

**Appendix M –  
Section 4(f) Evaluation**



## M. Section 4(f) Evaluation

The U.S. Department of Transportation (USDOT) regulation known as “Section 4(f)” is not applicable to Surface Transportation Board (STB or the Board) actions, however, it is applicable to the proposed Northern Rail Extension (NRE or project) through the involvement of the Federal Railroad Administration (FRA) and the Federal Transit Administration (FTA).<sup>1</sup> FRA is administering grant funding to the Alaska Railroad Corporation (ARRC) for preliminary engineering and environmental analysis of the NRE. FRA could also provide funding for rail line construction and would enforce rail safety regulations on the operating rail line. FTA is involved because of the project’s passenger rail component.

Section 4(f) was originally established in the U.S. Department of Transportation Act of 1966 (49 United States Code [U.S.C.] Section 1653(f) and later recodified as 49 U.S.C. 303. In 2005, Congress enacted legislation that required the USDOT to issue additional regulations that clarify 4(f) standards and procedures. These new regulations were finalized in March, 2008, at 23 Code of Federal Regulations (CFR) 774. Section 4(f) mandates that the Secretary of Transportation shall not approve any transportation project requiring the use of publicly owned parks, recreation areas or wildlife and waterfowl refuges, or significant historic sites, regardless of ownership, unless:

- There is no prudent and feasible alternative to using that land.
- The program or project includes all possible planning to minimize harm to the public park, recreation area, wildlife or waterfowl refuge, or significant site, resulting from that use.

In order to be protected under Section 4(f), public parks and recreation facilities must be considered “significant” (USDOT, 2005). Historic sites qualifying for 4(f) protection must be officially listed on, or eligible for inclusion in, the National Register of Historic Places (NRHP), or contribute to a historic district that is eligible for or listed on the NRHP.

For all types of properties protected under Section 4(f) there are three possible types of impact, as defined in 23 CFR 771.135(p):

- A “direct use” of a Section 4(f) property occurs when land from a qualifying 4(f) property is acquired and permanently incorporated into a transportation facility.
- A “use” under Section 4(f) also occurs when there is a temporary occupancy of 4(f) land during construction of the transportation facility that is considered adverse to the preservationist purposes of the Section 4(f) statute.
- A “constructive use” may occur when no land is acquired from a Section 4(f) property but the proximity of the project results in indirect impacts which would “substantially impair” the current use of the property such as visual, noise, or vibration impacts, or impairment of property access.

Table M-1 summarizes the Section 4(f) uses by alternative segment. The No-Action Alternative is presented for comparison.

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<sup>1</sup> The lead agency for the Northern Rail Extension is the STB. FRA and FTA are cooperating agencies in the EIS process. Section 4(f) does not apply to the STB, so the FRA and FTA act as lead agencies in regard to the Section 4(f) analysis.

## **M.1 Purpose and Need**

The Alaska Railroad Corporation (ARRC or the Applicant) has stated that the purpose and need for the NRE is to provide freight and passenger rail service to the region south of North Pole, Alaska. This service would provide options for moving goods and people, and would also allow for greater military access to training areas west of the Tanana River. Any full combination of the alternative segments would meet the project purpose and need.

## **M.2 Proposed Action and Alternatives**

The proposed NRE would involve construction of an approximately 80-mile rail line extension from the existing Eielson Branch. The Eielson Branch runs from Fairbanks, Alaska, through the community of North Pole to the Eielson Air Force Base (AFB). The proposed extension would begin at Milepost 20.18 of the Eielson Branch (Milepost 0 for the Northern Rail Extension) at the east end of the Chena River Overflow Bridge, just south of the community of North Pole, and extend to the southern side of the community of Delta Junction. ARRC would also construct a dual-modal bridge over the Tanana River that would be capable of supporting both rail and vehicular traffic.

Construction activities would include railbed construction, which would require clearing, excavating earth and rock on previously undisturbed lands, and removing and stockpiling topsoil where needed. Construction would require both cuts and fills. Suitable material excavated from cuts would be used as fill material in other areas. The railbed would form the base upon which the ballast, concrete rail ties, and rail would be laid.

The alternative segments are the outcome of an extensive alternatives analysis process that began in 2005 when ARRC presented potential alignments for NRE. Since that time, ARRC refined and evaluated potential routes both internally and through a public outreach and consultation process. The Board's Section of Environmental Analysis (SEA) alternative development process started in 2006 with ARRC's Alternatives Analysis Study, and continued until July 2007 when ARRC filed a petition with STB to construct and operate a new rail line extension.

Existing topographic and other data were used in ARRC's early phases of alignment development and analysis. ARRC's alignment development and refinement process occurred in three general phases. In Phase 1 (Study Area Identification), the general study area within which the rail line extension could be developed was identified, along with potential points for bridging the Tanana River and several representative routes.

In Phase 2 (Corridor Development), a preliminary screening was conducted by ARRC of the representative routes and Tanana River crossing locations identified in Phase 1 to eliminate any alignment segment with fatal flaws before continuing with alignment segment development. This included consideration of technical and practical considerations including natural barriers such as rivers and topography; engineering design; cost-effectiveness; geological considerations; and general land use patterns.

ARRC's Phase 3 (Corridor Analysis) involved a qualitative comparison of the relative advantages and disadvantages of various alignment segments. The evaluation of each alignment segment's relative merits was based primarily on engineering and environmental considerations, including issues raised by regulatory or resource agencies or the public during agency

**Table M-1  
Section 4(f) Property Summary**

	No-Action Alternative	North Common Segment	Eielson Alternative Segment 1	Eielson Alternative Segment 2	Eielson Alternative Segment 3	Salcha Alternative Segment 1	Salcha Alternative Segment 2	Connector A	Connector B
<b>Recreation Resources</b>									
Chena River Flood Control Project Management Units I2 and I4		X							
Twentythreemile Slough Dog- Sledding Trails			X	X					
Eielson Air Force Base (AFB) Outdoor Recreation Area					X				
Salcha School Grounds and Salcha Ski Area							X		
Silver Fox Lodge Trail									
U.S. Army Permit Route									
ADNR Winter Trail									
Koole Lake Trail									
Donnelly-Washburn Trail									
Alaska Department of Natural Resources (ADNR) Forestry Winter Road									
Rainbow Lake Trail									
Phillips Road/Delta Junction Area Trail Network									
Alaska Department of Natural Resources (ADNR) Dispersed Use Areas (Public Recreation Primary Use)									
Wildlife or Waterfowl Refuge*									
<b>Cultural Resources</b>									
2 archaeological sites within Salcha Alternative Segment 2 Area of Potential Effect (APE)							X		

**Table M-1  
Section 4(f) Property Resources Summary (continued)**

	Connector C	Connector D	Central Alternative Segment 1	Central Alternative Segment 2	Connector E	Donnelly Alternative Segment 1	Donnelly Alternative Segment 2	South Common Segment	Delta Alternative Segment 1	Delta Alternative Segment 2
<b>Recreation Resources</b>										
Chena River Flood Control Project Management Units I2 and I4										
Twentythreemile Slough Dog-Sledding Trails										
Eielson AFB Outdoor Recreation Area										
Salcha School Grounds and Salcha Ski Area										
Silver Fox Lodge Trail						X	X			
U.S. Army Permit Route						X				
ADNR Winter Trail						X	X			
Koole Lake Trail						X				
Donnelly-Washburn Trail						X	X			
ADNR Forestry Winter Road						X		X		
Rainbow Lake Trail								X		
Phillips Road/Delta Junction Area Trail Network										X
ADNR Dispersed Use Areas (Public Recreation Primary Use)						X	X	X	X	X
Wildlife or Waterfowl Refuge*										
<b>Cultural Resources</b>										
2 archaeological sites within Salcha Alternative Segment 2 APE										
* No wildlife or waterfowl refuge would be affected by the proposed NRE.										

coordination and public outreach efforts. Many of the preliminary alignment segments were eliminated by ARRC or combined with other similar alignment segments because they presented no clear advantages over adjacent alignment segments or they had more disadvantages than other alignments.

SEA reviewed the alignment development process during the project scoping period, and requested refinements to alignment segments based on public comment and consultation with cooperating agencies. Both SEA and cooperating agencies utilized the purpose and need factor (as described above) to review the alignments initially developed by ARRC. Through this review, SEA and cooperating agencies selected a set of reasonable alternatives to study in detail in the Environmental Impact Statement (EIS), and to eliminate alternatives and alternative segments from detailed study. Those alternative segments that did not meet fundamental components of the purpose and need, led to substantially greater adverse environmental impacts, or featured insurmountable construction and/or operational limitations, were eliminated by SEA and the cooperating agencies from detailed study. Consideration of alternatives under the criteria of Section 4(f) is discussed below in section M.5, Avoidance Alternatives.

A summary of the alignment segment development process and alternatives analyzed and eliminated from consideration is available in Chapter 2 and Appendix D of the EIS. There is no option to authorize an individual alternative segment; only a complete route from North Pole to Delta Junction would be authorized, which would be comprised of a combination of the alternative segments under consideration.

### **M.3 Section 4(f) Property Description**

A publicly owned park, recreation area or wildlife and waterfowl refuge must be a “significant” resource for Section 4(f) to apply. Pursuant to 23 C.F.R. 771.135(c), 4(f) resources are presumed to be significant unless the official having jurisdiction over the site concludes that the entire site is not significant. This section describes SEA’s preliminary determination of Section 4(f) properties that are located within the project area.

#### **M.3.1 Parks and Recreation Areas**

Ten parks and recreation areas are located within the project area. These areas range from trails to general recreation uses.

##### **Chena River Lakes Flood Control Project**

Size and Location: The flood control project includes approximately 20,000 acres at the northernmost section of the proposed Project Area. North Common Segment would cross portions of this area (Figure M-1).

