

STATE OF ALASKA

DEPARTMENT OF NATURAL RESOURCES
OFFICE OF PROJECT MANAGEMENT AND PERMITTING

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Dave Navecky
STB Finance Docket No. 35095
Surface Transportation Board
395 E Street S. W.
Washington, DC 20423-0001

May 10, 2010

Dear Mr. Navecky:

Re: STB Finance Docket No. 35095, Alaska Railroad Corporation Construction and Operation of a Rail Line Extension to Port Mackenzie, Alaska; Issuance of Draft Environmental Impact Statement

The State of Alaska has reviewed the Surface Transportation Board's (STB's) Draft Environmental Impact Statement (DEIS) for the Alaska Railroad Corporation's (ARRC) Port MacKenzie Rail Extension project. The comments in this letter represent the consolidated views of the state's resource agencies.

General Comments

- The inclusion of a permanent access road parallel to the tracks will increase the project footprint and environmental impacts substantially. It will involve increased wetland fill, additional clearing, and longer culverts leading to fish passage issues. The need for an access road should be evaluated in the final EIS. As a rule, the majority of the existing ARRC alignment does not have an access road. If an access road is determined necessary, additional road-specific mitigation measures must be developed and evaluated in consultation with ADF&G and other applicable resource agencies and included in the final EIS.
- Access into 4(f) resources is an issue. The State disagrees with the characterization that existing section-line easements are unlikely to be potentially viable access points into the Susitna Flats State Game Refuge (SFSGR). Appendix M.1.c.2 (Section 4(f) and Section 6(f) Evaluation; page M-30), states that *"It is possible that individuals could also access the refuge via section line easements, though it is unlikely due to the lack of public parking areas and the privately-owned agricultural parcels that would have to be crossed to enter the refuge via section line easements"*

"Develop, Conserve, and Enhance Natural Resources for Present and Future Alaskans."

(Paulsen pers. Comm., 2009a)." This is restated again in Appendix M.1.d.2 (page M-38) under Impacts to 4(f) resources.

While it is correct that the agricultural parcels in the area have had some section-line easements vacated, section-line easements and roads still exist and provide access around those agricultural parcels. Additionally, all section-line easements within agricultural parcels were not automatically vacated. Some remain, and are connected to public access easements around numerous lakes located on and adjacent to the agricultural parcels. The lack of a designated parking lot does not invalidate the potential use of existing valid section-line easements by the public. The public can park along existing borough road ROW's in the area or make arrangements with private land owners for parking, and enter the SFSGR by walking along section-lines.

The SFSGR is managed cooperatively by ADF&G and ADNR. The final EIS should reflect communications with the area managers regarding access into the refuge, not solely Matanuska-Susitna Borough (MSB) personnel. In addition, the text of that communication with the MSB was not included in the review materials.

- Moose impact mitigation is an issue that has not been sufficiently addressed in this document. Mitigation measure 33 instructs the applicant to develop, in consultation with resource agencies, a strategy to reduce moose mortality caused by train impacts. This approach is grossly insufficient and circumvents the EIS process. Developing mitigation measures in the proposed manner does not bind the applicant to any course of real action, is ambiguous as to how much input resource agencies may have, and does not allow for public comment.

Project-specific moose-related mitigation measures, on a route-by-route basis, must be included in the final EIS. These measures must include not only collision-related mitigation, but habitat fragmentation (e.g. properly designed and placed underpasses), and construction-related impacts. More work and direct interaction with local Division of Wildlife Conservation staff is necessary before the EIS can be finalized.

- Mitigation Measure 46 provides direction to the applicant to develop, in consultation with resource agencies, mitigation measures to address impacts to the Susitna Flats State Game Refuge (SFSGR) if the Mac West Route is authorized. This approach is grossly insufficient and circumvents the EIS process. Developing mitigation measures in the proposed manner does not bind the applicant to any course of action, is ambiguous as to how much input resource agencies may have, and does not allow for public comment.

Specific measures to mitigate impacts to the SFSGR need to be included in the final EIS. These measures should include, but not be limited to, compensatory mitigation, retention of public access to the refuge, and impacts to fish and wildlife. More work and direct interaction with local ADF&G and DNR staff is necessary to develop acceptable mitigation before the EIS can be finalized.

- Mitigation Measure 48 provides direction to the applicant to develop, in consultation with resource agencies, mitigation measures to address impacts to state parklands and recreational areas if the Willow Route is authorized. Again, this approach is grossly insufficient and circumvents the EIS process. Developing mitigation measures in the proposed manner does

not bind the applicant to any course of action, is ambiguous as to how much input resource agencies may have, and does not allow for public comment.

