
National Park Service
U.S. Department of the Interior

Bering Land Bridge National Preserve
Alaska



Temporary Access Permit to Cross Bering Land Bridge National Preserve for the Shishmaref Relocation Reconnaissance Study

Environmental Assessment
March 2008



Temporary Access Permit to Cross Bering Land Bridge National Preserve for the Shishmaref Relocation Reconnaissance Study

Environmental Assessment March 2008

National Park Service
U.S. Department of the Interior

Bering Land Bridge National Preserve
Alaska

Note to Reviewers

If you wish to comment on this document, you may mail comments to:

Bud Rice
Environmental Protection Specialist
Alaska Regional Office
240 West 5th Ave.
Anchorage, AK 99501

You may also comment online. Go to <http://parkplanning.nps.gov> and retrieve this document on the website to provide comments electronically.

Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment, including the personal identifying information, may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee we would be able to do so.

Front Cover: Winter drilling with a CME 45 drill rig.

1. PURPOSE AND NEED FOR ACTION

The National Park Service (NPS) is considering issuing a special use permit for temporary access across Bering Land Bridge National Preserve (BELA) to the Alaska Department of Transportation and Public Facilities (ADOT&PF), in cooperation with the Federal Highway Administration (FHWA), to conduct reconnaissance level engineering studies in support of the Shishmaref Relocation Road Project. The NPS is considering this access request under Title XI of the Alaska National Interest Lands Conservation Act of 1980 (ANILCA) and its implementing regulations at 43 CFR Part 36.3 as a pre-application activity to obtain information for a possible future application for a road across BELA.

Congress has made funds available through FHWA to study the potential for developing a suitable material site with an access road connecting the material site to a potential barge landing site in Shishmaref Inlet. As part of the reconnaissance level studies, ADOT&PF is proposing to conduct exploratory drilling along a route that extends from Shishmaref Inlet (a potential barge landing site) to Ear Mountain (a potential material source). Location information is shown on Figure 1.

A portion of this exploration route is within the Bering Land Bridge National Preserve (Preserve). ANILCA Section 201(2) established BELA for the following purposes, among others: “To protect and interpret examples of arctic plant communities ...; to protect habitat for, and populations of, fish, and wildlife including, but not limited to, marine mammals, brown/grizzly bears, moose, and wolves;”

This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, regulations of the Council of Environmental Quality (CEQ) (40 Code of Federal Regulations 1508.9), and the National Park Service (NPS) NEPA compliance guidance handbook (Director’s Order (DO)-12, *Conservation Planning, Environmental Impact Analysis, and Decision Making*). This environmental assessment (EA) analyzes the potential environmental impacts of alternatives considered, including the no action alternative.

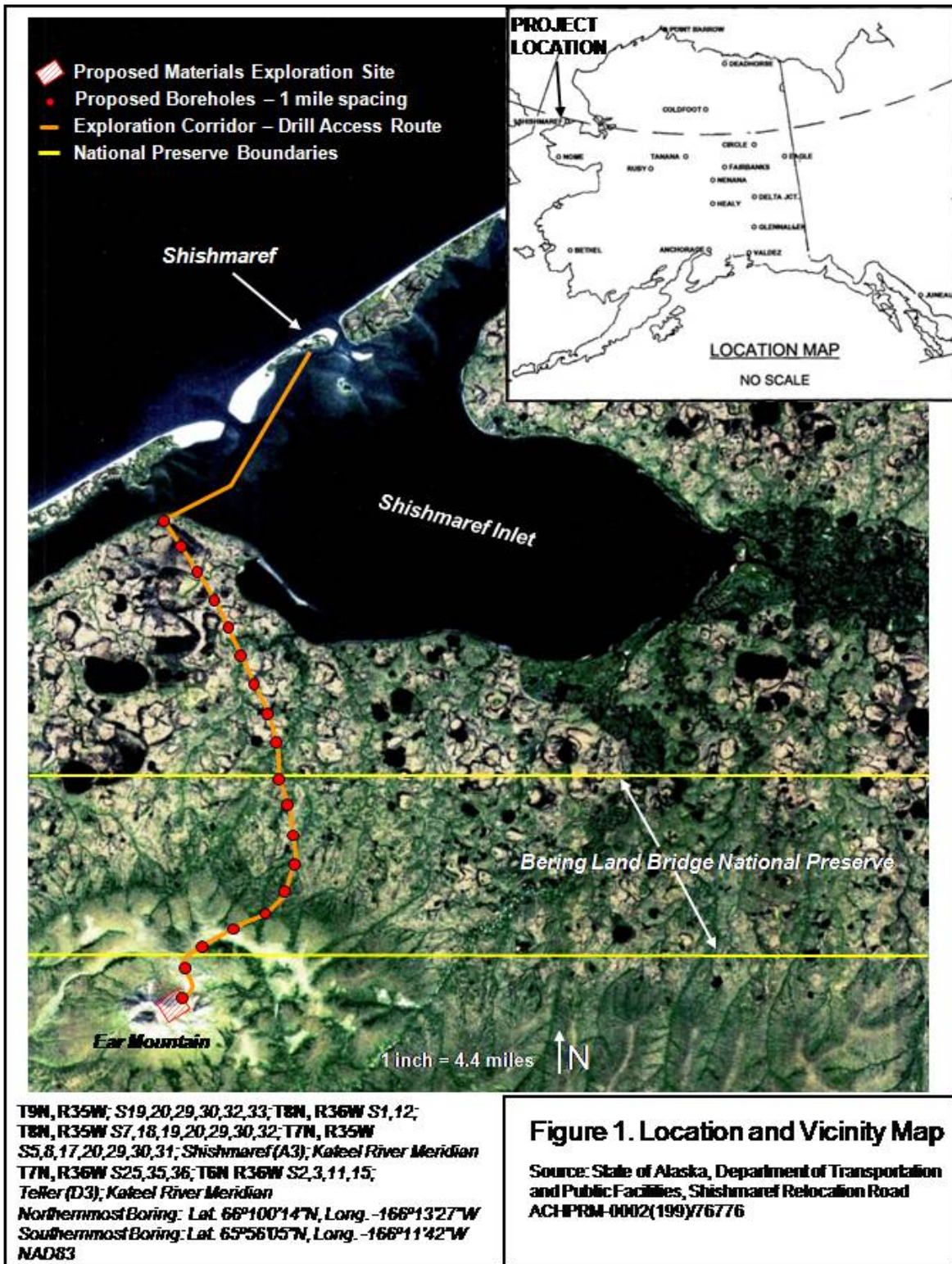
Purpose

The purpose of the special use permit is to authorize temporary access across BELA to:

- 1) Gather site-specific information on regional subsurface ground conditions to assist in investigating a potential roadway route from a potential barge landing site on Shishmaref Inlet to a potential material site on Ear Mountain.
- 2) Access areas south of the Preserve to gain information on subsurface ground conditions on Ear Mountain at a potential roadway route and material site location.

Need

Exploratory drilling information is needed to determine the foundation material present to support a roadway embankment. This information would be used to predict the design constraints, construction methods, and cost to build an economical, safe, and functioning



roadway along or near the investigated route. Access to Ear Mountain is necessary to collect drilling information needed to determine whether the Ear Mountain location can provide a suitable material source for use in potential construction of transportation infrastructure associated with the village relocation site, as well as a road from Ear Mountain to a barge site.

Permits and Approvals Needed to Implement Project

Permits and authorizations needed for work within the Preserve are listed below. All permits and authorizations would be obtained prior to initiation of project field work.

Permit/Authorization	Agency	Status
Section 106 Concurrence (See Appendix A)	State Historic Preservation Officer	Approved 1/31/08
404 Nationwide Permit #6	US Army Corps of Engineers	Non-reporting, Pre approved.
Title 41 Fish Habitat Permit	Alaska Dept. of Natural Resources	Applied 2/27/08, Approval Pending
Coastal Zone Consistency Determination ¹	Alaska Dept. of Natural Resources Division of Ocean & Coastal Mgmt.	Nation-wide permit determined consistent on 3/20/07
Dept. of Transportation Act Section 4(f) Temporary Occupancy ²	National Park Service (NPS) and Federal Highway Administration	Approval Pending
Special Use Permit	National Park Service	Approval Pending

¹Coastal Zone Consistency Determination: The project lies within the Bering Straits Coastal Resource Service Area (BSCRSA).

²Section 4(f) Temporary Occupancy: The proposed project was reviewed for applicability of Section 4(f) of the U.S. Department of Transportation Act (codified as 49 USC 303) concerning recreational properties. The project will use U.S. DOT federal funds for work within a publically owned park, the Preserve. Review of the proposed work finds that the project meets the criteria for a Temporary Non-Adverse Occupancy under 23 CFR 771.35(p)(7). A temporary non-adverse occupancy of 4(f) land is considered so minimal as to not constitute a use within the meaning of Section 4(f).

2. DESCRIPTION OF ALTERNATIVES

Alternative 1: No Action – No Land Travel or Drilling within the Preserve (Environmentally Preferred Alternative)

The NPS would not issue a special use permit for access across the Preserve. Under the no-action alternative the ADOT&PF would not conduct exploratory borings or land transport of equipment within the Preserve. Borings would be limited to locations outside the Preserve boundaries.