Ownership<sup>2</sup> and Type of Section 4(f) Property: The parcel is owned by the U.S. Army Corps of Engineers. Flood project management units I2 and I4 would be considered a direct use of Section 4(f) property.

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<sup>2</sup> “Ownership” refers to the current owner of the property.

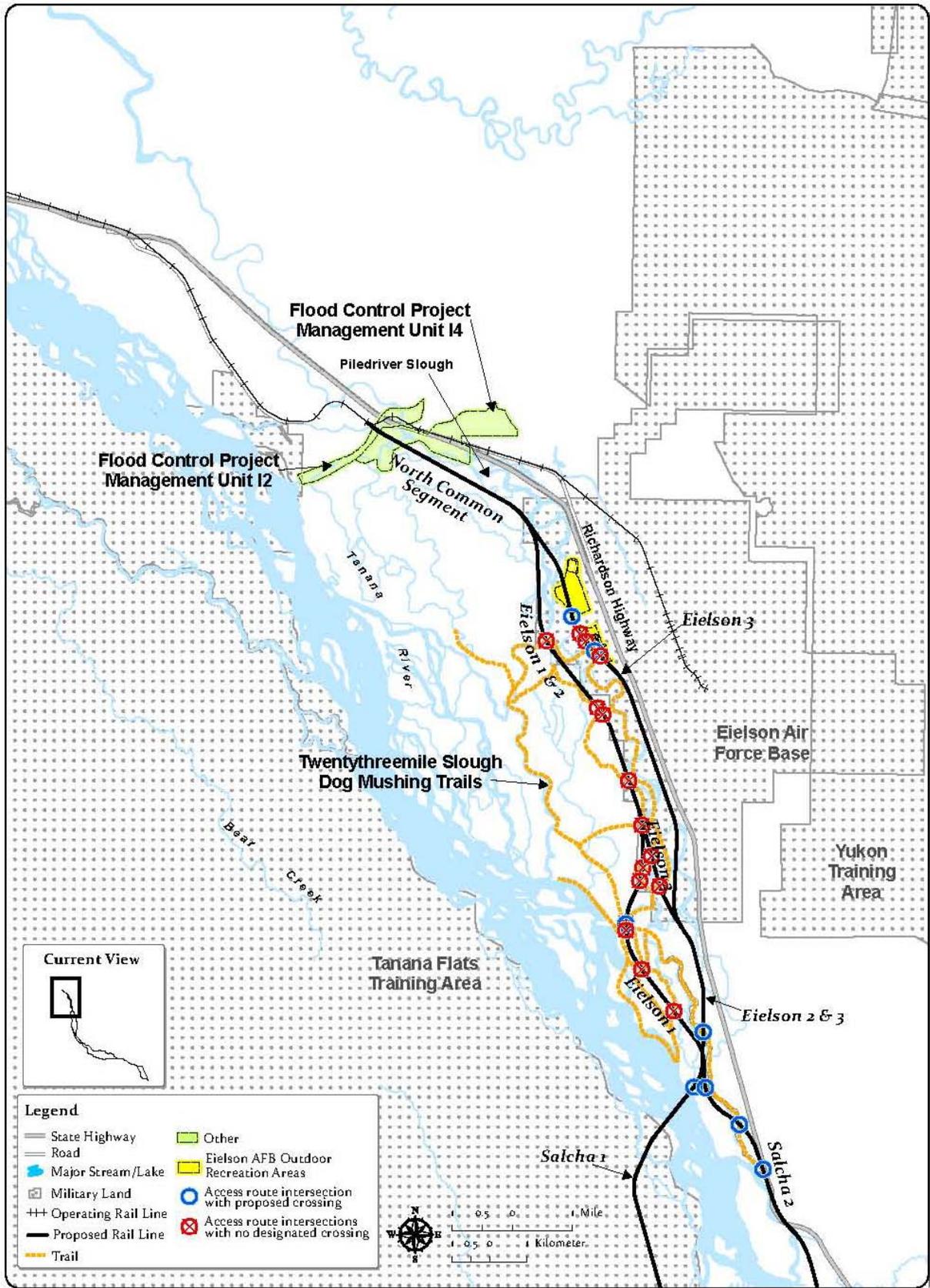


Figure M-1 – Park and Recreational Facilities along North Common and Eielson Alternative Segments 1, 2, and 3

Function of the Property and Available Activities: The property functions primarily as part of the Chena Lakes Flood Control Project, and includes portions of the Chena River Floodway and its southern levee. In non-flood periods, the area is used for public recreation. The floodway accommodates a portion of Fairbanks North Star Borough's (FNSB) 100-Mile Loop Trail, a multi-use public trail (FNSB, 1985, 2005; USACE, 1989). The proposed NRE begins just south of the floodway, and crosses a private road that follows the southern levee toward the Tanana River.

Description of Existing and Planned Uses: The flood control project's management units I2 and I4 crossed by the proposed project are designated for recreation and wildlife management in the Chena River Lakes Master Plan for Resource Use (Schaake, 2008; USACE, 1989). There are no planned additional facilities or improvements for the area.

Access: Access is available from Richardson Highway, Chena Flood Road, and the Chena River Floodway.

Relationship to other Similarly Used Lands in the Vicinity: Nearby Alaska Department of Natural Resources (ADNR) and U.S. military lands provide access to some dispersed recreation activity. There is a designated public recreation area within Eielson AFB immediately south of the flood control project area. This area provides opportunities for fishing, boating, picnicking, camping, and trails use.

Applicable Clauses Affecting the Ownership: There are no known applicable clauses that would affect acquisition of the property.

Unusual Characteristics Reducing or Enhancing the Value of the Property: Portions of the parcel are within the Chena River Floodway, and may be subject to emergency flood conditions.

### **Twentythreemile Slough Area Trails**

Size and Location: The multi-use trails total more than 30 miles in length, and are located along Piledriver Slough and Twentythreemile Slough west of Eielson AFB proper (Figure M-1). Most of the trails are upland of frozen sloughs and waterways. Trails would be crossed by all three of the Eielson alternative segments.

Ownership and Type of Section 4(f) Property: Trails are located on land owned by the U.S. Air Force, ADNR, U.S. Bureau of Land Management (BLM), FNSB, and private land. The trails are classified as "Class C" public trails by FNSB in its Comprehensive Recreational Trails Plan (FNSB, 1985, 2005; Hancock, 2007). "Class C" trails are defined as "neighborhood recreational trail systems" and are maintained by user groups – the Salcha Dog Musers Association, in this instance. The trails would be considered direct use of Section 4(f) properties.

Function of the Property and Available Activities: The majority of trails are located on U.S. military land. This land functions first and foremost for military uses; however, the area includes a variety of recreational activities, including berry picking, picnicking, camping, canoeing, trapping, bird watching, and off-road vehicle (ORV), snowmachine use, fishing, and hunting. Surrounding non-military public lands on which the trails are located are managed for general land use, including recreational use. The trails themselves are multi-use, but the primary activity is winter dog-sledding.

Description of Existing and Planned Uses: The trail system is managed for multi-use by a variety of recreationists. There are no planned additional facilities or improvements for the trail system.

Access: Access is available directly from Richardson Highway at multiple points and from secondary roads west of Richardson Highway on Eielson AFB. Individuals are required to obtain free permits from Eielson AFB prior to using Air Force lands for recreation activities.

Relationship to other Similarly Used Lands in the Vicinity: Multi-use trails exist within the Chena River Lakes Flood Control Project area. The floodway is located immediately north of the northernmost point of the proposed NRE, and accommodates a variety of trail-based recreation activities. A portion of the Fairbanks 100-mile Loop Trail follows a braided path through the floodway area. These trails are approximately 4.4 miles northwest of the Twentythreemile Slough trail system.

Applicable Clauses Affecting the Ownership: There are no known applicable clauses that would affect the property to be acquired.

Unusual Characteristics Reducing or Enhancing the Value of the Property: There are no unusual characteristics of the property.

### **Eielson AFB Outdoor Recreation Area**

Size and Location: The recreation area is located directly across Richardson Highway from the Eielson AFB airfield (Figure M-2). The area totals approximately 22 acres in size, and includes several miles of access roads and trails. The larger undeveloped portion of Eielson AFB designated for recreation use would be crossed by all three Eielson alternative segments, while the more formal recreation area described in detail here would be crossed only by Eielson Alternative Segment 3.

Ownership and Type of Section 4(f) Property: The property is owned by the U.S. Air Force. The area would be considered both a direct and constructive use of Section 4(f) property.

Function of the Property and Available Activities: The area is designated for outdoor recreation use in the Eielson AFB Integrated Natural Resources Management Plan (USAF, 2003). The surrounding areas are designated for open space (Piledriver Slough area), fish and wildlife (Piledriver Slough itself and several small areas within recreation areas), and training areas (between Richardson Highway and recreation areas). The recreation area includes several lakes, campsites, picnic sites (including a picnic pavilion), a playground area, and access trails. Activities available in the recreation area and adjacent open space areas include berry picking, canoeing, trapping, bird watching, ORV, snowmachine use, dog-sledding, fishing, and hunting.

Description of Existing and Planned Uses: The area is currently used for recreational purposes. The lakes within the recreation area are currently stocked by the Alaska Department of Fish and Game (ADF&G). There are no planned additional facilities or improvements for the recreational use areas.

Access: Access is available directly from Richardson Highway at several points adjacent to the recreation area.

Relationship to other Similarly Used Lands in the Vicinity: Eielson AFB includes several other areas designated for recreational use east of Richardson Highway, including athletic fields, nature and cross-country ski trails, picnic areas, a skeet-shooting range, an archery range, a downhill ski area and winter sports area, and opportunities for hiking. North of the recreation areas, the Chena Lakes Flood Control Project Area is also open to dispersed, low-intensity public recreation (Slater, 2008).