Specific mitigation measures need to be proposed as part of the final EIS and should include, but not be limited to, compensatory mitigation and public access components. More work and direct interaction with local DNR and ADF&G staff is necessary to develop acceptable mitigation measures before the EIS can be finalized.

- The draft EIS has not sufficiently addressed impacts to public use of area resources. Access to fish and game resources on public lands must be maintained across each potential alignment. Hunting and fishing activities are not limited to officially designated trails. It is not acceptable for this project to result in blockages of free access to state resources on public lands. Route-specific measures to provide passage across the alignment must be determined and included in the final EIS. These measures must include, but not be limited to, crossings at intervals frequent enough to allow historic usage patterns. Structures designed to pass humans across the alignment should also be designed to allow moose and other wildlife to cross (see attachment). More work with appropriate agencies and user groups to develop acceptable mitigation is necessary before the EIS can be finalized.
- The words “practicable” and “reasonable requirements” are used throughout the document. Neither of these words are defined in the glossary. No where is it addressed that the land manager needs to concur on what the ARRC considers to be practicable and reasonable or in some cases be informed that they have made this decision. Additionally, both practicable and reasonable are heavily used in the mitigation measures, making it difficult to determine what exactly the ARRC is proposing for mitigation. What role does the landowner have in the decision making process to determine what is practicable and reasonable? For example, mitigation measure 19.2.8.2(38) states: *“Public access and use of the statutory easements as established by the reasonable requirements of Alaska Statute 38.05.127...”* What does the ARRC consider to be the *reasonable requirements* of a statute?
- Authorizations issued by the state are subject to valid existing rights. The project description provided by the ARRC appears to indicate that they would like to vacate all valid existing rights or at least control them. Please note that an EIS does not provide the legal authority to accomplish this type of restriction.

Section Specific Comments:

Table S-2 Summary p. 32

The table listing “potential Impacts” to agriculture may be under reporting the amount of acres affected. The table lists “*Acres in agricultural use lost:*”, but this number does not account for agricultural lands that are still undeveloped. These undeveloped acres are still protected for future agricultural use by AS 38.05.321.

2.1.1.2: Rail Line Access Road

For rail line construction and post-construction operations, ARRC would build a permanent access road parallel to the rail alignment and within the 200 foot ROW. ARRC would construct the access road before the rail line and would use the access road for construction of the proposed rail line. ARRC would not maintain the access road as a public road.

As stated in the draft EIS, the right-of-way will be permanently cleared and no fence or other linear separation is being proposed or reviewed in the EIS. How does the applicant plan to block access to the road in an area that has high recreation and access use by the public?

2.1.1.5: Acquisition of Materials for Rail Line Construction

ARRC would obtain fill material from cut-and-fill activities during railbed construction, and to the extent practicable, would adjust the design profile grade to balance cut and fill quantities. If needed, ARRC would obtain additional fill material from borrow sources within the ROW or off site.

Additional fill material from off site sources need to be from legal gravel extraction locations or the land manager needs to concur on the location. A permit or lease may be required.

2.1.1.9 Grade Crossings

Where the proposed rail line could cross a trail that is officially recognized, meaning specifically established within currently-adopted plans by ADNR and/or MSB or are established within these plans at the time of construction or ROW conveyance (whichever occurs first), and are located on state, MSB property, or whose locations are provided for by recorded ROW or easement....

The state officially recognizes trails through plans, state issued authorizations and recorded ROW, easements and plats. The definition provided by the ARRC does not include recorded plats and state issued authorizations. Please add this to the definition of an officially recognized trail.

ARRC would coordinate with the trail owner and consult with the user groups as appropriate where the crossing location could have to be relocated...or where multiple crossings within one mile might be consolidated.

What role does the land owner and user groups have in the decision making process? It states that the ARRC will coordinate with the trail owner and user groups, but not that they need concurrence. What happens if the groups do not agree on relocation of a trail? Additionally, there is specific guidance on how to legally relocate an RS 2477 route. The method described in 2.1.1.9 does not necessarily fulfill these requirements (i.e. 11 AAC 51 and more specifically 11 AAC 51.065).