Under Alternative 1, subsurface conditions would remain uncertain within the Preserve for 8 of the 18-mile exploratory route between the south shore of Shishmaref Inlet and Ear Mountain (Figs. 1 and 2). ADOT&PF and FHWA would consider using field data from outside the Preserve boundaries to estimate subsurface conditions within the Preserve. Ear Mountain would



not be reached by land from Shishmaref Inlet because the Preserve and the ocean surround the area from all sides. Land approaches from the south would require overland transport of equipment approximately 50 miles on a winter trail from the nearest road or by aircraft. Transport of equipment to Ear Mountain by aircraft may need to be considered.

Alternative 2: Land Travel across and Drilling within the Preserve (Applicants Proposal & NPS Preferred Alternative)

Under Alternative 2, the NPS would issue a special use permit to ADOT&PF in the spring of 2008 to access Ear Mountain from Shishmaref Inlet on a route passing through the Preserve. Along the access route ADOT&PF proposes to drill 6" diameter solid stem auger test holes at a reconnaissance spacing of one test hole every mile. Figures 1 and 2 show the proposed access route and boring locations within the Preserve. An estimated eight borings would be completed within the Preserve boundaries. Test hole depths would range from 5 to 20 feet, depending on materials encountered. Transport and drilling within the Preserve is proposed in March and/or April 2008 when sufficient snow is on the ground to minimize impacts to the vegetation and soils.

Test holes would be drilled with augers utilizing the CME-45-C drill mounted on a Bombardier Muskeg carrier shown on the attached specification sheet in Appendix A. The specification sheet shows a photograph of the drill, along with basic specifications. ADOT&PF proposes to walk the drill rig through the Preserve along the geotechnical exploration route to Ear Mountain (Figure 2). Support equipment including pumps, fuel, drill steel, and other supplies would be transported with the drill and on snow-machine sleds to the site. The front cover image shows an example of winter drilling with a CME 45 drill rig.

No drilling fluids are required for the proposed method of drilling. Drill pads are not needed and ground disturbance would be kept to a minimum. Test holes would be backfilled with drill cuttings after drilling. GPS units would be used to record all test-hole locations. Test-hole sites would not be labeled with lath or stakes within the Preserve.

All test holes are anticipated to provide representative overview information on the subsurface conditions of the region. They would not necessarily follow a future road route.

After test holes are completed within the Preserve, drilling operations would move southward to Ear Mountain, outside the Preserve, during the spring and summer of 2008. After Ear Mountain drilling is complete, equipment would be returned by walking it northward across the Preserve by the way it came during the fall of 2008 or winter 2009 when sufficient protective snow cover is present.

No camps would be established within the Preserve. Workers would commute to the work area each day by snow machine from Shishmaref. The number of trips across the Preserve with equipment would be minimized. The number of round-trip passes across the Preserve is estimated at one for the drill rig and 10 to 12 for the snow machines and their support equipment.

The equipment route would be adjusted to take into account snow depths and frozen ground or ice along the way. Equipment would target those areas with adequate snow cover and avoid areas with little to no snow cover to the extent practicable. Stream crossings would be made from bank to bank with a preference for low and sloping bank locations and in a direction that is close to perpendicular as possible in the direction of stream flow. Stream crossings would target shallow areas and avoid any ice-covered deep-water pools or open water.

Fuel would be transported in sealed and secured fuel containers on the drill rig and snow machines. Care would be taken to avoid spillage during refueling, handling, or transport. Fuel containers would be transported to and from the work site each day. If it is necessary to leave any fuel container on site during non-work hours, it would be locked within the drill rig cab or storage boxes.

Trash and food-related waste would be packed out of the Preserve. Food would be transported to and from the work sites each day except emergency food supplies, which may be stored on site during non-work hours in a bear-resistant container locked within the drill rig cab.

Human waste would be deposited at least 200 feet from water bodies and covered with snow. Toilet paper or related material would be packed out.

Alternative 3: Land Travel Across With No Drilling in the Preserve

Under Alternative 3, the NPS would issue a special use permit to transport equipment across BELA, but no test hole drilling would be authorized. Operations would otherwise be the same as that described under Alternative 2, with the following exception.

- Round-trip passes across the Preserve are estimated at one for the drill rig and 5 to 6 for the snow machines and support equipment.

Mitigating Measures (Stipulations)

NPS Monitoring: An NPS staff person shall be on site during the phases of the project that take place inside Bering Land Bridge National Preserve.

Route Selection: In coordination with the Permittee, the NPS shall select and mark the route in advance of the drill rig and any other heavy equipment. The NPS shall select the route according to snow cover, ground frost, vegetation, animal groups, topography, and other factors. Snowy ridge crests are preferred. Snow free areas shall be avoided.

Snowcover: Before the project may proceed, the NPS will determine if the ground is frozen to a sufficient depth to protect soils. There shall be at least 6 inches of ground frost. Before the project may proceed, the NPS will determine if the snow cover is adequate to protect soils and vegetation and travel shall not leave any permanent scars on the landscape. There shall be at least 10 inches of snow cover.

Wildlife: The Permittee shall avoid wintering moose, muskoxen, and other wildlife to the extent they are not disturbed.

Soils and Vegetation: The Permittee shall not expose or disturb ground cover, vegetation, or soils. The Permittee shall avoid breaking branches of willows and other plants. The Permittee may not blade soils or vegetation. Blading of snow drifts would be permitted only when blades remain a minimum of 10" above the ground surface.

Stream Crossings: Equipment crossings shall be made from bank to bank in a direction substantially perpendicular to the direction of stream flow. Snow ramps may be constructed at stream crossings but must be substantially free of extraneous material (i.e., soil rock, wood or vegetation). Any ramps which may cause stream blockages during breakup will be removed after crossings are completed.

Banks shall not be altered or disturbed in any way to facilitate crossings. If stream banks are inadvertently disturbed, the damage shall be immediately reported to the NPS monitor.

Cultural Resources: Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the Permittee, or any person working on his behalf, on public or Federal land shall be immediately reported to the NPS. The Permittee shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the NPS. An evaluation of the discovery will be made by the NPS to determine appropriate actions to prevent the loss of significant cultural or scientific values. The Permittee will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the NPS after consulting with the Permittee.

Waste Disposal: The Permittee may not leave waste oil, garbage, or equipment inside the Preserve.

Motorized Equipment: All motorized equipment shall travel under its own power or be towed on an appropriate size sled. Any inoperative equipment will be repaired on-site and not towed unless on a sled or a break down occurs while crossing a river, lake or pond.

Permits and Regulations: The Permittee shall abide by all National Park Service (NPS) regulations. The Permittee is required to obtain all applicable federal and state permits prior to commencement of operation and to comply with all pertinent federal and state laws including, but not limited to, air and water quality standards and regulations issued pursuant to the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act (43 U.S.C. 6901 et. seq.) for disposal of solid waste.

Other Stipulations: The Permittee shall report any accidents, or injuries resulting in death, personal injury, requiring medical care, or property loss or damage over \$300 per incident to the Superintendent at the earliest possible time.

The Permittee shall report any resources damage at the earliest possible time. The Permittee shall reimburse any costs incurred by the NPS to correct damages caused by the failure to comply with the provisions of this permit.

3. AFFECTED ENVIRONMENT

The proposed exploratory drilling route begins on the south shore of the Shishmaref Inlet and extends over land approximately 18 miles to the East Peak of Ear Mountain. The proposed route crosses a narrow band of the Preserve, 6 miles wide, which lies between the Inlet and Ear Mountain (See Figs. 1 & 2).

Vegetation, Soils, and Wetlands

The drill route traverses treeless tundra ranging from wet tundra on the coast to alpine tundra in the mountains. The wet tundra of the low coastal plain is characterized by scattered thermokarst lakes, emergent wetlands, low shrub wetlands, and tall shrub wetlands within drainage ways. Ascending Ear Mountain, the mountain base is characterized by low shrub uplands. Approaching the mountain top the ground is covered with a 1.5 inch lichen mat and dominated by white mountain avens. The portion of the project within the Preserve lies within a landscape transition zone between the lower coastal plain and the higher elevations of Ear Mountain. Within the Preserve the northern 75% of the exploration route is within low shrub wetlands, crossed occasionally by drainages. The route's southern 25% is within uplands characterized by Bigelow sedge (*Carex Bigelowii*), entire-leaf mountain avens (*Dryas integrifolia*), and low shrubs. Figure 3 shows wetlands and uplands crossed by the project.

