alternative B.
c. The EPA suggested we improve the ASA by including an evaluation of the maintenance of thermal regime, which should also be incorporated in the LEDPA decision.

USACE Response. We have considered and accepted the EPA analysis regarding edge effect and interspersion and the data provided because it can be used factually and in the immediate GMT1 decision process for the evaluation of aquatic resource characteristics and value related to wildlife habitat and production. Within time constrains, USACE used not only the ASAs but also information provided in the ASDP-SEIS and other literature sources to analyze wetland functions, which resulted on a lift of the general habitat suitability factor and overall functional score for some of the aquatic resources (See sections 5.5.2., 6.1.30, and Appendix B of the ROD). We have not accepted their recommendation to include an evaluation of the maintenance of thermal regime in the ASAs. We believe the ASAs have provided with sufficient criteria to evaluate the character and functions of wetlands in alternatives A and B; therefore, we consider that developing another criterion for maintenance of thermal regime would not make a meaningful addition to our evaluation. USACE agrees that more work in this area needs to be done.

However, USACE recommends continuing to address ASA issues on a programmatic basis and not during the analysis and review of individual permits. The FSEIS and the other information listed in our ROD are fully sufficient for our analysis.

1.1.1.3 Enclosure 2. The EPA provided an analysis of the applicant supplied ASAs for the GMT1 project and noted dissatisfaction with the methodologies applied in completing them.
1. The EPA stated the ASA ranked wetlands and waters according to current function and condition, not according to their resiliency or capacity to take on a disturbance.
2. The wildlife habitat classification does not have a reference that correlates wildlife habitat types to a level of use.
3. The ASA methodologies apply to the Lower 48 States and do not apply to the permafrost-driven ecosystem in the project area.
4. The ranking system for individual functions of specific wetlands should be revised to remove N/As (not applicable) from the Rating Criteria.
5. The Flood Flow Regulation function assessment discounts the moderation of flood flows provided by herbaceous vegetation which creates surface roughness. Shrubby vegetation alone should not determine this function.
6. USACE should consider comments from the USFWS regarding the assessment of General Habitat Suitability Function, particularly for the number of mammal and avian species needed to determine what level is determined to be one of high suitability.
7. The EPA expressed concerns regarding the criteria for determining Category I wetland functions. They objecting to: a) the criteria used in the ASA methodology on the N/A rating being counted as a No determination; b) the criterion for documented observation of ESA listed species being used to determine a water or wetland as high value (Category I) without consideration of other characteristics is arbitrary; and c) the EPA believes all permafrost driven wetlands merit a high value Category I ranking because they difficult or impossible to replace within a generation and there is no evidence they will return to full functional value once reclaimed.

USACE Response. We are aware of the EPA concerns over the methodologies and criteria used to evaluate permafrost driven or any other water/wetland in Alaska. We have addressed the EPA concerns on the wetland function ranking approach, which included adding mammal and bird use information for some of the wetland/water types. This resulted in a lift to some of the wetland types' general habitat suitability performance (see sections 5.5.2., 6.1.30, and Appendix B). However, we consider the EPA comments on the evaluation methodology used in the applicant's ASAs to be a regulatory program issue and not completely resolvable here on the GMT1 permit decision. The FSEIS and the other information listed in our ROD are fully sufficient for our analysis.

1.1.2 US Fish and Wildlife Service (USFWS).

The USFWS provided a comment letter with 6 topics of concern related to the potential project impacts and a letter attachment regarding the ASAs developed by the applicant.

1.2.2.1 Letter. USFWS stated the project would set precedents and have consequences that will influence future developments in the NPR-A and they may affect fish and wildlife resources. They emphasized the importance for regional planning for oil and gas development across the NPR-A that w\should assess future projects to minimize access infrastructure to reduce impact on fish and wildlife resources, rare and declining species, species important to subsistence, and subsistence use patterns.

Fish and Wildlife Resources. 1. Fish. Project area studies conducted found the Ublutouch River tributary streams and lake systems to be important for migratory corridors and connectivity to overwintering habitat for several fish species, including invertebrates and prey species for birds.

2. Fish Creek Setback. There is an ecological and cultural importance of Fish Creek and its tributaries recognized for the NPR-A. The USFWS concluded the potential risk of impacts

associated with pipeline spills are reduced with Alternative B with one stream/river pipeline crossings (Ublutuoch River) compared with three river/stream crossings (Ublutuoch River, Crea Creek, and Barely Creek) under Alternative A.

3. Birds and habitat. A detailed list of species occurring within the GMT1 area is unavailable. The USFWS cited long term avian species studies for the Colville River Delta and adjacent areas and listed focal species chosen for subsistence and/or conservation values. They also provided information on non-focal species which were noted by incidental sightings and nest locations for our use and demonstrate there is extensive use to the project area by birds. The USFWS cited there have been 28 habitat types identified within the GMT1 study area (BLM FSEIS) and stated all types are likely to be directly or indirectly impacted by the proposed action. They also provided a list of mammals and ESA listed species that may use the project area.

USACE Response. We acknowledge the statements made by the USFWS on fish and wildlife resources and habitats. The FSEIS and our evaluation of fish and wildlife and their habitats have been fully considered in our analysis.

4. *Alternatives A and B Impacts.* The USFWS described acreages and linear distances for these alternatives and the interspersion occurrences between one water/wetland type to another. The USFWS stated the 7.8-mile Alternative A access road would impact 60.3 acres of wetlands comprised of 9 habitat types and cross through different habitat types 55 times. The 8.6-mile Alternative B access road would impact 66.8 acres of wetlands comprised of 7 habitat types and cross through different habitat types 60 times. They cited Alternative B would impact more acreage of patterned wet meadow and moist sedge-shrub tundra than Alternative A.

The USFWS compared potential resource impacts of these two alternatives and concluded Alternative B has less potential to impact fish and aquatic habitat because of fewer road crossings, water quality, and stream hydrology. The USFWS also stated Alternative B would importantly not be located in the Fish Creek Setback providing more protection to the aquatic resources and subsistence use that occur in the Fish Creek drainage.

USACE Response. We recognize the USFWS has expertise in fish and wildlife resources and habitats in the regional area and do not disagree with their conclusion on habitat evaluations. We do not recognize the USFWS as having expertise in regards to subsistence uses and do not agree that Alternative B would be most protective of the aquatic resources for the project area or the Fish Creek drainage. We have fully considered the USFWS analysis and recommendations and fully evaluated the aquatic resources of the area with a site visit, aquatic site assessments, and other information and data and determined that alternative A would represent overall less impact to the aquatic resources.

5. *Alternatives D1 and D2.* The USFWS stated a roadless approach to development in the NPR-A should be considered for future projects.

USACE Response. We agree with the USFWS that evaluation of a future regional roadless approach to oil and gas infrastructure development in the NPR-A should be considered.

6. Mitigation. USFWS stated that a mitigation package was not attached to the Public Notice. The USACE has stated the applicant is considering a conservation easement located in the vicinity of the Fish Creek Delta; the applicant has completed an Aquatic Site Assessments (ASA) for Alternatives A and B; and will prepare an ASA for the proposed mitigation site. The stated purpose of the ASAs was to establish mitigation debits and credits for the impacts of the proposed project. USFWS objected to the use of the ASAs for the sole purpose of determining adequate mitigation. USFWS added they believe an ASA should be used to determine the placement of the LEDPA and not as an indicator of the impacts after-the-fact.

USACE Response. The applicant's mitigation plan was neither available nor required by federal rule for determination of a complete permit application and to publish in the USACE public notice. Once available, the mitigation plan was provided to the USFWS and other resource agencies. ASAs for Alternatives A and B and the applicant's proposed land preservation mitigation site were all provided to the USFWS and other resource agencies as they became available. The ASAs have not been solely used by USACE for determination of compensatory mitigation as stated by the applicant in the ASAs (calculating debits and credits). The ASAs and other information available to us have been used for determining aquatic resource types, acreages, ploygon areas and configurations, the number and type of functions they provide, and relating those levels of functions to human values. The ASAs also can contribute, in part, to identification of a LEDPA.

7. Cumulative effects. The USFWS encouraged the USACE and BLM to consider a regional plan for development in the NPR-A as outlined in the BLM's 2012 NPR-A Final IAP/EIS as opposed to a project-by-project approach. They stated a regional approach should include future projects to reduce impacts from roads and the cumulative effects, including reasonably foreseeable projects such as GMT2 and Bear Tooth.

USACE Response. USACE agrees a regional perspective and thorough planning process should be considered with the BLM and other resource agencies to reduce potential cumulative effects caused of a westward expansion of oil and gas industry infrastructure.

8. Conclusion. The USFWS final conclusion was the avian and wetland impacts associated with Alternatives A and B are similar. However, Alternative B would result in fewer impacts to fish and aquatic resources, including subsistence species, and would maintain the integrity of the Fish Creek setback.

The USFWS stated they did not object to issuance of a permit provided the following modifications and/or conditions were included in the permit:
1. To avoid disturbance of nesting birds, filling of wetlands shall be avoided during the pre-nesting and nesting season (June 1 - 31 July).
2. All utility lines (power and communication) to drill pads shall be suspended from the VSMs at a minimum elevation of 7 feet above tundra elevation.
3. All lighting on structures will be shielded (downcast) to lessen the potential for migratory bird collision during periods of inclement weather.
4. A predator management plan shall be submitted to the District Engineer and approved prior to construction. The plan shall demonstrate how the applicant will deter ravens, gulls, foxes, and bears from ASDP facilities.
5. Mine site development and reclamation plans shall be submitted to the District Engineer and approved prior to construction.
6. Upon abandonment, the restoration of gravel pads and facilities shall be conducted with the objective of restoring fish and wildlife habitat.

USACE Response. We disagree with the USFWS conclusion regarding Alternative B. We agree with inclusion of recommended USFWS conditions 1-4 and 6 and will include them in an authorization. Recommended condition 5 is not applicable for the GMT1 project as the applicant does not propose any discharges associated with gravel mining. The applicant proposes to purchase gravel from a local source and USACE will require authorizations from them.

1.2.2.2 Attachment 1. USFWS raised concerns about the ASA methodology prepared by the applicant for their proposed action. Below is a summary of their concerns.
a. The USFWS questioned the use of an ASA for the sole purpose of determining mitigation credits and/or debits for impacts associated with the GMT1 project.
b. The USFWS questioned the methodology used in developing the ASA as being derived from the Lower-48 states where most wetlands have been previously impacted where comparisons of impacted wetlands are made differently from Alaska pristine wetlands; undisturbed wetlands should be functioning at high capacity by definition.

c. Many of the North Slope wetlands meet the criteria of Category I wetlands because they are undisturbed and difficult to replace in a generation.
d. The ASA uses incorrect or incomplete metrics to measure Flood Flow Regulation or it evaluates an event that does not naturally occur.
e. The assessment of the Sediment, Nutrient, and Toxicant Removal function is misapplied. The USFWS raised concerns regarding the Diversity of Use section of the General Habitat Suitability section.
f. Habitat preference parameter does not include all bird focal species for NPR-A studies. The preferred habitat question should be expanded to include a more representative suite of species.
g. Some important North Slope habitats are under-represented such as the Arctophila fulva vegetated wetlands.
h. Salt marsh habitats should be considered rare on a regional scale.
i. Ranking system for individual functions of specific wetlands should be revised to remove N/As from the Rating Criteria.
j. It is unclear what constitutes a documented life support function for a threatened or endangered species. But if specific habitats have been documented as breeding or brood habitat for an endangered species, they should be characterized as Category I.
k. The USFWS concluded many North Slope wetlands meet the criteria of Category I (highest value) because they are pristine.

USACE Response. Similar to our response to the EPA comments on the ASAs above, the USACE has accepted the ASAs provided by the applicant and has applied our best professional judgments to the findings, including adjustment to relative and overall functional rankings that resulted in the shift into Category I of several of the wetland types delineated in the project site (see section 5.5.2 and Appendix B). However, the USFWS recommended changes and opinions regarding the criteria used to determine particular wetland/water functions and values must be addressed in a programmatic manner and not here. The FSEIS and the other information listed in our ROD are fully sufficient for our analysis.

1.1.3 US Bureau of Land Management (BLM).

1. *FSEIS.* The BLM noted the USACE intends adopt the BLM's ROD to help in completing our NEPA requirements and if both agencies authorize the GMT1 development, they should make a decision that meets both agency requirements while avoiding conflicting authorizations. The BLM noted the USACE must determine the LEDPA which may be different to the Preferred Alternative in the FEIS.

2. The BLM emphasized Alternative B avoids the Fish Creek Setback per their lease stipulation K-1 established in their 2013 NPR-A IAP (Integrated Activity Plan). The verbiage is provided here as an item of BLM importance in their comments and as the federal land manager:

> "Prior to approving an alternative procedure as part of the authorization, BLM's staff would analyze the proposal and determine if the proposal is incorporating the alternative procedure would achieve the objectives of the stipulations and best management practices. If the BLM determines that the alternative procedure proposed by the applicant would meet the stipulations and best management practices objective, BLM could approve the alternative procedure. If BLM determines that the alternative procedure proposed by the applicant is unlikely to meet the objectives of a stipulation and best management practice, the requirements/standards would still be required. However, the Authorized Officer may allow a deviation from the objectives and requirement/standard in a new decision document supported by additional NEPA analysis."

The BLM stated the Alternative B route minimizes potential disturbances to subsistence areas by locating the proposed access road away from Fish Creek and eliminates bridge and pipeline crossings of Crea and Barley Creeks thus reducing impacts to fish.

BLM understands the USACE must determine the LEDPA and this determination requires full evaluation of the available project alternatives in consideration of the impacts, cost, logistics, and overall public interest decision. BLM indicated they would consider the USACE determination in their final decision and could modify their decision on the alternative selected.

USACE Response. This issue is fully considered and analyzed in the ROD in section 5.9.

3. *Alternatives A and B; Fish habitat.* The BLM described several potential impacts that could occur from construction of permanent road crossings over surface waters and were most concerned with the Alternative A crossing of the Crea and Barley Creeks because of their important seasonal fish habitats. The BLM described the design of these crossings as needing long-term monitoring and re-design if disruption of streambeds and banks lead to erosion and sedimentation.

The BLM provided a table showing the Alternative A 7.8-mile access road would fill 72.7-acres, have 2 bridge crossings of creeks, and need 81 cross- drainage culverts. The Alternative B 8.6-mile access road would fill 80.4-acres, have 1 bridge crossings, and 91 cross drainage culverts. A second table comparing high water ponding for Alternative A was 2,630-acres compared to 2,939-acres for Alternative B and low water drying of 470 for Alternative A and 525-acres for Alternative B.

The BLM stated the distance from the access road and pipeline to fish-bearing streams and lakes in Alternative makes the potential impacts much less than Alternative A. The BLM determined under Alternative B the intensity could be "low" and the duration "temporary", while under Alternative A and C the intensity could be "medium" and the duration "interim" for fish habitat, and "long-term" for fish.

The BLM noted the potential impacts caused from the Crea and Barely Creek crossings of Alternative A, with the shorter road length and reduced fill area, were not as preferable as Alternative B, with a slightly longer road and no creek crossings even through it would be routed through wetter terrain. The potential future impacts to fish habitat and passage due to channel erosion and sedimentation or improper culvert design, and the possibility of spills entering the Ublutuoch River system, made BLM believe Alternative B is a slightly better alternative for water resources.

USACE Response. We agree with the BLM on the need to minimize the impacts to protect the aquatic resources and fish habitats at the crossings of the Ublutouch River, Crea and Barely Creeks, including those ponds, lakes, and wetlands supporting the fish habitats. River and creek crossings need to be designed for passing expected high and low flows and protection of substrates, banks, and riverine areas. Cross drainage culverts must be placed in the access roadbed throughout the road length to retain drainage patterns and ensure surface waters do not divert between watersheds.

We do not agree with the BLM Alternative B would cause less damage to the aquatic resources, including the fish and other aquatic life habitats. Based on our evaluation of the aquatic resources potentially impacted by Alternatives A and B, the Alternative B route would cause a greater loss of aquatic resources and impact higher value wetlands. This determination is supported by protective special permit conditions at the Crea and Barely Creek crossings to ensure fish and other aquatic organism are protected to the maximum extent practicable. Similar permit conditions would ensure all watersheds affected by the access road and drillsite be constructed, monitored, and maintained to protect aquatic resources and aquatic life.

4. *Hydrocarbon spills.* The BLM stated Alternative A has a greater potential risk to transport oil spills from the pipeline or road because of its proximity to the 2 creek crossings. Conversely, Alternative B would avoid the 2 creek crossings and be located in an area with thaw basins with generally wetter and flatter terrains where spills are less likely to migrate off-site.

USACE Response. We agree with the BLM that it's important to protect potential hydrocarbon spills from entering waters draining toward the Fish Creek corridor. The topographic gradient throughout the general project area is toward the north and the Fish Creek corridor. This makes a potentially large pipeline spill easier to remove and clean when the pipeline is located south of the access road, as would be with Alternative B, as oil would drain toward the access road embankment where it could be contained easier.

Both Alternatives A and B pipeline routes cross the Ublutouch River, where a spill would be most likely to have the largest impact and potential to migrate downstream (especially during the thaw season) to the Fish Creek corridor or beyond. The pipeline crossings of Crea and Barely Creeks would be the next highest risk for a hydrocarbon spill to enter the Ublutouch River and potentially reach Fish Creek. There are also pipeline crossings with Alternatives A, D1, and D2 at 2 unnamed drainages/creeks between the Ublutouch River and the CD5 drillsite. These sub-watersheds lead to the west and empty into the Ublutouch River as well. There watershed boundaries have not been delineated. Alternative B does not appear to cross their channels, but may be within their headwaters; as it would be located on the south side of the Alternative A (proposed) access road. If a spill occurred during the winter with frozen waters conditions, the potential to access and clean-up spills would be relatively neutralized for each alternative.

A hydrocarbon spill along the Alternative B route would be of greater impact to wetter and higher value wetlands and could migrate to nearby lakes and ponds within the Crea and Barely Creek watersheds, including fish habitats. Distances between the access road and pipeline for spill clean-up activities on either Alternative A or B would be relatively the same (around 500-feet). The chance of a pipeline leak or spill is the same regardless of the pipeline route and relatively low, given the oil industry's record on the North Slope. If a large oil spill occurred, it would likely have less impact with Alternative B. The FSEIS and the other information listed in our ROD are fully sufficient for our analysis. See section 5.9.4 of the ROD.

5. *Vegetation and wetlands.* The BLM stated Alternative B would have greater direct and indirect impacts (dust fallout and soil moisture changes) than Alternative A. The direct impacts of B would be 0.007 percent greater than for A and indirect impacts 0.065% greater. The BLM stated in the context of the area ecology and when these differences are compared to the larger project study area, the difference is truly negligible.

USACE Response. We do not agree with the BLM that Alternative B would cause less direct and indirect impacts to vegetation and wetlands. Our analysis has shown the opposite and we believe the area general ecology will be less impacted with authorization of Alternative A. When a comparison of the small acreage differences between the Alternatives A and B is made to the overall FSEIS study area, the differences become too reduced to be meaningful.

6. *Subsistence.* The BLM stated they FSEIS determined the impacts to subsistence will be of high intensity, long-term duration, of unique context, and have a regional extent. The BLM stated the impacts of Alternatives A and B would be similar in type and intensity. However, they noted Alternative B would have fewer impacts on subsistence because of potential impacts to fish. The BLM provided a survey summary of Nuiqsut subsistence use (Native Village of Nuiqsut (NVN) council members showing a preference for Alternative B because of the reasons listed below.

a. The route of road and pipeline is closer to town, resulting in less impact and fragmentation of the larger resource habitat and hunting area.
b. The route would avoid the Fish Creek buffer.
c. There would be fewer river crossings.

The BLM stated they heard consistent local support in Nuiqsut for a route that includes fewer river crossings and concluded this represents the overall public interest. This conclusion is one of the primary reasons they identified Alternative B as the agency's preferred alternative.

USACE Response. In regards to the subsistence impact differences between Alternatives A and B, we believe they would be relatively similar. The reference to Alternative B as preferred by the NVN council members is not consistent with their public notice comment letter we received and the follow-up teleconference to clarify this preference. NVN informed us they prefer Alternative A.

1.1.4 National Park Service.

The National Park Service stated they had no comments as the project is not located near a national park unit, national natural landmark, national historic landmark, wild & scenic river, national trail, DOT 4(f) property, or L&WCF 6(f) property for which they have responsibility.

1.1.5 National Marine Fisheries Service.

NMFS did not submit any comments on the Public Notice.

1.1.6 US Coast Guard.

The US Coast Guard did not submit any comments on the Public Notice.

1.2 Federally Recognized Tribes.

1.2.1 Native Village of Nuiqsut (NVN).

The NVN submitted the comments specifically addressing the Applicant Proposed Mitigation section of the USACE public notice.

1. The NVN stated under the Avoidance section (PN), the applicant listed a series of mitigation measures but the proposed development of gravel roads in wetlands represents a change to the ecology of the area in a number of ways. No evidence is presented the proposed mitigation measures are based on solid science and traditional ecological knowledge. NVN is aware of several ongoing studies that would be applicable when completed but adequate science is not currently available to ensure that the proposed mitigation measures are the best available for the local area. NVN requested the USACE base their review on all existing scientific and traditional knowledge to ensure that ecological impacts are understood and mitigation measures are appropriate.

USACE Response. We agree with the NVN and will base our permit decision on the best available science, data, and traditional knowledge available to us at this time.

2. A better alternative for routing the pipeline (sic, access road) would be on the higher bluffs away from the marshy areas as proposed by the applicant. This route is preferable even though it would increase (sic decrease) the pipeline (sic, access road) length and be placed 1/2 mile closer to the Fish Creek setback.

USACE Response. Because this recommended condition was unclear from the references to the access road and the pipeline, a teleconference with the NVN was held on December 9, 2014 to review all their comments for clarity.

The teleconference with NVN Tribal Council members disclosed there were mistakes in their written comments and they recommend the Alternative A access road be constructed. NVN opposes the southern access road route as it would be in the wetter marshy areas of Alternative B and it would be a longer route with more fill material. NVN would prefer to keep the access road and pipeline out of the marshy areas of Alternative B. NVN disclosed they had told BLM they first preferred Alternative B but were somewhat troubled with the survey questions posed to them earlier and had since reconsidered.

3. NVN would like to see chip seal or other technique used on the gravel to greatly reduce dust generation. They would also like trail cameras mounted along the access road and pipeline to monitor for wildlife for research to use on subsistence impacts from the construction.

USACE Response. We agree with the NVN the access road would be constructed on higher and drier soils to provide a supportive base for road construction. The recommendation to require chip seal on the road surface and mounting cameras for wildlife monitoring will be considered after an opportunity to comment on these issues has been provided to the applicant to determine cost, use, safety issues, etc. From test areas in the Prudhoe Bay area, chip sealing of gravel roads has been shown to reduce dust generation, but not been shown to be a stable road surface because of freeze/thaw cracking and may not be cost efficient.

4. The NVN suggested a road dust mitigation plan to reduce impacts to surrounding vegetation and local health problems. Increased dust tundra causes early snowmelt within 30 to 100 meters of roads, decrease mosses and lichens and an increase in minerotrophic mosses.

USACE Response. We agree with the NVN and the applicant has supplied a road dust mitigation plan within their Alpine Satellite Development Maintenance Plan 2012. Permit conditions will require adequate gravel surface dust abatement be performed at all dust prone weather conditions/seasons.

5. NVN noted construction activities require high power lighting systems link to various negative health effects in animals and humans. They requested a lighting mitigation measures to reduce impacts to wildlife.

USACE Response. We agree with the NVN and the applicant has supplied a lighting plan with their Alpine Satellite Development Maintenance Plan 2012. Permit conditions will required artificial light sources not be projected up and out but downward.

6. NVN noted the applicant (USACE) will be coordinating with the USFWS to complete ESA requirements for endangered species monitoring during construction to determine impacts on species populations. NVN requested best practices real-time wildlife monitoring system is continued during operations once the road and pads are completed to mitigate the impacts on the movement/migration of wildlife through the project area.

USACE Response. A biological assessment was prepared by the applicant as the federal representative and a USFWS final biological opinion (BO) was provided to BLM and USACE as joint action agencies. The USFWS did not include action agency non-discretionary terms and conditions because an incidental take statement could not be made without knowing what project alternative would be permitted by the BLM and USACE. The USFWS provided an amended BO which included a Conservation Recommendations (discretionary) for BLM and USACE to monitor for threatened eiders and BLM special status species in the action (project) area. We have included a permit condition for eider sighting, recording, and reporting.