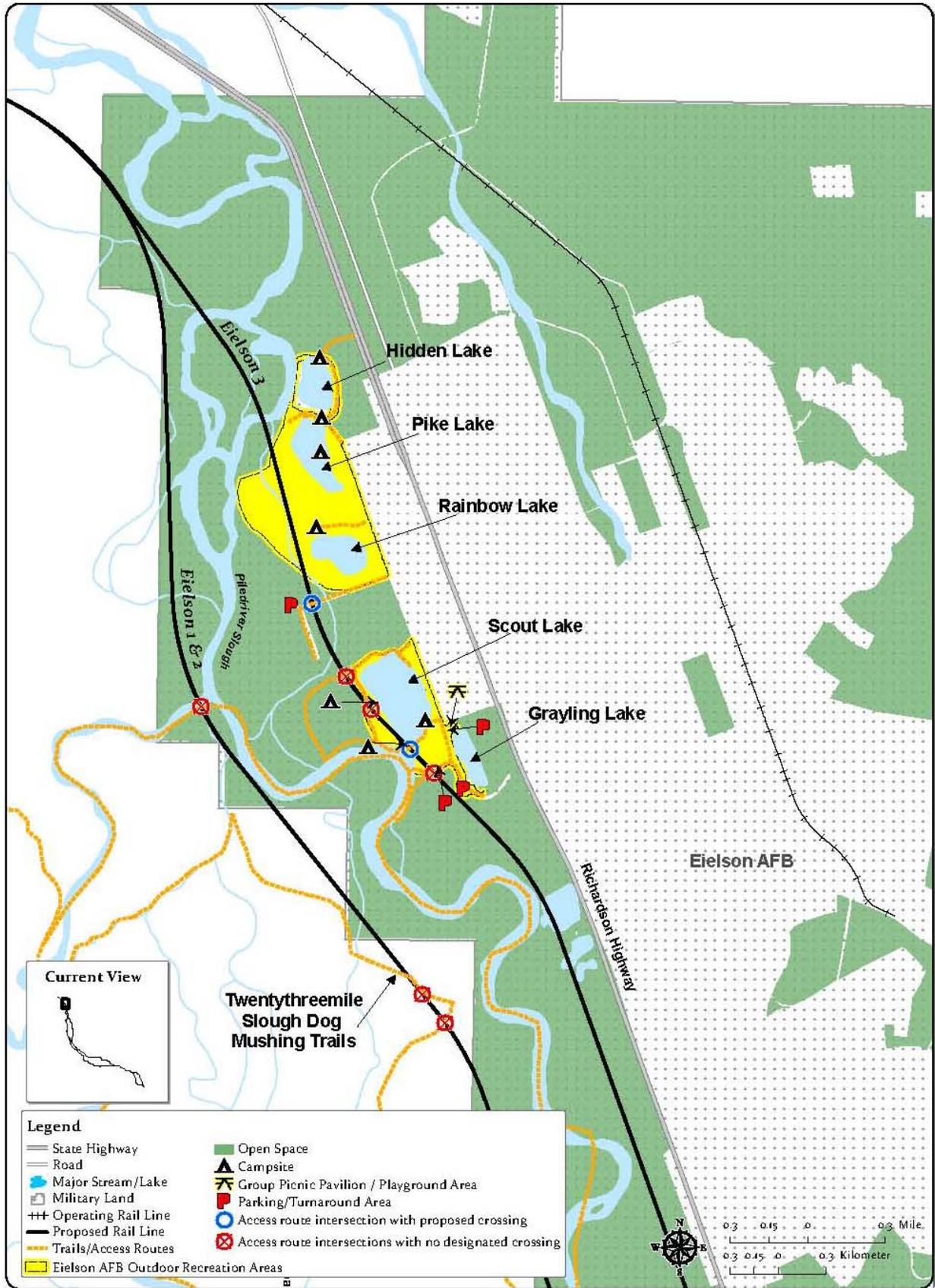


Figure M-2 – Map of Recreational Facilities along Eielson Alternative Segments 1, 2, and 3

Applicable Clauses Affecting the Ownership: There are no known applicable clauses that would affect the property to be acquired.

Unusual Characteristics Reducing or Enhancing the Value of the Property: There are no unusual characteristics of the property.

### **Salcha Elementary School Grounds and Salcha Ski Area**

Size and Location: Salcha Alternative Segment 2 would cross the Salcha Elementary School grounds and an adjacent public ski area approximately 1 mile north of the Salcha River (Figures M-3 and M-4). The school and trails are adjacent to Richardson Highway. The school includes recreational features, totaling approximately one-half acre. School grounds are open for public use on a first-come, first-serve basis any time they are not being used by the school or school district personnel (Vargo, 2008). The ski area includes multi-use trails totaling 15 kilometers, and a start/finish and stadium area just north of the school totals approximately 2.2 acres.

Ownership and Type of Section 4(f) Property: The school, recreation facilities, and ski area are all located on land owned by FNSB, Department of Land Management. The ski trail and school grounds would be considered a direct use of Section 4(f) property.

Function of the Property and Available Activities: The school recreation fields and facilities function to provide physical education opportunities to students of Salcha Elementary School, and for members of the public when not in use for school activities.

This is also a primary purpose of the ski trails. Available activities on the school grounds include organized sports such as baseball, soccer and basketball, as well as a playground area. The Salcha Ski Area trails are multi-use running, hiking, and skiing trails. The Salcha Ski Area also functions to provide recreational opportunities to the general public, and to host competitive events.

Description of Existing and Planned Uses: Existing uses on the school grounds include a ballfield, a basketball court, a playground area, several outbuildings that house recreational equipment, a public parking/turnaround area, and the school itself. The ski area includes a large open start/finish and stadium area, several small structures that house recreational equipment, and the multi-use trails. No other uses are known to be planned for the site at this time.

Access: The school grounds and ski area are easily accessible directly from Richardson Highway. The school parking lot is used by the general public for accessing the ski area.

Relationship to other Similarly Used Lands in the Vicinity: A system of multi-use trails exists near Eielson AFB to the north; however, these are used primarily for dog-sledding. FNSB maintains a groomed trail system at Birch Hill Recreation Area north of Fairbanks; this site is approximately 35 miles north of Salcha School.

Applicable Clauses Affecting the Ownership: The Salcha Ski Area is recognized in the FNSB Comprehensive Recreational Trails Plan.

Unusual Characteristics Reducing or Enhancing the Value of the Property: No known unusual characteristics exist regarding the school or trail system.

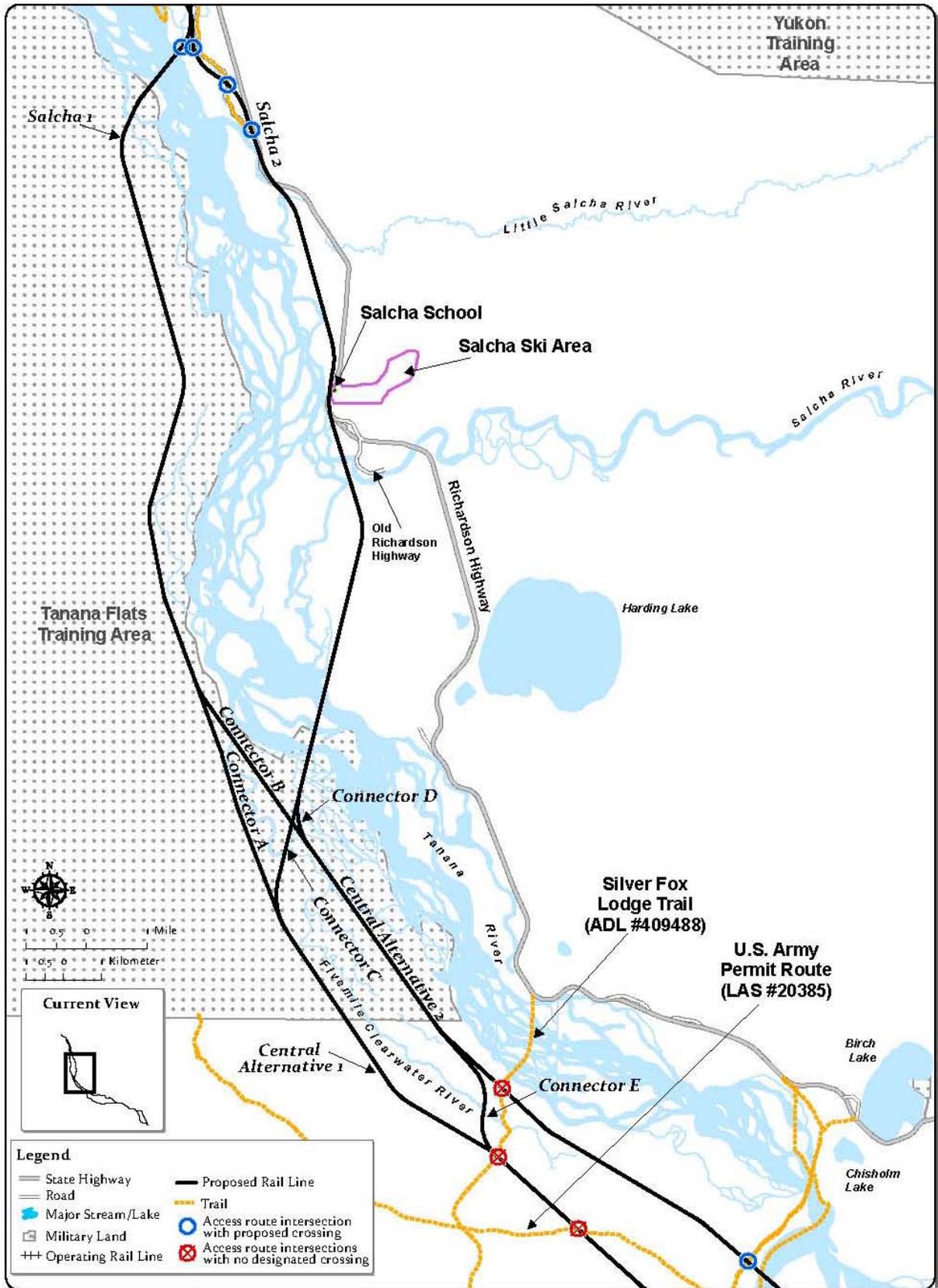


Figure M-3 – Map of Recreational Facilities along the Salcha, Connector, and Central Alternative Segments 1 and 2