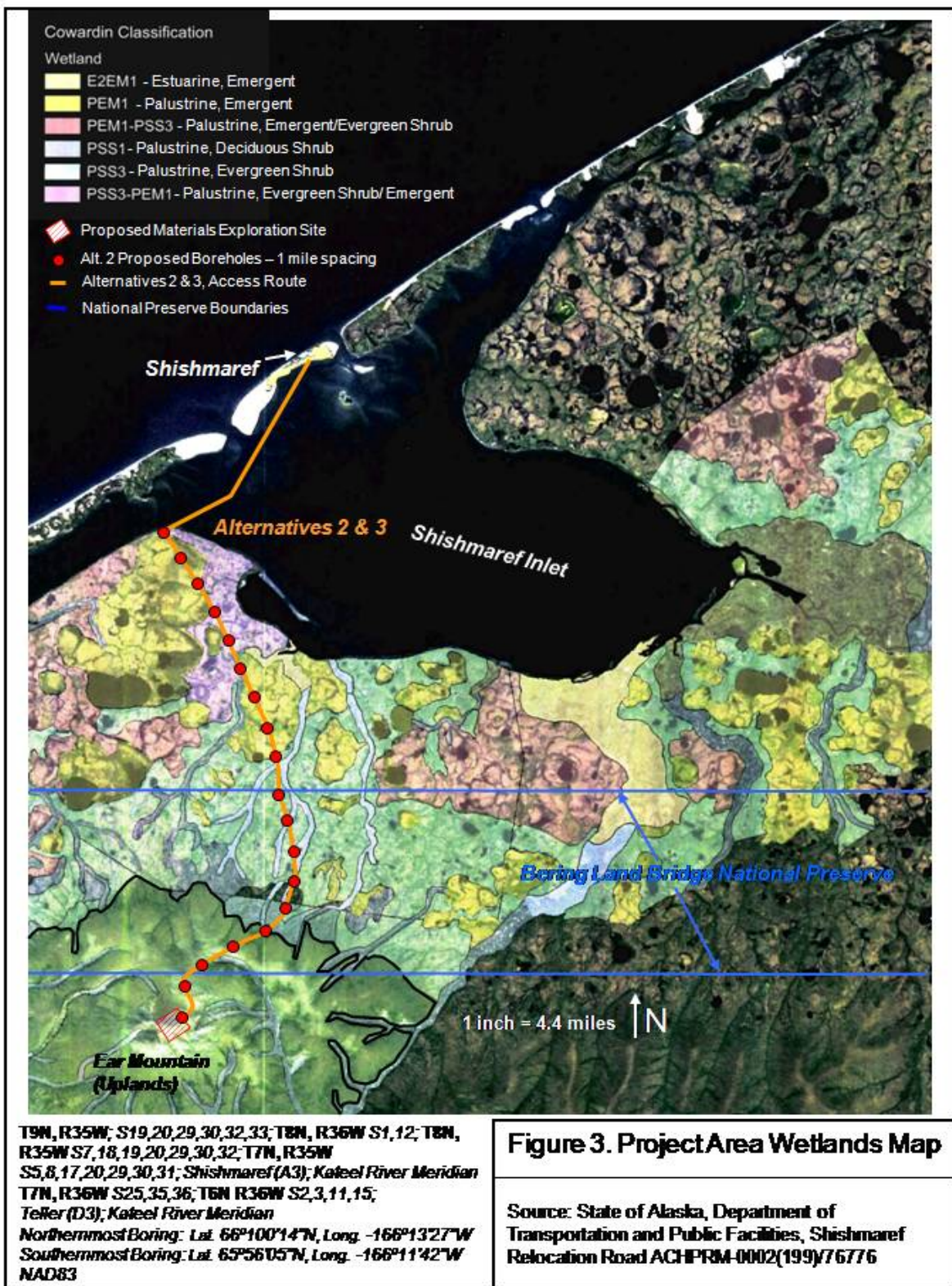
Wildlife and Habitat

A variety of wildlife uses the portion of the Preserve crossed by the project. The following table provides a summary of wildlife use in this area.

Category	Wildlife
Large mammals	Reindeer, muskoxen, grizzly bear, moose
Furbearers	Wolf, red fox, arctic fox, wolverine, mink, arctic hare
Birds	Songbirds, waterfowl (ducks, geese, swans, loons), seabirds, ptarmigan, grouse, raptors (hawks, eagles, falcons, owls)
Small mammals	Arctic ground squirrels, voles, lemmings

Much of the wildlife listed in the table above range throughout the project area. Some winter (including late fall and early spring) wildlife habitats are crossed by the proposed project and have potential to be occupied by wildlife during the project. Maps of project-area wildlife habitats are included in Appendix B.

Within the Preserve reindeer and muskoxen have winter ranges at the base of Ear Mountain where slopes are wind-blown and snow cover is less (Appendix B, Maps 1 & 2). Muskoxen are known to frequent drainages within their range. The proposed route for the project and



proposed work area at Ear Mountain are areas frequented by muskoxen especially during winter. During the March 2007 population census, over 150 muskoxen were located within 10 kilometers of Ear Mountain (Appendix B, Map 3). The topography and vegetation in the Ear Mountain area is favorable winter habitat for muskoxen as evidenced by their presence during winter surveys (Figure 4).



Figure 4. Muskoxen photo, Ear Mountain (courtesy of State of Alaska, DOT&PF, Shishmaref Relocation Road, ACHPRM-0002(199)/76776)

Moose winter at the base of Ear Mountain or in river bottoms if snow accumulates (Appendix B, Map 4). River bottoms provide moose tall willow to browse and higher banks to gain protection from the wind. Partial ranges for ptarmigan and furbearers in the project area are shown on Map 5 in Appendix B.

Grizzly bears are known to winter within dens located in the vicinity

of Ear Mountain, within tall riverbanks, or, less commonly, along the coastal lagoons. Bears emerging from hibernation dens on Ear Mountain travel down gulches and creeks with willow cover. In recent years, grizzly bears emerge from their dens in March or April and start denning again in late October to early November according to local residents.

Waterfowl habitat is present in the lowland coastal wetlands and lakes as well as in the vicinity of Tin Creek and its tributaries. Active use by waterfowl, however, is not anticipated during the project timeframe. Map 6 in Appendix B shows common waterfowl harvest areas. Other surrounding habitats, not expected to be impacted by the project, include habitats for marine mammals in Shishmaref Inlet and caribou east of Shishmaref Inlet (Appendix B, Map 7).

Fisheries

Tin Creek is crossed by the exploration route north of the Preserve at approximate creek-mile 2. Within the Preserve the exploration route crosses the upper reaches of unnamed tributaries to Tin Creek (route-miles 10, 12, and 14 as measured from Shishmaref Inlet). Tin Creek is not identified as an anadromous stream in resources describing the area including, the Alaska Department of Fish and Game online Fish Distribution Database, Bureau of Land Management Resource Management Plan EIS, and Corps of Engineers subsistence study. The subsistence use study conducted by the Corps of Engineers identifies the lower 5 miles of Tin Creek as a general fishing area for Shishmaref residents (Appendix B, Map 8).

Federally Designated Species

No federally endangered, threatened, or proposed-listed species are identified in the project area. The threatened Spectacled and Steller's Eiders do not occur within the Preserve portion of the proposed study project. The Kittlitz's murrelet is a seabird that is a federally-designated

candidate species, and the yellow-billed loon is noted as a sensitive species. These species receive no statutory protection under the Endangered Species Act, but their conservation is encouraged. Both birds are noted to have summer ranges in the vicinity but are not expected to be active in the project area during the time of the work.

Soundscape

Natural sounds predominate in the area, particularly from wind. Snowmobiles have been used in the area for reindeer herding. Noise from aircraft overflights occur infrequently. The winter trail between Shishmaref and Brevig Mission is used relatively frequently in winter.

Cultural Resources

A search of the Alaska Heritage Resources Survey (AHRS) database was conducted on January 30, 2008. No cultural sites were found to be within the area of potential effect of the proposed project. On 1/31/2008, a finding of “no historic properties effect” was submitted to the State Historic Preservation Officer (SHPO) by ADOT&PF on behalf of FHWA. SHPO concurred that borings along the exploratory route (including those within the Preserve) can proceed as proposed with a finding of “no historic properties affected.” (See Appendix C.)

Subsistence

There would be no significant restriction of subsistence uses in the project area as documented in the ANILCA Section 810 Subsistence Evaluation (Appendix D).

Wilderness

The Preserve does not contain designated wilderness areas; however, the entire project area was found to be “suitable” for future wilderness designation in the Preserve’s General Management Plan and Wilderness Suitability Review (NPS 1986). NPS Management Policies (NPS 2006) at Section 6.3.1 states: “The NPS will take no action that would diminish the wilderness eligibility of an area possessing wilderness characteristics until the legislative process of wilderness designation has been completed. ... All management decisions affecting wilderness will further apply the concept of “minimum requirement” for the administration of the area regardless of wilderness category.”

4. ENVIRONMENTAL CONSEQUENCES

Alternative 1: No Action – No Land Travel or Drilling within the Preserve

No environmental consequences to the Preserve resources are anticipated as a result of Alternative 1. Under this alternative the DOT&PF would conduct no exploratory borings or land transport of equipment within the Preserve. Borings and land travel would be limited to locations outside the Preserve boundaries.

Conclusion:

The no-action alternative would not result in any environmental impacts to Preserve resources and values.

Alternative 2: Land Travel across and Drilling within the Preserve (Preferred Alternative)

The following is a discussion of environmental consequences related to Alternative 2.