2.1.1.10 & 2.1.1.6 Construction Staging Areas and Communication Towers

The ARRC will attempt to place construction staging areas and communication towers within the right-of-way. It is not addressed what the applicant will do if they are not within the ROW. How will they work with the land owner? Do they foresee permits or leases being applied for? One of the towers appears to be adjacent to the Iditarod National Historic Trail and other official trails. How will the ARRC work with the land managers to identify the locations and possible effects any needed access roads and towers may have?

2.1.1.10 Terminal Reserve Area

A reserve area usually indicates that the railroad will take ownership of the land. Is the ARRC proposing to take ownership of the existing recreation facilities within the proposed Terminal Reserve Area?

6.4.3.2 Cultural Landscapes

See Appendix M below

There are more contributing trails identified in Figure 6-5 than the maps illustrating the trails listed in 2.1.1.9 (official trails identified for crossings). Are there going to be crossings provided for these contributing routes, especially any currently used trails? This difference in the trail illustrations is not specifically addressed in the document.

13.1.5.1 Common Impacts to Land Use

Existing land use for a small portion of land in proximity to the proposed ROW would be permanently changed, and any non-rail activities within the proposed ROW would require an ARRC-issued entry permit. Page 13.1-12

Where are these *small portions* located? What sorts of *changes* are foreseen? Please note so that the affected land owner can specifically comment in regards to the permanent changes. One could read the above statement to be a broad general statement or one describing the creation of stranded inholdings that would require ARRC permits for a land owner to monitor and manage their land.

13.2.4.2 Trails

Unofficial trails can also include means of accessing public or navigable waters on state land (11 AAC 38.05.127), riparian buffers along those waters (11 AAC 51.045), or trails along Section lines (11 AAC 51.025). Page 13.2-14

The State disagrees that 11 AAC 96.020 and 11 AAC 51.025 easements are unofficial trails. They can be developed or undeveloped, but not unofficial. Also, the above sentence is not explicitly included in the glossary definition of an “unofficial trail” (Page GL-18).

Section line easements are valid existing rights established by operation of law when DNR acquired the lands (AS 19.10.010), and the ARRC may have to provide crossings in the future as described under provisions of 11 AAC 51.025. If the applicant desires to vacate an 11 AAC 51.025 easement, there are specific regulations that outline the steps required to accomplish this (11 AAC 51.065).

13.2.5.1 Operations Impacts

- *The rail line could block access to and along public and navigable water bodies with access rights reserved through AS 38.05.127 (as described in Title 11 AAC 51.045). This would result in a change in recreational access patterns to certain waters. Because of the frequency of these access points, it is anticipated that users would identify an alternative location for recreational access to navigable and public waters that was not affected by the proposed rail line.*

Given the ARRC definition that access needs to be officially recognized at the time of construction or ROW acquisition (whichever occurs first), how will any alternate access be legal across the rail line if it doesn't already exist at time of construction? The rail line is a linear feature, and traveling to an area not affected by the proposed rail line could be a substantial diversion. Additionally, if access is blocked at one stream, and forces the public to use an alternate route, how will the public legally travel back to the stream they are attempting to access without trespassing on public or private land (or the railbed)?

Table 13.3-2 Known Hazardous Material Sites and Regulated Facilities of Concern

4) If the vertical and lateral extent of the contamination is undetermined, how do you know that the proposed project is outside of this contaminated site?

13.1.4.1 Existing Land Ownership

Private Land:

“...Private land in the vicinity of the proposed rail line is characterized as forested and some agricultural, and development is typically low-intensity, residential. Development typically occurs near lakes and ponds and linearly along highways. there are areas of private land in the vicinity of the proposed rail line east of the northern portion of the Willow Segment, around Big Lake, and agricultural land associated with the Point MacKenzie Agricultural Area between the Mac West and Mac East segments.”

This summary of Private Land identifies agricultural lands but does not address patent restrictions placed upon some of them. All private land within the Point MacKenzie Agricultural Area are subject to AS 38.05.321.

Some of the private land identified as being east (and possibly west) of the northern portion of the Willow segment also have AS 38.05.321 agricultural use restrictions.

Note that several times in Chapter 13.1 the DEIS states that there is no data available to determine land ownership in the proposed ROW. The land ownership is then assumed to be publicly owned by the State of Alaska. This data is available and the final EIS should contain accurate land ownership information for all of the proposed routes.

13.1.4.3 Existing Zoning

Point MacKenzie Agricultural Area:

“ ... Land titles are subject to a recorded declaration of covenants, conditions, and restrictions to promote agricultural use. The covenants, conditions, and restrictions limit improvement sites, residential locations, and subdivision of the original farm unit. ”

These lands are subject to a perpetual covenant for the benefit of all Alaska residents and running with the land that restricts or limits the use of the land for agricultural purposes. No conversion of these lands to non-agricultural use is allowed. This Draft EIS does not address this patent restriction or outline the process by which these restrictions could be removed.