1.3 State agencies.

None of the following state agencies submitted comments on the Public Notice.
Alaska Department of Fish and Game – Division of Habitat (ADF&G)
Alaska Department of Natural Resources (ADNR), Office of History and Archaeology (OHA)
Alaska Department of Environmental Conservation (ADEC) Other State Agencies

1.4 Local Government.

1.4.1 City of Nuiqsut.

The City of Nuiqsut commented in a joint letter with Kuukpik Corporation. See below section 1.6.2.

1.4.2 North Slope Borough (NSB)

1. The NSB stated they have historical support for onshore oil and gas leasing and operations as opposed to offshore development and they always need such activities to be conducted so there is no interference with the residential subsistence way of life.

The NSB stated GMT-1 is unique because it's the first major project geared towards developing Iñupiat owned natural resources which will benefit the shareholders of Kuukpik Corporation (Kuukpik), the Arctic Slope Regional Corporation (ASRC), the NSB, State of Alaska, and villages relying on funding from NPR-A grants. The NSB supports the GMT-1 project and Alternative A because of it incorporates rigorous mitigation and best management practices to enable it to move forward in a responsible manner and it also has the smallest gravel footprint.

USACE Response. We acknowledge the importance the proposed GMT1 project for NSB tax revenues, Kuukpik, ASRC, and the Iñupiat subsistence way of life. The project would also have a positive effect on local and state economies. The State of Alaska would not realize the level of revenues possible if it were located on State lands.

2. The NSB emphasized the importance of subsistence and is strongly opposed to any alternative that includes a road-less development or seasonal drilling as they would:
a. Require heavier air traffic, which could cause negative impacts to subsistence hunters through deflection of caribou;
b. Present greater risks to life, health, and safety due to weather delays; and
c. Have negative environmental consequences due to increased difficulty in responding to an oil spill or similar event.

The NSB stressed the importance of the proposed road vehicle pullouts as they are important for safety and subsistence activity access. They also serve as a mitigation measure for the impacts development will have on subsistence. The NSB referenced a Borough Code requiring subsistence user access to subsistence resources.

USACE Response. We agree with the NSB the road-less alternatives would cause greater impact to subsistence hunters and caribou herds; cause greater risk in providing all-season safe access and spill containment and clean-up; and the vehicle pull-outs would increase safe use of the industrial road by subsistence users. We do not agree fill placed in wetlands for vehicle pull-outs will mitigate for aquatic resource losses/impacts.

3. The NSB requested the USACE include and health/social impact assessment in our evaluation, i.e., evaluate a baseline health status and potential health/social impacts of each alternative, and a means to mitigate any potentially significant effects. This would include use of the FSEIS and the new study Health Indicators in the North Slope Borough: Monitoring the Effects of Resource Development Projects.

USACE Response. The lead federal agency for NEPA is responsible for conducting a health/social impact assessment as has done so in their FSEIS. We have included assessments in our evaluation for the Needs and Welfare of the People and General Health. See sections 6.1.20 and 6.1.23.

1.5 Non-government Organizations.

1.5.1 Audubon Alaska, The Wilderness Society (Alaska Wilderness League), Center for Biological Diversity, Conservation Lands Foundation, Natural Resources Defense Council,

Northern Alaska Environmental Center, Pacific Environment, and Sierra Club (Audubon et al).

Audubon et al submitted a request for a 30-day time extension to our GMT1 public notice (PN) to allow more informed participation in the wetlands permitting process. They were most interested in additional time to review the FSEIS prior to final comment.

USACE Response. We understand the Audubon et al desire to have the FSEIS to review in combination with our public notice describing the applicant's proposal for a full suite of the latest information and analyses. However, we determined a 45-day period, which was an additional 15-days beyond the standard comment period, was sufficient to allow comment on the applicant's proposal and denied the request for a time extension. We were required by regulation to publish a PN once a complete DA permit application had been received from the applicant.

1.5.2. Audubon Alaska and The Wilderness Society (AA and TWS).

1. *Public notice.* AA and TWS noted our public notice comment period closed one day after the release of the FEIS and insufficient time was allowed to review the document and comment in an informed manner.

USACE Response. We attempted to time release of our PN by working with the applicant and BLM in release of their FSEIS. Because completion of the FSEIS was delayed, and the applicant's submittal of a complete permit application, we were required to publish the public notice within 15-calendar days. A decision to extend the 45-day comment period was found to be not warranted.

2. *Road-less alternative.* AA and TWS opposed the issuance of a DA permit for the proposed action because of the destruction of wetlands and believed it will have very significant impacts. They were concerned with a decision to build a year-round road instead of requiring aircraft access and have yet to see a substantive analysis that would justify an all-season road being the LEDPA or make a public interest decision.

USACE Response. We have fully considered the 2 road-less Alternatives D1 and D2 in our alternatives analysis and determined these would cause more adverse impact to the aquatic environment, have other environmental impacts, and not be practicable alternatives and therefore not chosen them as the LEDPA. See section 3.5.

3. *Regional mitigation plan.* AA and TWS believed with an appropriately analyzed and designed project to permit, the USACE and BLM have an opportunity to develop a forward-thinking compensatory mitigation plan using a watershed and landscape-level approach to ensure a comprehensive mitigation strategy for the region. A mitigation-shed approach in the region should include the Teshekpuk Lake and Colville River Special Areas as well as all lands available for leasing between the special areas west to the Ikpikpuk watershed.

USACE Response. We support a future planning effort to partner with the BLM and other secondary agencies and organizations to explore whether a programmatic mitigation plan can be developed.

4. *Resource impacts.* AA and TWS commented the areas where the GMT2 and Bear Tooth potential future development projects would be within valuable fish and wildlife areas important for subsistence uses. The GMT1 project area is within the Colville River Delta Important Bird Area (IBA), established for continentally significant breeding populations of Pacific Brant, Spectacled Eiders, and Yellow-billed Loons. AA and TWS noted the access road may pass through the Fish Creek Setback which provides essential fish habitat and sensitive overwintering of fish. They also provided a computer link to Audubon's website and a description of the Colville River Delta areas and bird resource information. AA and TWS noted they had provided an

analysis to BLM regarding a Cumulative Effects Area (CEA) for birds in the Greater Moose's Tooth, Bear Tooth, and Colville River areas which demonstrates the importance of the area. Overall, WatchList species (Pacific Brant, King Eider, Red-throated Loon, and Yellow-billed Loon) occur at almost twice the density within the CEA compared with the entire NPR-A.

USACE Response. We agree with AA and TWS that future development projects may also be within important NPR-A fish and wildlife areas and the IBA provides for valuable fish and wildlife resources of high importance. We also recognize the Fish Creek corridor and delta are important for subsistence harvesting a provide much of the same resource attributes. We believe the aquatic resources in the Fish Creek Setback; can be protected with restrictive conditions included on an authorization for the proposed action as the LEDPA.

5. *Compliance with the Guidelines.* AA and TWS stated USACE cannot conclude the GMT1 project meets the CWA 404(b)(1) Guidelines due to lack of information. They contented BLM had not performed the analysis necessary to conclude road access is environmentally preferable to aircraft access and without this, USACE conclude a road access is the LEDPA.

USACE Response. We disagree with AA and TWS. There is a sufficient amount of information available to us to make a determination regarding compliance with the CWA Section 404(b)(1) Guidelines to determine a LEDPA for a permanent access road or road-less design. We have used the information in the FSEIS and all other information available to us. See section 5.0.

6. *Public interest decision.* AA and TWS described where the FSEIS includes discussion how a seasonal drilling alternative could eliminate the need for a year-round permanent road and decrease the airstrip footprint in a road-less alternative. AA and TWS noted there are excellent environmental reasons to consider the seasonal drilling/ice road option and more is required before the USACE can make a public interest determination.

USACE Response. We believe the FSEIS and other information available to us provided adequate information and data to fully consider the road-less alternative with seasonal drilling in our decision.

7. *Compensatory mitigation.* AA and TWS believe future developments in the NPR-A and other parts of the North Slope can be best compensated through an in-lieu fee program based on a comprehensive mitigation-shed plan and advocate a regional-scale mitigation planning perspective. They attached a set of comments submitted to the BLM promoting development of a conservation plan for the NPR-A northeastern region.

USACE Response. We agree with AA and TWS a programmatic or regional-scale mitigation strategy may be appropriate for the NPR-A in association with the BLM. It is too early in this analysis to determine whether an in-lieu fee program would be the most environmentally preferable type of mitigation for each proposed action.

8. AA and TWS concluded the GMT1 project will have very significant impacts on the aquatic environment regardless of its final form and USACE needs a careful analysis of road access versus aircraft access and seasonal development before making the Guidelines compliance and public interest determinations. They stated the process also requires informed public comment which the USACE has effectively avoided by refusing to grant an extension to the comment period with publication of the FSEIS. AA and TWS enclosed a copy of their recommendations to the BLM based on the Department of Interior Mitigation Strategy Report to the Secretary of April 2014.

USACE Response. We disagree with the AA and TWS all forms or designs of the proposed GMT1 action would have very significant impact on the aquatic resources given the available and practicable alternative project designs, locations, and mitigation, including compensatory

mitigation. We believe the opportunity to provide us with informed public comment has been provided with our 45-day public notice.

1.5.3 Alaska Wilderness League, Center for Biological Diversity, Conservation Lands Foundation, Natural Resources Defense Council, Sierra Club, and The Wilderness Society (Alaska Wilderness League et al).

1. *Regional impacts.* Alaska Wilderness League et al opposed issuance of a permit for the project because it is one piece of a significant and growing cumulative impact associated with the petroleum development in the regions. Building a permanent gravel road in arctic wetlands will have significant impacts to the aquatic environment and wildlife resources of the region. They believe current information is not conclusive on whether a permanent, all-season road would have more environmental and social impacts than aircraft access, ice roads, or seasonal development.

USACE Response. We disagree with the Alaska Wilderness League et al the proposed GMT1 action would have a significant impact on the aquatic resources of the region as there are available alternative project designs to reduce the adverse impacts to a local extent. In addition, an acceptable level of impacts can be obtained with application of appropriate mitigation measures, including compensatory mitigation.

2. *Public notice.* The USACE denied an extension of the public comment period which effectively deprives the public the opportunity to review the project's impacts and is contrary to the letter and spirit of the USACE regulations, the Clean Water Act, and NEPA. USACE closed the public comment period one day after the BLM released the Final SEIS. This is an insufficient amount of time to evaluate over 1,500 pages and incorporate the information into a comment and contrary to the USACE's own regulations, the CWA, and NEPA. Without timely public engagement, the USACE should not issue a permit. The comment period did not allow for adequate time to review the seasonal drilling alternative as it applies to the Section 404 permit.

USACE Response. We disagree with Alaska Wilderness League et al we denied them the opportunity to provide comments to us on the applicant's proposal by publication of a 45-day public notice. We attempted to time release of our public notice by working with the applicant and BLM in release of their FSEIS. Because completion of the FSEIS was delayed and the applicant's submittal of a complete permit application, we were required to publish the public notice within 15-calendar days. A decision to extend the 45-day comment period, for the applicant's proposed project, was found to be not warranted as we had already provided additional 15-days more than usual for our standard permit process reviews. There was sufficient time and information for public comment on the application.

3. *Guidelines.* Alaska Wilderness League et al contended the GMT1 proposal does not meet the CWA 404(b)(1) Guidelines and USACE has not considered the full range of practicable alternatives to the proposed access road route and should consider Alternatives D-1 and D-2, including a roadless, seasonal drilling approach as the LEDPA. The USACE must look at practicable alternatives and a seasonal drilling approach is proven, viable, and reduces impacts on wildlife and subsistence activities as compared to an all-season gravel road with the existing ConocoPhillips CD-3 drillsite used as an example. Alaska Wilderness League et al concluded USACE should provide another opportunity to submit comments by following CWA and NEPA regulations for meaningful public engagement.

USACE Response. We have considered the full range of available practicable alternatives in making our decision, including the road-less seasonal drilling alternative described in the FSEIS. We have followed the CWA and NEPA regulations in providing adequate opportunity for public engagements with our 45-day public notice. The conditions of the applicant's CD3 development have not demonstrated a GMT1 road-less proposal can be developed as a practicable

alternative. The applicant has not changed their proposal and we do not believe additional new information would be obtained for our consideration in the decision making process.

4. *Public interest.* Alaska Wilderness League et al stated the project is not within the public interest. Roads created for oil and gas development becomes a network of roads promoting other forms of incompatible development and degrading the natural area. Construction and use of roads is the most damaging and upon abandonment their fate is left uncertain and their impacts similarly unpredictable. Fewer roads mean less gravel extraction, less widespread construction activities, traffic, and less habitat fragmentation. The Greater Moose's Tooth and Bear Tooth Units will have significant impacts in the region; proposed action will be within the Fish Creek setback and Colville River Delta Important Bird Area. Roads can impede caribou migration patterns and lead to herd declines.

USACE Response. We believe the proposed action is within the public interest with the inclusion of appropriate resource protective permit conditions and mitigation. The access road and fill areas are the minimum necessary to meet the project purpose and not cause unacceptable adverse impacts to the aquatic environment.

5. *Conclusion.* Alaska Wilderness League et al stated USACE should not issue a permit for the GMT1 project as it does not minimize impact to the region's aquatic environment and required careful analysis of the impacts from a road, aircrafts, and seasonal development to determine a LEDPA. The public should be allowed full access to information and ample time to review latest analyses to provide meaningful input and allow another public opportunity to submit comments after full digestion of the FSEIS.

USACE Response. We believe a permit decision can be made which minimizes the adverse impacts to the aquatic environment in the project area. Careful analysis of the impacts from alternative designs including roads, aircrafts, and seasonal development has been completed to determine a LEDPA. The public has been provided the information and time through the NEPA process and public notice.

1.6 General Public.

The ASRC, Kuukpik Corporation/City of Nuiqsut, 28 individuals representing their employer or own interests, and 3 industry support groups (Consumer Energy Alliance, The Alliance, and Resource Development Council) provided comments.

1.6.1 Arctic Slope Regional Corporation (ASRC).

1. *History and importance.* ASRC informed us the development of GMT1 would include Native-owned resources within the NPR-A to a degree never seen before as their subsurface estate contains 90% of the GMT Unit hydrocarbon resources. Through ANCSA land selections, ASRC (subsurface) and Kuukpik Corporation (surface) selected more than 15,000 acres of federal land in the northeastern area of NPR-A. The applicant received approval from both the BLM and ASRC to form the Greater Moose's Tooth Unit. Development of GMT1 is of critical importance to ASRC and its Alaska Native shareholders to help shareholders increase economic and development opportunities with the region and preserve the Iñupiat culture and traditions. GMT1 will help maintain North Slope production and the tax-base of the NSB.

USACE response. We recognize the high importance of the proposal for the ASRC, it shareholders, regional Native Alaskans and other residents, for economic benefit subsistence access, and related secondary benefits.

2. *Alternative A.* ASRC supports the applicant's proposed project, feel it represents the LEDPA, and also support Kuukpik in their efforts to design a project (Nuiqsut Spur Road) that meets the needs of the community of Nuiqsut. ASRC stated Alternative A responds to concerns from

Nuiqsut regarding aircraft traffic in and around the village as road access will reduce the number of flights and allow access for subsistence hunting in the Fish Creek area. The Alternative A road location has less direct and indirect wetland impacts than a road located outside the Fish Creek buffer. ASRC has heard the majority of people in Nuiqsut would rather see the road route inside the Fish Creek buffer as it outweighs re-routing the road to the lower moister route. Kuukpik has built a road to the CD-5 access road with their Nuiqsut Spur Road in part anticipating the GMT1 development opening up a broader area for subsistence activities.

USACE Response. We agree with ASRC the applicant's proposed action represents the LEDPA and the project may provide additional subsistence access; aircraft traffic from a road-less alternative, which would necessitate an airstrip, would cause greater noise and disturbance to caribou and subsistence hunters; and Alternative A would cause less direct and indirect impacts to aquatic resources.

3. *Mitigation.* ASRC commented the applicant should receive credit for the 24 percent reduction in fill resulting from the relocation of the drill pad outside the Fish Creek buffer since from the 2004 proposal. Utilizing existing Alpine infrastructure reduces impacts from additional fill construction. Several proposed mitigation measures are innovative and accomplish multipurpose goals. Several aspects of design are a direct reflection of consultation with local residents and entities in Nuiqsut.

USACE response. We will not be providing credits to the applicant for revising their proposed design since 2004 as it is required by federal regulation to avoid and minimize impacts to aquatic resources as practicable.

4. *ASRC proposed mitigation bank.* ASRC requested their proposed Umbrella Mitigation Bank be considered for use for project compensatory mitigation requirements. If the DA has not approved the bank prior to issuing a ROD, then ASRC requested the applicant pay an in-lieu fee to an established in-lieu fee program sponsor and the in-lieu fee program purchase ASRC Bank credits when they become available. If the ASRC Bank is not approved within 1 year of the ILF payment date, then the funds may be used for other purposes on the North Slope.

USACE Response. The USACE 2008 Mitigation Rule does not provide for using approved in-lieu fees sponsors to operate as escrow account managers. We will be unable to use the ASRC mitigation bank unless it becomes approved by USACE for credit purchases.

1.6.2 Kuukpik Corporation (Kuukpik) and the City of Nuiqsut (City).

1. *Background.* Kuukpik/City described their position as historically supporting balanced and environmentally responsible development and Kuukpik is one of the largest landowners in the NPR-A. Kuukpik owns the land where much of the GMT1 proposed action would be constructed on the eastern portion. Kuukpik has contacted by any federal agencies as the landowner to discuss the proposed project and mitigation measures. CPAI has not rights to grant access to third parties on their lands. Kuukpik/City commented not enough time was available between the publication of the BLM's FEIS and the close of the Public Notice comment period to review and analyze the document and provide comments on the 404 notice.

2. *Subsistence and alternative preference.* GMT1 only offers an offsetting local subsistence benefit if connected by road. Kuukpik/City support Alternative A which is has clear differences from Alternatives C and D for fewer impacts of the Native community. Alternative B would be less desirable, but is also acceptable. Alternatives C and D are not preferred.

The most important determinant for favoring Alternatives A and B is they would minimize impacts in Nuiqsut while also creating improved subsistence access. Instead of an oil project removing subsistence critical areas from the available subsistence harvest areas, the project offers the prospect of improved access by connecting the GMT1 via the CD5 access road and Nuiqsut Spur

Road. Without this road connection to access the subsistence lands to the west, the project's benefits do not outweigh its impacts to Nuiqsut. Subsistence impacts are part of the USACE analysis. USACE should only issue a permit for a project that facilitates subsistence access. Kuukpik/City suggested the applicant also provide for snowmachine access be creating flatter slopes at select fill area locations. The drillsite should include space for Nuiqsut resident parking for subsistence activities.

USACE response. We recognize Alternatives A and B would provide additional road access to subsistence harvest areas north and west of Nuiqsut more than the other alternatives. We have fully considered the implications of subsistence in our analysis. Providing snowmachine access and parking from authorized fill areas could be accomplished by the applicant without further authorization from the USACE, if permitted.

3. Building the road in the Alternative B location would have more impacts on surrounding wetlands from fill and increased dust. The road would be located in an ice-rich thaw basin, one of the least desirable types of terrain for road building. The Alternative B road would have more impacts on the environment and subsistence resources than Alternative A. The limited intrusion of the Alternative A road into the southern edge of the Fish Creek buffer is acceptable under the circumstances. There is no basis to conclude the impacts of Alternative B, outside of the Fish Creek buffer, outweigh the value of decreasing those impacts in Alternative A. Kuukpik/City stated the BLM should grant and exception to their stipulation and allow construction within the Fish Creek buffer with Alternative A.

Alternative A is the LEDPA as it uses the least amount of gravel, water, and has the smallest footprint; offers meaningful benefits to the community that outweigh impacts; and has fewer impacts from prior proposals. Kuukpik/City recommended the bridge crossings at Crea Creek and the Ublutouch River not place fill below their ordinary high water mark. Both bridges must span the water sufficiently to prevent scouring and minimize erosion. The Ublutouch River construction must place piers outside of the summer flow water level. Kuukpik/city suggested construction of vertical support members (VSMs) be sufficiently sized from the GMT1 drill site to CD5 for a future 24-inch pipeline to avoid future wetland impacts.

Alternative C is neither practicable nor buildable. The applicant has stated they will not use the Nuiqsut Airport and Kuukpik has informed BLM by letter they will not allow their private Nuiqsut Spur Road to be expanded for their use on BMT1. The impacts of Alternative C would be substantially greater than those of Alternatives A or B and would fundamentally alter Nuiqsut.

Alternatives D1 and D2 offer no environmental benefits, significant adverse impacts, and to not provide subsistence access by road. Alternative D is requires duplication of facilities and extra footprint which cancels out the savings from eliminating a road. Alternative D requires a far greater amount of water due to reliance on ice roads. A roadless alternative would put additional stress on local waters and the resources that depend on them. A roadless alternative would also be inaccessible for an unacceptably high percentage of time due to weather shutting down flights.

Under the Alaska Native Claims Settlement Act (ANCSA) federal agencies should defer to Native development decisions and preferences, such as Alternative A, as much as possible, with other statutory requirements allow.

Kuukpik/City concluded by stating there is no practicable alternative having less adverse impacts on the environment and their community than the CPAI proposed action of Alternative A.

USACE Response. We have fully considered the Kuukpik/City comments and agree with most of their comments regarding alternatives, resources, subsistence access, and technical design issues. We do not agree Kuukpik Corporation and the City of Nuiqsut preferences should be given priority over others in our public interest decision.

1.6.3 Other public comments.

Members of the public, industry support groups, and individuals.

These comments all supported the proposed action and involved variation of these themes listed below.

1. Peak production from GMT1 is estimated at approximately 30,000 barrels of oil per day and would help offset declining North Slope production.
2. Development would provide benefits to local, state, and national economies through local hire for jobs created during construction and operations, tax revenues, royalties, and new resources to help meet domestic energy demand.
3. Development will also provide significant economic benefit to Alaska Natives on the North Slope as well as throughout the state through direct payment of royalties and revenue sharing among the Alaska Native Regional Corporations.
4. Alternative A will have the least impact to the wetland environment. The proposed project has been modified to reduce environmental impacts and overall gravel footprint.
5. Alternative D, the aircraft and ice road access alternative, has a larger gravel footprint than Alternative A because of the need to construct an airstrip and a larger gravel pad to accommodate more equipment and a camp.
6. Alternative A has the lowest estimated emissions because it requires the least amount of new infrastructure and eliminates the need for airplane support.
7. The proposed action includes subsistence mitigation in the design in support of subsistence resources and access. The drill site location was moved out of the Fish Creek buffer to provide additional protection to this area. Road access will avoid the need for air traffic to the drill site, which is the number one complaint of subsistence hunters.
8. Pipeline design standards of a minimum of 7 feet high and separation from the road were developed to ensure caribou movement is protected for subsistence hunting.
9. The proposal has incorporated three parking pull-outs to support safety and subsistence access.
10. The currently proposed GMT1 project (formerly CD6) is essentially the same as that approved for permitting in 2004.
11. A review of new data and information shows there are no appreciable changes in the physical, biological, or social resources associated with the project study area. New data includes multi-year studies on hydrology, birds, and caribou.
12. The road is needed for emergency spill and safety response.
13. The proposed action would include a gravel road connection to the main Alpine facilities. The road is necessary to ensure that the operator can respond to any environmental and safety issues in an adequate and timely manner. Alternative D would not allow adequate access (on bad weather days, there would be no access) to emergency response resources and creates significant environmental and safety risk.
14. NPR-A was intended for petroleum extraction.

USACE Response. All comments have been fully considered and do not represent any new issues not being analyzed in the FSEIS and USACE evaluation.

Applicant's Interpretation of Comments Received and USACE's Responses to Applicant's Information

Federal Agencies.

U.S. Fish and Wildlife Service (USFWS).

A-001-001
The Service has concluded the road routes for Alternatives A and B would have similar impacts to avian nesting and feeding habitats. Similar acreages of wetland habitats (patterned wet meadow, old basin-wetland complex, moist sedge-shrub tundra and tussock tundra) would be directly or indirectly impacted by either road route. These habitats are among the 18 habitats described in the GMT-1 area that are utilized by focal species, including spectacled and king eiders, tundra swan and greater white-fronted goose (BLM 2014). The routes also would cross through similar number of habitat edges (55 vs. 60 crossings) between the proposed GMT-1 pad location and the intersection of the CD-5 access road. This indicates both routes likely would impact an assemblage of habitats in close proximity to one another and therefore may impact a more diverse avian fauna than a route through a single habitat type (Wiens et al. 1985).