Vegetation/Soils

Vegetation and soil disturbances are expected to be minimal because equipment and personnel would be transported in spring and fall when adequate protective snow and frozen ground is present to minimize disturbances to vegetation and soils. Drilling through soils and surface rocks layers would occur only in spring inside the Preserve and disturb small areas of soil where augers penetrate. Most drill cuttings would be returned into drill holes after data is retrieved and no markers would remain at drill sites, so evidence of soil disturbance would be negligible. Minor vegetation disturbance around bore holes is not anticipated to result in any long-term vegetation impacts. Neighboring plants are expected to quickly re-colonize the small previously vegetated areas. There is potential that dormant willow and shrub branches could be broken as equipment crosses stream threads or tall shrub patches, but any broken shrub branches are expected to constitute a small percentage of the shrub canopy with minimal to no anticipated root damage. Damaged branches are expected to regenerate rapidly in the spring.

Wetlands

There would be no permanent impacts to wetlands. Temporary wetland impacts are anticipated to be minimal due to the measures mentioned above to avoid and minimize disturbance to vegetation and soils and to restore soils by backfilling at boring locations.

Riparian Areas and Fish

The project is expected to have no substantial impacts to riparian areas and fish. Minimal impacts would be expected because a) stream crossings would be kept to a minimum number by selecting a relatively direct route; b) crossings would be nearly perpendicular to the direction of stream flow and over locations with low sloping banks on either side; and c) during frozen conditions.

The number of trips across streams with equipment would be 6 for the drill rig (2 passes X 3 streams) and about 30 per snowmobile (10 passes X 3 streams) and would last no more than a minute per crossing at most. Equipment impacts to stream-side willows and other riparian vegetation would be minimized as described under the Vegetation/Soils impacts section and mitigating measures above.

The project would not be expected to affect fish and their habitat because equipment would not traverse streams during open water conditions. Mitigating measures to protect stream banks would assure no disturbance to fish habitat.

Wildlife

Moose and muskoxen are vulnerable to disturbance in late March and early April and would be energetically stressed if activities take place causing disturbance proximate to groups. Temporary displacement of wildlife from a portion of their winter habitat would be minimized by route selection and the short period of time within the Preserve (3-5 days). Due to the limited duration of activities and abundance of alternative habitat no long-term or substantial effects to wildlife are anticipated. When the project is finished, human activity is expected to return to normal and wildlife would no longer be disturbed from project activities.

Moose winter in river bottoms of the Preserve for food and shelter. Route selection by an onsite NPS monitor would avoid moose to eliminate unnecessarily stressing them, especially pregnant females.

The proposed work route is expected to encounter muskoxen groups. When threatened, muskoxen form a defensive formation that may be maintained for a long period of time. Defensive behavior limits foraging time and consequently energy intake. For this reason, care would be taken to maximize work distance and minimize work duration in the vicinity of muskoxen groups. Work distance from musk oxen groups would be maximized to the extent practicable while remaining near the work corridor. If work in close range of musk oxen is necessary, care would be taken to limit the work duration, especially if muskoxen maintain a defensive formation. With the implementation of these measures no long-term or substantial adverse impacts to muskoxen are anticipated in the Preserve.

Noise

The project would generate minor short-term noise from the drill rig, snow machines, and drilling crew during transport and drilling operations. Noise is expected to occur within the Preserve over a total of 3 to 5 days. As discussed under the wildlife section, impacts are expected to be minimal and short term in nature.

Cultural Resources

No adverse effects on cultural resources are anticipated from the proposed project. As per the mitigating measure for cultural resources, if the Permittee encounters any historic or prehistoric site or object, then the operation would immediately cease and the Preserve Superintendent would be contacted as soon as possible.

Wilderness

The Preserve does not contain designated wilderness areas, but an area eligible for wilderness designation would be traversed. The proposed reconnaissance project would not result in any effects that would preclude future wilderness designation.

Cumulative Effects

In the cumulative case snow machine use associated with community travel and reindeer herding would occur in the project area. These activities and associated noise result in minor impacts to

vegetation and wildlife. All effects of the project are temporary, minimal, and localized. In each case, the resources affected are expected to rapidly return to pre-project conditions yielding no perceivable accumulation of effects in the short-term and no contribution to long term effects.

Conclusion: Alternative 2 would have short-term, minimal, and localized effects on the Preserve's natural resources. No impacts to cultural resources or subsistence uses in the Preserve would be expected. Preserve resources would rapidly return to pre-project conditions. The proposal would not result in impairment of Preserve resources that fulfill specific purposes identified in the enabling legislation or that are essential to the resource integrity of the Preserve.

Alternative 3: Land Travel Across With No Drilling in the Preserve

Alternative 3 would have the same environmental consequences as described under Alternative 2 above with the following exceptions:

- 1) No boring-related temporary disturbances would occur to soil, vegetation, or wetlands.
- 2) Effects to air quality, noise, and wildlife displacement would be slightly less since the degree and duration of activity within the Preserve would be reduced. Estimated total activity time within the Preserve would be reduced from 3-5 days to 2 days. Equipment operation would be limited to transport across the Preserve.

Cumulative Effects

The cumulative effects of associated with Alternative 3 would be substantially the same as identified for Alternative 2.

Conclusion: Alternative 3 would have short-term, minimal, and localized effects on the Preserve's natural resources to a lesser extent than with Alternative 2. Preserve resources are expected to rapidly return to pre-project conditions. Alternative 3 is not expected to result in or contribute to any long-term effects. It would not result in impairment of Preserve resources that fulfill specific purposes identified in the enabling legislations or that are essential to the resource integrity of the Preserve.

List of Preparers:

Alaska Department of Transportation and Public Facilities, Northern Region:

Bob Effinger, Environmental Analyst

National Park Service:

Brad Shults, Wildlife Biologist, Western Arctic National Parks

Bud Rice, Environmental Protection Specialist, Alaska Regional Office

Glen Yankus, Environmental Protection Specialist, Alaska Regional Office

List of Reviewers:

Alaska Department of Transportation and Public Facilities, Northern Region:

Steve Masterman, Regional Engineering Geologist

Julie Rowland, Engineering Geologist

Ryan Anderson, P.E. Engineering Manager

Bruce Campbell, Environmental Coordinator

National Park Service:

George Helfrich, Superintendent Western Arctic Parks

Ken Adkisson, Acting Superintendent, Bering Land Bridge National Preserve

Joan Darnell, Team Manager, Environmental Planning and Compliance, Alaska Region

References

Alaska Office of History and Archaeology. 2008. *Alaska Heritage Resources Survey (AHRs) Cultural Resource Database*.

Bureau of Land Management - Alaska. *Kobuk-Seward Peninsula Draft Resource Management Plan*.

Georgette, Susan. 2001. *Alaska Department of Fish and Game. Brown Bears on the Northern Seward Peninsula, Alaska*. Technical Paper 248.

National Park Service. 1986. *General Management Plan, Land Protection Plan, Wilderness Suitability Review, Bering Land Bridge National Preserve, Alaska*. NPS D-18A.

National Park Service. 2006. *Management Policies 2006*.

Northern Land Use Research, Inc. *Cultural Resource Data Collection: Shishmaref Study Area Sites*. Summary Table.

U.S. 1988. *Alaska National Interest Lands Conservation Act (ANILCA)*. PUBLIC LAW 96-487-DEC. 2, 1980; 94 STAT. 2371 as amended. <http://alaska.fws.gov/asm/anilca/toc.html#top>

U.S. Army Corps of Engineers and National Park Service. *2007 GIS Data Sets*.

U.S. Fish and Wildlife Service. 2003. *Alaska's Threatened and Endangered Species*.

U.S. Fish and Wildlife Service. Nov. 2007. List of Endangered, Threatened, Proposed, Candidate, and Delisted Species in Alaska. http://alaska.fws.gov/fisheries/endangered/pdf/consultation_guide/4_Species_List.pdf.

U.S. Fish and Wildlife Service. *Ecological Subregions of the United States*. <http://www.fs.fed.us/land/pubs/ecoregions/ch2.html>.

Wisniewski, Josh, U.S. Corps of Engineers. 2005. "We are always going back and forth"; *Kigiqtaamiut Subsistence Land Use and Occupancy For the Community of Shishmaref*. Subsistence Use Study.