The anticipated economic feasibility of the land's productivity for agricultural pursuits has not been realized.

The Point MacKenzie Agricultural Area has several active dairies, livestock operations, and several thousand acres of hay are in production. How has the Draft EIS concluded that the goals for agriculture have not been met?

In 1997, AS 38.05.321 was amended to ease restrictions on the subdivision of agricultural land.

Prior to 1997 AS 38.05.321 allowed agricultural parcel owners to subdivide into as many subdivision of at least 40 acres as they wanted to. AS 38.05.321 limited agricultural parcel owners to a maximum of 4 subdivided parcels of at least 40 acres. This was an additional restriction not a lessening of restrictions.

14.4 Socioeconomics, Affected Environment

What impact will there be to taking on agricultural covenants? How does farm equipment cross the rail line if it bisects a parcel?

19.2.2.2 SEA's Preliminary Mitigation Measures

17) During final design of the project, the Applicant shall conduct all siting, design, and development of the rail line and associated facilities according to the reasonable requirements within the jurisdiction of the Alaska Department of Natural Resources and the Alaska Department of Fish and Game.

Please define “reasonable requirements” and how disagreements between the ADNR/ADFG and the applicant on these requirements will be resolved?

19.2.8.2 SEA’s Preliminary Mitigation Measures

38) In coordination with the Alaska Department of Natural Resources (ADNR), the Applicant shall ensure that project-related bridges and culverts placed on navigable or public waters, as determined by the ADNR, are designed and installed to accommodate:

- Navigation by recreational boat users in a manner that shall not impede existing uses, to the extent practicable, and*
- Public access and use of the statutory easements as established by the reasonable requirements of Alaska Statute 38.05.127, Access to Navigable or Public Water.*

Who determines what is “practicable” and the “reasonable requirements” of a statute? This could actually not be a mitigation measure, since the ARRC could find that it’s not “practicable” and the statute is “unreasonable”. How will disagreements between ADNR and the applicant on the use of this mitigation measure be resolved?

19.2.9.2 SEA’s Preliminary Mitigation Measures

39) What is the timeline and funding source for the plan under #39?

40) The Applicant shall consult with the appropriate management agencies, including the Alaska Department of Natural Resources and the Alaska Department of Fish and Game to ensure that project-related bridges and culverts are signed, constructed, and maintained to accommodate travel by winter modes of transportation (snow machine, dog sled, etc.) on streams and rivers used for recreational access, as determined under mitigation measure 38.

How will it be determined under mitigation measure 38? Winter access on a water body is not confined to a 38.05.127 easement. Is the ARRC just referring to water determined navigable and not the bulleted items? Also, the ADFG is included as an agency under mitigation measure 40, but not 38. Please explain what the ARRC envisions the role of ADFG to be in regards to this measure.

41) The applicant shall consult with resource management agencies including the Alaska Department of Natural Resources, the Alaska Department of Fish and Game, and appropriate trail user groups regarding provision, access, and design of crossings for trail easements with intersect with the rail line. Consultation shall include concerns related to general dispersed-use access, informal public trails on state land, blazed section lines, and long stretches of rail line without designated public crossings.

A blazed section line could be a developed legal easement. Why is the ARRC consulting about general dispersed-use access, informal public trails on state land and long stretches of rail line without designated public crossings, since these are defined as “unofficial trails” that will not have crossings? Is this mitigation since the EIS states no legal crossings will be constructed?

48) *If the Surface Transportation Board authorizes the Willow Segment, the Applicant shall consult with the Alaska Department of Fish and Game and the Alaska Department of Natural Resources to develop and implement measures, including consideration of the replacing acreage used for rail right-of-way, to minimize impacts to the Nancy Lake State Recreation Area, Little Susitna State Recreation River, and Willow Creek Recreation Area to the extent practicable.*

Is the railroad swapping their land or paying for new land to replace acreage? Otherwise, this is not necessarily a mitigation measure.

**Appendix M: Draft Section 4(f) and Section 6(f) Evaluation
Iditarod National Historic Trail**

Historic sections of the trail and historic sites associated with the trail may be subject to Section 4(f) if deemed historically significant; however, the portion of the trail in question for this project (Knik to Susitna River) is considered ineligible for inclusion on the National Register as a historic trail segment according to the Iditarod National Historic Trail Comprehensive Management Plan (BLM 1986) and is therefore not subject to the provisions of Section 4(f) under this condition.