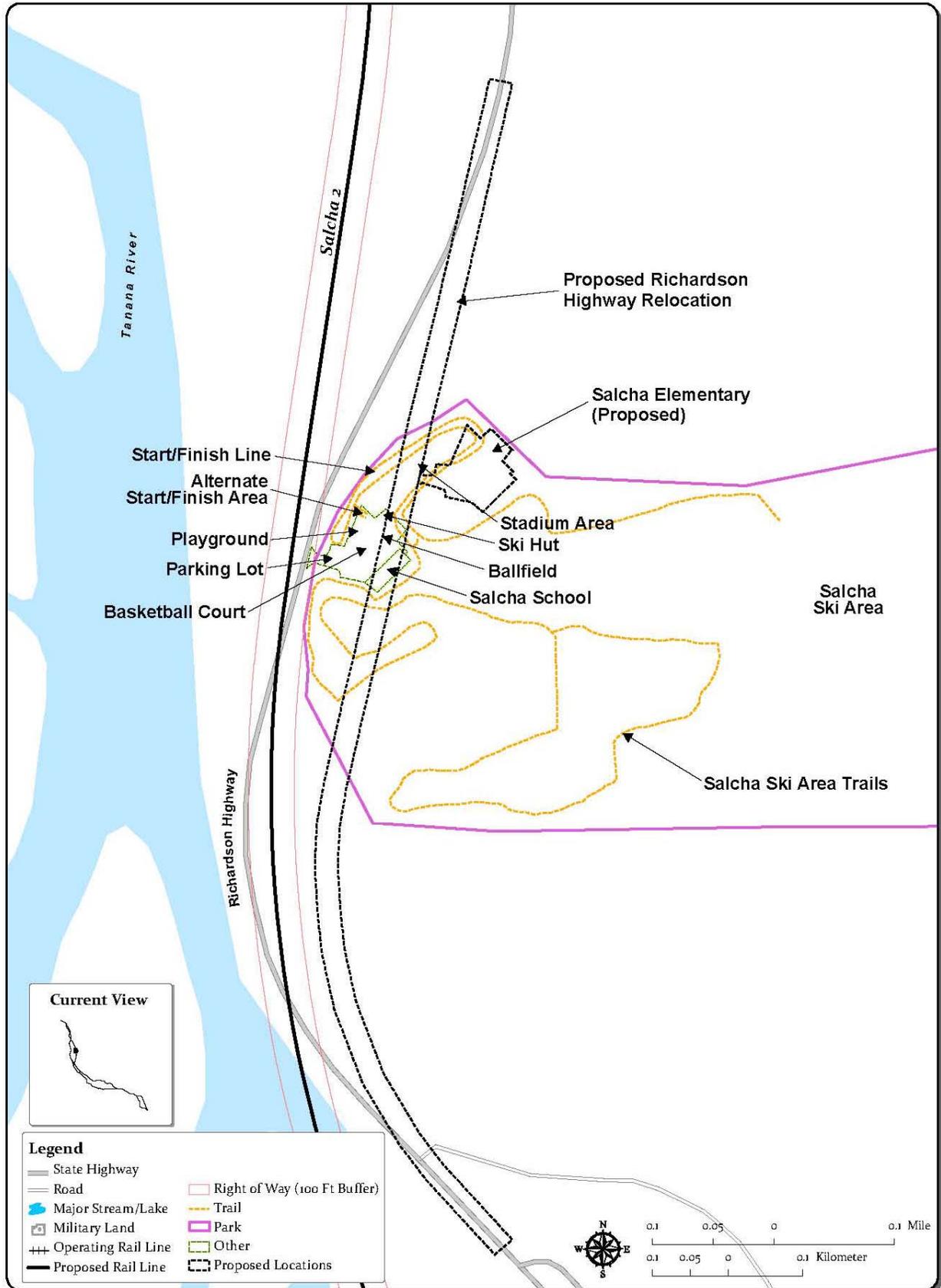


Figure M-4 - Map of the Salcha Elementary School Grounds and Skiing Area

## Silver Fox Lodge Trail

**Size and Location:** Donnelly Alternative Segments 1 and 2 would cross an ADNR trail approximately 1.3 miles southeast of the Central alternative segments (Figures M-5 and M-6). The trail is approximately 6.1 miles long, and leads south from the Silver Lake Lodge historical site along Richardson Highway (about 5 miles south of Harding Lake).

**Ownership and Type of Section 4(f) Property:** The trail crosses the Tanana River and is located on ADNR land south of the river. It provides access to state land disposals<sup>3</sup> along the Fivemile Clearwater River, so portions of the trail may intersect some land now in private ownership. The portions of the trail that cross land in private ownership are not protected under Section 4(f). The trail is established and recognized by the ADNR (lease assignment, or ADL lease number 409488). The trail would be considered a direct use of Section 4(f) property.

**Function of the Property and Available Activities:** The trail functions to provide public access across the Tanana River to areas surrounding the Fivemile Clearwater River. The trail also provides public access to ADNR lands further west (Japan Hills, North Slope of the Alaska Range), which may otherwise be inaccessible due to the military lands to the north and south of this site.

**Description of Existing and Planned Uses:** The trail is multi-use. ADNR land surrounding the trail is designated for forestry and wildlife habitat uses in the Tanana Basin Area Plan. One management subunit contains accessible white spruce stands, and forestry activity has been ongoing. No other planned uses are known for this trail and its immediate vicinity.

**Access:** This area is remote and roadless. Access to the area is mainly available via the trail itself and the Fivemile Clearwater River.

**Relationship to other Similarly Used Lands in the Vicinity:** Although another established and recognized trail exists nearby (see Koole Lake Trail, located approximately 5.3 miles southeast), no other trail or road provides access to the private forestry lands adjacent to the trail.

**Applicable Clauses Affecting the Ownership:** This trail is established and recognized by the ADNR with a lease assignment number.

**Unusual Characteristics Reducing or Enhancing the Value of the Property:** No known unusual characteristics exist regarding this trail.

## Koole Lake Trail (Donnelly-Washburn Trail)

**Size and Location:** Donnelly Alternative Segments 1 and 2 would cross segments of winter trails at four points (Figure M-5). These trails were established by ADNR, Revised Statute 2477 (RS 2477)<sup>4</sup>, and ADF&G (ADNR, 2001; Durst, 2008). Donnelly Alternative Segment 1 would also cross a U.S. Army permit route across ADNR land at one point (Taylor, 2008). The trails are

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<sup>3</sup> The Department of Natural Resources has the authority under Alaska Statute 38.05.035(e) to sell state land for private ownership if determined to be in the best interest of the state. These sales are referred to as “land disposals.”

<sup>4</sup> RS 2477 is found in section 8 of the Mining Law of 1866. The statute grants the right-of-way for construction of foot trails, pack trails, sled dog trails, and other corridors for transportation over public land, not reserved for public uses. Under the statute, people created legal right-of-way by using or constructing routes across unreserved federal land. Once a right-of-way was established, it became a valid, existing right owned by the state. Typically, RS 2477 rights-of-way are available for public use under ADNR’s regulations (ADNR, 2001).