APPENDIX A

Drill Rig Specifications



1994 Bombardier Muskeg carrier with CME 45-C Dill

Muskeg carrier serial # 322940648 / Drill Serial # 261944

Vehicle Number: 31625
Equipment: 10-foot tower, 1 sand line, 140# or 340# auto hammer, or 140 #cat head / rope, 3L6 moyno pump
Drill Dimensions: 7' 4" wide x 16' 4" long x 7' 6" high
Curb weight: 19,300 pounds
Tooled Weight: Average 20,800 pounds
Ground pressure: 3.7 PSI at 20,800 pounds

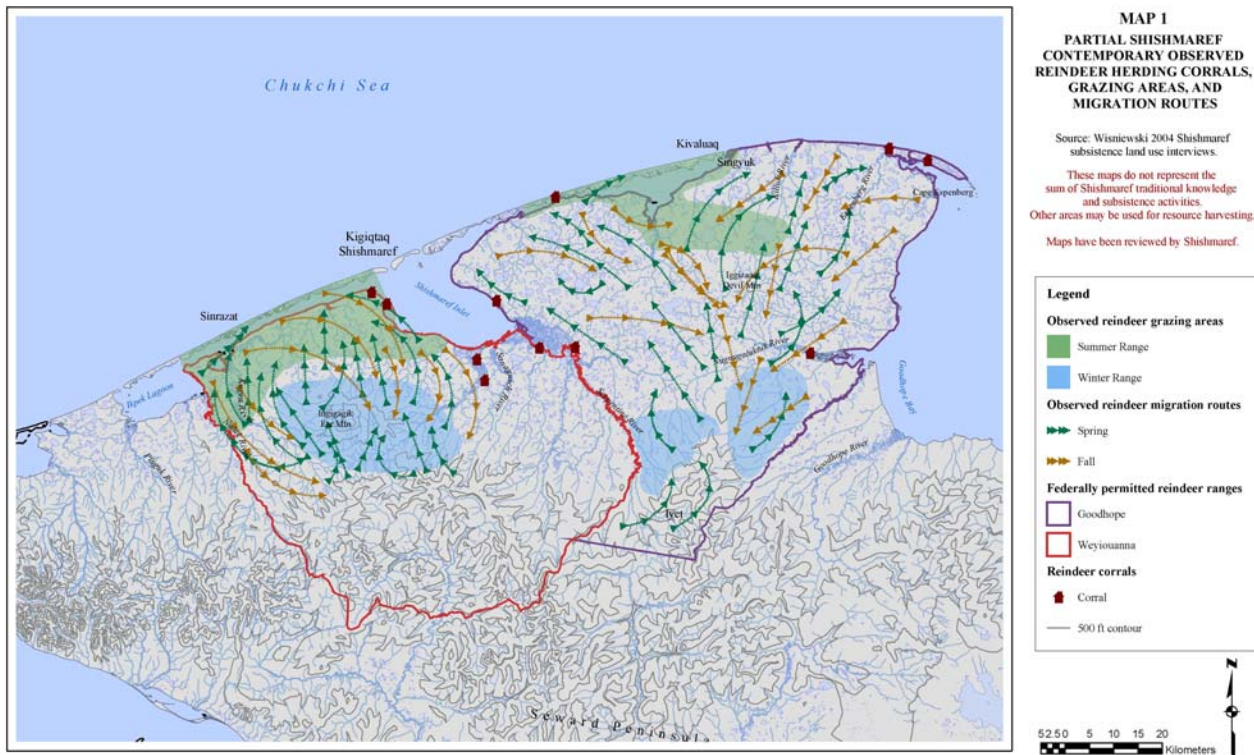
Drill methods, tool sizes and approximate depth limits:

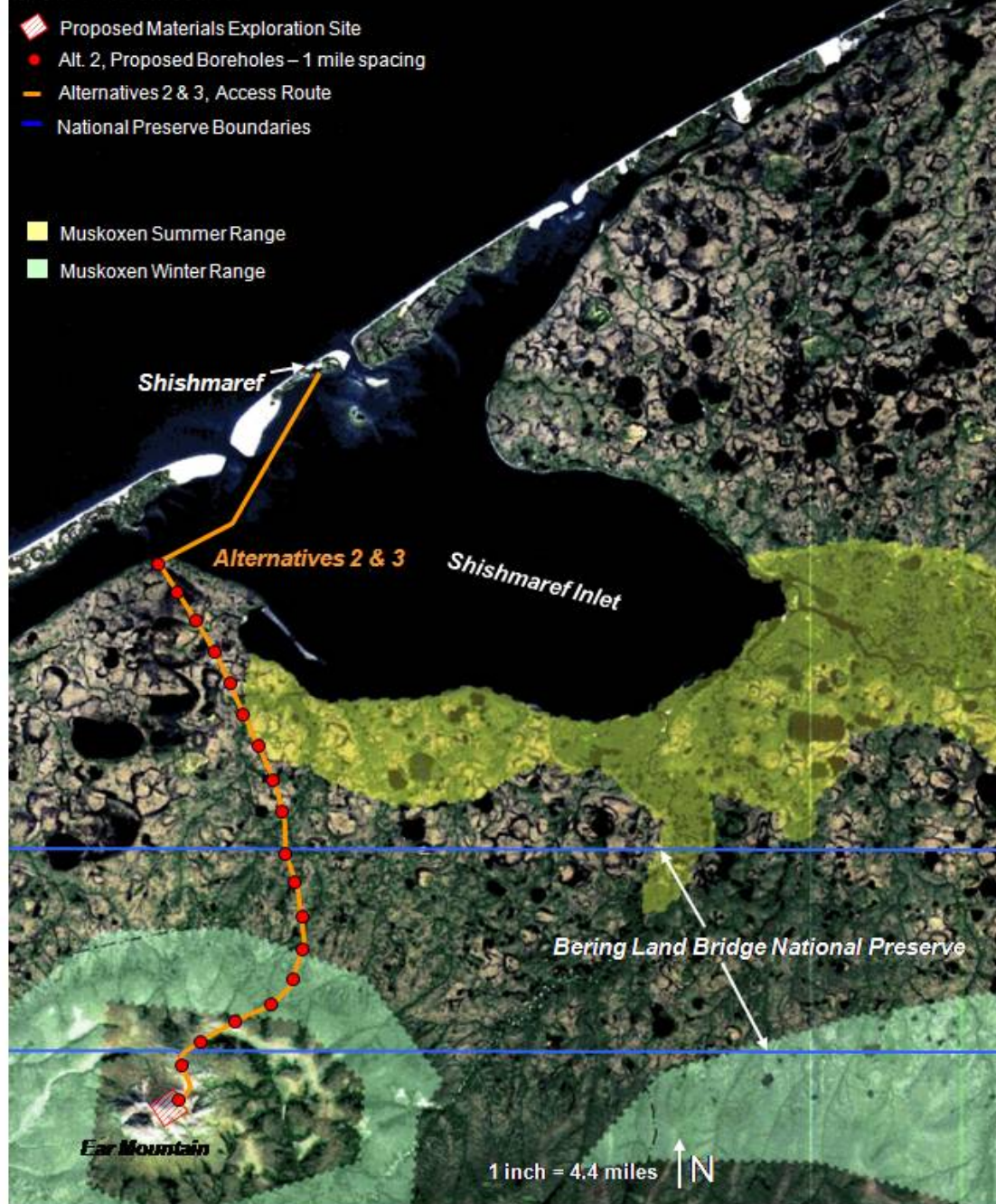
Solid flight auger - 6" OD x 5' long, depth limit ~ 125 feet depth
Hollow stem auger - 3 1/4" ID x 6' 5/8" OD x 5' long, depth limit ~ 75 feet depth
Wash bore rotary - 3 1/2" OD x 3" ID x 5' long casing, depth limit ~ 125 feet
BWD4 Core barrel - 2.365" OD x 1.615" ID x 5' long, depth limit ~ 200 feet
NW Core barrel - 2.98" OD x 2.06" ID x 5' long, depth limit ~ 150 feet

Drilling and sampling methods are job specific and can be obtained by contacting the State of Alaska D.O.T. & P.F Northern Region Materials Section at (907)-451-2245.