Applicant Response. CPAI agrees that impacts to birds would not be significantly different between Alternatives A and B. However, CPAI would like to point out that given the characteristics of the wetlands (such as more interspersed wetlands) along the Alternative B route, overall direct and indirect impacts to birds would likely be greater.

USACE Response. We agree with the USFWS and CPAI that Alternatives A and B have similar impacts to avian species in the project area. We reviewed the functional assessments conducted for both alternatives. Using best information available including, but not limited to, USEPA and USFWS comments, USACE adjusted the general habitat suitability scores on several aquatic resource types. Five waters and wetlands were adjusted from moderate to high functioning and two were adjusted from low to moderate functioning (see Section 5.5.2 and 5.9.4 in the USACE ROD).

A-001-002
The Service has concluded Alternative B has less potential to impact fish and aquatic habitat than Alternatives A. The Alternative B road route would have fewer stream crossings (one vs. three crossings), thereby reducing several potential fish passage barriers to important feeding and overwintering areas. Fewer stream crossings would also lessen the potential for impacts to water quality and stream hydrology. The Alternative B route comes to within 500 feet of only one fish-bearing lake instead of three fish-bearing lakes under Alternative A.

Applicant Response. CPAI disagrees with FWS that Alternative B has fewer potential fish and aquatic impacts than Alternative A. The Alternative A alignment intentionally crosses both the Crea Creek and Barely Creek drainages lower in the drainage where channelized flow occurs. The channelized flow of both creeks is beaded in nature at the point of the proposed crossings. In contrast, the Alternative B alignment passes through the uppermost portions of the Crea Creek and Barely Creek drainages through persistently saturated or flooded wetlands where there is no channelized flow. CPAI has determined that Alternative A has less potential for upstream ponding due to the channelized flow and the bridge over Crea Creek. Alternative B will require a greater number of culverts and could result in minor ponding upstream of the road, but the volume of ponding relative to total runoff volume would be small.

USACE Response. We are aware of and have considered the value of the fish habitat areas between Alternatives A and B and the Fish Creek Setback. USACE also believes properly designed stream crossing structures will avoid and minimize impacts directly associated with impediments to fish passage. See sections 5.5.2 and 5.4.2.

A-001-003
Potential risk of impacts associated with pipeline spills are reduced with Alternative B with one stream/ crossings (Ublutuoch River) compared with three river/stream crossings (Ublutuoch River, Crea Creek, and Barely Creek) under Alternative A.

Applicant Response. The probability of a spill resulting from a pipeline is generally low. The probability of a large spill occurring from a pipeline is even lower. In conclusion, both Alternative A and Alternative B pipelines will be safely designed and constructed, with very low potential for pipeline spills. Although there are slight differences (e.g. Alternative B has one river crossing, Alternative A traverses and impacts dryer less valuable wetlands), oil spill risk is not a material differentiator.

USACE Response. We are aware of the potential risk associated with pipeline spills. See ROD section 5.2.2.7.

A-001-004
Alternative B would comply with BLM's Lease Stipulation K-1(e) for oil and gas development in the NPR-A by maintaining the Fish Creek setback, which prohibits the establishment of infrastructure including roads, pads and pipelines within 3-miles of either side of Fish Creek. No conditions have changed that originally merited the establishment of the special protective Fish Creek setback. Therefore, the Service concludes that Alternative B with the road route outside of the Fish Creek setback would be most protective of the aquatic resources and subsistence uses that occur within the Fish Creek drainage.

Applicant Response. In its November 2004 Record of Decision for the Alpine Satellites Development Plan EIS, BLM waived the stipulation related to the Fish Creek setback for CD-6 (now GMT1), stating "This ROD grants exceptions to three stipulations included in the Northeast National Petroleum Reserve-Alaska Final Integrated Activity Plan/Environmental Impact Statement Record of Decision (IAP/EIS ROD signed in October 1998. Consistent with the exception clause in the IAP/EIS ROD, BLM will grant exceptions to: Stipulation 39(d): to allow permanent oil and gas facilities within a 3-mile setback from Fish Creek, based on technical, economic, and environmental factors ..." Since that decision CPAI has moved the pad location and most of the road outside the Fish Creek setback to minimize impacts to that area. In addition, Kuukpik Corporation, the City of Nuiqsut, and Arctic Slope Regional Corporation have stated that they prefer Alternative A, CPAI's proposed project, and the Native Village of Nuiqsut has stated that they prefer the road and pipeline route be located on "higher bluffs above the marshy areas ... even though it would increase pipeline length and result in a 1/2 mile closer placing to the Fish Creek setback." In addition, Strict adherence to BLM Stipulation K-1(e) is not alone a criteria applicable to the Corps' Clean Water Act 404(b)(1) LEDPA determination, which focuses on identifying the project design that would have the least adverse impact on the aquatic ecosystem. In this instance, although Alternative B would keep all project structures more than 3 miles from Fish Creek within BLM managed areas, Alternative B would have substantially larger adverse direct and indirect impact on wetlands, both in terms of acreage affected and in terms of wetland functional values impacted. Accordingly, in this instance, because there is a practicable alternative that has less adverse impact (i.e., Alternative A), strict adherence to stipulation K-1(e), does not comply with the CWA's 404(b)(1) Guidance and cannot be selected as the LEDPA.

USACE Response. The FSEIS and the other information listed in our ROD are fully sufficient for our analysis.

A-001-005
Although CPAI has concluded that Alternatives D1 and D2 are not currently economically viable, the Service continues to believe a roadless approach to development in NPR-A should be considered for future projects. The establishment and maintenance of a road network is a major component of oil field impacts to fish and wildlife. The hydrology of the area surrounding a road, and the associated habitat, is impacted by the alteration of surface flow, the constriction of

drainages, and potentially the drainage of lake basins. Wildlife, particularly caribou, can be displaced by traffic, and subsistence use patterns may be altered by the existence of the infrastructure or the effect of the infrastructure on wildlife. A road network also requires the mining of millions of cubic yards of gravel during initial construction and continued maintenance. In addition, because gravel sources within NPR-A become more limited as infrastructure spreads west, the haul distances for gravel will increase substantially. Consequently, larger areas continue to be effected directly and indirectly by roadway impacts, including the potential for fuel and chemical spills, associated with the long-haul trucking of gravel.

Applicant Response. In concluding that Alternatives D1 and D2 are not economically viable, ConocoPhillips assessed roadless approaches to development. In working to reduce overall potential impacts, ConocoPhillips has interfaced with representatives from Nuiqsut in a focused effort to provide a balanced approach to responsible development. Throughout the public hearing process for the DSEIS, one of the clear themes was that a roadless approach would ultimately result in greater potential impacts due to increased air traffic and the duplication of facilities that would be necessary to maintain an isolated facility.

USACE Response. USACE has determined a road-less alternative is not a less damaging practicable alternative for the proposed action. Future proposals must be evaluated on their own particular circumstances.

A-001-007
We have serious concerns regarding the technical development of these particular ASAs for use in conjunction with North Slope projects (described in Attachment 1). We would be willing to meet with the Corps, BLM, and other interested parties to pursue an approach to developing a functional assessment model for use on the North Slope, outside of any particular permit review.

Applicant Response. CPAI supports the USFWS's proposal to work with all concerned agency, industry and NGO stakeholders toward a refined North Slope ASA methodology. CPAI has already initiated discussions with regulatory agencies, scientists, and industry leaders to encourage continued discussion regarding ASA methodologies with the goal of developing clear standards that will allow agencies to thoroughly review proposed projects and to provide permit applicants with a clear and consistent framework for permit application review.

USACE Response. We have accepted the ASAs provided by the applicant and applied our best professional judgments to the findings, including many recommendations of the USFWS. We agree a cooperative effort with interested agencies would be a good approach to solving differences of opinion on a North Slope functional assessment model. The FSEIS and the other information listed in our ROD are fully sufficient for our analysis.

A-001-008
As discussed earlier, the Service believes the GMT-1 project should be considered from a regional perspective by assessing the potential cumulative effects of this and reasonably foreseeable projects such as GMT-2 and Bear Tooth. As the potential for development expands westward from GMT-1 the likelihood of a new processing facility becomes greater and with it additional infrastructure and regional impacts. Areas of particularly high fish and wildlife value are immediately to the north and northwest of the proposed project. Roads and other infrastructure in areas of high-density waterfowl nesting and molting areas are of particular concern to the Service. Development activities, particularly those associated with roads, may also affect the migration of the Teshekpuk Lake Caribou Herd during periods of calving and insect harassment. The Service encourages the Corps and BLM to consider a regional plan for the development of NPR-A as outlined in the 2012 IAP/EIS rather than a project-by-project approach. The Service encourages the Corps to acquire the needed data to thoroughly analyze all access alternatives, and to consider options that minimize the potential impacts to fish and wildlife resources including rare and declining species, subsistence resources, and subsistence users.

Applicant Response. ConocoPhillips is a strong advocate for understanding the baseline conditions and dynamics in potential development areas. Throughout project design, we work with project engineers to limit potential impacts to fish, birds, wildlife, and subsistence activities. For future activities we anticipate that this process that has been successfully employed in planning activities could be used in the future. In addition, the FEIS and the 2004 ASDP SEIS, both of which were prepared by BLM as the lead agency, include robust cumulative impacts analyses in the context of past, present, and reasonably foreseeable future activities.

USACE Response. USACE agrees a regional perspective and thorough planning process should be considered with the BLM and other resource agencies to reduce potential cumulative effects caused by the westward expansion of oil and gas industry infrastructure.

A-001-009
The Service has concluded that avian and wetland impacts associated with Alternatives A and B are similar. However, Alternative B, with fewer bridge and pipeline crossings than Alternative A, would maintain water quality, hydrology and stream connectivity, resulting in fewer impacts to fish and other aquatic resources, including important subsistence species. In addition, Alternative B would maintain the integrity of the Fish Creek setback, resulting in fewer impacts to the Fish Creek watershed, fisheries, and subsistence resources.

Applicant Response. CPAI believes that Alternative A, the proposed project, is the best environmental alternative and the LEPDA. Because Alternative B has greater direct and indirect impacts to wetlands, crosses wetter (higher value) wetlands, a greater degree of wetland complexes and more interspersed wetlands, it would likely have higher impacts to birds. Although the impacts to birds from either Alternative A or Alternative B would not be significant, and although the differences in bird avian impacts are not a major differentiator, Alternative A would have the least adverse impact. Alternative B would impact a minimum of 6.6 acres (approximately 9 percent) more wetlands than Alternative A including greater impacts to Category I wetlands. This greater impact is not justified by any substantial difference in impact to water quality, hydrology, or fish between the two alternatives.

USACE Response. USACE analyses have shown Alternative A is the LEDPA. Alternative B has greater direct and indirect impacts to wetlands, crosses higher value wetlands, and a greater number of wetland complexes (see Section 3.5 of the USACE ROD). We agree with inclusion of 5 of the 6 recommended USFWS conditions on an authorization. The condition regarding gravel mining is not applicable as it is not proposed by the applicant.

A-001-011
The Service questions the use of an ASA for the sole purpose of determining mitigation credits and/or debits for impacts associated with the GMT-1 project. The ASAs developed for the GMT-1 project include methodology largely derived from wetland functional assessments from the Lower-48 states where most wetlands have been previously impacted through habitat fragmentation and hydrologic disruption. In these cases wetland functionality is measured against the functionality of rare, undisturbed/pristine wetlands and ranked accordingly.

In Alaska however, the opposite technique is applied. Many of the wetlands in Alaska, including the North Slope, are undisturbed and could be described as pristine. As such, these wetlands should be used as the benchmark for optimal functionality. Instead, their "functionality" is assessed based on un-natural conditions (that may occur with disturbance) and their functional capability downgraded accordingly.

There are inherent problems with assessing the "functionality" of wetlands based on criteria they do not encounter in the natural environment. An undisturbed pristine wetland, by definition should be functioning at high capacity. Those functions which it does not perform are functions it does not encounter, and therefore does not need to perform. Ranking these wetlands as "lower functioning" because they do not meet an artificially imposed set of functions is counterintuitive.

This is especially true when categorizing soon-to-be-impacted wetlands to establish mitigation ratios.

Applicant Response. CPAI understands that USACE uses all available data sources to evaluate all client supplied documents. The ASA provides one piece of information that may be used to by the USACE as part of its Least Environmentally Damaging Practicable Alternative analysis. The ASA is also important in evaluating wetlands for the purposes of compensatory mitigation. CPAI is committed to providing the USACE with the best information possible to support review of the GMT1 permit application according to USACE regulatory guidelines. This includes providing scientifically-supported information on the range of wetland function across typical North Slope wetland types. CPAI disagrees that the method proposed in the current ASA compares pristine ACP wetlands to disturbed wetland types in the Lower 48. The development of the ASA methodology used the existing framework from the rescinded RGL 09-01 but developed new sets of indicators and rating criteria to meet the range of variability of ACP wetlands. This included use of CPAI data, ELS program data, and wildlife observation program data compiled over the last 20+ years to support the rationale behind modifying the rating criteria. The ASA includes careful evaluation of the functional performance of each wetland type, which incorporates consideration of, but is not directly dependent on or always correlated to, a wetland's degree of disturbance. Ranking all undisturbed wetlands on the Arctic Coastal Plain as Category I would fail to recognize or differentiate wetlands that provide a documented life support function for a T&E species, are truly a high quality example of a rare wetland type, or that are rare within the region. In addition to sources cited in the ASA, Smith et al. 1995 provide a detailed discussion of wetland functions and wetland functional capacity. For example, a wetland whose physical and biological processes are active throughout the year will be functionally very different from a wetland that is only active for 90 days. The ASA does not, however, assign value to one function over another, a process that may be more appropriately dealt with by a group of collaborating stakeholders.

USACE Response. We have not used the ASAs for only determining debits and credits. The USACE used information provided by the applicant in the ASAs to evaluate the various alternatives and to help determine the LEDPA. We applied our best professional judgment to readjust wetland functional scorings, taking into consideration the unfragmented landscape condition, general habitat suitability based on known usage by various small mammal species/passerine birds and waterfowl, waters/wetlands interspersion, and vegetation dominance of Arctophila/willows, among others. This resulted in the lift of the overall functional category in five wetland/water types. The USFWS recommended changes and opinions regarding the criteria were used to determine particular wetland/water functions and values. We recommend continuing to address ASA issues on a programmatic basis and not during the analysis and review of individual permit actions (see section 5.5.9 and Appendix B of the ROD).

A-001-012
In the ASA, Category I wetlands are described as those wetlands that 1) provide a documented life support function for a threatened or endangered species; 2) represent a high quality example of a rare wetland type; 3) are rare within a given region; or 4) are undisturbed and contain ecological attributes that are impossible or difficult to replace within a generation, if at all. A wetland also can be ranked as a Category 1 wetland if 1) there is documented sighting of a threatened or endangered species; 2) it is within designated critical habitat; or 3) it receives a HIGH rating for all the evaluated functions.

The Service believes many wetlands on the North Slope meet the criteria of Category I wetlands because they are undisturbed and contain ecological attributes that are impossible or difficult to replace within a generation, if at all. Certainly, most of the wetlands that will be impacted by the proposed GMT-1 development meet these criteria. This ranking is important when one considers that habitats on the North Slope are difficult, if not impossible, to restore and that no amount of mitigation will result in a "no net loss" of wetlands.

Applicant Response. The ASA includes careful evaluation of the functional performance of each wetland type, which incorporates consideration of, but is not directly dependent on or always correlated to, a wetland's degree of disturbance. Ranking all undisturbed wetlands on the Arctic Coastal Plain as Category I would fail to recognize or differentiate wetlands that provide a documented life support function for a T&E species, are truly a high quality example of a rare wetland type, or that are rare within the region. By identifying and ranking only those wetlands with the highest functional capacity in the project are and relative to the region as Category I, the ASA allows avoidance, minimization, and mitigation measures to focus on wetlands of the highest value.

USACE Response. We used information in the ASAs provided by the applicant and applied our best professional judgments to the findings, including readjusting the wetland functional scoring protocol provided in the ASAs. This resulted in the lift of the overall functional category in five wetland/water types. The USFWS recommended changes and opinions regarding the criteria were used to determine particular wetland/water functions and values and adjustments in the general habitat suitability function, including areas preferred by threatened or endangered species. USACE agrees with USFWS that more work in this area is needed. USACE recommends continuing to address ASA issues on a programmatic basis. The FSEIS and the other information listed in our ROD are fully sufficient for our analysis.

A-001-013
The Service continues to question the usefulness and applicability of Functional Assessments on the North Slope, including the ASAs developed for the GMT-1 development for the purpose of determining mitigation ratios. However, the application of a Functional Assessment or an ASA may be applicable when determining the least damaging alternative to a proposed development, providing the appropriate metrics are used to determine functional impacts. The assessment of wetland functions also may be important when determining the credit side of the equation. While wetlands proposed for conservation may be assessed as Category I wetlands they may offer different functions than the impacted wetlands. In these cases recognizing this disparity and analyzing the appropriate set of functions to determine credits will be important.

Applicant Response. CPAI concurs that consideration of functions and values, in addition to consideration of the overall acreage of aquatic site impacts, is an important tool in determining the LEDPA. In addition to minimizing impacts to aquatic sites overall, CPAI has sought to avoid and minimize impacts to high-functioning aquatic sites. For example, Alternative A would impact 6.3 acres fewer Category I wetlands and 0.3 acres fewer Category II wetlands than Alternative B. The majority of the aquatic sites impacted by the proposed project have been rated as Category II wetlands. In evaluating compensatory mitigation options for this project, CPAI continues to work with local and regional organizations and stakeholders to seek out options that will preserve wetlands of similar or higher value than those impacted.

USACE Response. We used information in the ASAs provided by the applicant and applied our best professional judgments to the findings. The USACE follows the 2008 Mitigation Rule to select compensatory mitigation sites. We relied on the ASAs to compare lost wetland functions against functions provided by aquatic resources chosen for compensation. In selecting sites to compensate for lost wetland functions, USACE looked at the 10 HUC watershed scale to identifying wetlands with limited distribution, such as estuaries and/or wetland/upland complexes established in the terrestrial/coastal interface. The USFWS recommended changes and opinions regarding scoring criteria were used to readjust particular wetland/water functions and values. USACE agrees with USFWS that more work in this area is needed and considers that such work has to occur at the regulatory programmatic level. The FSEIS and the other information listed in our ROD are fully sufficient for our analysis.

A-001-014
Floods on the North Slope generally occur during spring break-up and are recognized as sheet flow. In the ASA the ability of a wetland to moderate sheet flow is ranked according to the

amount of depressions it has (or its capability) for water storage. Four wetland types (Lower Perennial Emergent Stream Bank (R2EME), Seasonally Flooded Deciduous Shrub Scrub (PSSIC), Seasonally Flooded/Saturated Emergent-Deciduous Shrub Meadow (PEM1/SS1B) and Tidal Seasonally Flooded Unconsolidated Shore (PUSR) are ranked LOW for Flood Flow Regulation due to their lack of depressional topography. However, all of these wetlands are exposed to annual sheet flow events and continue to naturally exist on the landscape, indicating they are capable of withstanding this type of flooding (as does the descriptive title Seasonally Flooded for 3 of the 4 wetlands.) The ASA either uses the incorrect or incomplete metric to measure Flood Flow Regulation or it evaluates an event that does not naturally occur on the North Slope. While it may be true these wetlands are not ideally suited to withstand unnatural flooding, such as water impounded by a road or channelized by a culvert, these are not the parameters that should be measured by the ASA, especially when used to determine mitigation ratios. These factors may be applicable, if evaluated correctly, in determining where to place infrastructure to minimize impacts.

Applicant Response. Significant improvements to the rating criteria of flood flow regulation and control have been made based on literature review of available studies on the ACP. The overall assumption that all tundra surfaces receive floodwater during snowmelt and that snowmelt floods behave somewhat similarly to floods within the growing season allows for the generous evaluation of this function. The fact that almost all wetlands and waterbodies perform this function at least to some extent is reflected in the high, moderate, or low ranking for all wetland and waterbody types with the exception of the active riverine channel itself (R2UBH) which does not have capacity for any type of storage and is ranked as N/A. The remaining wetlands and waterbodies were ranked based on their capacity to perform the function. A primary indicator of functional performance are depressional features as key biological features commonly used as indicators functional capacity (i.e., presence of dense vegetation, soil types conducive to subsurface storage) are not generally applicable to ACP wetlands that experience peak runoff when soils are still frozen and vegetation is largely dormant (shrubs) or absent (herbaceous species). Note that not all floodwaters during spring break-up are technically considered sheet flow. The in-channel waters and overbank flow within the active riverine corridor are considered channel flow during flood stage. Citations to relevant research on wetland flood flow control on the North Slope are provided in the ASA.

USACE Response. The USACE used information in the ASAs provided by the applicant and has applied best professional judgments to the findings. USACE also incorporated information provided by resource agencies, including the USFWS, and information made available to us during the evaluation process. We modified the wetland/waters functional scoring protocol, which changed of the general habitat suitability of R2EME from moderate to high and the overall functional score from Category II to Category I. This is the case with aquatic resources like PEM1T, PEM1F, and PUBH. Other wetlands general habitat suitability was also lifted; however, the overall score did not increase due to low scores in other functions. USACE agrees with USFWS that more work in this area is needed. USACE recommends continuing to address ASA issues on a programmatic basis. The FSEIS and the other information listed in our ROD are fully sufficient for our analysis.

A-001-015

Another example of misapplication of functional measurement in the ASA, especially regards to determining mitigation ratios, is the assessment of the Sediment, Nutrient, and Toxicant Removal function. The ability of a wetland to retain sediments, cycle nutrients, and remove toxicants is important functions, especially when the wetland is exposed to anthropogenic sources of these pollutants. However, the wetlands within the GMT-1 generally are not exposed to unnatural or natural sources of sedimentation and/or toxicants. As stated in the ASA (page 910)"there are no anthropogenic sources of sediments, nutrients, or toxicants in the vicinity of the GMT-1 proposed alternative...and there are few naturally occurring sediment sources, *so wetlands currently have little opportunity to perform this function in the study area*" (emphasis added).

The ability of the wetlands to perform an unnecessary function is assessed in the ASA because "the function will be important if development occurs in the area."

In the ASA, eight of the wetlands are ranked as "MODERATE" for the Sediment, Nutrient, and Toxicant Removal function, one is ranked as "LOW," and two are ranked as "HIGH." In the naturally occurring environment, most of the GMT-1 wetlands may not perform this function at a high level and therefore they should not be "downgraded" for not performing a non-existing function. Again, this information may be useful in determining where infrastructure may have the least impact, but it should not be used in "ranking" wetlands for mitigation ratios. It is also important to note in the ASA wetlands with "LOW" or "MODERATE" ratings for this function may be placed in a lower category overall, thereby potentially exposing them to the very impacts they are least capable of handling.

Applicant Response. CPAI agrees that not all functions are equally valued across a given landscape and the USFWS concern on this topic may be addressed in an ACP-specific evaluation by adding a separate value ranking for each function to better define the potential impacts. With respect to sediment, nutrient, and toxicant removal, the wetlands evaluated are not downgraded for not performing that function. Rather, they are rated on a scale of their potential capacity to perform this function. The ASA evaluation is intended to document baseline conditions in the area around the proposed project and practicable alternatives. The primary direct impact of the GMT1 project on wetlands would be the placement of gravel fill.

USACE Response. The USACE used information in the ASAs provided by the applicant and has applied best professional judgments to the findings. The USFWS recommended changes and opinions regarding the criteria were used to determine particular wetland/water functions and values. USACE agrees with USFWS that more work in this area is needed. A more comprehensive analysis of wetlands for flood flow regulation functions based on geomorphic units and hydrogeomorphologic features typical of the North Slope needs to be done. However, USACE recommends continuing to address ASA issues on a programmatic basis and not during the analysis and review of individual permits, The FSEIS and the other information listed in our ROD are fully sufficient for our analysis.