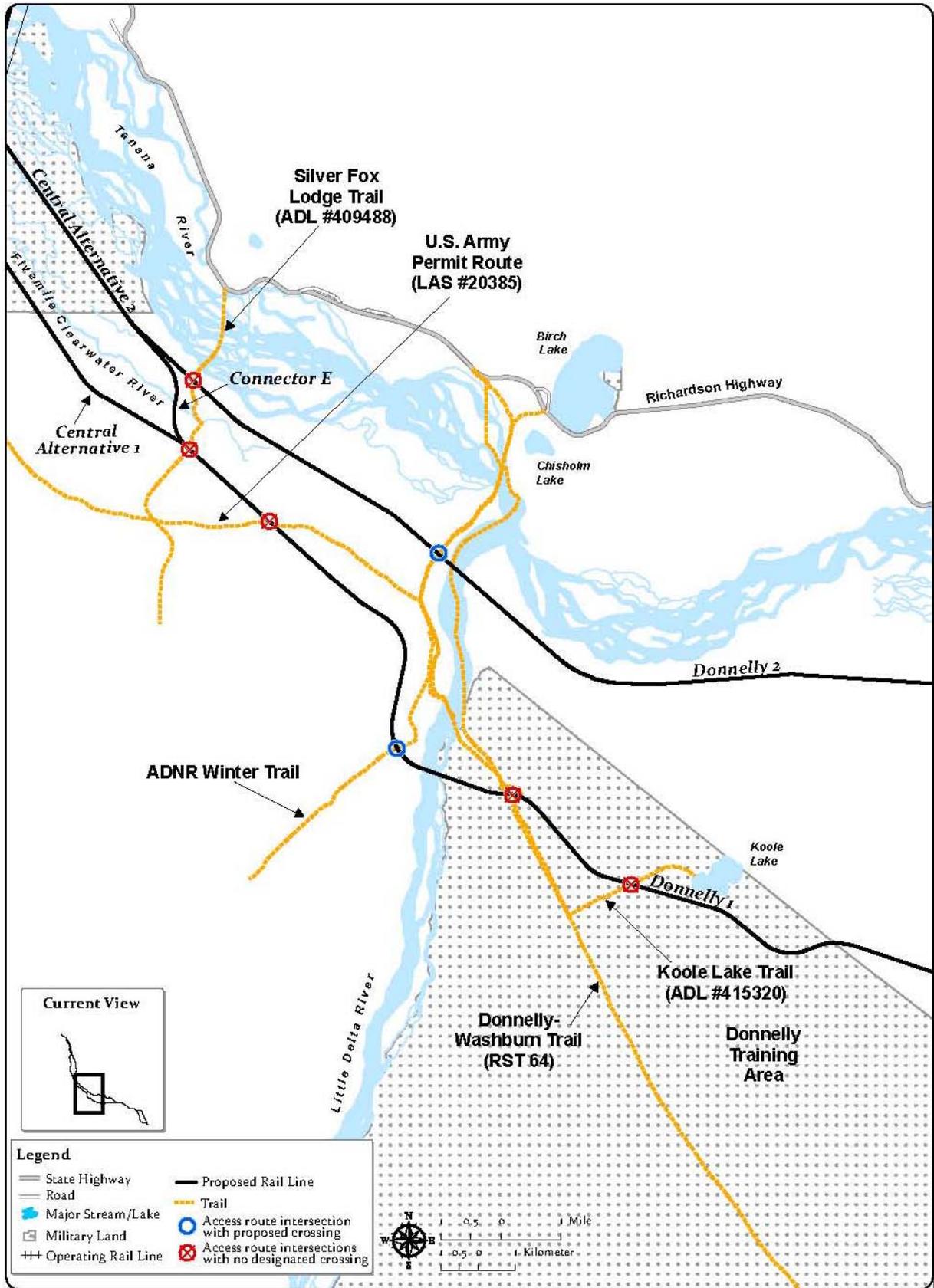


Figure M-5 – Map of Recreational Facilities along Donnelly Alternative Segments 1 and 2

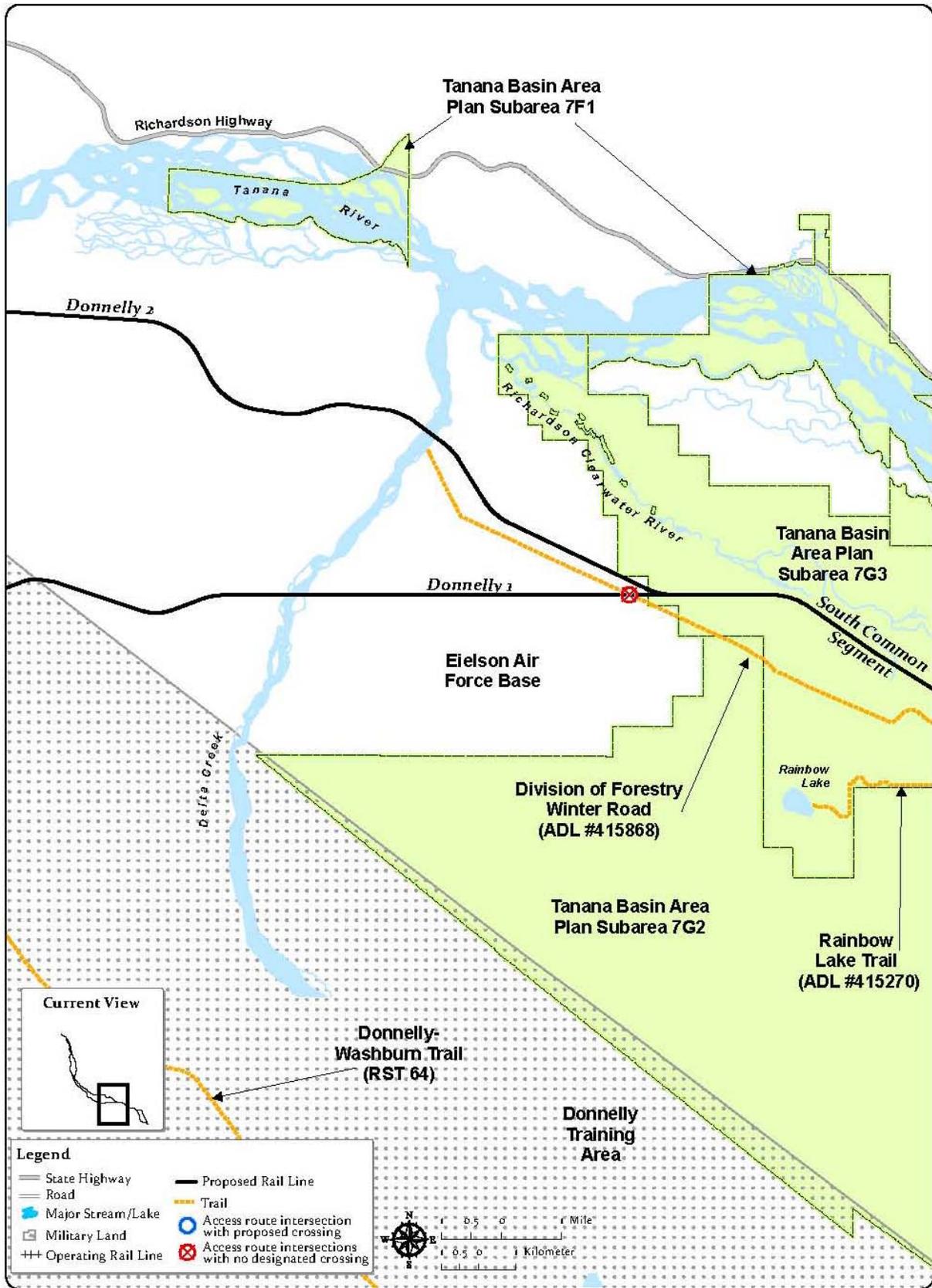


Figure M-6 – Map of Recreational Facilities along Donnelly Alternative Segments 1 and 2 and South Common Segment

located on both the east and west sides of the Little Delta River, on the west side of the Tanana River.

The ADF&G trail (Koole Lake Trail) collocates with the RS 2477 trail (Donnelly-Washburn Trail) from a trailhead at Richardson Highway near Birch Lake south along the western bank of the Little Delta River, crossing the Little Delta to a point within the Donnelly Training Area (TA). At this point, the Koole Lake Trail diverges toward Koole Lake and the Donnelly-Washburn Trail continues to the southeast through the Donnelly TA.

The ADNR Winter Trail collocates with the Koole Lake Trail and Donnelly-Washburn Trail from the Birch Lake trailhead along the western bank of the Little Delta River, at which point the Koole Lake/Donnelly-Washburn trail crosses the Little Delta River toward the Donnelly TA. The ADNR Winter Trail continues southwest through ADNR land on the western side of the Little Delta River. The U.S. Army trail crosses the Little Delta River with the Koole Lake/Donnelly-Washburn Trail and collocates with all trails on the river's western bank for a stretch of approximately 1.5 miles, then diverges west across ADNR land toward the Tanana Flats Training Area (TA).

Ownership and Type of Section 4(f) Property: The trails cross land owned by the ADNR and the U.S. Army. The Donnelly-Washburn Trail is RS 2477 trail number 0064. The ADF&G trail has been validated with a 100-foot-wide easement held by the ADF&G (ADL File #415320, application complete but not yet issued). The ADNR Winter Trail does not have an ADNR permit, but appears on topographic maps and ADNR's Mapguide resource (Mapguide is an online mapping application identifying a variety of state lands managed for recreation, access, or other resource management purposes). The U.S. Army route permits access across ADNR land (case file LAS #20385). The rights-of-way (ROWs) are listed as "official" within ADNR lands, but this status does not cover areas where the trail crosses military land. The trails would be considered a direct use of Section 4(f) properties.

Function of the Property and Available Activities: The trails are multi-use, but primarily receive winter use, such as dog-sledding and snowmachining. Trails are located on both ADNR and U.S. Army land. ADNR land in this area is managed primarily for forestry and wildlife habitat according to the Tanana Basin Area Plan (ADNR 1991), while military land is primarily for military use, but is provisionally open to recreation activities. Activities facilitated via the trails include hunting, trapping, and fishing (Koole Lake is one of the ADF&G's remote stocked lakes). The U.S. Army permit route is used primarily to move vehicles and equipment between the Donnelly and Tanana Flats TAs in winter months, but it is open for public recreational use and provides access to ADNR lands from the Little Delta River.

Description of Existing and Planned Uses: The trails are designated as ADNR and ADF&G winter trails, and an RS 2477 trail. The U.S. Army permit route is not designated for public access, but public access is a generally-allowed use across ADNR-owned lands. There are no planned additional facilities or improvements for the trail system.

Access: Access to the trail system is available via a parking lot at Birch Lake, off Richardson Highway, and from the Tanana and Little Delta rivers. The trails cross the Tanana River, and are used primarily for winter access, as is the U.S. Army permit route.

Relationship to other Similarly Used Lands in the Vicinity: A similar ADF&G trail crosses the Delta River northwest of Delta Junction, and leads to Rainbow Lake, another of the ADF&G's remote stocked lakes. This trail is approximately 32 miles southeast of Birch Lake. An

established and recognized ADNR trail crosses the Tanana from the Silver Fox Lodge on Richardson Highway (several miles north of Birch Lake), providing access to a portion of the Fivemile Clearwater River and forestry areas. No other trail is known to provide access to Koole Lake.

Applicable Clauses Affecting the Ownership: The Koole Lake Trail, Donnelly-Washburn Trail, and U.S. Army permit route are established and recognized by the ADNR with a lease assignment or permit number. The Donnelly-Washburn Trail has RS 2477 status.

Unusual Characteristics Reducing or Enhancing the Value of the Property: Trails may not be as readily accessed outside of winter, when trail users are able to cross the frozen Tanana River.

### **ADNR Forestry Winter Road**

Size and Location: Donnelly Alternative Segment 1 and South Common Segment would cross a winter road established by ADNR's Forestry Division approximately 0.6 miles before Donnelly Alternative Segment 1 and Donnelly Alternative Segment 2 reconnect (Donnelly Alternative Segment 1 crossing) and approximately 3.5 miles west of the Delta River (South Common Segment crossing) (Figure M-6). The road is approximately 14.8 miles long, and connects the Delta River and Delta Creek across the benchlands above the Richardson Clearwater River.