APPENDIX B

Project Area Wildlife Range Maps

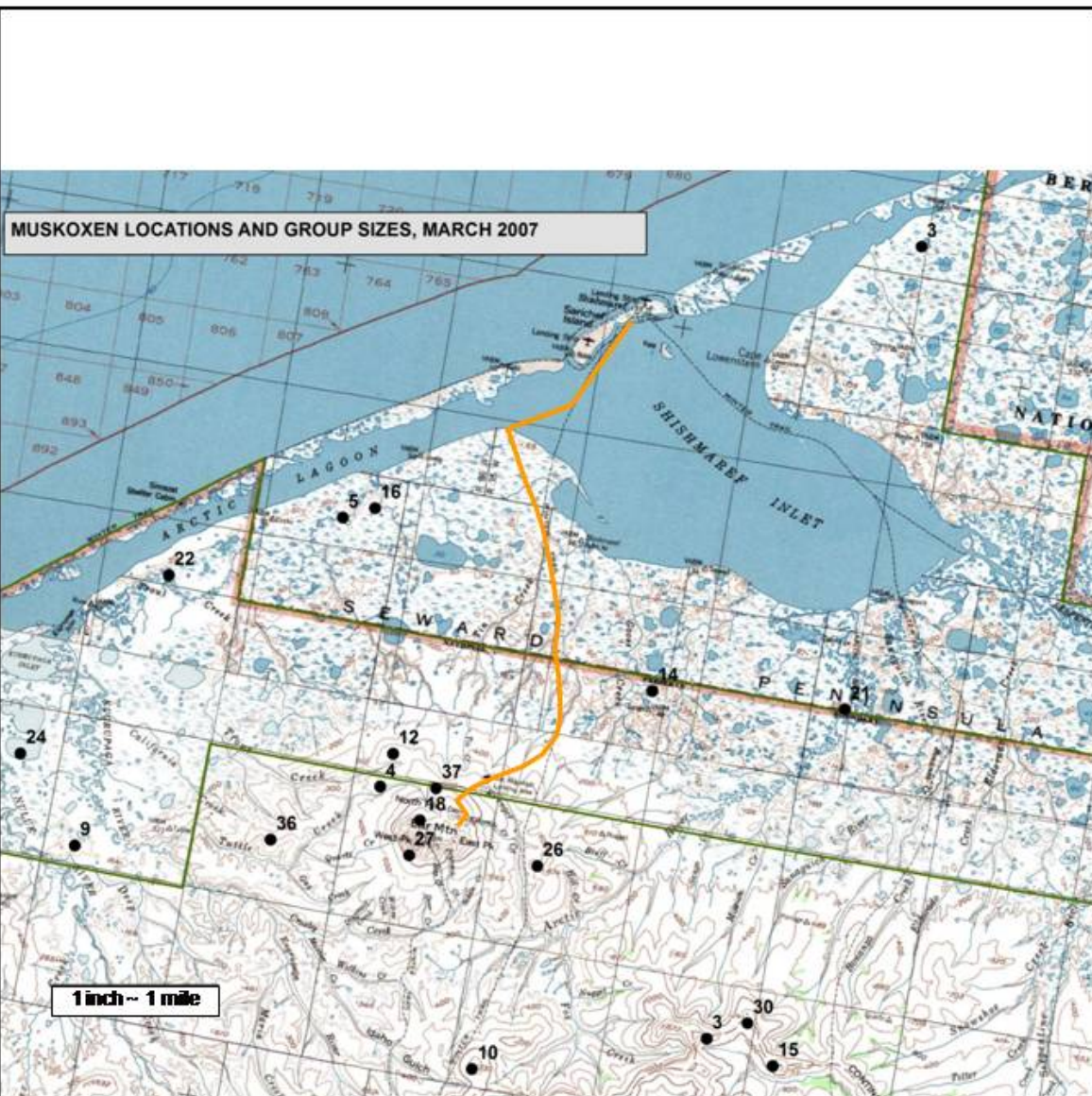




T9N, R35W; S19,20,29,30,32,33; T8N, R36W S1,12; T8N, R35W S7,18,19,20,29,30,32; T7N, R35W S5,6,17,20,29,30,31; Shishmaref (A3); Kateel River Meridian
 T7N, R36W S25,35,36; T6N R36W S2,3,11,15; Teller (D3); Kateel River Meridian
 Northernmost Boring: Lat. 66°100'14"N, Long. -166°1327"W
 Ear Mountain Boring: Lat. 65°56'05"N, Long. -166°11'42"W
 NAD83

Map 2. Muskoxen Range Map

Source: State of Alaska, Department of Transportation and Public Facilities, Shishmaref Relocation Road ACHPRM-0002(199)/76776



— Alternatives 2 & 3, Access Route

T9N, R35W; S19, 20, 29, 30, 32, 33; T8N, R36W S1, 12;
 T8N, R35W S7, 18, 19, 20, 29, 30, 32; T7N, R35W
 S5, 6, 17, 20, 29, 30, 31; Shishmaref (A3); Kateel River Meridian
 T7N, R36W S25, 35, 36; T6N R36W S2, 3, 11, 15;
 Teller (D3); Kateel River Meridian
 Northernmost Boring: Lat. 66°100'14"N, Long. -166°132'7"W
 Ear Mountain Boring: Lat. 65°56'05"N, Long. -166°11'42"W
 NAD83

Map 3. Muskoxen Locations Map

Source: State of Alaska, Department of
 Transportation and Public Facilities, Shishmaref
 Relocation Road ACHPRM-0002(199)76776

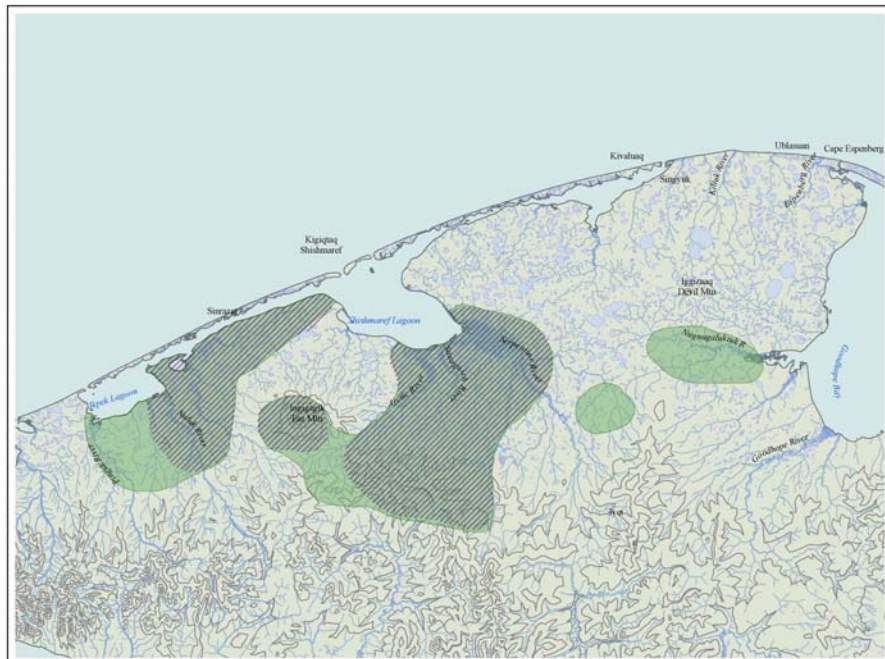
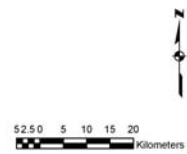


MAP 4
PARTIAL SHISHMAREF
CONTEMPORARY MOOSE
HUNTING AREAS

Source: Wisniewski 2004 Shishmaref subsistence land use interviews.

These maps do not represent the sum of Shishmaref traditional knowledge and subsistence activities. Other areas may be used for resource harvesting. Maps have been reviewed by Shishmaref.

Legend
Moose hunting areas
500 ft contour

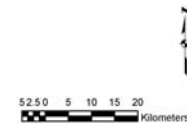


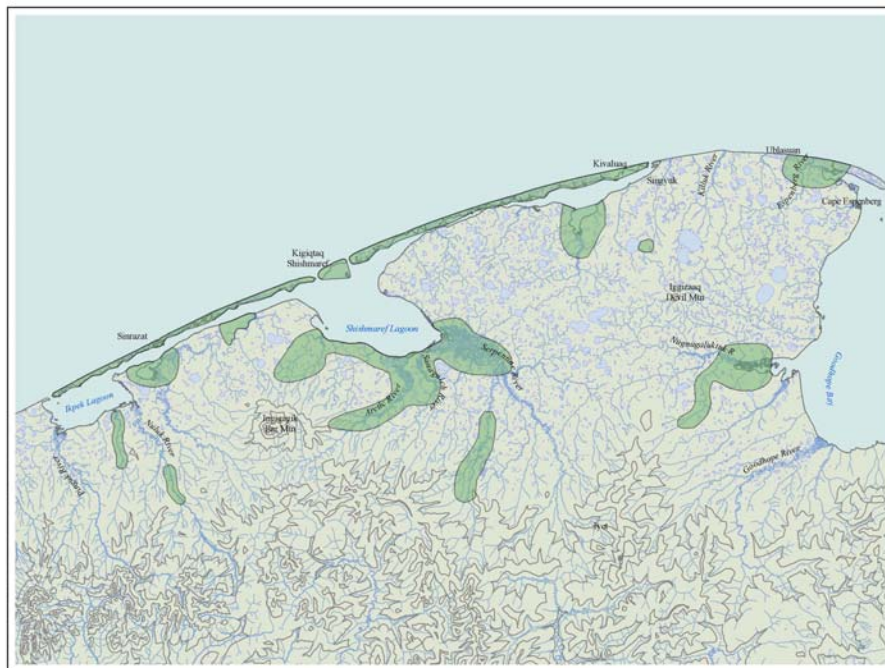
MAP 5
PARTIAL SHISHMAREF
CONTEMPORARY SMALL GAME
TRAPPING AND HARVEST AREAS
(WOLF, WOLVERINE, FOX,
AND PTARMIGAN).

Source: Wisniewski 2004 Shishmaref subsistence land use interviews.

These maps do not represent the sum of Shishmaref traditional knowledge and subsistence activities. Other areas may be used for resource harvesting. Maps have been reviewed by Shishmaref.

Legend
ptarmigan harvest area
furbearer harvest area
500 ft contour



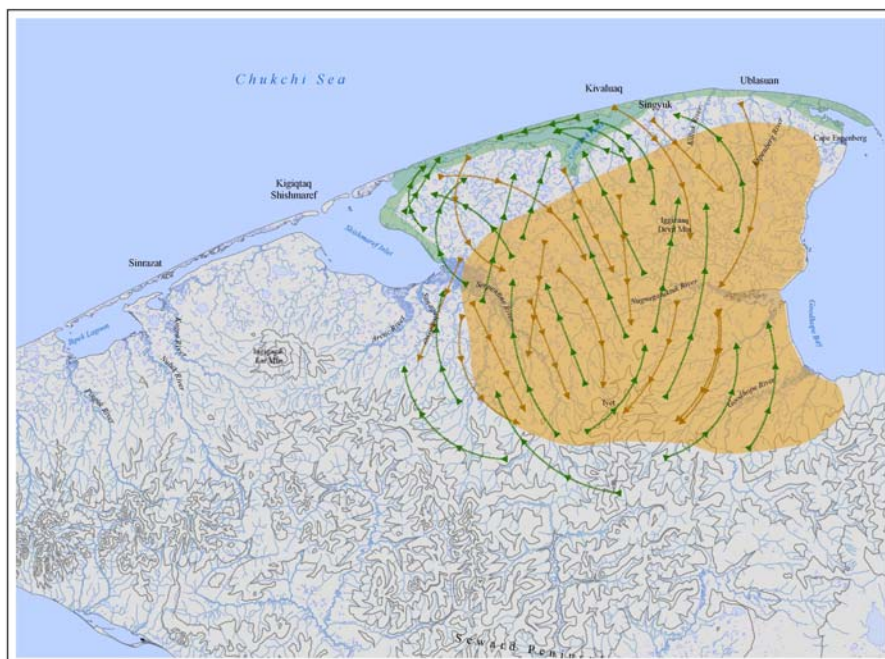


MAP 6

SOME CONTEMPORARY SHISHMAREF SPRING & FALL WATERFOWL HARVEST AREAS

Source: Wisniewski 2004 Shishmaref subsistence land use interviews.