A-001-016
The Service questions the rationale behind the "diversity of use" question (page 10) in the General Habitat Suitability component of the ASA. The diversity cut-point of "use" by at least 6 mammals or 28 species of birds is arbitrary and is not based on wildlife diversity studies on the North Slope. Habitat use by mammals particularly is underrepresented in the ASA. The ASDP-SEIS identifies eight species of large mammals and nine species of small mammals within the GMT-1 area (BLM 2014). There is no discussion of what constitutes use by mammals under the General Habitat Suitability function of the ASA however it is likely most, if not all, the small mammals occur in most of the identified wetland types. The larger mammals may occur in the area seasonally (caribou) or sporadically (muskoxen, moose, bear, fox, and wolverine) however occasional use of a particular wetland type by any of these mammals should constitute use. As such most of the wetland types listed should be considered to have a HIGH diversity of use (at least six species) by mammals except perhaps those wetland types located adjacent to existing infrastructure.

Data for ranking also is specifically lacking in the ASA pertaining to habitat use by shorebirds, passerines and several species of waterfowl, including long-tailed duck and pintail. Lastly, it does not appear as though predatory birds are accounted for in the discussion. Snowy and shorteared owls, pomarine, parasitic and long-tailed jaegers, glaucous and Sabine's gulls, common raven, and peregrine falcon are known to hunt in the area and should constitute "use" of just about all of the wetland types identified in the functional assessment.

Applicant Response. CPAI agrees that small mammal diversity is underrepresented in the General Habitat Suitability component of the ASA. This factor could be a consideration for future

iterations of the ASA methodology, particularly if the data products were readily available to assess habitat use for small mammals. CPAI appreciates USFWS' views about ways in which ASA analysis is imperfect and, in most instances, agrees. At the same time, this remains an important piece of information for which there is currently no superior methodology available. Recognizing its limits, which are not biased in favor of any one particular GMT1 project alternative, the ASA provides a very useful comparative tool that, in this instance, indicates consistent with other information that Alternative A is the LEDPA. CPAI is very receptive to ways to improve ASA analysis going forward and looks forward to working with USFWS and other agencies in this regard.

USACE Response. We used information in the ASAs provided by the applicant and applied our best professional judgments to the findings, including mammal use information provided in the ASDP-SEIS. The final general habitat suitability changed for five waters/wetlands from moderate to high functioning and for two waters/wetlands from low to moderate functioning (see Section 5.9 of the USACE ROD). USACE agrees with USFWS more work in this area is needed on a programmatic basis. The FSEIS and the other information listed in our ROD are fully sufficient for our analysis.

A-001-017

The habitat preference parameter (page 10) of the General Habitat Suitability function is based upon use by one or more of four focal species (yellow-billed loon, tundra swan, brant and spectacled eider) derived for studies conducted exclusively on the Colville Delta. The list of focal species for studies in NPR-A has since been expanded to include king eider, snow goose, greater white-fronted goose and Canada goose however, these species were not considered in the ASA. In addition, there are several species of conservation concern, such as the bar-tailed godwit, dunlin, buff-breasted sandpiper and whimbrel which have been documented as nesting or occurring in the GMT-1 area (Johnson et al. 2005). The Service suggests the "preferred habitat" question be expanded to include a more diverse and representative (of NPR-A habitats) suite of species.

Applicant Response. The focal species list was selected to be tailored to the available habitat preference data for the NPR-A and the Colville River Delta. The incorporation of an expanded list of focal species in future ASA methodologies largely depends on availability of data and/or resources for a literature review to support an accurate and informed assessment.

USACE Response. The USACE incorporated a coarse analysis on plant species used by waterfowl and passerine in association to specific wetland types. However, more work is needed to expand the list of focal species in future ASA methodologies. USACE again recommends that some of these issues need to be worked out on a programmatic basis. The FSEIS and the other information listed in our ROD are fully sufficient for our analysis.

A-001-018

Some important North Slope habitats also are under-represented in the ASA. Arctophila wetlands, found in shallow areas of lakes on the North Slope, are used extensively by several species of waterfowl during brood-rearing and fall staging. The presence of this type of wetland does not seem to be captured in the Lake (L1UBH) wetland type under Question 5 of General Habitat Suitability (page B-3). This may be due to the requirement that surface water account for only 10% areal cover or is continuous with a "well developed" emergent component. As Arctophila grows in shallow water (usually less than 3 feet deep) it commonly occupies only the edges or one end of larger lakes, whereby the lake would not meet either the open water or continuous emergent component. These criteria seem to be a hold-over from a lower-48 functional assessment and not applicable to North Slope wetlands. The Service suggests the criteria be reworded to capture the presence of Arctophila wetlands on the North Slope.

Applicant Response. Arctophila wetlands are captured in the ASA as part the PEM1H category of wetlands and this wetland type's importance for bird species is captured in the High rating PEM1H wetlands receive for the General Habitat Suitability. CPAI acknowledges that it is difficult to accurately capture the full extent of the Arctophila communities due to its ephemeral nature. Arctophila is a grass species that does not persist above the water level in early and late growing seasons and may even be obscured in aerial imagery when water levels rise. Due to the nature of this community, it cannot be reliably distinguished from aquatic sedge marshes in aerial imagery and the two wetland types are evaluated together.

USACE Response. The USACE agrees Arctophila wetlands are difficult to distinguish using aerial imagery. USACE will continue to work with the USFWS to refine methodologies used to evaluate wetlands. The USACE used information in the ASAs provided by the applicant and has applied best professional judgments to the findings. This included not only categorizing PEM1H as vegetated shallows, but also adjusting their overall performance to high functioning wetlands. The USFWS recommended changes and opinions regarding the criteria were used to determine particular wetland/water functions and values. We recommend continuing to address ASA issues on a programmatic basis with the USFWS. The FSEIS and the other information listed in our ROD are fully sufficient for our analysis.

A-001-019

Lastly, salt marsh habitats (PEM1T) (Table 1, page 5) should be considered as rare on a regional scale for the North Slope (General Habitat Suitability- Question 6.) These habitats are limited in extent and provide extremely important brood-rearing and fall staging habitats for many species of waterfowl, including tundra swans, brant and spectacled eiders as well several species of shorebirds.

Applicant Response. The ASA methodology assigns a one percent threshold for assigning rarity on a regional scale. The salt marsh type did not fall below that level based on acreage calculation on ELS wildlife habitat types.

USACE Response. The USACE used information in the ASAs provided by the applicant and has applied best professional judgments to the findings, including categorizing PEM1T as wetlands that have a high functioning performance (see Section 5.9 in the USACE ROD). The USFWS recommended changes and opinions regarding the criteria were used to determine particular wetland/water functions and values. USACE recommends continuing to address ASA issues on a programmatic basis with the USFWS, The FSEIS and the other information listed in our ROD are fully sufficient for our analysis.

A-001-020

The ranking system for individual functions of specific wetlands in the ASA should be revised. If a question is not-applicable (N/A) to a particular function it is not rated, however the question remains as a component of the Rating Criteria, thereby influencing the outcome of the Overall Rating. For example, there are six questions relating to Function B: Sediment, Nutrient, Toxicant Removal (page B-2). The Rating Criteria requires a "Yes" response for 4-6 of the questions in order to have an Overall Rating of High. If, as in the case of a Lake (L1UBH) wetland type, three of the questions are N/A the highest overall rating a Lake wetland can receive is Moderate (2-3 Yes responses) for Sediment, Nutrient, and Toxicant Removal. The N/A questions for all Functions should be removed from the Rating Criteria equation for each wetland type where this occurs and the Rating Criteria reworked accordingly.

Applicant Response. Please see the response to a similar comment made by EPA (A-002-013). CPAI appreciates USFWS' views about ways in which ASA analysis is imperfect and, in most instances, agrees. At the same time, this remains an important piece of information for which there is currently no superior methodology available. Recognizing its limits, which are not biased in favor of any one particular GMT1 project alternative, the ASA provides a very useful comparative tool that, in this instance, indicates consistent with other information that Alternative

A is the LEDPA. CPAI is very receptive to ways to improve ASA analysis going forward and looks forward to working with USFWS and other agencies in this regard.

USACE Response. We used information in the ASAs provided by the applicant and applied best professional judgments to the findings, including applying a scoring system to rank wetland/water types based on a maximum capacity index and that do not include the N/A answer as part of the calculations (see Appendix B). The USFWS recommended changes and opinions regarding the criteria were used to determine particular wetland/water functions and values. Changes in the criteria to evaluate sediment, nutrient, and toxicant removal would require a more extensive evaluation of the ASA methodology to be addressed at the regulatory programmatic level, The FSEIS and the other information listed in our ROD are fully sufficient for our analysis.

A-001-021
On Page 12 of the ASA, Category I wetlands are described as those wetlands that 1) provide a documented life support function for a threatened or endangered species; 2) represent a high quality example of a rare wetland type; 3) are rare within a given region; or 4) are undisturbed and contain ecological attributes that are impossible or difficult to replace within a generation, if at all. A wetland also can be ranked as a Category I wetland if: 1) there is documented sighting of a threatened or endangered species; 2) it is within designated critical habitat; or 3) it receives a HIGH rating for all the evaluated functions.

It is unclear what constitutes a "documented" life support function for a threatened or endangered species. However, if specific habitats have been documented as breeding or brood rearing habitat for an endangered species, the Service believes they should be categorized as Category I wetlands, even if they have not recently been occupied by the species in question. The definition of a threatened or endangered species likely means it is scarce on the landscape, and therefore not occupying all available habitats. Also, according to the rating criteria a Category I rating can be given if the wetland receives HIGH ratings for all (8) Functions, however, on Page 8 of the ASA a Category I ranking would be given if a wetland ranked HIGH for 6 of the 8 functions. This disparity should be corrected.

Applicant Response. The ASA methodology interprets "documented" to mean the direct observations of a T&E species. CPAI disagrees with the recommendation to widen the criteria for Category 1 to the point where all North Slope wetlands fall into that category as it would limit the usefulness of any ASA to identify wetland areas that have the highest functional capacity so that avoidance and minimization measures could be focused on those wetlands of the highest value.

USACE Response. We used information in the ASAs provided by the applicant and applied our best professional judgments to the findings, which included a broader approach to evaluate general habitat suitability. We included interspersion, small mammal usage, and dominant plant species to infer the capacity of wetland/water types to provide for habitat to wildlife and avian species. The USFWS recommended changes and opinions regarding the criteria were used to determine particular wetland/water functions and values. USACE recommends continuing to address ASA issues on a programmatic basis. The FSEIS and the other information listed in our ROD are fully sufficient for our analysis.

A-001-022
Finally, the Service continues to believe many wetlands on the North Slope meet the criteria of Category I wetlands because they are pristine and undisturbed on the landscape. In addition, they are impossible to replace within a generation, if at all. Most of the wetlands that will be impacted by the proposed GMT-1development meet these criteria.

Applicant Response. As stated in the response to the EPA, (A-002-017) below, the ASA includes careful evaluation of the functional performance of each wetland type, which incorporates consideration of, but is not directly dependent on or always correlated to, a wetland's degree of disturbance. Ranking all undisturbed wetlands on the Arctic Coastal Plain as Category I would

fail to recognize or differentiate wetlands that provide a documented life support function for a T&E species, are truly a high quality example of a rare wetland type, or that are rare within the region. By identifying and ranking only those wetlands with the highest functional capacity in the project area and relative to the region as Category I, the ASA allows avoidance, minimization, and mitigation measures to focus on wetlands of the highest value.

USACE Response. We do not recognize all pristine wetlands as highly productive or valuable based on their undisturbed condition. We used information in the ASAs provided by the applicant and applied our best professional judgments to the findings. We do not believe all wetlands in the GMT1 project area are Category I and have assigned values accordingly. USACE agrees with USFWS more work in this area is needed. USACE recommends continuing to address ASA issues on a programmatic basis. The FSEIS and the other information listed in our ROD are fully sufficient for our analysis.

U.S. Environmental Protection Agency

A-002-004
SEIS: impact criteria for vegetation and wetlands, and comparison of indirect impact acreage. In our comments provided to BLM for the Draft SEIS, we stated that the impact criteria for differentiating between alternatives for vegetation and wetlands were not meaningful (U.S. Environmental Protection Agency 2014). These impact criteria pointed out the importance of one rare vegetation type (Cassiope dwarf shrub tundra), but did not capture the differences in other impacts to vegetation and wetlands across alternatives. We also stated that, although impacts to vegetation and wetlands were qualitatively very well described in Section 4.3.1 of the Draft SEIS, the impact criteria could be augmented with the information in Table 4.3-4, where acreages of indirect impacts of construction on vegetation and wetlands based on a 300-foot zone of impact are listed. Using the information presented in Table 4.3-4 from the Draft SEIS, the following conclusions can be drawn.
• Alternative C will impact more than twice the acreage of Alternative A (1,368.7 vs. 595.3).
• Alternatives A and B will impact similar amounts of acreage (595.3 vs. 613.7).
• Alternative D will impact about half the acreage of Alternative A (275.9 vs. 595.3).
Solely from the standpoint of minimization of direct and indirect impacts to wetlands as a result of gravel fill, these acreages would point to Alternative D as the least environmentally damaging practicable alternative. The Clean Water Act, Section 404(b)(1) Guidelines, however, state: "Except as provided under section 404(b)(2), no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences." (40 CFR 230.10(a), emphasis added). As described in the Draft SEIS, Alternative D presents other potentially significant adverse environmental consequences that deserve consideration in determining which alternative in the least environmental damaging. Some of these are: lack of year-round access that a road would provide for emergency response, and increased disturbance of wildlife (notably birds and caribou) resulting from higher levels of air traffic under this alternative.

Applicant Response. CPAI agrees with the EPA's conclusion that the wetland and vegetation impact criteria used in the Final SEIS are not meaningful in differentiating impacts between alternatives. The impact criteria overemphasize the importance of impacts to Cassiope dwarf shrub tundra, rating the impact for Alternative A as moderate solely because indirect impacts to this vegetation type exceed 5 percent of the vegetation type mapped within the study area. This methodology fails to consider the importance (or lack thereof) of a particular vegetation type within the landscape and the type of impact (i.e. direct versus indirect impacts) anticipated. Cassiope Dwarf Shrub Tundra may support a variety of wildlife species it does not contain any rare plants, nor is it identified as preferred habitat for any threatened or endangered species. Furthermore, the Final SEIS rates this moderate impact as "important in context as wetlands are protected by legislation," failing to consider that recent field data indicates that many of the Cassiope dwarf shrub tundra communities found in the study area are in fact upland (ABR

2014). Given that the Cassiope Dwarf Shrub Tundra vegetation type is an upland class and the impacted area is very small and located solely within the indirect impact zone (dust shadow effects), the intensity of the impact is more in line with the definition of low intensity and should be rated similar to Alternative B.

CPAI agrees that the wetland and vegetation impacts should consider acreage of direct and indirect wetland impacts, using data, for example, from Tables 4.3-2, 4.3-3, and 4.3-4. CPAI also concurs with the EPA's analysis of relative impacts- with Alternative C having substantially more impact than the other alternatives. Although both Alternatives A and B have less adverse impact to wetlands that Alternative C, as between the two, for purposes of determining the LEDPA, Alternative A clearly has the least adverse impact, with Alternative A having 6.6 acres less direct impact and 65.1 acres less indirect impacts. Because Alts. D-1 and D-2 are not practicable; neither can be the LEDPA regardless of the wetland acreages impacted. Not only would Alternative D (either D1 or D2 as presented in the Final SEIS) would have greater direct impact to wetlands and vegetation (87.4 and 85.8 acres of gravel fill, respectively), but it would also result in a significant increase in impacts related to increased air traffic year round and for the life of the proposed project and increased risk posed by the lack of reliable access for spill and emergency response.

Citation: ABR. 2014. Wetland Mapping for Alternative Routes for the Greater Mooses Tooth Unit Development Project- 2014. Prepared by ABR, Inc. Environmental Research and Services for ConocoPhillips Alaska, Inc.

USACE Response. See sections 5.9 and Appendix B of the USACE ROD for more detailed technical analysis.

A-002-005
SEIS: impacts to wetland hydrology. The effects of gravel fill for an airstrip, road or pad are well described in Section 4.2.2.1 of the Draft SEIS. Quantitative differences between the alternatives for inundation resulting from new roads are given in Table 4.26, where the areas of increased stage and decreased stage for Alternative D are shown as "negligible." Likewise, in Table 4.2-7, Summary of Major Components Potentially Impacting Hydrology, Alternative D is shown with a much shorter road, no bridges, and a fraction of the number of culverts when compared to the other alternatives. The gravel fill for Alternative D will be consolidated in one locality. By contrast, the road required under the other three alternatives (A, B, and C) will perpendicularly cross the hydrologic gradient, the topographic gradient, and the wind direction gradient. The likelihood of the road behaving as a dam to disrupt hydrology is discussed in the Draft SEIS. We believe that the intensity of impacts to hydrology is less for Alternative D, and that the extent is more localized for Alternative D, than for the other three alternatives. The impacts to hydrology are not proportional to the amount of area impacted by infrastructure, but are rather related to the configuration of gravel fill. Whether the fill is strung across the landscape (as for a road) or consolidated at one location (as for a pad) makes a difference in impacts to hydrology. Solely from the standpoint of minimizing impacts to wetland hydrology, this analysis points to Alternative D as the least environmentally damaging practicable alternative. However, as described in the Draft SEIS, Alternative D presents other potentially significant adverse environmental consequences that deserve consideration under the 404(b)(1) Guidelines in determining which alternative is the least environmentally damaging.

Applicant Response. Because Alts. D-1 and D-2 are not practicable; they do not require further consideration under the 404(b)(1) Guidelines. Nevertheless, CPAI agrees with EPA that if these alternatives were practicable, which they are not, there are other significant adverse impacts that would preclude their selection as the LEDPA. CPAI agrees with the statement that "Alternative D presents other potentially significant adverse environmental consequences that deserve consideration under the 404(b)(1) Guidelines in determining which alternative is the least environmentally damaging." Sections 4.4.5.6 and 4.4.5.7 of the Final SEIS state that "air traffic is the most frequently cited impact of development by Nuiqsut caribou hunters ... and Alternative D1

[and D2 in Section 4.4.5.7] would result in significantly higher aircraft traffic." In comments on the Draft SEIS, several residents of Nuiqsut expressed concern regarding the amount of aircraft traffic associated with Alternative D (see Volume 3 of the Final SEIS).

USACE Response. USACE agrees with EPA and CPAI there are potentially other substantial environmentally damaging consequences with Alternative D1 and D2. See section 3.5 of the ROD.

A-002-007
CPAI and ABR have done a laudable job of attempting to initiate a new methodology for assessing the functions of aquatic resources for this project, against a backdrop of the rescission of the Corps' Regulatory Guidance Letter 09-01, and no replacement guidance for wetland functional assessments (on the North Slope, or otherwise). The EPA has been involved in the review of the Alt A ASA throughout its development over a period of months, and has offered numerous comments, both orally and in writing, on the various drafts. The Alt B ASA follows the same methodology, and comes to the same conclusions, as the Alt A ASA. We find that many of the concerns that we brought up over the last several months with this new aquatic site assessment methodology being developed by CPAI and ABR remain unresolved. Our remaining concerns are reiterated in Enclosure 2 to this comment letter. While we recognize that CPAI has devoted considerable effort toward formulating an assessment methodology, we do not endorse the method as it stands now as the way forward in evaluating the aquatic resources for other projects in the future. Rather, much work remains to be done to formulate an aquatic resource assessment methodology that is specific to the permafrost-driven ecosystems of the Arctic Coastal Plain.

Applicant Response. CPAI appreciates the recognition of the considerable time and effort put into development of the GMT1 ASA methodology for both Alternatives A and B. The ASA was the product of substantial effort on behalf of CPAI and ABR, as well as extensive feedback from regulatory agencies including the EPA. CPAI's coordination efforts included hosting a six-hour long ASA workshop with USACE, EPA, USFWS the State of Alaska, and the Native Village of Nuiqsut on June 25, 2014, and making substantial revisions to the methodology based on agency input where appropriate. All of the EPA's feedback was carefully considered throughout this process and major revisions included reevaluation of general habitat suitability and subsistence/recreational/educational values for all wetland types with the effect of moving 43.2 acres of wetlands previously rated as Category III into Category II. The Alternative B methodology follows the same methodology as Alternative A to allow consistent comparison of impacts between the two alternatives. Individual EPA comments are discussed individually by comment below.

USACE Response. We are aware of the EPA concerns over the methodologies and criteria used to evaluate permafrost driven or any other water/wetland in Alaska. We considered the EPA comments on the evaluation methodology used in the applicant's ASAs to be a regulatory program issue and not completely resolvable here on the GMT1 permit decision.

Some points raised by the EPA are valid concerns with the methodology and criteria used by the applicant in developing the ASA documents, just as they have been used in the past by other applicants and generally accepted by the USACE. As described above in EPA comment 6 above, the ASAs were voluntarily provided by the applicant who largely used the guidance provided by the Alaska District in publication of our Alaska District Mitigation Policy Regulatory Guidance Letter 2009-01 (RGL 2009-01). This guidance was rescinded in 2013 just prior to the applicant beginning development of their first ASA. Absent replacement Alaska District guidance, the applicant chose to continue to use the methodologies and criteria of the rescinded RGL-2009-01, with some modifications to the questions under each function to incorporate subsistence and threatened/endangered species uses, rather than creating or using a different and also unproven method. Therefore, the USACE has accepted the ASAs as an important piece of the best available information used in the wetland functional evaluation. The USACE has also accepted

the waters and wetlands mapping, classification, polygon delineations, acreages, and the overall methodologies and criteria used by the applicant for Alternative A, B, and the Fish Creek Delta (applicant's proposed mitigation site). Furthermore, we have applied our best professional judgments to these ASAs as described in sections 5.5.2, 6.1.30, and Appendix B of the USACE ROD. The FSEIS and the other information listed in our ROD are fully sufficient to analyze the alternatives.

A-002-008
The ASAs that have been developed for this project focus on assessing a suite of ecological functions performed by waters and wetlands, rating each function for each water/wetland type, and assigning an overall functional category for each water/wetland type. The outputs include tables of water/ wetland types, functional categorization, acreage, and color-coded maps. The analysis, in this case, was facilitated by using source data in GIS layers, as well as field verification at certain sites. Each water/wetland polygon in a GIS layer was assigned attributes (e.g. ELS ecotype, derived vegetation type, assigned NWI class), and attributes for each water/wetland class were, in turn, evaluated against a set of questions for each function to make the assessment. In this sense, the analysis is a pixel-counting exercise; its structure is point based, not vector-based. The analysis may indicate how much (acreage) of a given water/wetland type is present for each of Alternatives A and B, it may show how the water/wetland types are arrayed on the landscape in map form, but it has not measured how much the water/wetland types are interspersed.

One vector-based measure of wildlife habitat - especially avian habitat - is the edge effect. Different species need different kinds of habitats for different life stages. The more interspersion of habitats on the landscape, the more occupancy of that landscape by wildlife, especially birds.

During the site visit of Alternative A and Alternative B sites on July 8, 2014, we observed, qualitatively, that the proposed road route for Alternative B contained wetlands that were wetter and more interspersed than the proposed road route for Alternative A. The ASAs for the these two alternatives contained aerial imagery annotated with water/wetland types, which further corroborated this conclusion, that the Alternative B road route was located on wetter ground, in a more diverse interspersion of types. Further, the Draft SEIS explains that due to the greater amount of thaw basin geomorphology and associated wet ground crossed by the Alternative B road route, more culverts would be required to maintain adequate drainage than for the other alternatives (Table 4.2-7).

A quantitative measure of the interspersion of wetland and water types is presented here. Using the maps in the Alt A ASA (Figures 2a, 2b, and 2c), and the maps in the Alt B ASA (Figures 2a, 2b, and 2c), a count was made of every crossing from one mapped water/wetland type to the next, (i.e. every occurrence of an edge crossing), within the 600-ft wide mapped corridor surrounding gravel pads and roads and the 200-ft mapped corridor surrounding pipelines. The raw counts are shown in Table 1.

Table 1. Numbers of crossings between water/wetland type boundaries, by infrastructure type, for Alternatives A and B.
Alternative A: Pad 2; Road 138; Pipeline 140; TOTAL 280
Alternative B: Pad: 2; Road 151; Pipeline 177; TOTAL 330
The number of crossings of water/wetland boundaries for Alternative B exceeds the number of crossings for Alternative A by 50, or 18% more. Understanding that the gravel fill acreage will be greater under Alternative B than under Alternative A, these numbers can be normalized, as shown in Table 2.