Ownership and Type of Section 4(f) Property: The trail is located entirely on ADNR-owned land. The trail is established and recognized by the ADNR (ADL# 415868). The trail would be considered a direct use of Section 4(f) property.

Function of the Property and Available Activities: The road provides public access to a number of public and commercial timber sales in the Tanana Flats, and is also used for recreational vehicle activity.

Description of Existing and Planned Uses: The road is multi-use. ADNR land surrounding the road is designated for forestry, wildlife habitat, public recreation, agriculture, and watershed uses in the Tanana Basin Area Plan (ADNR 1991). No other planned uses are known for this trail and its immediate vicinity.

Access: This area is remote and roadless. Access to the trail is via the Delta River, Delta Creek and a winter ice bridge across the Delta River.

Relationship to other Similarly Used Lands in the Vicinity: Although other established and recognized trails exist nearby (*e.g.*, Koole Lake Trail, Rainbow Lake Trail), no other trail or road provides access across the stretch of terrain between the Delta River and Delta Creek.

Applicable Clauses Affecting the Ownership: This road is established and recognized by the ADNR with a lease assignment number. All applicable ADNR management subunits crossed by the winter road reserve a 300-foot-wide ROW for the proposed NRE, according to the Tanana Basin Area Plan.

Unusual Characteristics Reducing or Enhancing the Value of the Property: No known unusual characteristics exist regarding this road.

### **Rainbow Lake Trail**

Size and Location: South Common Segment would cross an approximately 10-mile long ADF&G winter trail located northwest of the City of Delta Junction (Figure M-6). The trail crosses the Delta River via an ice bridge.

Ownership and Type of Section 4(f) Property: The Rainbow Lake Trail crosses land owned by ADNR. The trail has been validated with a 100-foot-wide easement held by ADF&G (ADL File #415270, issued 3/12/02). The trail would be considered a direct use of Section 4(f) property.

Function of the Property and Available Activities: The trail functions to provide public access to Rainbow Lake, one of ADF&G's remote stocked lakes. Activities include fishing, hunting, trapping, as well as recreational vehicle use, dog-sledding, and cross-country skiing.

Description of Existing and Planned Uses: Rainbow Lake Trail is multi-use. ADNR land surrounding the road is designated for forestry, wildlife habitat, public recreation, agriculture, and watershed uses in the Tanana Basin Area Plan (ADNR, 1991). There are no planned additional facilities or improvements for the trail system.

Access: Access is available from Old Richardson Highway and an ice bridge across the Delta River, approximately 6.5 miles north of Delta Junction.

Relationship to other Similarly Used Lands in the Vicinity: Established and recognized trails are available nearby (*e.g.*, Koole Lake Trail, ADNR Forestry Winter Road, and Phillips Road); however, no other established trail provides access to Rainbow Lake.

Applicable Clauses Affecting the Ownership: This trail is established and recognized by ADNR with a lease assignment number. All applicable ADNR management subunits crossed by the trail reserve a 300-foot-wide ROW for the proposed NRE, according to the Tanana Basin Area Plan.

Unusual Characteristics Reducing or Enhancing the Value of the Property: No known unusual characteristics exist regarding this road.

### **Phillips Road/Delta Junction Area Trail Network**

Size and Location: Delta Alternative Segment 2 would cross a winter trail established by the ADNR approximately 2.5 miles north of Delta Junction (Figure M-7). The trail is approximately 5.3 miles long, and connects to a larger trail network in the Big Delta Area.

Ownership and Type of Section 4(f) Property: The trail is located on ADNR land interspersed with many private agricultural landholdings. The trail is established and recognized by the ADNR (ADL# 400064). The trail would be considered a direct use of Section 4(f) property.

Function of the Property and Available Activities: The trail functions as a recreational resource. Activities include snowmachining, dog-sledding, cross-country skiing and non-winter motorized and non-motorized vehicle uses.

Description of Existing and Planned Uses: The trail is multi-use. ADNR land in the vicinity is designated for agriculture and settlement uses in the Tanana Basin Area Plan (ADNR, 1991). Most areas adjacent to the trail are agricultural fields. No other planned uses are known for this trail and its immediate vicinity.

Access: The trail is easily accessible from Jack Warren Road and secondary roads off Richardson Highway.

Relationship to other Similarly Used Lands in the Vicinity: Other established and recognized trails exist nearby (*e.g.*, Koole Lake Trail, ADNR Forestry Winter Road, Rainbow Lake Trail). However, all other established trails are on the undeveloped side of the Tanana River, and are generally less accessible than this trail system. A large group of trails exist to the south and southeast of this trail.

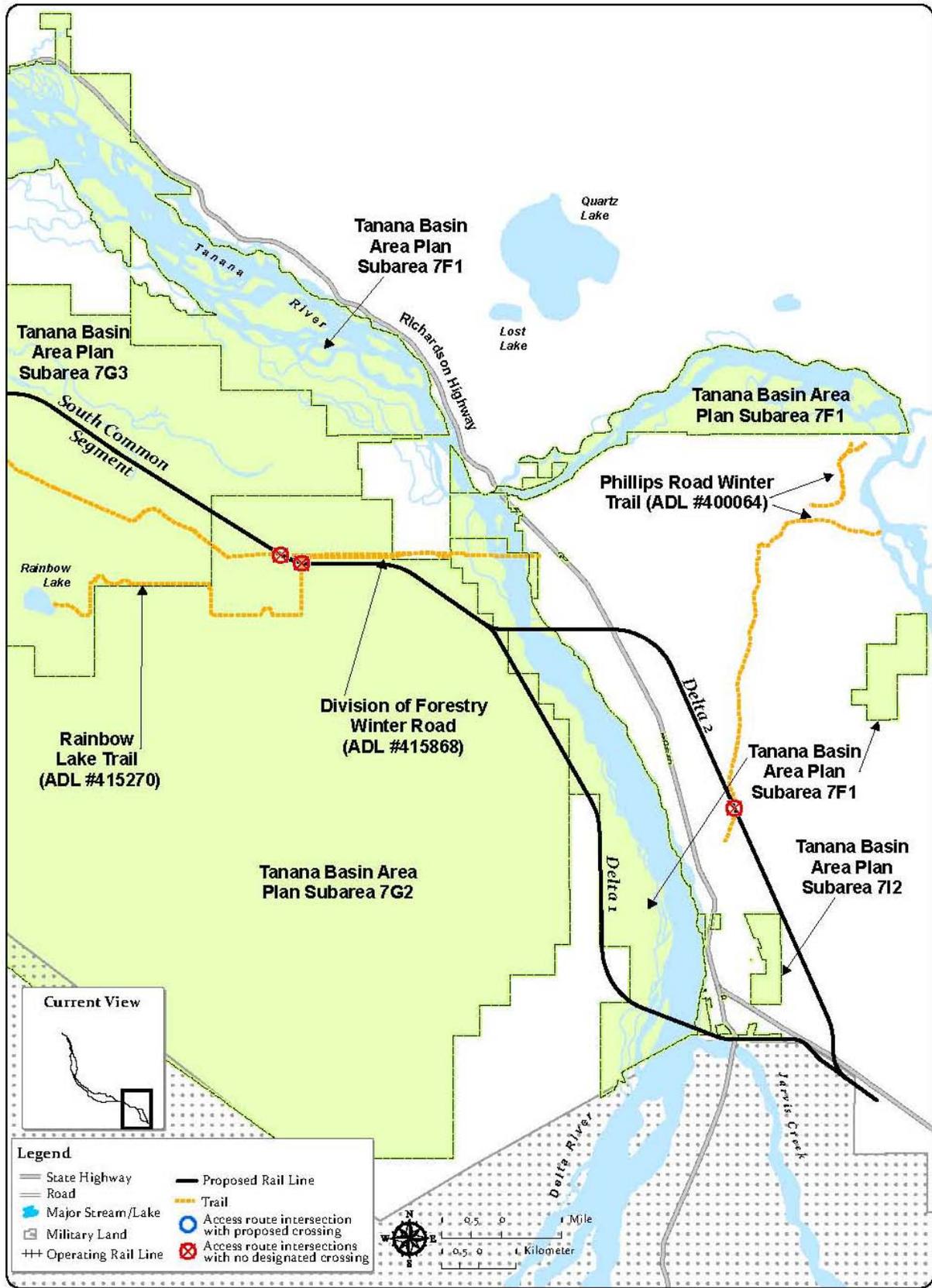


Figure M-7 – Map of Recreational Facilities along South Common and Delta Alternative Segments 1 and 2

Applicable Clauses Affecting the Ownership: This trail is established and recognized by ADNR with a lease assignment number.

Unusual Characteristics Reducing or Enhancing the Value of the Property: There are no known unusual characteristics that exist regarding this trail.

### **Dispersed Use Areas**

Areas where dispersed recreation takes place represent the vast majority of lands that would be crossed by the proposed project and its alternatives. Section 4(f) applies to lands that are narrowly defined as parks and recreation areas, but also includes areas that have been officially designated as important recreational resources or have recreation activities as primary uses. Dispersed use areas specifically designated for recreation as a primary use would be crossed by Donnelly Alternative Segment 1, Donnelly Alternative Segment 2, South Common Segment, Delta Alternative Segment 1 and Delta Alternative Segment 2.

Size and Location: Parcels total in the thousands of acres and are located at many points along the proposed project route. ADNR parcels in this analysis include Tanana Basin Area Plan management subunits 7F1 (Delta River from Tanana River south to Delta Junction), 7G2 (west of Delta River, north of Donnelly TA), 7G3 (Richardson Clearwater River area, east of Delta Creek and west of Delta River), and 7I2 (small parcels south of Delta Junction and east of Delta River).