These maps do not represent the sum of Shishmaref traditional knowledge and subsistence activities. Other areas may be used for resource harvesting. Maps have been reviewed by Shishmaref.

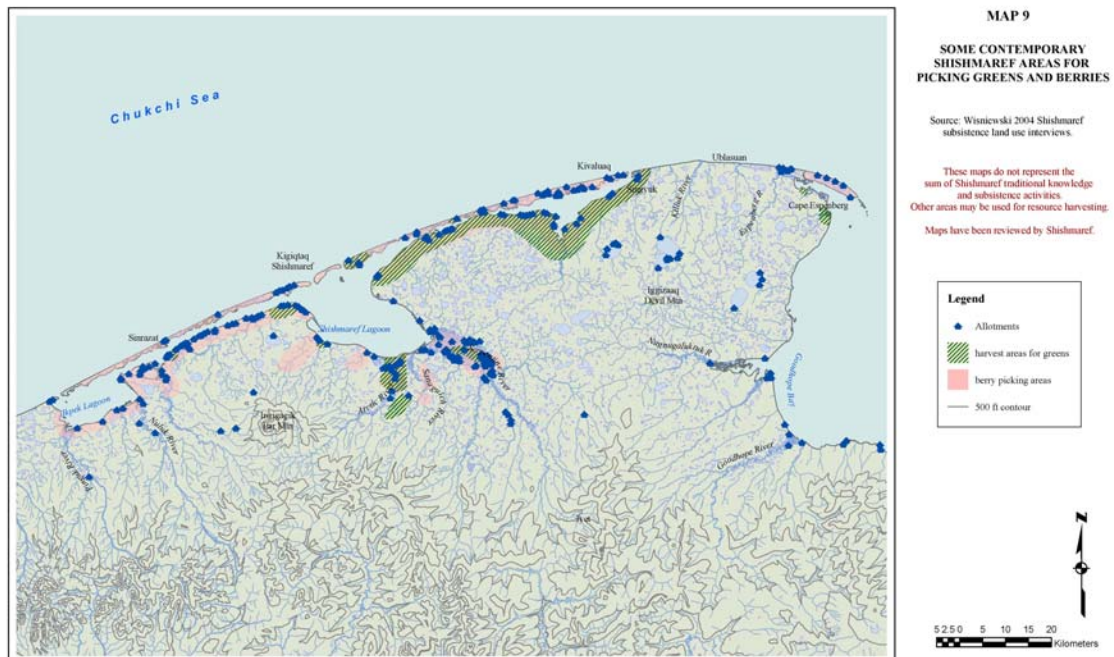
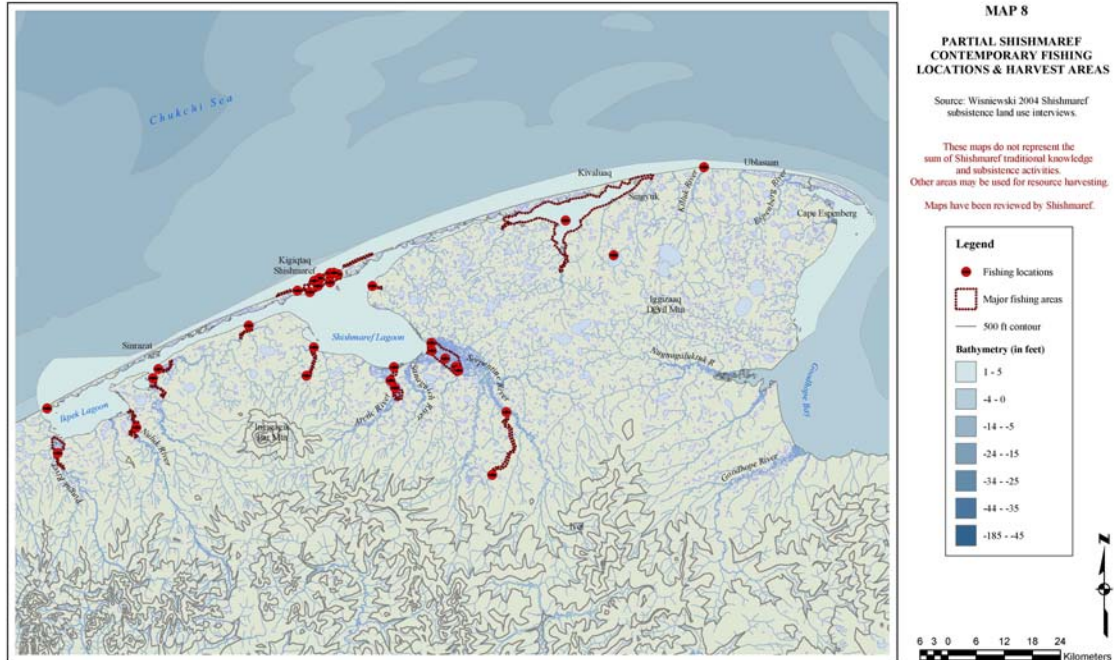


MAP 7

PARTIAL SHISHMAREF CONTEMPORARY CARIBOU HUNTING AREAS AND OBSERVED MIGRATION ROUTES

Source: Wisniewski 2004 Shishmaref subsistence land use interviews.

These maps do not represent the sum of Shishmaref traditional knowledge and subsistence activities. Other areas may be used for resource harvesting. Maps have been reviewed by Shishmaref.



APPENDIX C

SHPO CONSULTATION

Effinger, Robert A (DOT)

From: Ludwig, Stefanie L (DNR)
Sent: Thursday, February 14, 2008 4:28 PM
To: Effinger, Robert A (DOT)
Subject: RE: Shishmaref Relocation road ACHPRM-0002(199)/76776 Geotech Consultation

Robert,
The proposed road crosses some areas with high archaeological potential: areas of relatively higher ground, stream crossings, and ridges near Ear Mountain. We will likely be recommending an archaeological survey for the actual road construction and for the geotech work in the Ear Mountain Exploration Zone.

However the Access Route Borings appear to be spaced widely enough that the threat to unreported cultural remains is not that high. We concur that the Access Route Borings will not affect historic properties provided that the ground is frozen and snow covered and that disturbance to stream banks is minimized.
Stefanie

-----Original Message-----

From: Effinger, Robert A (DOT)
Sent: Thursday, January 31, 2008 1:47 PM
To: Ludwig, Stefanie L (DNR)
Cc: Campbell, Bruce W (DOT); Mulcahy, Laurie A (DOT); Forsling, Peter; Anderson, Ryan (DOT); Masterman, Steve S (DOT)
Subject: Shishmaref Relocation road ACHPRM-0002(199)/76776 Geotech Consultation

Stephanie,
Attached is a submittal for geotech consultation. This submittal covers proposed geotechnical borings for a future relocation road for Shishmaref. Please reply by email with your concurrence and/or recommendations. If you have any questions please feel free to call me.

Thank you.

Bob Effinger
Environmental Analyst
Alaska Department of Transportation
Northern Region - Fairbanks
bob.effinger@alaska.gov
(907)451-5294

APPENDIX D
Alaska National Interest Land Conservation Act (ANILCA), Section 810(a)
Summary Evaluations and Findings

I. INTRODUCTION

This section was prepared to comply with the Title VIII, Section 810 of the Alaska National Lands Conservation Act (ANILCA). It summarizes the evaluations of potential restrictions to subsistence uses that could result from the proposed action by the Alaska Department of Transportation and Public Facilities (ADOT&PF) in cooperation with the Federal Highway Administration (FHWA) to conduct exploratory drilling operations within a portion of the Bering Land Bridge National Preserve.

II. EVALUATION PROCESS

Title VIII Section 810(a) states:

“In determining whether to withdraw, reserve, lease, or otherwise permit the use, occupancy, or disposition of public lands...the head of the federal agency...over such lands...shall evaluate the effect of such use, occupancy, or disposition on subsistence uses and needs,No such withdrawal, reservation, lease, permit or other use, occupancy or disposition of such land which would significantly restrict subsistence uses shall be effected until the head of such Federal agency –determines that (A) such a significant restriction of subsistence uses is necessary, consistent with sound management principles for the utilization of the public lands, (B) the proposed activity will involve the minimal amount of public lands necessary..., and (C) reasonable steps will be taken to minimize adverse impacts upon subsistence uses and resources resulting from such actions.”