Table 2. Water/wetland boundary crossings per acre for Alternatives A and B.
Alternative A: Number of crossings 280; Total gravel fill 72.7; Crossings per acre of fill 3.85
Alternative B: Number of crossings 330; Total gravel fill 79.4; Crossings per acre of fill 4.16
Alternative B therefore crosses water/ wetland boundaries 8% more frequently than Alternative A. This measure supports the conclusion that Alternative B crosses a higher diversity of wildlife

habitats - especially habitats important for different life stages of avian species - than does Alternative A.

Applicant Response. CPAI appreciates the time and thought by the EPA to develop this analysis. CPAI agrees that it could be appropriate to evaluate edge effects as part of an ASA methodology and notes that the concept of interspersion as a valuable faunal support criterion is already built into the mapping and classification phase of the ASA process. As part of the ASA, an effort was made to define individual wetland types that may provide preferred habitat to a range of species and one of the considerations is interspersion of vegetation and surface water. CPAI also agrees that developing a scientifically-based technique similar to the EPA's proposed Edge Effect Analysis could be of value in further identifying areas of high habitat value. Development of this technique would require thoughtful definition of what constitutes a biologically significant transition and how transitions may be counted. CPAI notes that the results of the evaluation provided by EPA the supports CPAI's finding that Alternative A would be less environmentally damaging than Alternative B.

USACE Response. We have considered and accepted the EPA analysis regarding edge effect and interspersion and the data provided because it can be used factually and in the immediate GMT1 decision process for the evaluation of aquatic resource characteristics and value related to wildlife habitat and production. We have not accepted their recommendation to include an evaluation of the maintenance of thermal regime in the ASAs. We believe the ASAs have sufficient criteria to evaluate the character and functions for alternatives A and B. Developing another criterion for maintenance of thermal regime, at this time, would not make a meaningful addition to our evaluation. _The FSEIS and the other information listed in our ROD are fully sufficient to analyze the alternatives.

A-002-009
Balancing potential impacts on certain resource classes between alternatives. According to information from the Draft EIS (Table 4.3-6), Alternative B would impact fish habitat less than Alternative A. Alternative B would not encroach into the Fish Creek Setback, would not necessitate a bridge and pipeline crossing of Crea Creek, and would not necessitate a crossing of Barely Creek.

Based on the distribution and interspersion of wetland and water types, (corroborated by the two ASAs, the July 8, 2014 site visit, and the edge effect analysis presented here), there would be greater impacts to wildlife habitats, especially for avian species, under Alternative B.

We encourage the Corps to consider the two very different suites of services performed by each of these alternatives - fish habitat for Alternative A, and avian habitat for Alternative B - in its LEDPA determination.

Applicant Response. CPAI disagrees with the EPA and the SEIS that Alternative B would have less impact to fish and aquatic habitat because it has fewer stream crossings. The Alternative A alignment intentionally crosses both the Crea Creek and Barely Creek drainages lower in the drainage where channelized flow occurs. The channelized flow of both creeks is beaded in nature at the point of the proposed crossings. In contrast, the Alternative B alignment passes through the uppermost portions of the Crea Creek and Barely Creek drainages through persistently saturated or flooded wetlands where there is no channelized flow. Channelized flow typically has enough volume and hydraulic head to pass through an appropriately designed structure without ponding. On the other hand, sheet and wetland flows are widespread and shallow, often requiring more culverts and diversion along the roadway to reach culverts. Culverts convey flow across roads but localized shallow ponding does often occur. While correct placement of culverts in both alternatives will minimize ponding and ensure that sheet flow runoff remains within its native drainage basin, CPAI has determined that Alternative A has less potential for upstream ponding due to the channelized flow and the bridge over Crea Creek. Alternative B will require a greater number of culverts and could result in minor ponding upstream of the road, but the volume of

ponding relative to total runoff volume would be small. Culverts within the Crea and Barely Creek watersheds on the Alternative B alignment would be for cross drainage, and therefore not be designed for fish passage. In contrast, the bridge over Crea Creek would span the stream channel and would be designed to minimize erosion and the culvert battery at Barely Creek would be located in a channelized section of the stream and would be designed for fish passage.

CPAI concurs with EPA that Alternative B has the potential for slightly higher impacts to wildlife, including avian species, however, the impacts from Alternatives A and B would likely be similar.

USACE Response. USACE agrees with the CPAI response above. We understand that Alternative B would result in higher direct impacts to wildlife due to permanent displacement of habitat. On the other hand, Alternative A would result in mainly indirect impacts as no direct displacement of fish habitat would occur; fish passage is to be maintained through avoidance and minimization measures implementation. However, on a programmatic level, USACE looks forward to continuing to work with EPA on developing and refining methodologies to better capture the habitat services performed by different types of wetlands.

A-002-010
Suggestion for improving the aquatic site assessment: Maintenance of thermal regime. The ASAs used a suite of functions typically evaluated in other methodologies (e.g. Adamus 1991, Magee 1998) as a starting point, and revised the evaluation questions and rating criteria for typical Arctic Coastal Plain wetlands, and adding questions relating to waters. Again, while we appreciate the difficulties in formulating a method to assess wetland and water functions for this particular project, the Adamus and Magee methods do not in any way address permafrost-driven systems. One function that is specific to permafrost-driven systems is maintenance of thermal regime. This function was evaluated for the Point Thomson Project (U.S. Army Corps of Engineers 2012), but has not been included in the ASAs for the GMT-1 project. For the Point Thomson Project, the Maintenance of Soil Thermal Regime was defined as:

"The role of wetland soil and vegetation in maintaining a stable soil thermal regime, as indicated by presence of permafrost, surface topography, and soil moisture typical of the site's plant community. Loss of this maintenance function would be indicated by development of thermokarst, or thaw of permafrost, ground subsidence, drainage into the thawed area, drainage of adjacent areas, and proliferation of thawing and collapse conditions." (ibid.) In the case of the Point Thomson Project, this particular function was found to be ascribed to 62% of the project area, (ibid.)

We encourage the Corps to consider the maintenance of thermal regime function in its LEDPA decision for this project if at all possible, recognizing that data to assess for this function are probably not readily available at this juncture. We also encourage the development of evaluation questions (in the fashion that is used in the ASAs here) or a model (in the fashion that this function was evaluated for the Point Thomson Project) for aquatic site assessments that may be conducted for future projects on the North Slope, as a means of improving the ASA methodology and making it more specific to permafrost-driven wetlands and waters.

Applicant Response. CPAI has and continues to welcome specific input on an appropriate list of wetland functions to include in future ASAs on Alaska's North Slope. Maintenance of thermal regime is certainly one option to be considered. The functions addressed in both the Alternative A and B ASAs are based on standard HGM models that, while initially developed for wetlands outside of Alaska, have been adapted and apply to permafrost wetlands, pristine wetlands, and Arctic Coastal Plain wetlands. Development of a functional model for the maintenance of thermal regime would require constructing a generalized model and identify specific controlling criteria, rather than being able to rely on well established HGM principles for standard functions. CPAI has taken extraordinary steps in development of the GMT1 ASA to ensure the functions and indicators evaluated are as specific to the North Slope region as possible within the scope of this project.

USACE Response. We have considered and accepted the EPA analysis regarding edge effect and interspersion and the data provided because it can be used factually and in the immediate GMT1 decision process for the evaluation of aquatic resource characteristics and value related to wildlife habitat and production. We have not accepted their recommendation to include an evaluation of the maintenance of thermal regime in the ASAs. We believe the ASAs have sufficient criteria to evaluate the character and functions Alternatives A and B. Developing another criterion for maintenance of thermal regime, at this time, would not make a meaningful addition to our evaluation. The FSEIS and the other information listed in our ROD are fully sufficient for our analysis.

A-002-011
Use of the ASA for mitigation ratios and not for project siting. The Alt A ASA states, on p. 3, "The USACE commonly uses a 4 category system as a guide for developing mitigation ratios. The categorical system is intended to identify the most productive wetlands and waters and also the most disturbed systems at the time of evaluation. Ranking wetland functions does not infer the resiliency of a given wetland or waters exposed to recover from various construction methods or disturbances." (In the Alt B ASA, it also says, "and most important" after "the most productive".) This ASA methodology has therefore ranked wetlands and waters according to current function and condition, not according to their resiliency or capacity to "take on" a disturbance. The ASA therefore is not a measure of how much impact a given wetland can take on and still function and/or recover. Rather, it's a rating of how well the wetland functions now, in the undisturbed state. The risk of being impacted by construction of oil and gas infrastructure (gravel fill for roads, pads, and pipelines) does not enter the analysis. While we understand the approach being used in this ASA is to guide the development of mitigation ratios, it does not provide answers for siting that infrastructure, because the waters' and wetlands' ability to tolerate disturbance by gravel fill is not identified or characterized.

Applicant Response. The primary purpose of the ASA is to inform ratios for compensatory mitigation with the ultimate goal of functional replacement of impacted wetlands. The GMT1 ASA achieves this goal by ranking (e.g., high, moderate, low) of different wetland types for eight different evaluated functions and by overall categorization of wetlands as Category I, II, or III. The ASA documents baseline conditions and does not evaluate wetlands based on how a wetland may or may not be altered by proposed development as the type and extent of these impacts is dependent on the exact alignment permitted.

The ASA may also be used, however, as one tool to evaluate terrain sensitivity to inform efforts to avoid and minimize impacts to higher functioning wetlands and support the USACE's least environmentally damaging practicable alternative (LEDPA) determination and permitting decision under Section 404 of the Clean Water Act (CWA). Under the USACE's regulatory guidelines, the avoidance of direct impacts (e.g., wetland losses from the placement of gravel fill) to higher functioning wetlands is generally of primary concern. Siting project components to reduce potential indirect impacts at the expense of increasing direct impacts to higher value wetlands would not result in the least environmentally damaging practicable alternative.

Finally, other tools, such as the Jorgenson 2003 Ecological Land Survey which includes an Ecological Land Evaluation section, may provide additional information on oil spill sensitivity and winter traffic sensitivity rated on a scale of Negligible, Low, Moderate and High. This information can be used by project engineers and regulatory agencies to inform siting of project components. These maps are available for consideration by all agencies and the USACE during the permit application review process.

USACE Response. The USACE used information in the ASAs provided by the applicant and has applied best professional judgments to the findings. The ASAs supported our analysis that Alternative A would result in lower direct and indirect impacts to high functioning wetlands. We included comments provided by EPA regarding the criteria used to determine particular

wetland/water functions and values. USACE agrees with EPA that more work in this area needs to be done and looks forward to continuing to work with EPA on developing and refining methodologies to better capture the habitat services performed by different types of wetlands. The FSEIS and the other information listed in our ROD are fully sufficient for our analysis.

A-002-012
Wildlife habitat classification. The ASA explains on pages 3 and 4 how the ELS ecotypes and derived vegetation types (Jorgenson et al. 2003) were cross walked to Cowardin wetland types using NWI annotation, and how wildlife habitat maps were derived from the ELS maps. Table 1 is a crosswalk table, associating NWI codes, vegetation types and wildlife habitat types. We noted that one wetland type of particularly high use for avian species, Old Basin Wetland Complex, appeared in several different Cowardin classes in Table 1, leading to some confusion as to how finely different wildlife habitats could be defined using the ELS data source. We also noted that observations of wildlife use were collected during the one-day field map verification survey, but noted that, on all datasheets included in the ASA, no wildlife use observations were made. We read Jorgenson's (et al 2003) description of how wildlife habitat types were assigned to each ecotype. The habitat types are described in the ELS in Table 16, but the importance of each habitat type for wildlife species is not discussed. In fact, Jorgenson warns us of the complexity of habitat use analysis:

Analyses revealed both large differences in habitat use among species, and strong seasonal patterns within species. For example, Canada Geese preferred Shallow Open Water with Islands for nest sites and Yellowbilled Loons preferred Deep Open Water with Islands. The analysis of habitat use, however, becomes exceedingly complex when differences in wildlife species, seasonal use (i.e., pre-nesting, nesting, brood-rearing, fall staging), and ecological regions (i.e., delta and coastal plain) must be considered and it becomes difficult to synthesize the information into simple mitigation objectives (Jorgenson et al 2003, p. 87).

We do not have a reference that correlates a given wildlife habitat type from the ELS (and, therefore, from the ASA) to a level of use by wildlife (whether that be by numbers of species, for different life stages, in different seasons, by mammal vs. avian, etc.). As such, the veracity of data used to assess the functions related to wildlife use (e.g. General Habitat Suitability and Uniqueness and Special Use) should be carefully considered.

Applicant Response. The Old Basin Wetland Complex is a composite of at least three distinct land cover types, often times varying greatly in characteristics, that are grouped together as part of the mapping phase of the broad scale ELS projects to meet map scale protocols. For the ASA, ABR re-mapped many of the ELS polygons, in particular the complexes because they contain at least three functionally dissimilar wetland types. The habitat information linking ELS wildlife types to wildlife use and preference data (i.e. "reference that correlates a given wildlife habitat type from the ELS to a level of use by wildlife") used in the ASA is cited in Phillips Alaska 2001 and Johnson 2013. The first is a presence absence table indicating when a particular species uses a particular wildlife habitat type at any life stage and the second are habitat preference data compiled by focal species and by region (NPR-A and Colville River Delta). The crosswalk table in the ASA was used to determine which habitat type listing to use. Data were interpreted conservatively, such that if a species preference were listed in the Colville River Delta but not in the NPR-A, the habitat would still be considered as preferred.

USACE Response. The USACE used information in the ASAs provided by the applicant and has applied best professional judgments to the findings, including USACE's review of plant communities using the ASAs' wetland delineation data forms and applied basic knowledge of wildlife feeding habits. This resulted in a lift to the general habitat suitability function to high on five wetland/waters, among others (see Appendix B, table 4). The EPA recommended changes and opinions regarding the criteria used to determine particular wetland/water functions and values, some of which were incorporated into the document. USACE agrees with EPA that more work in this area needs to be done and recommends continuing to address ASA issues on a

programmatic basis and not during the analysis and review of individual permits. The FSEIS and the other information listed in our ROD are fully sufficient for our analysis. See ROD section 5.5 and 6.1.

A-002-013
Lower 48 methods do not apply to the Arctic Coastal Plain. The ASA states, on p. 8, "To be consistent with previous functional evaluations in the Colville River Delta and the NE NPR-A, we used a list of 8 functions typically used in a variety of established functional assessment methods (Adamus 1991, Magee 1998), but revised the evaluation questions and rating criteria for individual functions by adding specific thresholds relevant to typical ACP wetlands and adding questions which relate to waters." The Adamus method (1991) is intended for use in Lower 48 ecosystems. It does not apply to the permafrost-driven ecosystems characterized by decumbent vegetation and the unique hydrologic regime of the Arctic coastal plain. Paul Adamus has developed a separate wetland functional assessment methodology for Southeast Alaska, referred to as WESPAK-SE. When asked during a recent WESPAK-SE training course if this method could be used elsewhere in Alaska outside of Southeast, Paul Adamus responded that no, it could not be used, unless and until the evaluation questions were "calibrated", i.e. regionalized (Gayle Martin, pers. comm. with Paul Adamus, Sept 29, 2014).

Applicant Response. CPAI agrees that no standard or recommended method exists to assess wetlands and waterbodies within the State of Alaska or to assess permafrost-driven wetlands on the North Slope in particular. As a result, CPAI and ABR invested considerable time and research to adapt general wetland models for the standard wetland functions listed in Adamus 1991 and Magee 1998 to ecological conditions specific to North Slope wetlands. This includes defining specific Arctic Coastal Plain (ACP) characteristics that allow permafrost-driven, ACP wetlands and waters to function under broad wetland function categories well established in the scientific literature. For example, the GMT1 ASA methodology development included revision of evaluation questions and rating criteria for individual functions by adding specific thresholds relevant to permafrost-driven wetlands. It should be noted that the GMT1 ASA methodology is not based on the WESPAK-SE method (Adamus 2013), which the EPA correctly notes is tailored specifically to Southeast Alaska wetlands and ecosystems. However, like WESPAK-SE, the GMT1 ASA has its basis in well-established HGM functional concepts and evaluates most of the same functions as used in WET and the Magee wetland assessment method, with broad categories subdivided and support for region specific species are added.

CPAI agrees that establishing a region specific list of functions should be a primary goal in future development of an ACP ASA methodology. Part of this process, which may be more appropriately dealt with by a group of collaborating stakeholders, would be to identify new region-specific functions and to define appropriate models. This last effort is likely beyond the scope of a single USACE permit applicant.

USACE Response. The USACE used information in the ASAs provided by the applicant and has applied best professional judgments to the findings that lead to modification of the original relative and overall functional scores (see section 5.9 and Appendix B of the USACE ROD). The EPA recommended changes and opinions regarding the criteria used to determine particular wetland/water functions and values. USACE agrees with EPA that more work in this area needs to be done. However, USACE recommends continuing to address ASA issues on a programmatic basis and not during the analysis and review of individual permits. The FSEIS and the other information listed in our ROD are fully sufficient for our analysis.

A-002-014
Meaning of the "N/ A" answer to evaluation questions. The ASA on p. 8 states, "Possible answers to evaluation questions are Y (Yes), N (No) and N/A (Not applicable). A Y response adds one point to the total and N and N/A add no points. The rating criteria (rank assigned to the sum of Y responses) is designed to account for wetland and waters types that typically get N/ A values on specific questions so that wetlands fall along the appropriate range (low, moderate, high) based

on basic HGM principles and BPJ." We find the meaning of the "N/A" answer to be problematic as it is used in this ASA method. "N/ A" means not applicable; it does not equal "no". N/ A should not be used to downgrade the ranking of a particular wetland or water for a given function. To say that a given evaluation question cannot be answered because the question does not apply, does not mean that the wetland or water underperforms the function. It means that the function and/or evaluation question does not describe the ecological services performed by this wetland or water. To then group the N/A answers with the No answers, and divide them by the total number of questions, results in an automatic downgrading of ranking for this wetland performing this function. Instead, the denominator should be the number of questions that can be answered either yes or no, and should not include the questions that cannot be answered because they are not applicable.

Applicant Response. The potential for an individual wetland type to produce an N/A value for any given indicator is accounted for within the rating criteria listed on the datasheets. In keeping with the overall goal of the ASA, which is to place wetlands in the study area along a natural gradient of functionality, the possible sums of Y/N data are considered when assigning a rank to a wetland type for a specific function. One example is the case of Sediment, Nutrient, and Toxicant Removal for open waters. There are six criteria used to evaluate this function, three of which would logically return an N/A value for open waters that have no vegetation which plays an important role in removing sediment, nutrients, and toxicants from water. In comparison to other wetland types that have high sediment inputs, thick organic layers, dense vegetation, and still waters and thus perform at a high level for this function, the model will accurately return a moderate value when open water is considered on its own. Arguably this linear type of method could be improved upon by establishing controlling indicators, using IF/THEN statements and establishing appropriate weights to individual indicators in order to deal with the potential for absent indicators.

USACE Response. The USACE used information in the ASAs provided by the applicant and has applied best professional judgments to the findings, including categorizing a wetland functional capacity against its performance at maximum capacity and restricted only to the functions it performs (See Appendix B). The EPA recommended changes and opinions regarding the criteria used to determine particular wetland/water functions and values. USACE agrees with EPA that more work in this area needs to be done. However, USACE recommends continuing to address ASA issues on a programmatic basis and not during the analysis and review of individual permits. The FSEIS and the other information listed in our ROD are fully sufficient for our analysis.

A-002-015
Assessing the Flood Flow Regulation function. The Flood Flow Regulation function is described on p. 9 of the ASA. As described, wetlands and waters that have a higher capacity to store floodwaters by virtue of having available depressions would be ranked high for performing this function. Regulation of floodflows receives less emphasis in the ASA. Surface roughness provided by live vegetation was only considered when seasonal flooding from rainfall events was likely to be flooding the wetland. We do not agree with this assessment. For example, for the type PEM1/SS1B (the most prevalent wetland type by acreage, for both Alternatives A and B), this function is rated as Low (p. B-29). The evaluation question "dense persistent vegetation or raised polygonal rims are present" is answered No, but we believe should be answered Yes. The rationale states that the wetland provides some surface roughness by raised tussock growth form but not by vegetation. To ignore the surface roughness provided by tall vegetation, or by vegetation that creates uneven terrain (such as tussocks do) during the spring break-up period discounts the moderation of floodflows that these plants provide.

Applicant Response. Significant improvements to the rating criteria of flood flow regulation and control have been made based on literature review of available studies on the ACP. The overall assumption that all tundra surfaces receive floodwater during snowmelt and that snowmelt floods behave somewhat similarly to floods within the growing season allows for the generous evaluation of this function. PEM1/SS1B or tussock tundra is described as a saturated wetland

type found typically on raised convex terrain where polygon rims, low center polygons and surface water in depressions is mostly absent. These wetlands are arguably less vulnerable to spring flooding or even seasonal flooding from high rainfall events and have less capacity to hold floodwaters due to the relative lack of physical storage features. Based on the assumption that peak flooding occurs during snowmelt and is very unlikely during the growing season, the ASA methodology assumes that the senesced graminoid plants under the snow surface do not physically provide surface roughness substantial enough to warrant a Y response.

USACE Response. The USACE used information in the ASAs provided by the applicant and has applied best professional judgments to the findings. The EPA recommended changes and opinions regarding the criteria used to determine particular wetland/water functions and values. A more comprehensive analysis of wetlands for flood flow regulation functions based on geomorphic units and hydrogeomorphologic features typical of the North Slope needs to be done. However, USACE recommends continuing to address ASA issues on a programmatic basis and not during the analysis and review of individual permits. The FSEIS and the other information listed in our ROD are fully sufficient for our analysis.

A-002-016
Assessing the General Habitat Suitability function. The ASA states, on p. 10, "For this aquatic site assessment, a particular wetland type was considered used by a high diversity of species if at least half of the assessed species were present: >6 mammal species and >27 bird species/' As we have stated in many ASA meetings, including the 6-hour ASA Methodology Workshop on June 25, 2014, this - whether there are half the number of species from a list are seen - is an arbitrary measure. The rationale for determining that observing half of the number of species from a list constitutes "high diversity of species" is not explained. The ASA points to various wildlife studies and avian survey reports, but none of these contain a "cutpoint" for determining high diversity of species. We would suggest augmenting the assessment with the edge effect analysis as described in this letter. We also suggest that the Corps take into account any comments on this issue from the U.S. Fish and Wildlife Service, as they have raised questions about negative data and ability to observe species that are rare on the landscape.

Applicant Response. The development of the GMT1 ASA criteria used existing available data. The diversity indicators used in the ASA are based on a full study evaluating wildlife habitat value. The number of species using any given habitat at any time factors into habitat evaluations. During the ASA methodology development, ABR concluded that the list of species evaluated in the presence/absence table in Phillips Alaska (2001) comprised a reasonable range of native species to the area. The indicators used in the ASA require a binary response (either Y or N) so the number of species necessary to be considered "high" diversity was based on half of the total number of species native to the area. The results of applying the ASA criteria indicate that, for avian species diversity in particular, this measure is a relatively conservative because most of the evaluated wetlands received a high ranking for diversity using the 50% threshold. Finally, it is important to note that the structure of the ASA is purposely flexible to allow for the introduction of different indicators based on what data products are available for a given project area. A 50% threshold for species diversity may or may not be an appropriate threshold for other projects in other parts of the North Slope or the state.

USACE Response. We have considered and accepted the EPA analysis regarding edge effect and interspersion and the data provided because it can be used factually and in the immediate GMT1 decision process for the evaluation of aquatic resource characteristics and value related to wildlife habitat and production. We have incorporated information provided in the ASDP-SEIS for mammal species into the wetland functional analysis, which resulted in a lift of the general habitat suitability factor to high in five of the aquatic resources analyzed (See section 5.9 and Appendix B of the ROD). We have not accepted EPA recommendation to include an evaluation of the maintenance of thermal regime in the ASAs. We believe the ASAs have sufficient criteria to evaluate the character and functions Alternatives A and B and developing another criterion for

maintenance of thermal regime would not make a meaningful addition to our evaluation. The FSEIS and the other information listed in our ROD are fully sufficient for our analysis.

A-002-017

Categorical rankings of wetland functions: Category 1. Categorical rankings of wetland functions are described on pp. 12-13 of the ASA, and generally follow the now rescinded RGL 09-01. For purposes of this ASA, a wetland can receive a Category I status only if the following criteria are met in the BPJ assessment: "1) documented observations of applicable threatened, endangered or candidate wildlife species (TES) were found within the project study bounds, 2) a wetland was within an established critical habitat, or 3) the wetland rated as high value for all of the evaluated functions." We find these criteria problematic for three reasons.