DNR has been unable to locate an ineligibility determination for the Knik to Susitna River Primary Trail of the Iditarod National Historic Trail. Please provide a more specific citation with the required concurrence from the State Historic Preservation Officer and/or Advisory Council on Historic Preservation. Otherwise, remove this statement.

The cultural resources analysis conducted through the Section 106 process for the proposed rail extension identified dog sledding associated with the INHT including improvements made from 1967 through 1978 for the Iditarod Race as a cultural landscape potentially eligible for inclusion on the National Register.

Per the Cultural and Historic Resources section of the draft EIS, dog sledding associated with the Iditarod National Historic Trail and Iditarod Race are “considered a cultural landscape and assumed eligible for inclusion in the National Register” (6.4.3.2, Page 6-19). Since Part 1 of the draft EIS states that this is eligible (not potentially), please provide a 4(f) review.

In addition to the above issues, the Iditarod Trail is a recreation trail that is collocated with an RS 2477 route and has a recorded state easement (ADL 222930) and survey (ASLS 830001 Goose Creek to Susitna Station). Please provide documentation as to why the RS 2477 route and recorded easement with platted survey for an active recreation route do not qualify under a Section 4(f) review.

Officially Recognized Trails

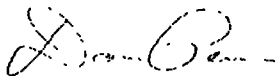
These trails would be closed temporarily during construction and crossings could be relocated or consolidated with other trails if they exist nearby to reduce the number of crossings of the rail line in proximity to one another. Trail closures,

though temporary, could affect user enjoyment though ARRC would time construction activities during the most appropriate timeframe to limit impacts to trails...Impacts such as closure of trails during construction would be temporary and would not result in permanent impairment of the features of the resource that qualify it as a Section 4(f) resource.

Only the temporary closures are discussed, not the permanent relocations and consolidations. What are the impacts of relocating and consolidating the trails?

This concludes the State's response to the Port Mackenzie Rail Extension DEIS. We look forward to working closely with the SEA and the applicant to address any outstanding issues. Please contact me at (907) 269-7476 or by email at donald.perrin@alaska.gov if you questions regarding these comments.

Sincerely,



Don Perrin
Project Management and Permit Coordinator
Alaska Department of Natural Resources

Attachments:

1. Mitigation table comments
2. Guidelines for moose mortality mitigation
3. Current agriculture land maps

cc: Mike Bethe, ADF&G
Ken Bouwens, ADF&G
Ellen Simpson, ADF&G
Wyn Menefee, ADNR
Sandy Singer, ADNR
Lesli Schick, ADNR
Erik Johnson, ADNR
Wayne Biessel, ADNR

Attachment 1

The following table lists the State's comments on the proposed mitigation measures.

Mitigation measure	Recommendation	Comment
19.2.1 Topography, Geology, and Soils		
VM-1	NR	
19.2.2 Water Resources		
VM-2	Retain	
VM-3	Amend	Include ADF&G Special Area Permit in list of state permits.
VM-4	Amend	Remove "...to the extent practicable."
VM-5	Amend	Include "...and access road..." after "...rail line...". Clarify that the applicant will ensure connectivity for all wetland drainages.
VM-6	Retain	
VM-7	Retain	
VM-8	Retain	
VM-9	Retain	
VM-10	Amend	insert: "...in consultation with ADF&G Division of Habitat and..." after "structures". Clarify that an ADF&G Fish Habitat Permit will be required to cross specified anadromous streams.
VM-11	Amend	Include "...in consultation with ADF&G..." after "Applicant".
VM-12	Retain	
SEA-1	Retain	
SEA-2	Retain	
SEA-3	Retain	
SEA-4	Amend	include "all" after "mark".
SEA-5	Retain	
SEA-6	Retain	
SEA-7	Retain	
SEA-8	Amend	Clarify that all travel off the ROW must be approved by the land owner.
SEA-9	Retain	
SEA-10	Amend	Clarify that gravel mining below the OHW mark of anadromous streams would require authorization (not just consultation) from ADF&G.
SEA-11	NR	