Ownership and Type of Section 4(f) Property: These lands are owned by the ADNR. These areas would be considered a direct use of Section 4(f) properties.

Function of the Property and Available Activities: These areas can be characterized as vast and remote. They are open to a variety of public uses, with recreation one among many. Recreation on these lands includes dog-sledding, cross-country skiing, snowshoeing, fishing and ice fishing, hunting, trapping, snowmachining, camping, cabin stays, sightseeing, berry gathering, hiking, wildlife and botanical viewing, boating (both non-motorized and motorized), water skiing, and swimming. The ADNR management subunits discussed here are designated for public recreation as a primary use in the Tanana Basin Area Plan.

Description of Existing and Planned Uses: The ADNR parcels are designated for public recreation use, in addition to several other uses (forestry, wildlife habitat, agriculture, and watershed). ADNR lands are occasionally subject to land disposals. No land disposals are known to be in planning for these subunits within the ROW. There are no known planned additional recreational facilities or improvements for these areas.

Access: The ADNR parcels west of the Tanana River are accessible to the public via boat, ORV and foot during summer months, and snowmachine, dog sled, and cross-country skis during the winter. Tributaries to the Tanana River provide access to backcountry areas in both winter and summer. These lands may also be accessed via airplane. ADNR subunit 7I2 (south of Delta Junction) is accessible via side roads off Richardson Highway and undesignated trails that parallel Jarvis Creek.

Relationship to other Similarly Used Lands in the Vicinity: Similar ADNR land, FNSB land, and military areas along the proposed alternative segments exist in proximity to these areas; however, recreation is not their primary use. Much of the land on the east side of the Tanana River (adjacent to Richardson Highway) exhibits similar use designations and recreational opportunities.

Applicable Clauses Affecting the Ownership: Several ADF&G and ADNR trail easements cross through these areas (see Koole and Rainbow Lake Trails, and ADNR Forestry Winter Road, above). These trails are shown on Alaska State Lands Records maps. At least one of the trails is listed as an RS 2477 trail. The Tanana Basin Area Plan specifies that management subunits 7F and 7G would reserve a 300-foot-wide ROW for the proposed NRE.

Unusual Characteristics Reducing or Enhancing the Value of the Property: No known unusual characteristics exist at this time for general use lands.

### **M.3.2 Wildlife or Waterfowl Refuges**

No wildlife or waterfowl refuge would be affected by the proposed NRE; therefore, no Section 4(f) analysis is required for this type of resource.

### **M.3.3 Cultural Resource Areas**

Cultural resources known to exist from previous surveys and historic documentation were reviewed for their proximity to the Area of Potential Effect (APE). The area was also surveyed for cultural resources, using a site location model to guide the survey methods used. Areas determined to be of high potential for the discovery of archaeological resources were examined with subsurface testing, and determinations of eligibility for the NRHP were made for identified resources. A full description of cultural resources findings and the analysis process can be found in Chapter 6 of the EIS.

Surveys for the proposed NRE identified 51 archaeological sites that are considered eligible for the NRHP under Criterion D, for their potential to yield information important to history or prehistory. In the case of archaeological sites, Section 4(f) applies to those sites that are on or eligible for inclusion in the NRHP and that warrant preservation in place. It does not apply to sites that are eligible only for their research potential. Two sites were identified in the APE that may be eligible under criteria A and B, and that could warrant preservation in place (sites XBD-293 and XBD-294). Both sites are along Salcha Alternative Segment 2. More information is needed to complete a determination of eligibility for these sites, but they are treated here, based on preliminary determinations, as if they are eligible for protection under Section 4(f).

#### **Salcha Alternative Segment 2 Area of Potential Effect**

Size and Location: Two historic archaeological sites have been identified within the APE associated with Salchaket Village. Site size has not been fully determined, as archaeological surveys were limited. The Salchaket Village site is located near the mouth of the Salcha River.

Ownership and Type of Section 4(f) Property: Property along Salcha Alternative Segment 2 includes land owned by the ADNR, FNSB, the University of Alaska, the Alaska State Mental Health Trust, and private owners. The historic sites associated with Salchaket Village require further analysis to fully determine eligibility, but would likely qualify for inclusion in the NRHP under Criteria A, B, and D. Criterion A includes resources associated with significant events in history, and Criteria B includes resources associated with the lives of persons significant in the past. These sites would be considered direct use Section 4(f) properties.

Function of the Property and Available Activities: The Tanana Basin Area Plan designates land near the mouth of the Salcha River primarily for wildlife habitat and secondarily for public recreation. A wide variety of activities may occur on these lands.

Description of Existing and Planned Uses: Salcha Alternative Segment 2 lies within areas having high potential for both prehistoric and historic sites. There are no known planned additional recreational facilities or improvements for these areas.

Access: Access is available to this area via Richardson Highway and secondary roads near the Town of Salcha.

Relationship to other Similarly Used Lands in the Vicinity: Ten other prehistoric and historic sites are known to exist between 100 and 500 meters from the APE.

Applicable Clauses Affecting the Ownership: There are no known applicable clauses that would affect the property to be acquired.

Unusual Characteristics Reducing or Enhancing the Value of the Property: There are no known unusual characteristics associated with the property.

## **M.4 Impacts to Section 4(f) Resources**

Impacts to Section 4(f) resources were evaluated for each proposed alternative segment. This section presents the potential impacts to park and recreation areas and cultural resources as a result of the proposed project.

### **M.4.1 Park and Recreation Areas**

#### **Chena River Lakes Flood Control Project**

North Common Segment tracks in a southeastern direction across this area, affecting approximately 14.3 acres within the Chena River Lakes Flood Control Project. Construction would result in a temporary suspension of recreational activities. Construction and operation would likely result in clearance and maintenance of a 200-foot-wide ROW. The associated vegetation clearance would be a highly-visible line of deforestation which could reduce user enjoyment of the area, and could decrease the game productivity if this area is used for hunting. However, analysis of aerial photography shows that the area is already affected by substantial maintained vegetation lines along the flood project, and is also subject to other visual features such as roads, levees, and ARRC's existing Eielson Branch. The visual impact of the new ROW to this recreational area would be consistent with other features that currently make this area uncharacteristic of a natural or wilderness setting.

#### **Twentythreemile Slough Area Trails**

All three Eielson alternative segments would cross trail segments at numerous points, many of which are the same, as Eielson Alternative Segments 1 and 2 collocate for several miles toward their northern ends, and Eielson Alternative Segments 2 and 3 collocate toward the south. In addition, Salcha Alternative Segment 2 crosses trail segments in the Twentythreemile Slough area. These trails are heavily used for dog-sledding, and any at-grade interactions between dog teams and trains would pose public safety concerns. Most trails are located upland of sloughs and waterways, though some are located on frozen waterways. Construction activities would likely result in temporary closure of both types of trails. For operational impacts, a permanent rail line could serve as a barrier for both waterway trails and land trails, depending on whether adequate clearance or at-grade crossings are made available. The presence of a new rail line would likely detract from user enjoyment of the trail resource, in that a highly visible line of deforestation would be introduced to the area, and the rail line would also be a source of

intermittent noise. Ambient noise levels in the vicinity of Eielson AFB are relatively high due to the proximity of Richardson Highway and aircraft operations. The STB does not consider trails a sensitive receptor, and some trail activities (such as snowmachine use) are themselves substantial sources of noise.<sup>5</sup>

### **Eielson AFB Outdoor Recreation Area**

Eielson Alternative Segment 3 would directly cross portions of the designated outdoor recreation areas. Eielson Alternative Segment 3 would be west of the stocked lakes and permanent recreation facilities (campgrounds, picnic sites and playground); however, it would cross trails or access routes at five points. Two of these – a road south of Rainbow Lake, and a road south of Scout Lake – have been proposed by the ARRC for at-grade crossings, so no long-term access impacts would be expected at these sites. Construction impacts would be similar to those described for Twentythreemile Slough Area Trails. Three access roads/trails (two west of Scout Lake, one west of Grayling Lake) would be crossed by Eielson Alternative Segment 3 and are not currently proposed as accessible crossings by ARRC; the rail line would prevent crossing by vehicles and pedestrians.<sup>6</sup>

Eielson Alternative Segment 3 ROW would cross the southwestern corner of Scout Lake. This 0.85-acre portion of the lake could be filled to create a stable railbed. Fill activities could result in increased turbidity and decreased lake area (corresponding to decreased fish habitat) in Scout Lake, which is stocked by ADF&G.

Eielson Alternative Segment 3 would cross a parking/turnaround area for the access route west of Grayling Lake. This trail is primarily used by fishermen and hand-carry canoeists accessing Piledriver Slough. The parking lot is within a portion of the proposed 200-foot rail ROW, and the space available for parking could be diminished.

Eielson Alternative Segment 3 would pass in proximity to several campsites located among the various lakes. The closest is located approximately 100 feet from the proposed 200 foot ROW, on the west side of Scout Lake. The access road to this campsite is well within the ROW, and access to this campsite could be affected during both construction and operation. The access road to a campsite on the southern end of Scout Lake would be similarly affected. Users of campsites and the recreation area in general would experience impacts including increased noise and visible deforestation. Two campsites are within the affected area that could experience high-intensity locomotive horns, a safety-related requirement for the proposed at-grade crossings west of Scout Lake. Two other campsites (east side of Scout Lake and in the center of Rainbow Lake) are just on the edge of the whistle zone.<sup>7</sup>

### **Salcha Elementary School Grounds and Salcha Ski Area**

Construction and operation of Salcha Alternative Segment 2 would require the re-routing of Richardson Highway through the public school grounds and portions of the ski area and its trails.