First, if the third criterion high value for all of the evaluated functions - were used to rank a wetland or water as Category I, then most of the wetland and water types could never rate Category I. This is because some of the functions are not applicable, and in this ASA, "N/A" is being counted as "N" (no). It would not be possible for a wetland or water with one function which does not apply to it, to ever be ranked as Category I. In fact, several of the evaluation questions for waters do not apply, so, logically, waters could never rank as Category I using these criteria. As stated above, we don't think that "N/A" should equal "N".

Second, there is only one wetland type - PEM1F - for which a Category I rank was assigned (Tables 3 and 4; p. 21). This is because one pair of Spectacled Eiders, a listed threatened species, was observed in this wetland type elsewhere in the overall GMT-1 study area in 2004. This does not mean that Spectacled Eiders do not use other wetland and water types within the study area; it only means that they haven't yet been observed during short-term, targeted avian surveys conducted by CPAI or its contractors. Threatened and endangered species are, by definition, rare on the landscape and difficult to detect. This criterion - documented observation of a threatened or endangered species - when used to bump a ranking up to Category I, is an arbitrary one.

Third, the ASA defines Category I wetlands, in part, as "undisturbed and containing ecological attributes that are impossible or difficult to replace within a generation, if at all." This language comes from the now-rescinded RGL 09-01. We state here, again, as we have on nearly all of our reviews of permits and projects on the North Slope over the last several years, and as we have for earlier drafts of this ASA, that undisturbed, permafrost-driven wetlands merit a Category I ranking because they "are impossible or difficult to replace within a generation, if at all." We have no evidence that a disturbed site, once reclaimed, will return to pre-disturbance wetland functional levels.

Applicant Response. The ASA methodology includes a number of ways in which a wetland may be ranked as Category 1. These include: 1) documented observations of applicable threatened, endangered or candidate wildlife species (TES) were found within the project study bounds; 2) a wetland was within an established critical habitat, or 3) the wetland rated as high value for all of the evaluated functions; or 3) if a wetland or water ranks high for 6 of the 8 evaluated functions. The option to put a wetland in Category 1 if all evaluated functions were rated as high works independently of functions listed as N/A overall. If a wetland was rated for 6 of the 8 functions and received high rankings for each of the 6 then it would be considered Category 1. These criteria were made intentionally difficult to meet because, based USACE's definition of a Category 1 wetland, these wetlands should be exceptional in some definable way. The Category I through III criteria are based on previously established protected status or high ranking across the entire assessment area.

The draft definitions issued by the USACE Alaska District state that Category I wetlands include those that "provide habitat for threatened or endangered species that has been documented." The ASA methodology interprets "documented" to mean the direct observations of a T&E species and has rated wetlands as such. CPAI acknowledges the lack of observation of a T&E species within a given habitat is not evidence that these species do not use or will not be observed in that

habitat in the future. However, documented use of habitat by a T&E species is just one way that an aquatic site's value is measured. For example, several criteria evaluating General Habitat Suitability and Uniqueness and Special Status also consider the presence of documented critical habitat or preferred habitat for T&E species.

As part of the development of future ASA methodologies, further definition of replace-ability is needed to consider wetlands on a regional level. The assertion that all wetlands on the Arctic Coastal Plain are difficult or impossible to replace within a generation and thus should all be ranked as Category 1 would fail to recognize or differentiate wetlands that provide a documented life support function for a T&E species, are truly a high quality example of a rare wetland type, or that are rare within the region. By identifying and ranking only those wetlands with the highest functional capacity in the project are and relative to the region as Category I, the ASA allows avoidance, minimization, and mitigation measures to focus on wetlands that are truly of the highest value.

USACE Response. USACE is aware of the EPA concerns over the methodologies and criteria used to evaluate permafrost driven or any other water/wetland in Alaska. To avoid penalizing aquatic resources for functions they do not intrinsically posses, we have modified the protocol to calculate the overall functional scores by wetland/water type. Categories are determined based on the maximum capacity of a wetland to perform a specific function and only for functions inherently to such wetland (See ROD Appendix B). However, we consider the EPA comments on the evaluation methodology used in the applicant's ASAs to be a regulatory program issue and not completely resolvable here on the GMT1 permit decision.

We have applied our best professional judgments to these ASAs as described in sections 5.5.2 and 6.1.30, and in Appendix B of the USACE ROD. The FSEIS and the other information listed in our ROD are fully sufficient for our analysis.

Bureau of Land Management

A-003-003
Project development activities that have the potential to impact water resources include installation of bridges and culverts, placement of gravel fill for roads, pads, airstrips, and construction of suspended pipelines adjacent to waterbodies and across streams. Installation of bridges and culverts could affect natural drainage patterns (creation of new channels and inundation of dry areas), stream stage (water level) and streamflow (volume), stream velocity (which influences erosion and sedimentation rates), groundwater flow, and lake levels. Modification of the natural surface water drainage patterns may result from blockage or redirection of flow. Installation of culverts may introduce ponding upstream of culverts and drying downstream of them. Disruption of streambeds and stream banks can also remove protective shoreline vegetation and lead to channel erosion and sedimentation, formation of meltwater gullies and plunge pools from perched culverts

Alternatives A and B both require a 350 ft bridge spanning the Ublutuoch River. This bridge was designed with the bridge deck 14 ft higher than the 100-year water-surface of 12.1 BPMSL. Though the upper portion of the west floodplain is inundated during high flows, the majority of the flow is conveyed along the lower west floodplain and main channel, neither of which will be constricted by the current design when ice jams are not present. Thus, stream velocity and channel scour is not expected to vary much from baseline conditions. Should an ice jam occur during moderate to large floods, it is possible some back water could result. However, significant ice jamming is not anticipated since the lower west floodplain could provide an alternative route for stream flow if the main channel is blocked. In addition, roads leading up to the bridge will be required to provide for natural flow during high-discharge events. The pipeline crossing will include block valves on each side of the channel.

Alternative A requires a 40 ft bridge over Crea Creek and cross-drainage culvert over Barely Creek, potentially impacting critical fish habitat and fish passage. Design of both structures will require long-term monitoring and re-design if disruption of streambeds and streambanks lead to erosion and sedimentation. Additionally, the proximity of these two crossings to the Ublutuoch River make any spills from cither the road or pipeline crossing more likely to be transported into the Ublutuoch River system compared to the Alternative B route. The Alternative B road route is higher in the basin, requires no bridges and is at least 1 mile further from the Ublutuoch River in an area with thaw basins and generally wetter and flatter terrains where significant spills are less likely to migrate off-site.

Applicant Response. CPAI recommends USACE incorporate material provided in the Alternative A versus B comparison provided 11/12/14 to respond to this comment.

USACE Response. See the above USACE response to the BLM comment above in section 1.1.3 US Bureau of Land Management (BLM).

A-003-004
Alternatives A and B both require numerous culverts, installed at regularly spaced intervals to mitigate the risk of sheet flow interruption and thermokarst. Table 4.2-8 from the GMT1 EIS outlines the differences between these alternatives.

Table 4.2-8. Summary of Major Components Potentially Impacting Hydrology Alternative A: Total Gravel Fill Footprint (acres) 72.7, Total Length of New Road (miles) 7.8, Number of Constructed Bridge Crossings 2, Potential Number of Culverts 81
Alternative B: Total Gravel Fill Footprint (acres) 80.4, Total Length of New Road (miles) 8.6, Number of Constructed Bridge Crossings 1, Potential Number of Culverts 91.

Potential impacts to drainage that may be caused by the CD5-GMT1 road were evaluated using an inundation analysis with conservative assumptions. The methods followed the general approach described in the Point Thomson Project EIS. In the analysis (modeling), the maximum headwater depth at each road crossing is assumed to equal the height of the culvert. Culverts were assumed to be 4 feet in diameter and installed every 500 feet along the ground surface. Thus, the maximum water depth immediately upstream of each road crossing (culvert) is 4 feel. This hypothetical water surface was used to estimate the inundated area, by projecting the upgradient of the road until a 4 foot elevation rise occurred. Areas with the flattest topography experience the greatest ponding, and steeper areas less ponding. Both Alternatives were similar in areas of ponding and drying.

Table 4.2-7. Potential Altered Inundation Area by New Roads
Alternative A: Area of Decreased Stage (Drying) Downstream of Gravel Road (acres) 2,630
Area of Increased Stage (ponding) Upstream of Gravel Road (acres) 470
Alterative B: Area of Decreased Stage (Drying) Downstream of Gravel Road (acres) 2,939
Area of Increased Stage (ponding) Upstream of Gravel Road (acres) 525

Applicant Response. CPAI disagrees with the analysis method presented in the SEIS. Considering the small drainage basin sizes and limited runoff volumes, the SEIS predicts backwater impoundment upstream of access road alternatives using an approach that is inappropriate, yielding a grossly overestimated area of inundation. The method assumes 4-foot diameter culverts with a 4-foot headwater (assumes culverts are flowing full) occurring during a large breakup event. Four feet of headwater could never occur in these drainage basins. Snow water equivalent on the arctic coastal plain typically does not exceed 3 inches. Given the flat terrain and lake storage the resulting volume from snow melt would be insufficient to yield 4-feet of headwater. A more applicable method to approximating upstream inundation extents is to reasonably distribute estimated peak discharge volume among culverts, calculate an appropriate headwater for conveyance of that distributed discharge, and map the resulting elevation upstream to an intersecting ground elevation. This then should be compared to unimpeded flow to yield an

accurate comparison of inundation resulting from Alternative A or Alternative B alignments. With proper culvert placement and design no significant inundation upstream of either alternative is expected. CPAI recommends USACE incorporate material provided in the Alternative A versus B comparison provided 11/12/14 to respond to this comment.

USACE Response. We generally agree with the BLM conceptual approach to show gross hydrologic differences between alternatives for ponding and drying. Assumptions must be made to demonstrate the differences in hydrology and the levels of ponded water were not used as absolute by USACE. See USACE comment for A-003-003.

A-003-005
In summary, water resource-related impacts associated with the GMT1 development ranked both alternatives A and B low in intensity, long-term in duration, and local in extent. Potential impacts from the Crea and Barely Creek river crossings with a shorter road length and reduced fill were not as preferable as a slightly longer road with no crossings through welter terrain. The potential future impacts to fish habitat and passage due to channel erosion and sedimentation or improper culvert design, and the possibility of spills entering the Ublutuoch River system made Alternative B a slightly better alternative for water resources.

Applicant Response. CPAI recommends USACE incorporate material provided in the Alternative A versus B comparison provided 11/12/14 to respond to this comment.

USACE Response. USACE agrees with BLM that both Alternatives A and B rank as low in intensity, long-term duration, and local in extent. However, USACE disagrees that Alternative B is slightly better for water resources given it would require a longer road, use more gravel, affect more wetlands of higher value habitat, and require 50 percent more culverts. See also ROD at section 5.9.

A-003-006
According to the GIS analysis of Alternatives A and B, 80.2 acres of vegetation would be buried (i.e. direct impact) under gravel fill in Alternative B versus only 72.7 acres under Alternative A. Therefore, Alternative B has a 10.3% greater direct impact to vegetation in terms of absolute acres buried under gravel fill. When looking at dust fallout or changes in soil moisture as a result of gravel fill. i.e. indirect impacts, Alternative B is again greater at 659.2 acres versus 587.3 acres, or 12.2%. Taken out of context, these percentage differences may be perceived as a real difference. However, the acreage differences must be examined in the context of the ecology of the area. If limited to the project study area, direct impacts of B are 0.007% greater than for A, and indirect impacts are 0.065% greater. For this reason, we conclude that the difference is truly negligible.

Applicant Response. The Clean Water Act, Section 404(b)(1) Guidelines state: "Except as provided under Section 404(b)(2), no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences." (40 CFR 230.10(a), emphasis added). Under the Section (404)(b)(1) Guidelines, the difference between the 80.2 acres of impact and 72.6 acres of impact is not negligible and the USACE may not permit Alternative B unless it can be shown that it is the least (emphasis added) impactful alternative.

USACE Response. Alternative A was originally designed to minimize impacts associated with the siting of facilities within the Fish Creek Setback. USACE disagrees that the difference in wetland impacts between the two alternatives are negligible in meeting the CWA requirements to arrive at the LEDPA. See the above section 1.1.3 US Bureau of Land Management (BLM).

A-003-007

Potential impacts to fish from the GMT1 project include injury at water-use intakes, altered water quality, physical habitat changes (water quantity, flow patterns, and geomorphology), point and non-point source pollution, increased turbidity and sedimentation, and barriers to fish movement. Collectively, these could contribute to reduced success at different life history stages, behavioral changes, diminished condition, susceptibility to pollutants or disease, shifts in fish species distribution, and mortality.

Based on the impact criteria established in Table 4.3-5 of the Final SEIS, the various project components most relevant to fish, and the potential impacts associated with those components. Alternative B would have a lesser impact on fish and fish habitat than Alternative A. Alternative A would have a greater potential impact on fish resources primarily due to the presence of a permanent road and pipeline that would cross two additional streams, including one culvert, which would exist for the life of the project. The context of all alternatives would be "important", with anadromous fish species and anadromous waters in the project area protected by legislation, along with the existence of seasonal habitats critical to the life history of many fish species. Similarly, the geographic extent of all alternatives would be "regional", due to the fact that many fish species make extensive seasonal movements and utilize a variety of habitats that can extend beyond the project area. However, potential impacts under Alternative B would most likely be greatest during construction, as related to gravel placement, while impacts under Alternative A would be more extensive due to the proximity of the permanent road and pipeline to streams, and the crossing of those streams. It is the distance from the permanent road and pipeline to fish bearing streams and lakes in Alternative B that makes the magnitude of potential impacts much less than A. Based on these aspects of the alternatives, and the impact criteria used by BLM in Table 4.3-5 of the Final SEIS, the intensity of Alternative B could be considered "low" and the duration could be "temporary", while under Alternative A and C the intensity could be "medium" while the duration could be "interim" for fish habitat, and "long-term" for fish.

Applicant Response. CPAI disagrees with the BLM and the SEIS that Alternative B would have less impact to fish and aquatic habitat because it has fewer stream crossings. The SEIS indicates that Alts. A, B, C, D1 and D2 would each have "minor" impacts to fish and "minor" impacts to fish habitat. This would seem to confirm the conclusion that Alt. A and Alt. B cannot be distinguished on the basis of impacts to fish. To the extent BLM is contending otherwise, it would appear to be disagreeing with its own SEIS.

USACE Response. USACE agrees with CPAI that the SEIS indicates that alternatives A, B, C, D1 and D2 would each have "minor" impacts to fish and "minor impacts to fish habitat". We have determined Alternative A would have no direct impacts and the indirect impacts to fish and fish habitat can be found acceptable with proper design and protective conditions.

A-003-008
Potential impacts to subsistence from the GMT1 project include impacts to user access, to user avoidance, to resource availability, and to community participation in subsistence activities. Based on the impact criteria established in section 4.1.2 of the Final SEIS, impacts to subsistence that are likely to occur from development of GMT 1 will be of high intensity, long-term duration, of unique context, and have a regional extent. The summary impact level for all alternatives was determined to be major, but the comparison of alternatives in the subsistence section (4.4.5.12) explained that in terms of overall subsistence impacts, Alternatives A and B would likely have the fewest impacts of all the action alternatives.

Because Alternative A and Alternative B are similar, it is anticipated that most impacts to subsistence from either of these two development scenarios would be similar in type and intensity. However, there are a few notable differences between Alternatives A and B that lead to the conclusion that Alternative B will likely have fewer impacts on subsistence than Alternative A. The potential for fewer impacts to fish under Alternative B as described above constitute a factor of that conclusion. When subsistence users in Nuiqsut were presented with a list of the pros and cons of Alternatives A and B and asked to determine which scenario they preferred of those two,

the group (Native Village of Nuiqsut council members) determined that Alternative B was preferable because:

1. The route of road and pipeline is closer to town, resulting in less impact and fragmentation of the larger resource habitat and hunting area.
2. The route would avoid the Fish Creek buffer.
3. There would be fewer river crossings.

The BLM heard consistent local support in Nuiqsut for a route that includes fewer river crossings and concluded that this represents the overall public interest. This conclusion is one of the primary reasons we identified Alternative B as the agency's preferred alternative.

Applicant Response. CPAI disagrees with the SEIS finding that the impacts to subsistence from development of GMT1 will be of high intensity, long-term duration, of unique context, and have a regional extent. See our comments to the Draft SEIS. Kuukpik Corporation and the City of Nuiqsut agree with CPAI that the SEIS overemphasize the subsistence impacts from the development of GMT1. In their comments on the Draft SEIS Kuukpik Corporation and the City of Nuiqsut stated: "In light of the support of the Native people of the North Slope for Alternative A, it is very clear that they do not share the conclusions of the Draft SEIS that all of the development alternatives would have "Major" impacts on Native interests and values. It is also very clear that North Slope Natives do not share the conclusions of the Draft SEIS that mistakenly assign all but the No Action Alternative impact ratings of High Intensity, Long Term, Region-Wide and Important impacts on specifically Native interests in Socio-cultural Resources, Subsistence, and Environmental Justice." (See paragraph above Draft SEIS comment 19-003)

Based on a review of publicly available comments on the GMT1 project, CPAI disagrees with BLM on the alternative preference by subsistence users and residents of Nuiqsut. Public testimony from North Slope communities overwhelmingly supported Alternative A when an alternative was mentioned. Public testimony comments on the Draft SEIS supporting CPAI's proposed project (Alternative A) include the following:

1. "You know, I would probably go with A, because it leaves a smaller footprint that won't affect any migrating animals up in that area and (indiscernible) over the years of being on (indiscernible) I've seen Nuiqsut get cut off from the south or from the east because of Prudhoe Bay and then from the south with, you know, they're just almost surrounded in all areas, you know, on four or three different sides and then now, Shell trying to cut off the - drilling out in the Beaufort Sea, you know, pretty much like boxed in, but you know, I'm glad that Nuiqsut has been able to subsist, even though development is all around them."
Willard Neakok
Native Village of Point Lay
Point Lay Meeting, Page 94

2. "For the record, my name is Mary Ellen Ahmaogak and I am on the Board of Directors of Arctic Slope Regional Corporation. ASRC supports Alternative A as it's -- as proposed by ConocoPhillips, our partner in development.

We support the efforts of Kuukpik Corporation to work with ConocoPhillips to design a project that meets the needs and concerns of the community of Nuiqsut. Alternative A responds to Nuiqsut's concerns over aircraft traffic in and around the village. The excessive amount of air traffic has a negative effect on the community and subsistence through disturbances to the animals.

ASRC agrees with the community that road access is better because it will allow broader access for subsistence to the west of the village in the Fish Creek area. Alternative A and the road also address safety issues, both for emergency situations, but also will allow for faster and more efficient oil spill response."
Mary Ellen Ahmaogak

Board of Directors of Arctic Slope Regional Corporation
Atqasuk Public Meeting, Page 78

3. "So I have to make up my mind and move forward and support projects like this that will benefit our people and not just us as Iñupiat, everybody who lives on the North Slope, no matter what race, creed, or color they come from. That's the benefit of the -- of our system today. So we benefit everybody and that's why I have to support what we're doing here today.
I support Alternative A. It's the least impact, as you stated in your presentations to the community of Nuiqsut. There is (sic) impacts, but it's the least impact and it's most beneficial for the subsistence users, as well. I, for one, in Wainwright cannot be telling the community of Nuiqsut what they should be supporting. So I'm supporting what they do -- what they're supporting, Alternative A, and that's -- and that's what we should be doing, supporting a community with the most impacts."
John Hopson
Mayor of Wainwright
Barrow Public Meeting, Page 85

4. "In addition to bringing direct benefits to the shareholders of Kuukpik, ASRC and other Native corporations entitled to 7(i) distributions, this project will benefit the North Slope Borough and the state of Alaska through the increased tax revenues and by extending the life of the Trans-Alaska Pipeline System. It will also bring benefits to the villages that rely heavily on funding from NPR-A grants. The North Slope Borough supports the Greater Moose's Tooth Project 1 and the adoption of Alternative A as the preferred alternative. We believe that Alternative A incorporates rigorous mitigation and best management practices that will enable this project to move forward in a responsible manner, while also protecting the ability of our local residents to continue their subsistence practices.

It also has the smallest gravel footprint of all alternatives, which is important given the scarcity of gravel on the North Slope. Alternative A also includes road connections that will provide increased access to hunting areas for local subsistence users. Roads will provide for more timely and efficient responses to an oil spill or other unforeseen incident. Further roads will allow emergency responders access to the project site, even in the severe weather conditions. Roads will also enable residents of Nuiqsut to have access to the project site and will create greater employment and training opportunities for the village.

Alternative A will also minimize the amount of noise and required over flights by helicopters and fixed wing aircraft, which has been repeatedly expressed to the BLM and stated in the SEIS document as being more disruptive to subsistence hunting than any other activity and because GMT1 project (sic) is located in an area that is not heavily utilized by Teshekpuk or Central Arctic Caribou Herds, a road connection is unlikely to have any substantial impact to this important subsistence resource.

For all these reasons, we feel that Alternative D or any other alternative that would promote road-less development is a poor concept and should not be considered further as a viable alternative. As the SEIS acknowledges, air travel has been restricted at the Alpine site between 13 to 22% of each year over the last four years.

It is not prudent or reasonable to risk the life, health or safety of the workers at the project site, or hamper response times to oil spills for the sake of road-less development. Alternative D will also create more ambient noise and will have a greater negative impact to air quality than all of the other alternatives. The SEIS states, "Alternative D would likely have the largest impact to subsistence and thus environmental justice for Nuiqsut." We agree and we feel that this alternative should not be recommended."
Charlotte Brower
Mayor of North Slope Borough
Nuiqsut Public Meeting, Page 74

5. "While Kuukpik's review of the draft supplemental EIS is still ongoing, our preliminary conclusion that Alternative A is the most balanced environmentally responsible of all alternatives and that Alternative A has the least impact to this community. Kuukpik Corporation prefers Alternative A because Alternative A uses less amount of fill to the wetland and a small footprint and uses less amount of other resources like water, which would not have been building GMT1 at all (sic), would use less gravel and have a small footprint that the Alternative A identifies.

The people of Nuiqsut had complained repeatedly for years and years about aircraft, fixed wing, helicopter noises that interfere our subsistence hunt trying to gather for our food security and Nuiqsut consistently opposed building any more airstrips in our (indiscernible) land of the Kuukpik (indiscernible) because of disruption of our hunt.

Because of a large increase in aircraft traffic, a greater impact overall that Alternative D, the road-less alternative that (indiscernible) Kuukpik opposes Alternative D because of more impacts. In addition, if GMT1 were built road-less, it would make it more likely that the other satellites also would be built road-less and more airstrips to be built in the Fish Creek area and known as other satellites (sic). A second airstrip near Fish Creek would be -- would be even more unacceptable than the first airstrip in Alternative D. Road-less development of Alternative D would require large amounts of unnecessary duplication of facilities at GMT1. A pad plus an absence of a road requires GMT1 to have more standalone facilities, including a year-round man camp, incinerators, generators that cause emissions. From Alternative D, there would be less -- five times greater (sic) from the Alternative A.

Using Nuiqsut as the hub under Alternative C is not acceptable to Kuukpik at this time. Kuukpik does not want ConocoPhillips building roads, pads, other -- other facilities (indiscernible) and we understand that neither the industry nor the community would like that idea because it would increase impacts, social impacts, subsistence impacts. It would increase the air traffic, blocking operation -- operational activity. It would be accountable (sic) to this community.

Kuukpik would not make the land and (indiscernible) city limit available for this project because of impacts, air emissions, dust, you name it. Kuukpik also believes that trucking activity under C, like I indicated, dust, air control (sic) would be unacceptable."
Isaac Nukapigak
President of Kuukpik Corporation
Nuiqsut Public Meeting, Page 81

6. "Sometimes, you know, when you have a contradicting document that says this and that, but it's not on the same page as what they want to believe, but for Alternative A is most, for me, to be acceptable, because there's a lot of -- it's the least use of gravel, smaller footprint versus the alternative or that probably some years down the road, they will not have it, but not now. I have seen all these years of being observant. I have participated in some of the process. I've seen that. I thank you."
Joseph Nukapigak
Kuukpik Corporation, Natural Resource Director
Nuiqsut Public Meeting, Page 97

USACE Response. USACE was present at the Barrow, Nuiqsut, and Anchorage public meeting held to hear testimony for the DSEIS publication. We have considered the different viewpoints from local stakeholders in the region and agree there have been conflicting views. All of the information has been taken into consideration in the USACE ROD (See, e.g. section 6.1).