SEA-12	Retain	
SEA-13	Amend	Add that no storage of fuel would be allowed within 100-feet of anadromous waterbodies.
SEA-14	Amend	add: "...and, in the case of fish-bearing streams, ADF&G." to the end of the sentence.
SEA-15	Retain	
SEA-16	Amend	add: "blockages to free-fish passage" after "to avoid". Clarify that the applicant accepts the responsibility to clear all blockages, including those related to beaver activity and perched culverts, under the alignment for the life of the rail line. Also, culverts must be designed to allow fish passage at low flows.
SEA-17	Amend	Remove the word "reasonable".
SEA-18	NR	
SEA-19	Retain	
SEA-20	Amend	add: "and natural condition." after "contours".
SEA-21	Remove	
SEA-22	Retain	
19.2.3 Biological Resources		
VM-13	Retain	
VM-14	Retain	
VM-15	Retain	
VM-16	Retain	
VM-17	Retain	
VM-18	Retain	
VM-19	Retain	
SEA-23	Retain	
SEA-24	Amend	Clarify that ADF&G will make the final determination on whether a stream is fish bearing.
SEA-25	Amend	Add "anadromous and resident fish streams" and "moose calving area" to the list of potential highly sensitive areas.
SEA-26	Retain	
SEA-27	Retain	
SEA-28	Amend	Refer to appropriate BMPs contained in the Alaska Forest Resources and Practices Act (FRPA).
SEA-29	Retain	

SEA-30	Retain	
SEA-31	Amend	Include all work below the Ordinary High Water mark of all fish bearing streams to possible work. Remove the word "reasonable".
SEA-32	Amend	replace: "... not narrow an anadromous water body between its mean high water lines..." with "...not modify an andromous water body below the ordinary high water mark..."
SEA-33	Amend	Add recommendations outlined in attachment A into this mitigation measure.
SEA-34	Retain	
SEA-35	Retain	
SEA-36	Retain	
New		Free fish passage will be maintained across the project reach for the life of the project. This includes, but is not limited to, blockages through culverts and bridges caused by beaver activity and perched culverts.
New		Wetlands cataloged as anadromous under AS 16.05.871 will be avoided. Fill will not be placed within anadromous wetlands.
New		Public access to fish and wildlife resources shall be maintained during construction and operation to the maximum extent practicable.
19.2.4 Cultural Resources		
VM-20	NR	
VM-21	NR	
19.2.5 Climate and Air Quality		
VM-22	NR	
VM-23	NR	
19.2.6 Noise and Vibration		
VM-24	NR	
VM-25	NR	
VM-26	NR	
SEA-37	NR	
new		The Applicant shall consult with and obtain fish habitat permits from ADF&G for pile driving activities and use of explosives near anadromous streams.
19.2.7 Transportation		

VM-27	NR	
VM-28	NR	
VM-29	NR	
VM-30	NR	
VM-31	NR	
VM-32	NR	
19.2.8 Navigation		
VM-33	Retain	
VM-34	Retain	
SEA-38	Retain	
19.2.9 Land Use		
VM-35	Retain	
VM-36	Retain	
VM-37	NR	
VM-38	NR	
VM-39	NR	
VM-40	NR	
VM-41	NR	
VM-42	Amend	
VM-43	NR	
VM-44	NR	
VM-45	Retain	
VM-46	NR	
SEA-39	Retain	
SEA-40	Amend	Include guidelines recommended into SEA-33 into these crossings to allow large mammal passage.
SEA-41	Amend	Revise to read: The Applicant shall consult with resource management agencies including the Alaska Department of Natural Resources and the Alaska Department of Fish and Game, and appropriate trail user groups, to develop and implement measures regarding provision, access and design of crossings for trail easements trails that intersect with the rail line. Consultation shall include concerns related to general dispersed use access, informal public trails on state land, blazed section lines section line easements and long stretches of rail line without designated public crossings.
SEA-42	NR	

SEA-43	Retain	
SEA-44	NR	
SEA-45	NR	
SEA-46	Amend	Change to: If the Surface Transportation Board authorizes the Mac West Segment, the Applicant shall consult with the ADF&G and DNR to develop and implement mitigation measures to address impacts to the Susitna Flats State Game Refuge. Mitigation measures will include, but not be limited to, compensatory mitigation and public access to the refuge.
SEA-47	Retain	
SEA-48	Retain	
SEA-49	Amend	Include ADF&G
SEA-50	NR	
SEA-51	NR	
SEA-52	Retain	
SEA-53	NR	