When Congress passed ANILCA in 1980, it expanded the national park system in Alaska by creating new parks, monuments and Preserves and making additions to existing units. In establishing these new park areas, ANILCA Title II states the management purposes for which Congress created each unit and outlines the human uses and activities that may be permitted. ANILCA Title II Section 202(2) states the following regarding the management purposes for the Bering Land Bridge National Preserve.

“ The Preserve shall be managed for the following purposes, among others: to protect and interpret examples of arctic plant communities, volcanic lava flows, ash explosions, coastal formations, and other geological processes; to protect habitat for internationally significant populations of migratory birds; to protect habitat for internationally significant populations of migratory birds; to provide for archeological and paleontological study, in cooperation with Native Alaskans, of the process of plant and animal migration, including man, between North America and the Asian Continent; to protect habitat for and populations of, fish and wildlife including, but not limited to, marine mammals, brown/grizzly bears, moose, and wolves; subject to such reasonable regulations as the Secretary may prescribe, to continue reindeer grazing use, including necessary facilities and equipment, within the areas which on January 1, 1976, were subject to reindeer grazing permits, in accordance

with sound range management practices; to protect the viability of subsistence resources; and in a manner consistent with the foregoing, to provide for outdoor recreation and environmental education activities including public access for recreational purposes to the Serpentine Hot Springs area. The Secretary shall permit the continuation of customary patterns and modes of travel during periods of adequate snow cover within a one-hundred-foot right-of-way along either side of an existing route from Deering to the Taylor Highway, subject to such reasonable regulations as the Secretary may promulgate to assure that such travel is consistent with the foregoing purposes.”

ANILCA 810(a) further requires that the potential for significant restriction of subsistence uses by a proposed action be evaluated on “...the availability of other lands for the purposes sought to be achieved and other alternatives which would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes.”

III. PROPOSED ACTION OF FEDERAL PUBLIC LANDS

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Highway Administration (FHWA), is proposing to conduct reconnaissance level engineering studies in support of the Shishmaref Relocation Road project. Congress has made funds available through FHWA to study the potential for developing a suitable material site with an access road connecting the material site to a potential barge landing site in Shishmaref Inlet. As part of the reconnaissance level studies DOT&PF is proposing to conduct exploratory drilling operations. A portion of the proposed operations is proposed within the Bering Land Bridge National Preserve (Preserve).

IV. AFFECTED ENVIRONMENT

Bering Land Bridge National Preserve is located on the northern section of the Seward Peninsula and was established in 1980 by Title II Section 201(2) of ANILCA. Subsistence uses are allowed within the Preserve in accordance with Title II, Section 202(2) and Title VIII of ANILCA and in accordance with Title 36 CFR Part 13 regulations prescribed for proper use and management of park areas in Alaska.

Title VIII, Section 803 of ANILCA defines subsistence uses as: “the customary and traditional uses by rural Alaska residents of wild, renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for the making and selling of handicraft articles out of non-edible byproducts of fish and wildlife resources taken for personal or family consumption; for barter, or sharing for personal or family consumption; and for customary trade.”

Major resources used for subsistence by local communities within the project-related portion of the Preserve include: moose, reindeer, brown bear, snowshoe hare, fox, mink, wolf, wolverine, ptarmigan, ground squirrel, waterfowl, trout, grayling, berries, and wild edible plants. Use areas for the nearby village of Shishmaref are mapped for some of these resources in Appendix B, Maps 1 through 9.

Other resources used for subsistence by local communities in surrounding areas but outside the project area include: caribou, and marine mammals (seal, walrus, polar bear, whale), and other fish (salmon, whitefish, herring, lingcod, tomcod, flounder, smelt).

It is estimated that the nearby community of Shishmaref harvests nearly 800 edible pounds per person per year of subsistence resources from the surrounding area which includes parts of Preserve and the proposed project area. The proportion of this harvest by type is estimated as follows: marine mammals (55%), fish (21%), marine invertebrates (18%), birds and eggs (4%) and vegetation (2%).

V. SUBSISTENCE USES AND NEEDS EVALUATION

To determine the potential impact on subsistence activities, three evaluation criteria were analyzed relative to current subsistence resources that relative to the current subsistence resources that could be impacted.

The evaluation criteria are:

1. The potential to reduce important subsistence fish, wildlife, or plant populations by substantial (a) reductions in abundance; (b) redistribution of subsistence resources; or (c) loss of habitat.
2. Potential impacts the action may have on access for subsistence hunters and anglers.
3. The potential for the action to increase competition among hunters and anglers for subsistence resources.

1. The potential to reduce populations:

No substantial reduction in fish, wildlife, or plant populations is anticipated as a result of the proposed exploratory drilling project.

Fisheries

The project is expected to have no substantial impacts on fish abundance, distribution, or habitat. The number of stream crossings would be minimized by selecting a direct route. Within the Preserve the exploration route crossed upper reaches of unnamed tributaries of Tin Creek (route-miles 10, 12, and 14 as measured from Shishmaref Inlet)(Figure 2). None of these streams are identified as anadromous in the Alaska Department of Fish and Game online Fish Distribution Database. Outside the Preserve, the lower 5 miles of the main stem of Tin Creek are identified as a general fishing area for Shishmaref residents in the subsistence use study conducted by the Corps of Engineers (Appendix B, Map 8).

Equipment is expected to pass over streams directly on snow and ice during frozen conditions. The number of trips across streams with equipment will be few in number and duration. The number of trips across streams with equipment would be few in number and duration. The number of round-trip passes across the Preserve is estimated at one for the drill rig and 10-12 for the snow machines and their support equipment to transport commuting workers and supplies. Stream crossings would be made from bank to bank with a preference for low and sloping bank

locations and in a direction that is as close to perpendicular as possible to the direction of stream flow. Crossings will target shallow areas and avoid any ice-covered deep water pools. Equipment impacts to stream-side willows will be minimized as described under the wildlife section below.

Wildlife

The project is expected to have no substantial effects on wildlife or their habitats. No loss of wildlife habitat is expected. To minimize habitat effects, the work would be conducted when snow cover is adequate to substantially protect soils, roots, vegetation. Soil and vegetation disturbances would be small, confined to the immediate vicinity of the 6-inch diameter auger holes. Soil cuttings would be returned to the holes. Neighboring plants are expected to quickly re-colonize the small disturbed areas.

There is potential that dormant willow and shrub branches could be broken as equipment crosses streams or tall shrub patches. Plants emerging above snow cover will be avoided to the extent practicable. Impacts to shrub branches are expected to constitute a small percentage of the shrub canopy with minimal to no anticipated root damage. Damaged branches are expected to regenerate rapidly in the spring.

Temporary displacement of wildlife from a portion of their movement area may occur as a result of equipment noise and human activities during transport and drilling. The displacement would be short in duration during which time abundant suitable alternative habitat areas are readily available nearby. The total estimated time for activities within the Preserve is 3 to 5 days. The drilling rig would cross and complete borings within the Preserve over a period of 2 to 4 days in the spring (March and/or April). The rig would be returned by walking the equipment back through the Preserve over a one day period in the fall under adequate snow cover conditions. When the project is finished, human activity and wildlife movements are expected to return to normal with no change in wildlife population, distribution, or habitat.

Plants

The project is expected to have no substantial effect to subsistence plant populations. The precautions given under the wildlife discussion above are expected to substantially protect subsistence plants. Minor disturbances are expected to quickly re-colonize in-kind with no measurable change in resource abundance, distribution, or habitat.

2. Restriction of Access:

All rights of access for subsistence harvest on National Park Service lands are granted by Section 811 of ANILCA. Bering Land Bridge National Preserve is managed according to the legislative mandates, NPS management policies and guidelines within the approved General Management Plan. The proposed action to conduct exploratory drilling operations is not expected to limit or restrict the access of subsistence users to natural resources within the Preserve. The superintendent may enact closures and/or restrictions if necessary to protect subsistence opportunities or to assure the continued viability of a particular fish or wildlife population.

3. Increase in Competition:

The proposed action to conduct exploratory drilling operations is not expected to result in increased competition for fish, wildlife, or other resources within the park. The project is temporary and non-consumptive in nature. The conditions of subsistence activities are expected to remain the same before and after the project. Furthermore, NPS regulations and provision of ANILCA mandate that if and when it is necessary to restrict taking of fish or wildlife, subsistence users will be given a priority over other user groups. Continued implementation of the ANILCA provisions should mitigate any increased competition that may arise from resource users other than subsistence users. The superintendent may edict closures and/or restrictions if necessary to protect subsistence opportunities or to assure the continued viability of a particular fish or wildlife habitat.

VI. AVAILABILITY OF OTHER LANDS

The proposed project is site specific to explore a route from a potential barge landing site on Shishmaref Inlet to a potential material site on Ear Mountain. The potential barge landing site is surrounded on three sides by the Preserve and by the ocean to the north. Any land route between the potential barge landing and Ear Mountain requires passage through the Preserve. There are no other available lands that would meet the purpose and need of the project.

VIII. FINDINGS

This analysis concludes that the proposed action will not result in a significant restriction of subsistence uses.