Audubon Alaska, The Wilderness Society, Center for Biological Diversity, Conservation Lands Foundation, Natural Resources Defense Council, Northern Alaska Environmental Center, Pacific Environment, and Sierra Club

N-001-002
We are concerned with the decision to build a year-round road to the GMT1 project instead of requiring aircraft access. We have yet to see a substantive analysis of the issue that would justify a decision that an all-season road is the least environmentally damaging practicable alternative or allow the Corps to make an informed public interest determination on the project.

Applicant Response. The LEDPA analysis begins with identification of practicable alternatives. Alternatives D-1 and D-2 - the so-called roadless options are not practicable because they result in a negative net return on investment. Therefore, these alternatives cannot be the LEDPA. In addition, even if the roadless options were practicable, which they are not, the next step would be to see which alternative has the least direct and indirect impact to the aquatic ecosystem. Alternatives D-1 and D-2 have a greater direct and indirect impact because they both have a larger gravel footprint that Alternative A, which has the smallest gravel footprint. Finally, the presumptive LEDPA - Alternative A - would not be the LEDPA is there are other significant adverse impacts that outweigh the fact that it has the smallest impact to wetlands. However, there are not countervailing significant adverse impacts resulting from Alternative A. To the contrary, as to Alternatives D-1 and D-2, in addition to having larger gravel footprints, these project designs would result in significant adverse impacts to subsistence users and subsistence resources as a result of a substantial increase in air traffic.

Furthermore, The Clean Water Act, Section 404(b)(1) Guidelines, however, state: "Except as provided under section 404(b)(2), no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences." (40 CFR 230.10(a)). Not only would Alternative D have greater direct impact on aquatic sites (87.4 and 85.8 acres direct impact respectively), but Alternatives D1 and D2 would present other significant adverse environmental consequences that deserve consideration in determining which alternative in the least environmental damaging. These include the lack of year-round access that a road would provide for emergency response, increased disturbance of wildlife (notably birds and caribou), and subsequent disturbance of subsistence resources and activities resulting from higher levels of air traffic under these alternatives. Indeed, the Final SEIS notes: "In comments and testimony received on the GMT1 Draft SEIS from North Slope residents, there is universal opposition to development options that include more airstrips and thus increased air traffic (BLM 2014, page 423)." These significant impacts suggest that roadless development at GMT1 is not the least environmentally damaging practicable alternative.

USACE Response. USACE has fully considered the 2 road-less Alternatives D1 and D2, described our analysis in section 3.5, and determined the road-less alternative to not be practicable alternatives. These alternatives also have greater impact to aquatic resources, as described in the ROD at 5.9.

N-001-004
The project area is within the Colville River Delta Important Bird Area (IBA). The Colville River Delta IBA was established for continentally significant breeding populations of Pacific Brant, Spectacled Eiders, and Yellow-billed Loons. More information is located at http://netapp.audubon.org/iba/Reports/2784.

Applicant Response. CPAI recognizes the importance of the Alpine Satellites and GMT1 project areas to birds and as a result has committed to an extensive and long-term study of the avian resources in the area, has designed the project to avoid and minimize impacts to birds, and committed to mitigation measures to minimize long-term population level impacts to birds in the project area.

USACE Response. USACE recognizes the importance of the Colville River Delta Important Bird Area (IBA) as important habitat for numerous avian species. Avian species were considered throughout the BLM and USACE analyses for the proposed action and alternatives.

N-001-005
In its comments to BLM on the Draft SEIS for GMT1, Audubon Alaska analyzed a "Cumulative Effects Area" (CEA) encompassing the Greater Mooses Tooth, Bear Tooth and Colville River development units of the NPR-A. Within that area, wetlands and other waters of the United States support above average NPR-A breeding densities for 17 water bird species. The area contains above average NPR-A habitat for four species on Audubon's Alaska Watchlist (Kirchhoff and Padula 2010)—Pacific Brant, King Eider, Red-throated Loon and Yellow-billed Loon.

The CEA is particularly important for King Eiders, encompassing almost 8% of the high-value King Eider habitat in the NPR-A. On average, acres in the CEA are 3.2 times more valuable as King Eider habitat than an average acre in the NPR-A. Additionally, an estimated 44 Spectacled Eiders, a federally-listed threatened species, as well as 68 Yellow-billed Loons, a candidate for federal listing, breed in the CEA. Overall, WatchList species occur at almost twice the density within the CEA compared with the entire NPR-A.

Given these wildlife values, as well as the area's value for caribou and subsistence uses, an aggressive effort to reduce any project's impacts within the area is warranted.

Applicant Response. CPAI recognizes the importance of the Alpine Satellites and GMT1 project areas to birds and as a result has committed to an extensive and long-term study of the avian resources in the area, has designed the project to avoid and minimize impacts to birds, and committed to mitigation measures to minimize long-term population level impacts to birds in the project area.

USACE Response. USACE has worked with BLM and the applicant to avoid and minimize impacts to birds within the proposed project area. Where necessary, compensatory mitigation will be required (see section 5.9).

N-001-006
According to EPA and the Corps' 404(b)(1) Guidelines, the "degradation or destruction of special aquatic sites, such as filling operations in wetlands, is considered to be among the most severe environmental impacts covered by the Guidelines. Under the Guidelines, no discharge of dredged or fill material shall be permitted if, among other things, a practicable alternative to the proposed discharge would have less adverse impact on the aquatic ecosystem. The Corps lacks the information to make a 404(b)(1) determination here.

As discussed above, the final SEIS for this project, which does not include a final design decision, was released on the 29th of October. During the draft SEIS comment period, a number of commenters noted that BLM had not adequately analyzed the environmental and social impacts of an access road versus aircraft access. Indeed, BLM apparently used flawed numbers to perform its draft SEIS analysis. A preliminary look at the just-released EIS suggests that BLM has not yet performed the necessary analysis necessary to conclude that road access is environmentally and socially preferable to aircraft access. Without adequate analysis, the Corps cannot conclude that a road is the least environmentally damaging practicable alternative for the project.

Applicant Response. The LEDPA analysis begins with identification of practicable alternatives. Alternatives D-1 and D-2 - the so-called roadless options are not practicable because they result in a negative net return on investment. Therefore, these alternatives cannot be the LEDPA. In addition, even if the roadless options were practicable, which they are not, the next step would be to see which alternative has the least direct and indirect impact to the aquatic ecosystem. Alternatives D-1 and D-2 have a greater direct and indirect impact because they both have a

larger gravel footprint that Alternative A, which has the smallest gravel footprint. Finally, the presumptive LEDPA - Alternative A - would not be the LEDPA is there are other significant adverse impacts that outweigh the fact that it has the smallest impact to wetlands. However, there are not countervailing significant adverse impacts resulting from Alternative A. To the contrary, as to Alternatives D-1 and D-2, in addition to having larger gravel footprints, these project designs would result in significant adverse impacts to subsistence users and subsistence resources as a result of a substantial increase in air traffic.

CPAI agrees with the statement that "Alternative D presents other potentially significant adverse environmental consequences that deserve consideration under the 404(b)(1) Guidelines in determining which alternative is the least environmentally damaging." The substantial increase in air traffic that would be required under Alternatives D1 and D2 is well documented in the Final EIS in Sections 2.8 and 2.9. The Final SEIS also documents that the increased air traffic would have increased impacts to birds, mammals, and noise. Furthermore, Sections 4.4.5.6 and 4.4.5.7 of the Final SEIS state that "air traffic is the most frequently cited impact of development by Nuiqsut caribou hunters ... and Alternative D1 [and D2 in Section 4.4.5.7] would result in significantly higher aircraft traffic." In comments on the Draft SEIS, several residents of Nuiqsut expressed concern regarding the amount of aircraft traffic associated with Alternative D (see Volume 3 of the Final SEIS). Finally, CPAI has provided extensive comment on the increased environmental and human risk associated with Alternatives D1 and D2 as a result of limited access in the event of a spill or other emergency. Of note, Alternatives D1 and D2 would also have greater direct impacts to wetlands and vegetation, directly impacting 87.4 and 85.8 acres respectively. For these reasons, CPAI believes it has been clearly demonstrated that despite the decreased gravel footprint, Alternatives D1 and D2 are not the LEDPA.

USACE Response. We disagree and believe there is a sufficient amount of information available to us to make a determination regarding compliance with the CWA Section 404(b)(1) Guidelines for a permanent access road or roadless design (see section 3.5).

N-001-007
Many commenters on the draft SEIS also noted that a seasonal drilling option could eliminate the need for a year-round, permanent road and decrease the airstrip footprint in the roadless alternative. The draft SEIS did not include a discussion of that alternative. The final SEIS does discuss an seasonal alternative, but time is too limited to allow careful public review of that discussion for purposes of the Corps' comment deadline. We note that there are excellent environmental reasons to strongly consider the seasonal drilling/ice roads option, and would reference Alaska Senator Frank Murkowski's statement on the Senate floor over ten years ago that "[W]e do not build gravel roads; we build ice roads. It represents better and safer technology and does not leave a scar on the tundra."

Applicant Response. The LEDPA analysis begins with identification of practicable alternatives. Alternatives D-1 and D-2 - the so-called roadless options are not practicable because they result in a negative net return on investment. Therefore, these alternatives cannot be the LEDPA. In addition, even if the roadless options were practicable, which they are not, the next step would be to see which alternative has the least direct and indirect impact to the aquatic ecosystem. Alternatives D-1 and D-2 have a greater direct and indirect impact because they both have a larger gravel footprint that Alternative A, which has the smallest gravel footprint. Finally, the presumptive LEDPA - Alternative A - would not be the LEDPA is there are other significant adverse impacts that outweigh the fact that it has the smallest impact to wetlands. However, there are not countervailing significant adverse impacts resulting from Alternative A. To the contrary, as to Alternatives D-1 and D-2, in addition to having larger gravel footprints, these project designs would result in significant adverse impacts to subsistence users and subsistence resources as a result of a substantial increase in air traffic.

In addition, as detailed in Table 2.3-2 of the FSEIS, the seasonal drilling roadless alternative when compared to the roadless alternative (D2 compared to D1) results in a decreased number

of aircraft flights annually in years 2017 and 2018. However, for years 2019 and beyond the anticipated number of flights above the background average is the same for Alternatives D1 and D2. Additionally, due to the limits that seasonal drilling the completion of drilling activities would be double that for all other activities. This would extend drilling activities to 2042 while for the other alternatives; drilling activities are anticipated to be completed 21 years earlier in 2021. In developing our proposed project, ConocoPhillips has provided a balanced approach to responsible development.

USACE Response. We have considered the full range of available practicable alternatives in making our decision, including the roadless seasonal drilling alternative described in the 2014 BLM GMT1 FSEIS. We have followed the CWA and NEPA regulations in providing adequate opportunity for public engagements with our 45-day public notice. The applicant has not changed their proposal and we do not believe additional new information would be obtained for our consideration in the decision making process.

Alaska Wilderness League

N-002-001
Current information is not conclusive on whether a permanent, all-season road will have more environmental and social impacts than aircraft access, ice roads, or seasonal development.

Applicant Response. The LEDPA analysis begins with identification of practicable alternatives. Alternatives D-1 and D-2 - the so-called roadless options are not practicable because they result in a negative net return on investment. Therefore, these alternatives cannot be the LEDPA. In addition, even if the roadless options were practicable, which they are not, the next step would be to see which alternative has the least direct and indirect impact to the aquatic ecosystem. Alternatives D-1 and D-2 have a greater direct and indirect impact because they both have a larger gravel footprint that Alternative A, which has the smallest gravel footprint. Finally, the presumptive LEDPA - Alternative A - would not be the LEDPA is there are other significant adverse impacts that outweigh the fact that it has the smallest impact to wetlands. However, there are not countervailing significant adverse impacts resulting from Alternative A. To the contrary, as to Alternatives D-1 and D-2, in addition to having larger gravel footprints, these project designs would result in significant adverse impacts to subsistence users and subsistence resources as a result of a substantial increase in air traffic.

Additionally, the Final SEIS clearly documents the substantial increase in air traffic that would be required under Alternatives D1 and D2 (Final EIS in Sections 2.8 and 2.9). The Final SEIS also documents that the increased air traffic would have increased impacts to birds, mammals, and noise. Impacts to birds under Alternatives D1 and D2 increase from local in geographic extent to regional due to increased disturbance related to air traffic over a wider area that would occur under alternatives with access via a gravel road. Impacts to terrestrial mammals, and specifically caribou, increase from low in intensity to medium under Alternatives D1 and D2 and from local in extent to regional with an overall increase in impacts from minor to moderate. Impacts to climate/meteorology and air quality would also increase under Alternatives D1 and D2 relative to the alternatives with road access, including an overall increase in climate/meteorology impacts from moderate to major and an overall increase in air quality impacts from minor to moderate. While differences in impacts to subsistence are not captured in the impact level summary in the Final SEIS, Sections 4.4.5.6 and 4.4.5.7 state that "air traffic is the most frequently cited impact of development by Nuiqsut caribou hunters ... and Alternative D1 [and D2 in Section 4.4.5.7] would result in significantly higher aircraft traffic." In comments on the Draft SEIS, several residents of Nuiqsut expressed concern regarding the amount of aircraft traffic associated with Alternative D (see Volume 3 of the Final SEIS). Alternatives D1 and D2 would not minimize impacts to aquatic sites, with greater direct impacts as a result of the placement of gravel fill (87.4 and 85.8 acres, respectively). Finally, CPAI has provided extensive comment on the increased environmental and human risk associated with Alternatives D1 and D2 as a result of limited access in the event

of a spill or other emergency. For these reasons, CPAI believes it has been clearly demonstrated that Alternatives D1 and D2 are not the LEDPA.

USACE Response. USACE believes there is a sufficient amount of information available to make a determination regarding compliance with the CWA Section 404(b)(1) Guidelines regarding a permanent access road or roadless design (see section 3.5).

N-002-005
Development on federal lands in the NPR-A was intended to and ought to require no permanent, gravel roads. At the onset of the previous EIS process for GMT-1 (the Alpine Satellite Development Plan), project proponents are on the Congressional record condemning all-season roads for the project:

"Now let me show you how we operate. I said we are not going to have roads. We are not going to open up gravel pits. That is drilling in the Arctic... That is a winter road. It is a road that is frozen. It works fine... Where are they talking about these big gravel roads? It isn't done anymore. We use technology," Senator Frank Murkowski, April 17, 2002 "We do not build gravel roads; we build ice roads. It represents better and safer technology and does not leave a scar on the tundra," Senator Frank Murkowski, April 17, 2002.

While in the Final SEIS Alternative D-1 presents a "roadless" option, BLM has now included Alternative D-2 analyzing seasonal drilling approach utilizing winter ice road access. Previous analysis for this alternative was based on faulty aircraft numbers, so this new analysis needs to be evaluated by the public to understand flight patterns in relation to wildlife migrations, emissions projections, and subsistence impacts. The Alternative D-2 analysis also includes winter-only drilling operation that relies primarily on ice road access that needs thorough evaluation. These options for the project must be considered by the Corps as a roadless, seasonal drilling approach for the project could potentially be the LEDPA, having less adverse impact on the aquatic ecosystem and be feasible. This approach could lessen the footprint of the airstrip, drill pad, and support facilities; remove the need for a permanent gravel road by using mainly ice roads; and limit the number of over-flights during summer months. With seasonal development at ConocoPhillips's CD-3 as an example, this approach meets the test of being both practical and feasible, and follows the approach touted by project proponents in the past as having "brought together the lessons learned over 30 years of oil development in the arctic."

An alternative is practicable "if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes." Practicable alternatives include "activities which do not involve a discharge of dredged or fill material," as well as "discharges of dredged or fill material at other locations" where such discharges would result in fewer impacts to the aquatic environment.

The Corps is prohibited from issuing a permit if "[t]here is a practicable alternative to the proposed discharge that would have less adverse effect on the aquatic ecosystem, so long as such alternative does not have other significant adverse environmental consequences." The applicant has the burden of clearly demonstrating that there is no practicable alternative to the discharge or that any practicable alternative would have greater environmental impacts. The Corps cannot blindly and uncritically accept an applicant's study of alternatives and its assertions that no practice.

A patchwork or piecemeal approach to protecting these resources is inadequate, and a network of gravel roads does not align with the mandate of protecting the area. A seasonal drilling approach is proven, viable, and reduces impacts on wildlife and subsistence activities as compared to an all-season, gravel road. This approach would also be appropriate to the dual mandate for management of the NPR-A to both produce oil and gas and to protect the environment and wildlife. Without the careful analysis of the environmental impacts of a

permanent road, aircraft access, or seasonal development, there is not enough information to determine that the proposed project is in the public interest.

Applicant Response. As stated in the Final SEIS, there has been a critically important shift in North Slope residents' and the BLM's understanding of impact on subsistence that has occurred since the development of Alpine and its satellites. During development of Alpine, Nuiqsut residents and the Kuukpik Corporation perceived the impacts of roads as the potential impact of oil development that they most wanted to avoid. As a result, Alpine was developed with an unprecedented and innovative roadless design that was welcomed by all interested parties as a significant evolution in reducing the footprint of development. The proposed GMT1 project has been developed, however, with understanding of both the lessons learned prior to and since Alpine was developed. These lessons include a greater understanding of the degree of impact to subsistence activities caused by disturbance from increased aircraft traffic necessary when year-round ground access is not available. The Final SEIS documents that in comments and testimony received on the GMT1 Draft SEIS from North Slope residents, there was universal opposition to development options that include more airstrips and thus increased air traffic (§4.4.5.1, BLM 2014). CPAI also notes that roadless development at GMT1 is not analogous to roadless development at CD3. The GMT1 site is not accessible by response watercraft from the ACF at CD1 as is the case for CD3, where that alternative method of access has been employed numerous times within the past four years to transport personnel who were stranded at CD3 due to weather that prohibited flying.

As discussed in response to comment N-002-001, above, the Final SEIS clearly documents the substantial increase in air traffic that would be required under Alternatives D1 and D2 (Final EIS in Sections 2.8 and 2.9) as well as the increased impact that the greater volume of air traffic would have on climate/meteorology, air quality, birds, mammals, and noise, relative to the other action alternatives. Furthermore, Alternatives D1 and D2 would result in an increase in the total acreage of fill in Waters of the U.S., including wetlands, relative to the proposed project (87.4 and 85.8 acres, respectively as compared to 72.6 acres for the proposed project). Finally and based on an independent third-party analysis, the Final SEIS also documents that the roadless alternatives are not viable economically. Table 4.4-7 of Section 4.4.3 indicates that the increased capital and operating expenditures necessary for both Alternatives D1 and D2 would result in a negative expected monetary value and a discounted profitability index of less than 1.0. This independent analysis supports CPAI's conclusion that Alternatives D1 and D2 are not practicable based on cost. Furthermore, Alternatives D1 and D2 would not reduce impacts to aquatic sites and would, in fact, increase impacts to other resources. Therefore, CPAI believes that it has been clearly demonstrated that neither Alternatives D1 nor D2 are the LEDPA.

Finally, a third party analysis of the economics has confirmed that roadless options are not economically practicable.

USACE Response. We believe there is a sufficient amount of information available to make a determination regarding compliance with the CWA Section 404(b)(1) Guidelines regarding permanent access road or roadless design (see section 3.5).

Public Comments

Mr. Bruce Harland

P-001-001
I am writing in support of the project to bring economic benefits to the local region and to put new production into the pipeline. Without this type of economic development the State of Alaska will not be able to continue to develop infrastructure and provide a sound economy to support future generations of Alaskans.

Applicant Response. CPAI agrees with the statement of support. The GMT1 project will result in economic benefits through royalties paid to Alaska Native corporations, the BLM, and the State of Alaska, the potential for increased local and statewide employment and economic activity, and potential tax benefits to the North Slope Borough and the State of Alaska.

USACE Response. USACE agrees that the proposed project will bring economic benefits to the local region.

Mr. Patrick Walsh/Peak

P-002-001
I am writing this email in an effort to show my support of the referenced permit and specifically alternative A, as proposed by ConocoPhillips Alaska. Alternative A has the least impacts to Wetlands and the environment. The project is essentially the same as previously proposed and approved for permitting back in 2004 under ASDP ROD. No appreciable changes in the physical, biological, or social resources associated with the project study area have been identified. This was the right choice then and is still the right choice.

Applicant Response. CPAI agrees with this statement of support for the proposed project (Alternative A). Since publication of the 2004 ROD, CPAI has sought to further avoid and minimize impacts to aquatic sites including wetlands and has further minimized the project footprint within the Fish Creek area by moving the pad location and most of the road outside of the designated setback. Of the alternatives considered that provide road access to the GMT1 pad, Alternative A has the smallest gravel fill footprint and minimizes impacts to the highest functioning wetlands found within the study area.

USACE Response. USACE agrees with this comment.

Arctic Slope Regional Corporation (ASRC)

L-003-001
GMT1 is the first development that would locate a development drill site on Bureau of Land Management (BLM) land in the National Petroleum Reserve - Alaska (NPR-A) to develop ASRC minerals and is the subject of this Permit. The currently proposed GMT1 project is located 11.5 miles west from Nuiqsut and is the sixth drill pad to be developed in the area following the development of the Alpine Oil Field. GMT1 was reviewed and approved in the November 2004 Record of Decision for the Alpine Satellite Development Final EIS (2004 ROD). At that time GMT1 was known as CD6. The main difference between the 2004 CD6 project and approval and the current GMT1 proposed project is that the Applicant decided to move the drill site out of the Fish Creek buffer area to mitigate potential impacts to subsistence. Otherwise the project and size of the development is very similar to the original approved CD6 project.

In 2007 ASRC along with Kuukpik Corporation (Kuukpik) utilized their ANCSA land entitlement to strategically select more than 15,000 acres of federal land in the northeastern area of the NPR-A. ASRC acquired ownership of the subsurface estate to surface lands selected by Kuukpik, as is prescribed by ANCSA. With contractual commitments from ConocoPhillips Alaska Inc. in hand that assured that lands not selected would have the same enhanced environmental protections as lands that were selected, the two ANCSA corporations selected lands that had the highest potential for oil and gas development based on exploration results in the area. As a result ASRC and Kuukpik selected lands containing the ARCO Alaska Inc. Lookout #1 oil discovery well, drilled in 2001. In 2008, ConocoPhillips, successor to ARCO Alaska Inc., applied for and received approval to form the Great Moose's Tooth Unit (GMTU). Approval was received from both the BLM and ASRC as the subsurface managers of the leases.

In 2010 Lookout-area selections were conveyed to ASRC (subsurface) and Kuukpik (surface) by the BLM. By virtue of the land selection and conveyance, the ASRC subsurface estate within the

GMT1 unit now contains approximately 90% of the hydrocarbon resources thought to be accessed through the GMT1 development. Therefore, the development of GMT1 will be the development of Native-owned resources within NPR-A to a degree not seen before.

The GMT1 development is of critical importance to ASRC and its Alaska Native shareholders. ASRC is committed both to increasing the economic and shareholder development opportunities within our region, and to preserving the Iñupiat culture and traditions that strengthen our shareholders. We also support responsible development of oil and gas resources in Alaska, and specifically on the North Slope (including in the NPR-A), and believe that Alaska oil and gas must be an integral component of the nation's energy strategy.

A positive decision on GMT1 is of critical importance to ASRC and its shareholders. ASRC is the Alaska Native Corporation formed under the Alaska Native Claims Settlement Act ("ANCSA") that encompasses the entire North Slope of Alaska. ASRC has a growing shareholder population of approximately 11,000, and represents eight villages on the North Slope: four that are within the boundaries of the NPR-A (Atqasuk, Barrow, Nuiqsut and Wainwright), and four that are not (Anaktuvuk Pass, Kaktovik, Point Hope and Point Lay).

Applicant Response. CPAI appreciates ASRC's statement of support for the proposed project and the opportunity to work with ASRC and the Kuukpik Native corporations to responsibly develop of oil and gas resources in Alaska. As stated, the proposed project would have economic benefits for ASRC and its shareholders. About ninety percent of the GMT1 oil reservoir is located on lands for which ASRC owns the mineral estate. The potential royalties on oil and gas production from these lands represents a substantial economic benefit for shareholders in those two corporations. Furthermore, through the sharing provisions of ANCSA § 7(i) and 70), seventy percent of these royalty benefits flow to Alaska Native corporations across the State of Alaska, and to associated Village Corporations and shareholders, so that the benefits are not limited to the North Slope. For these and other reasons, CPAI believes that the GMT1 project will have a strong beneficial effect on economics and overall the project is in the public interest.