Attachment 2

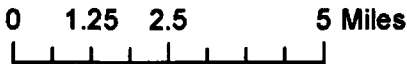
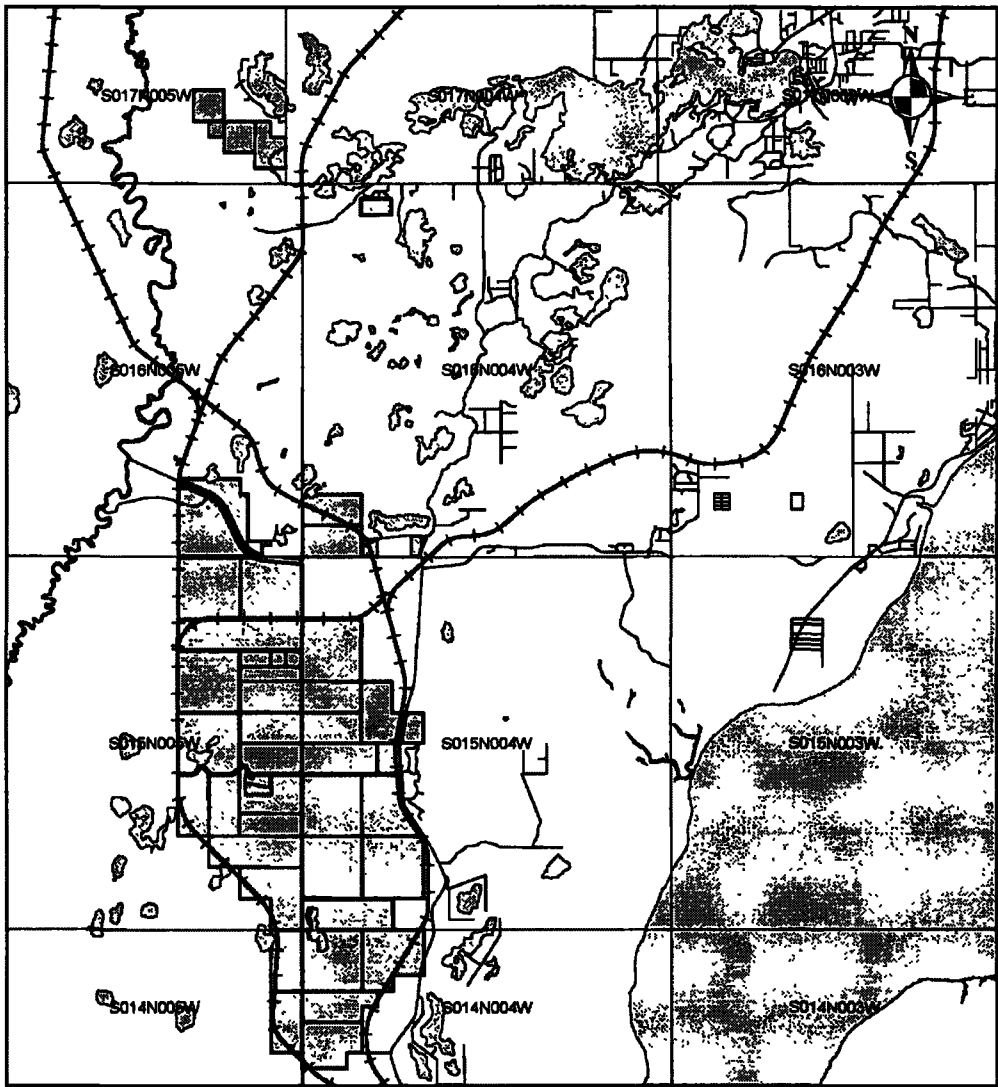
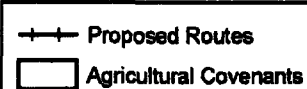
ADF&G guidelines for Moose Mortality Mitigation (accommodates most other large wildlife¹)

- Provide undercrossings in areas of natural moose travel areas where possible, with a maximum spacing of one to two miles between undercrossings.
 - Place additional undercrossings in high use areas.
 - Provide an open line-of sight through undercrossings and under bridges.
 - Provide an openness² of 2.0 or greater for moose undercrossings.
 - Reduce sound levels coming from above and echoes within undercrossing structures.
 - Provide upland (non-submerged and non-iced) corridors through and approaches to all undercrossings.
 - Provide suitable walking surface (e.g., cover rip-rap with soil) across the alignment.
 - Provide minimum of 12 feet clear opening above ground/snow line of sight (i.e., with 2 feet of snow cover need 14 feet clearance from ground surface).
 - Configure access road and railroad crossings separately with open space in between. Do not design one long undercrossing under both prisms.
 - Consider fencing or other measures to keep animals from entering area between the access road and railroad alignments.
 - Institute snow removal policy and procedures to eliminate berms that may block access across the alignment.
-

¹ includes moose, brown bear, black bear, wolf, coyote, red fox, and lynx; unknown if adequate for bison; smaller terrestrial wildlife species may need more frequent corridor crossings due to scaling of home ranges and seasonal habitat requirements

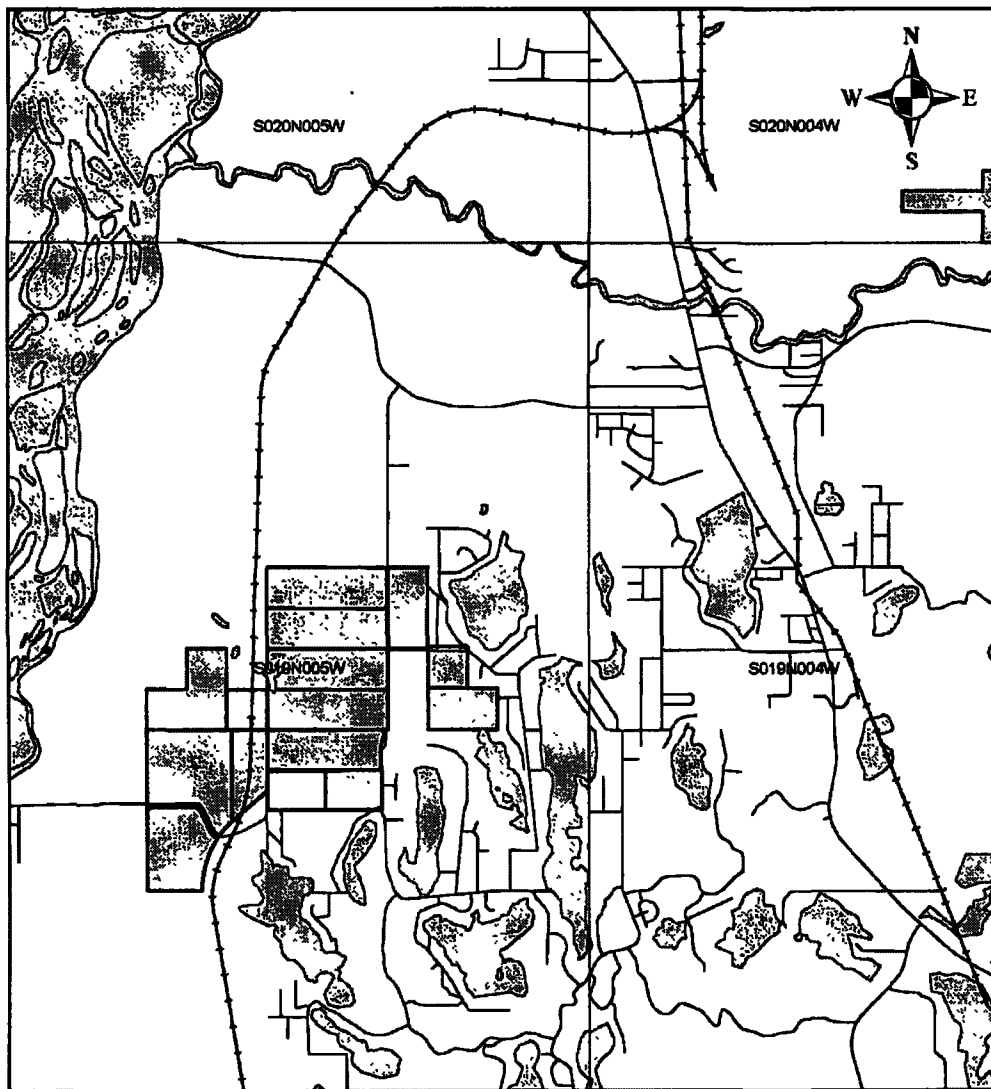
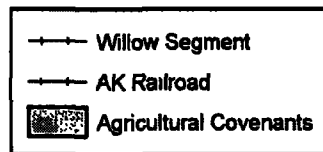
² openness is a concept of uncrowdedness that reduces the apparent cross sectional area of a crossing by the travel distance required to pass beneath or through the crossing; other important factors can include aspect ratio, apparent cross-sectional area, shape, materials used, acoustic characteristics, lighting characteristics, and predator detection and avoidance

Private lands with Agricultural restrictions



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Private lands with Agricultural restrictions



0 0.5 1 2 Miles

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