USACE Response. We understand the ASRC ownership of the subsurface resources within the NPR-A and the general economic relationships of the proposed action.

L-003-002
ASRC supports the Applicants proposed project, also known as Alternative A under the Bureau of Land Management's Final Supplemental Environmental Impact Statement for the Alpine Satellite Development Plan for the Proposed Greater Moose's Tooth One Development Project. We feel that Alternative A represents the LEDPA as required under the NEPA. ASRC has also supported the efforts by Kuukpik to work with ConocoPhillips to design a project that meets the needs and concerns of the community of Nuiqsut. GMT1 is a project that will produce oil from ASRC subsurface, a right given to us through ANCSA to support our shareholders and through the sharing provisions benefits Alaska Natives across the state. GMT1 is also an essential project to maintain North Slope production and the economic benefits that it brings to the North Slope Borough through its tax-base that supports the infrastructure of the North Slope communities.

Applicant Response. CPAI appreciates this statement of support for the proposed project (Alternative A) from ASRC. Throughout the design of the GMT1 project, CPAI has sought to consult with and incorporate feedback from the Kuukpik Corporation and other local and regional stakeholders. CPAI agrees that the proposed project will have numerous beneficial economic effects for both the local and regional economy through royalties, employment opportunities, and tax payments and that overall the project is in the public interest.

USACE Response. While we are neither a proponent nor opponent to the project, USACE has noted the comment and believe the project would have substantial economic benefits to the local and state regions.

L-003-003

ASRC believes Alternative A responds to the community of Nuiqsut's long-standing and well documented concerns over aircraft traffic in and around the village. The excessive amount of aircraft traffic has a negative effect on the community and subsistence through disturbances to the animals. Complaints of excessive amount of air traffic around Nuiqsut have been well documented in numerous EIS's over the years and along with safety and spill response concerns are one of the primary reasons this project had a road in the 2004 Alpine Satellite Development Plan EIS.
ASRC agrees with the community that road access is better because it will reduce the number of flights in the area while at the same time allow broader access for subsistence to the west of the village in the Fish Creek area. Local Nuiqsut residents will have use of access to the road to improve access to subsistence hunting areas west of Nuiqsut in the northeastern NPR-A. Nuiqsut has been very consistent in its message that road to GMT1 offers an offsetting benefits to local subsistence.

We support the proposed road location because it is located in dryer, more uplands tundra despite being located in the 3-mile Fish Creek Set-back (FCS). The project as proposed by the applicant has less direct wetland impacts. Of the wetlands impacted, the road proposed by the applicant has lower functional value wetlands (Category III) than a road located outside the FCS. The project as proposed also has less indirect wetland impacts during construction than any other alternative location for the project.

We have heard in Nuiqsut that the majority of the people would rather see the road routing inside the FCS that outside despite that it is in a small area of the FCS. Individuals in the community expressed that having a small portion of the road in the drier set-back outweighed re-routing the road in the lower, moister route outside the FCS.

In fact, Kuukpik has built a road to the CD5 development north of the village in part, anticipating the GMT1 development thereby opening up a broader area for subsistence activities for local residents. Greater access to subsistence has always been one of the goals of the community and a road to GMT1 has always been part of the plan to do that.

Applicant Response. Since first proposing and constructing the original Alpine project, continuing through the Alpine Satellite pads, and now during design of the GMT1 facility, CPAI has engaged with the community of Nuiqsut to understand and respond to local concerns. Mitigation measures and best management practices we currently implement as part of existing Alpine and Alpine Satellites activities and that will be implemented with GMT1 recognize the importance of maintaining Nuiqsut's subsistence heritage. We continually adapt procedures based on feedback from Nuiqsut, and we are dedicated to continuing to support Nuiqsut's access to subsistence resources.

USACE Response. We agree the roadless alternatives would have greater impacts to wildlife and subsistence hunters due to aircraft noise and an all-season road would provide greater access. We also agree the proposed action would be located in drier wetlands and have less fill area. USACE has noted the remaining comments.

Kuukpik Corporation

L-002-002
Kuukpik also needs to point out that a boat ramp at the Ublutuoch is likely not even practicable because of navigability issues. Kuukpik management is unsure whether Kuukpik's Board of Directors would support construction of a facility on (and disruption of and damage to) Kuukpik land when the proposed facility seems likely to useless and impractical.

Applicant Response. ConocoPhillips appreciates the Kuukpik Corporation's insight into the utility of a boat ramp to provide access to the Ublutuoch River. This boat ramp concept has not been developed by ConocoPhillips. We will work to ensure that the position of the Kuukpik Board of Directors is clearly understood.

USACE Response. USACE also appreciates Kuukpik's insight into a potential boat ramp project. However, the boat ramp project is not being considered as part of this permit application.

L-002-003
Based on that knowledge and experience, the City of Nuiqsut and Kuukpik support Alternative A, which is the project as proposed by CPAI. The City's and Kuukpik's views and support for Alternative A are shared by the vast majority of Nuiqsut and North Slope Natives who have previously testified on GMT1 during the public hearings held on GMT1 in connection with the Draft Supplemental EIS on GMT1 (on which the Corps of Engineers is a cooperating agency). We see clear differences among the Alternatives and see Alternative A as having far fewer impacts on the Native community than would Alternatives C and D. Alternative B would be less desirable, but also acceptable.

Applicant Response. ConocoPhillips appreciates the Kuukpik Corporation's insight into the comprehensive local support for Alternative A. We value the input we have received from local residents throughout the planning of GTM1. These engagements have improved our understanding of how we could optimize the project components to enhance subsistence access while achieving the objectives of the development of GTM1.

USACE Response. USACE has noted the comment and believe the FSEIS record fully addresses the community concerns.

L-002-005
From the standpoint of the Nuiqsut community, THE most important determinant favoring Alternatives A and B is that those Alternatives minimize impacts in Nuiqsut while also creating improved subsistence access to currently difficult-to-access subsistence lands as an offset to other, unavoidable GMT1-related impacts. Thanks to construction of the Nuiqsut Spur Road and its link to all of CPAI's roads in the Colville River Delta area and NPR-A, the GMT1 project and its associated road under Alternatives A and B would for the first time open new and broader access to key subsistence areas and harvests in large areas that are currently either inaccessible or difficult to access through much of the year. For the first time, instead of an oil project removing subsistence-critical areas from the available subsistence harvest areas, the project offers the prospects of improved access to offset oil development by connecting the GMT1 road to the Nuiqsut Spur Road.

Applicant Response. Since first proposing and constructing the original Alpine project, continuing through the Alpine Satellite pads, and now during design of the GMT1 facility, CPAI has engaged with the community of Nuiqsut to understand and respond to local concerns. Mitigation measures and best management practices we currently implement as part of existing Alpine and Alpine Satellites activities and that will be implemented with GMT1 recognize the importance of maintaining Nuiqsut's subsistence heritage. We continually adapt procedures based on feedback from Nuiqsut, and we are dedicated to continuing to support Nuiqsut's access to subsistence resources.

USACE Response. USACE has noted the comment and understands the proposed action would provide for additional all-season road access by the Nuiqsut residents to the Fish Creek areas for subsistence activities.

L-002-006
We address the technical differences between the Alternatives presented by the Draft GMT1 Supplemental EIS below in more detail, but want to make this point clear at the outset: unless a

road connection to the Spur Road accompanies GMT1, this project's benefits do not outweigh its impacts to our community. It is the road connection and the access to Fish Creek and the western areas beyond that it offers, that allow us to support this project. Yes, this project offers economic benefits to Kuukpik's shareholders and to City residents. But Kuukpik and the City have never put economic advantage above our shareholder's and residents' subsistence lifestyle, and we will not do so here. For these and other reasons (discussed below), without the access road connecting to CD-5 and to the Nuiqsut Spur Road, our organizations and the Nuiqsut community might not support construction of GMT1 at all.

Applicant Response. CPAI has the permits in place to construct the Nuiqsut Spur Road and construction is planned to begin in winter 2014-15. Construction of the Nuiqsut Spur Road was delayed because of delays related to CD-5.

USACE Response. USACE has noted the comment and understands the proposed action would provide for additional all-season road access by the Nuiqsut residents to the Fish Creek areas for subsistence activities. USACE has previously authorized the Nuiqsut Spur Road that will connect the village of Nuiqsut to the CD5 road which would connect to the proposed GMT1 access road and the Fish Creek region.

L-002-012
Therefore, the Corps should not only issue permits for the GMT1 road to be built to support GMT1, but also it should also include in those permits that the road be built in a manner that facilitates subsistence access. The additional footprint, gravel quantities and wetlands impacts would be nominal. Our understanding from discussions with CPAI is that CPAI plans to install 3 vehicle pullouts along the GMT1 access road. We also suggest permitting snowmachine ramps at each pullout area so subsistence users can park their vehicles in one of these spots and are able to get their snow-machines down to the tundra. This could easily be accomplished by changing the side slopes on one or more areas of the vehicle pullouts from 2:1 as currently shown to a 3:1 or 4:1 side slope. In addition to incorporating pull out areas as part of the GMT1 road, the road itself should include snowmachine ramps at multiple locations to provide both access to and places to cross the road. Kuukpik and the City of Nuiqsut (and probably, KSOP and NVN, as well) would gladly help CPAI identify appropriate locations.

Applicant Response. CPAI has coordinated with the residents of Nuiqsut to design three pullouts along the GMT1 road for use by local residents for subsistence activities. One will be near the GMT1 drill pad, one will be approximately half way between the GMT1 drill pad and the Ublutuoch River, and one will be near the valve pad west of the bridge over the Ublutuoch River. Each pullout pad will be 0.3 acres--50-feet wide by 200-feet long.

USACE Response. The purpose of the proposed action is not for providing subsistence access. The applicant has proposed accommodating local subsistence users by requesting traffic safety pull-out and parking areas.

L-002-013
Finally, the GMT1 pad itself should include some space designated for vehicle parking for Nuiqsut residents to use for subsistence activities in the area.

Applicant Response. One of the safety pullouts along the GMT1 road for use by local residents for subsistence activities, one will be located near the GMT1 drill pad. For health and safety reasons we cannot allow Nuiqsut residents to park on the GMT1 drill pad itself.

USACE Response. USACE will not require the applicant to provide for parking at the GMT1 drill site and it is outside of the project purpose.

L-002-015

The reality of the comparison of the Alternative A versus Alternative B road routes is that the road route of Alternative B actually lies largely in lower, marshier, more valuable habitat than does the road route of Alternative A, which lies along a low but discernible ridge of higher, drier habitat. The marshier Alternative B route is more challenging to build and more impacting. Nearly half of the B road would be built on ice-rich thaw basin terrain, which is one of the least desirable types of terrain and ground cover for building roads on the North Slope. A road that deteriorates quickly or requires constant grading or reconstruction will ultimately have more impacts on surrounding wetlands due to lost fill and increased dust.

Applicant Response. CPAI agrees with the Kuukpik Native Corporation's conclusion that Alternative B would place more fill in wetter, higher functioning wetlands than the proposed project (Alternative A). CPAI's proposed project would have a smaller direct impact (72.6 vs. 79.2 acres, respectively), would have a smaller indirect impact than Alternative B (595.5 vs. 613.7 acres, respectively), and a smaller footprint of impact in wetlands of higher functional value (6.9 vs. 13.1 acres, respectively in Category I wetlands and 65.7 vs. 66.0 acres, respectively, in Category II wetlands). The Alternative B route would be technically more challenging for road construction and maintenance due to the extent of ice-rich thaw basins along the route and likely issues with poor soils and thaw stability (§2.5, BLM 2014; CPAI 2014). These challenges could increase the overall indirect impacts related to increase localized sedimentation and erosion due to poor soils and associated increase in road maintenance requirements.

USACE Response. We agree with Kuukpik that the Alternative A route would have less direct and indirect impact to the aquatic resources. Alternative A is the better route to construct a road from an engineering standpoint due to wet soft soils on the Alternative B route. USACE has considered these matters within the framework of the Guidelines compliance determination (LEDPA analysis). See section 3.5.

L-002-016
We therefore disagree with BLM's conclusion that Alternatives A and C would have "moderate" impacts on vegetation and wetlands, whereas B and D would be "minor." GMT1 DSEIS, p. 250. An arbitrary percentage of a type of vegetation impacted should not be determinative of impacts. Healthy wetlands are far more complex than this type of analysis suggests. The path for B is much more sensitive than A, regardless of arbitrary percentages. Note, as discussed below, that the DSEIS's conclusion that wetlands impacts of Alternative D would be "minor" is incorrect.

Applicant Response. CPAI agrees with Kuukpik Corporation's conclusion regarding the misleading finding of a "moderate" impact on wetlands and vegetation for Alternative A and C and the "minor" impact finding for Alternatives B and D. Overall, CPAI believes that the wetland and vegetation impact criteria used in the Final SEIS is not meaningful in differentiating impacts between alternatives. The impact criteria overemphasize the importance of impacts to Cassiope dwarf shrub tundra, rating the impact for Alternative A as moderate solely because indirect impacts to this vegetation type exceed 5 percent of the vegetation type mapped within the study area. Furthermore, the impact criteria do not recognized either similarities or dramatic differences in the acreage of impact (i.e., Alternative C would indirectly impact twice as many acres as Alternatives A and B) or the functional value of wetlands impacted (i.e. the wetter and higher functional value of wetlands impacted by Alternative B versus Alternative A).

USACE Response. We agree the Alternative B route does not represent an insignificant difference from Alternative A in the direct and indirect impact analyses. USACE has considered these matters in our Guidelines compliance determination and made a LEDPA determination for Alternative A. See section 3.5.

L-002-018
Rather than reducing risks and impacts to the environment, the roadless alternative actually increases the impacts. Alternative D requires so much duplication of facilities and extra footprint that any savings from eliminating a road is more than cancelled out....

There is simply no way to conclude that Alternative D produces less adverse environmental impacts than any of the other alternatives. Indeed, it is clearly the worst option available....

In any event, the impacts of Alternative C would be substantially greater than those of Alternatives A or B. In fact, those impacts would fundamentally alter Nuiqsut.

Applicant Response. ConocoPhillips appreciates this assessment of alternatives by Kuukpik. As proposed by ConocoPhillips, Alternative A provides the most balanced approach to GMT1. The other alternatives each present potentially greater impacts to resources.

USACE Response. We agree with Kuukpik and have determined Alternatives D1 and D2 are not practicable alternatives to the proposed actions. We have considered all alternative in our Guidelines compliance determination. See section 3.5.

North Slope Borough (NSB)

L-004-001
What is unique about this project is that the GMT1 project is the first major project geared towards developing Inupiat-owned natural resources. In addition to bringing direct benefits to the shareholders of Kuukpik, ASRC, and the other Regional corporations entitled to 7(i) distributions, this project will benefit the North Slope Borough and the State of Alaska through increased tax revenues and by extending the life of the Trans-Alaska Pipeline System. It will also bring benefits to the villages that rely heavily on funding from NPR-A grants. The North Slope Borough supports the GMT1 project. Throughout the process of developing a Supplemental Environmental Impact Statement (SEIS) under the National Environmental Policy Act, we support the adoption of CPAI's Proposed Project, referred to as Alternative A, as the preferred alternative. Subject to further review pursuant to each of our independent permitting processes, the Borough believes that if it is adopted by Bureau of Land Management, the Borough, the Corps, and other responsible agencies, Alternative A incorporates rigorous mitigation and best management practices that will enable this project to move forward in a responsible manner while also protecting the ability of our local residents to continue their subsistence practices.

In addition, Alternative A has the smallest gravel footprint of all the alternatives - which is an important consideration given the scarcity of gravel on the North Slope. The Borough understands that BLM has selected Alternative B as its Preferred Alternative in the Final Environmental Impact Statement. We recognize that BLM's concerns are based on discussions with the Native Village of Nuiqsut about not permitting the road in the Fish Creek buffer, as a way to mitigate the impacts to subsistence. However, the road to Alternative B would be 1 mile longer than for Alternative A. The overall gravel footprint for Alternative B is 80.4 acres, while the footprint at Alternative A is 72.7 acres, a difference of 7.7 acres. This larger footprint for Alternative B is important to the Corps' LEDPA analysis, as it increases the acreage that will need to be filled under the permit. Because of its reduced footprint, we continue to support Alternative A.

Applicant Response. CPAI agrees with this statement of support for the proposed project (Alternative A). Throughout the design of the GMT1 project, CPAI has sought to consult with and incorporate feedback from the Kuukpik Corporation and other local and regional stakeholders. The proposed project would have economic benefits for ASRC and Kuukpik Corporation and their shareholders, as well as numerous beneficial economic effects for both the local and regional economy through royalties, employment opportunities, and tax payments. Based on these benefits, CPAI believes that the project, as proposed, is in the public interest.

CPAI also agrees with the NSB conclusion that Alternative A is the LEDPA. Alternative B would place more fill in wetter, higher functioning wetlands than the proposed project (Alternative A). CPAI's proposed project would have a smaller direct impact (72.6 vs. 79.2 acres, respectively),

would have a smaller indirect impact than Alternative B (595.5 vs. 613.7 acres, respectively), and a smaller footprint of impact in wetlands of higher functional value (6.9 vs. 13.1 acres, respectively in Category I wetlands and 65.7 vs. 66.0 acres, respectively, in Category II wetlands). Since publication of the 2004 ROD, CPAI has sought to further avoid and minimize impacts to aquatic sites including wetlands and has further minimized the project footprint within the Fish Creek area by moving the pad location and most of the road outside of the designated setback. Of the alternatives considered that provide road access to the GMT1 pad, Alternative A has the smallest gravel fill footprint and minimizes impacts to the highest functioning wetlands found within the study area.

USACE Response. We understand the economic benefits regional corporations and shareholders would realize with authorization and development of the proposed action. We acknowledge the uniqueness of developing Inupiat-owned natural resources (ASRC subsurface owned hydrocarbon reserves). We agree the impacts to the aquatic resources would be minimized with the USACE and BLM protective resource development restrictions and forms of mitigation. We also agree Alternative A is the LEDPA. See section 5.9.4.

L-004-002
Because of the importance of subsistence, the Borough is strongly opposed to any alternative that advocates for roadless development or seasonal drilling. These alternatives would require heavier air traffic than an alternative where the project area is connected by a road. Negative impacts to subsistence hunters by aircraft deflecting caribou movements are the most common concern shared by North Slope hunters, which is another reason the Borough supports Alternative A. In addition, a Roadless Alternative will present greater risks to life, health, and safety due to weather-related delays associated with air-based emergency response operations. Roadless alternatives could also have additional negative environmental consequences due to the increased difficulty in responding to an oil spill or other similar event. These are important considerations for the 404 permit process.

Applicant Response. CPAI agrees with the NSB's conclusion that a roadless alternative (e.g., Final SEIS Alternatives D1 or D2) is not the LEDPA. Alternatives D1 and D2 would have greater direct impact to wetlands and vegetation (87.4 and 85.8 acres, respectively) than Alternative A. In addition, Alternative D (either D1 or D2 as presented in the Final SEIS) is not the LEDPA due to significant increase in impacts related to increased air traffic year round and for the life of the proposed project and increased risk posed by the lack of reliable access for spill and emergency response. Furthermore, a roadless alternative is not supported by local stakeholders and subsistence users. In comments on the Draft SEIS, several residents of Nuiqsut expressed concern regarding the amount of aircraft traffic associated with Alternative D (see Volume 3 of the Final SEIS).

USACE Response. We agree with the NSB the road-less alternatives would cause greater impacts to subsistence hunters and caribou herds and cause greater human safety risk because of limited access to the drill site. Oil spill containment and clean-up in an emergency blow out or pipeline breakage would also be difficult.

L-004-003
Under the Borough Code Title 19 Area-Wide Polices, "[development shall not preclude reasonable subsistence user access to a subsistence resource." In addition, "[applicable development is required to minimize its negative impact." As such, the Borough appreciates that our residents would have access to the proposed project road, which will allow increased access to areas around Fish Creek for subsistence purposes. We want to stress the importance of the inclusion of Vehicle Pullout Pads on the proposed road. These pullout pads are important for safety and subsistence activity access. They also serve as mitigation measures for the impacts the development will have on subsistence.

Applicant Response. Since first proposing and constructing the original Alpine project, continuing through the Alpine Satellite pads, and now during design of the GMT1 facility, CPAI has engaged with the community of Nuiqsut to understand and respond to local concerns. Mitigation measures and best management practices we currently implement as part of existing Alpine and Alpine Satellites activities and that will be implemented with GMT1 recognize the importance of maintaining Nuiqsut's subsistence heritage. We continually adapt procedures based on feedback from Nuiqsut, and we are dedicated to continuing to support Nuiqsut's access to subsistence resources.

USACE Response. The applicant has stated they will provide access on the GMt1 road to local subsistence hunters. We will not require the applicant to provide their facilities for subsistence uses and it is not part of the purpose. We do not agree additional fill placed in the wetlands will mitigate for development impacts or impacts to subsistence areas. We agree the vehicle pull-outs provide for safety.

Individual Comments

P-003 to P-018
These comments are either copies of the RDC action letter or contained same/similar points

•Peak production from GMT1 is estimated at approximately 30,000 barrels of oil per day and would help offset declining North Slope production.
•Development would provide benefits to local, state, and national economies through local hire for jobs created during construction and operations, tax revenues, royalties, and new resources to help meet domestic energy demand.
•Development will also provide significant economic benefit to Alaska Natives on the North Slope as well as throughout the state through direct payment of royalties and revenue sharing among the Alaska Native Regional Corporations.
•Alternative A will have the least impact to the wetland environment. CPAI's proposed project, Alternative A, has been modified to reduce environmental impacts and lower the overall footprint.
•The overall gravel footprint of Alternative A is the smallest of all the options. Alternative D, the aircraft and ice road access alternative, has a larger gravel footprint than Alternative A because of the need to construct an airstrip and a larger gravel pad to accommodate more equipment and a camp.
•Alternative A has the lowest estimated emissions because it requires the least amount of new infrastructure and eliminates the need for airplane support.
•The Project incorporates extensive subsistence mitigation in the project design in support of subsistence resources and access, the proposed project drill site location was moved out of the Fish Creek buffer to provide additional protection to this area. Road access will avoid the need for air traffic to the drill site, which is the number one complaint of subsistence hunters.
•Pipeline design standards are of a minimum of seven feet and separation from the road was developed to ensure caribou movement is protected for subsistence hunting.
•The project has incorporated three pull-outs to support safety and subsistence access on the GMT1 road.
•The currently proposed GMT1 project (formerly CD6) is essentially the same as that approved for permitting in 2004.
•A review of new data and information shows there are no appreciable changes in the physical, biological, or social resources associated with the project study area. New data includes multi-year studies on hydrology, birds, and caribou.
•The road is needed for emergency spill and safety response.
•As proposed in Alternative A, GMT1 will include a gravel road connection to the main Alpine facilities. The road is necessary to insure that the operator can respond to any environmental and safety issues in an adequate and timely manner. Alternative D, the aircraft and ice road access alternative, would not allow adequate access (on bad weather days, there would be no access) to emergency response resources and creates significant environmental and safety risk.

Applicant Response. CPAI appreciates these statements of support for the proposed project. As mentioned by numerous commenters above, the GMT1 project would result in economic benefits through royalties paid to Alaska Native corporations, the BLM, and the State of Alaska, the potential for increased local and statewide employment and economic activity, and potential tax benefits to the North Slope Borough and the State of Alaska. Furthermore, CPAI has sought, to the extent practicable, to minimize potential impacts of the proposed project including further minimizing the project footprint within the Fish Creek area by moving the pad location and most of the road outside of the designated setback. Of the alternatives considered that provide road access to the GMT1 pad, Alternative A has the smallest gravel fill footprint and minimizes impacts to the highest functioning wetlands found within the study area. Throughout the design of the GMT1 project, CPAI has sought to consult with and incorporate feedback from local and regional stakeholders throughout development of the GMT1 project including recognition of well documented concerns over the increased air traffic that would result from development of a "roadless" alternative. Inclusion of an all-season gravel access road in the proposed project is an important step in mitigating these concerns as well as crucial for providing reliable access in the event of a spill or other emergency. The all season gravel access road would have the added benefit of providing subsistence users with broader overland access to subsistence use areas to the west of Nuiqsut. Overall, CPAI believes that the GMT1 project as proposed (Alternative A) is the least environmentally damaging practicable alternative and is in the overall public interest.

USACE Response. All comments have been fully considered. We understand and acknowledge the economic and subsistence access benefits of the proposed action.