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<sup>5</sup> Section 4(f) defines noise impacts as a “constructive use,” with the significance criteria as an effect that would “substantially impair” the resource. The STB considers an adverse noise impact as exposure to “day night level” (DNL) of 65 decibels or greater in combination with an increase (compared to current conditions) of at least 3 decibels. See Chapter 9 and Appendix J for a full description of noise impacts and methodology. This measure is considered an adverse impact and not “substantial impairment” in the context of Section 4(f).

<sup>6</sup> State law prohibits individuals, dog-sleds, or vehicles from crossing the ROW except at designated crossings.

<sup>7</sup> “Whistle zone” refers to the 65 DNL noise contour, inside of which sensitive receptors would be affected by a noise level of 65 decibels in combination with an increase of at least 3 decibels above existing conditions. See Chapter 9 for noise contour maps.

The proposed re-routing would directly affect the school's outdoor ballfield, several outbuildings that house recreation equipment and the school itself. The re-routed highway would bisect the existing school, as well as the existing public parking area, basketball court, and playground area. These facilities would likely be moved slightly to the east to different parts of the school property.

The highway re-routing would directly affect the start/finish stadium portion of the ski area and several trails, including the Lower Loop and the Fall Loop. The proposed relocation of the school grounds and facilities would subsequently affect another portion of the start/finish stadium area. These actions would require the closure of the stadium area in its current location and prevent access to trails. As mentioned above, the highway re-route would affect the school parking area, which also serves the general public to access the ski area.

### **Silver Fox Lodge Trail**

Donnelly alternative segments would both cross this trail several miles northwest of the Little Delta River. Construction and operational impacts are similar to those listed for the Twentythreemile Slough trail system. User enjoyment would also be similarly affected. ARRC has not proposed any designated trail crossings for either alternative segment, without which public access would be prevented on this established and recognized ADNR trail.

### **Koole Lake Trail (Donnelly-Washburn Trail)**

Donnelly Alternative Segment 2 would cross the collocated ADNR Winter /Koole Lake/Donnelly-Washburn Trail approximately 1.3 miles southwest of the Tanana River. ARRC has proposed a public crossing at this intersection. An appropriately-designed crossing serving the multiple uses of the trail would have no impact on long-term public recreation access.

Donnelly Alternative Segment 1 would cross the ADNR Winter Trail approximately 4.75 miles south of the Tanana River; ARRC has proposed a public crossing at this intersection. An appropriately-designed crossing serving the multiple uses of the trail would have no impact on public recreation access.

Donnelly Alternative Segment 1 would cross the U.S. Army permit route approximately 1.85 miles south of the Tanana River and 3 miles west of the Little Delta River; it would cross the collocated Koole Lake/Donnelly-Washburn Trail approximately 1.25 miles east of the Little Delta River; and it would cross the Koole Lake Trail approximately 3.15 miles east of the Little Delta River. No public crossings have been proposed by ARRC for these routes. Without designated crossings, public access on these trails would be prevented.

For all trails, construction and operational impacts would be similar to those listed for the Twentythreemile Slough trail system. User enjoyment would also be similarly affected.

### **ADNR Forestry Winter Road**

Donnelly Alternative Segment 1 and South Common Segment would cross this route at two different points (Donnelly Alternative Segment 1 crossing approximately 5.5 miles east of Delta Creek; South Common Segment crossing approximately 3.5 miles west of the Delta River). Construction and operational impacts are similar to those listed for the Twentythreemile Slough trail system. User enjoyment would be similarly affected. ARRC has not proposed designated trail crossings for either intersection, without which public access would be prevented on this established and recognized ADNR trail.

### **Rainbow Lake Winter Trail**

South Common Segment would cross this trail at one point, approximately 0.3 miles southeast of the point where the South Common Segment would cross the ADNR Forestry Winter Road. Construction, operations, and user enjoyment impacts would be similar to the Twentythreemile Slough trail system. ARRC has not proposed designated trail crossings at this intersection, without which public access would be prevented on this established and recognized ADNR and ADF&G trail.

### **Phillips Road/Delta Junction Area Trail Network**

Delta Alternative Segment 2 would cross this trail approximately 2.5 miles north of Delta Junction. Construction and operational impacts are similar to those listed for the Twentythreemile Slough trail system. User enjoyment would be similarly affected. ARRC has not proposed a designated crossing for this intersection, without which public access would be inhibited on this established and recognized ADNR trail.

### **Dispersed Use Areas**

Dispersed use areas would be affected through ROW clearance activities, similar to the Chena River Flood Control Project. Donnelly and Delta alternative segments and South Common Segment would affect the dispersed use areas. Areas open to recreation could be temporarily disrupted during the construction period. Operation issues could include limited access or access prevention across these lands, which are used for a variety of recreation activities. Individuals and vehicles would not be allowed to cross the rail ROW at undesignated crossing points. Although crossing would be likely to occur, it would be illegal and individual recreationists could be subject to enforcement penalties.

## **M.4.2 Cultural Resource Areas**

Salcha Alternative Segment 2 exhibited cultural resource sites that could be protected under Section 4(f). Field investigations may identify additional, as yet undiscovered, archaeological resources that may be eligible for the NRHP.

Cultural resources can be directly damaged (adversely effected) in a number of ways. Removal of surface artifacts, surface disturbance (resulting in artifact and feature dislocations), subsurface disturbance, and contamination of organic residues, such as hearths and fauna, are major types of direct impacts.

Construction-related direct impacts could result from construction of the main track segments and related facilities. Temporary direct impacts could result from construction camps, construction staging areas, and temporary construction bridges.

Operations impacts would result from replacement/repair of rail components (main track rail, sidings, buildings, bridges, *etc.*), acquisition of additional borrow materials, possible wrecks or spills from railcars and subsequent clean-up operations, and other activities resulting in ground-disturbing impacts.

Indirect (and cumulative) impacts can be divided into two categories: access-related impacts (including other uses of the NRE access routes) and erosion. With the exception of public and private crossings, access to the proposed NRE ROW and access road would require a permit from ARRC. However, it is likely that some unauthorized use would occur. These unauthorized uses of the rail line ROW and access road could increase recreational use in this area, such as hunting and hiking, and use of ORVs. These activities can lead to increased site vandalism,

removal of artifacts, and adverse effects from increased camping. Additionally, construction of the project could alter the watershed and groundwater in the area, leading indirectly to changes in soils and, by extension artifacts.

### **M.4.3 Summary of Impacts to Section 4(f) Resources**

Table M-2 provides a comparison of impacts to Section 4(f) resources by alternative segment. Effects to trails were measured in linear feet of impact and the number of recreation access route intersections, and impacts to recreation areas was measured by the number of acres affected. Cultural resource areas are presented by the number of confirmed historic sites potentially affected by the project.

## **M.5 Avoidance Alternatives**

This section provides a discussion of avoidance alternatives considered early in the project development process, and potential avoidance techniques applied to the alternative segments considered in detail in the EIS.

All alternative segments considered in this analysis are considered feasible because they can be designed and built. An alternative that is not prudent could be eliminated from consideration for the following reasons:

- It involves extraordinary operational or safety problems;
- There are unique problems or truly unusual factors present with it;
- It results in unacceptable and severe adverse social, economic or other environmental impacts;
- It would cause extraordinary community disruption;
- It has additional construction costs of an extraordinary magnitude; or
- There is an accumulation of factors that collectively, rather than individually, have adverse impacts that present unique problems or reach extraordinary magnitudes.

### **M.5.1 Alternatives Eliminated from Detailed Study**

A number of alternatives were considered early in the National Environmental Policy Act (NEPA) process but were eliminated from further consideration. Chapter 2 discusses the process of narrowing the alternatives, and Table 2-1 summarizes 13 alternatives eliminated from consideration. None of those alternatives provides a clear advantage under the criteria of Section 4(f) for avoidance or minimization of Section 4(f) uses.

Two of the Eielson area alternatives, the one that suggests crossing to the western side of the Tanana River from the Eielson Farm Community and the one that would cross at the Chena River overflow, would need to pass through a considerable amount of the military's Tanana Flats TA. These alternatives are not feasible as the military has indicated that it would not allow that much intrusion into their TA. The other two Eielson alternative segments would bring the rail line eastward, through the Eielson AFB property. These alternatives are not feasible, as the military has expressed concerns of encroachment into runway taxi areas and that movement of trains through the base is highly undesirable. The related idea of continuing around the base to the east would add construction costs of an extraordinary magnitude.

**Table M-2  
Comparison of Potential Impacts per Alternative**

<b>Alternatives</b>	<b>Feasible and Prudent Alternative?<sup>a</sup></b>	<b>Uses 4(f) Land? (Resource and Area Impacted)</b>	<b>Number of 4(f) Recreation Access Route Intersections<sup>b</sup></b>
No-Action Alternative	No	No	0
North Common Segment	Yes	- Chena River Flood Control Project (14.3 acres)	0
<b>Eielson Alternative Segments</b>			
Eielson Alternative Segment 1	--	- Twentythreemile Slough Dog-Sledding Trails (1,172.6 feet or 0.22 mile)	11
Eielson Alternative Segment 2	--	- Twentythreemile Slough Dog-Sledding Trails (1,728.61 feet or 0.33 mile)	8
Eielson Alternative Segment 3	--	- Twentythreemile Slough Dog-Sledding Trails (239.65 feet or 0.045 mile) - Eielson AFB Outdoor Recreation Area (21.79 acres)	6
<b>Salcha Alternative Segments</b>			
Salcha Alternative Segment 1	Yes	No	1
Salcha Alternative Segment 2	Yes	- Twentythreemile Slough Dog-Sledding Trails (567 feet or 0.11 mile) - Salcha School Grounds (0.93 acre) - Salcha Ski Area (3.45 acres and 1,254 feet of trails or 0.24 mile) - Salcha 2 Alignment cultural resource sites (2) within 100 meters of the APE	3
Connector A	Yes	No	0
Connector B	Yes	No	0
Connector C	Yes	No	0
Connector D	Yes	No	0
<b>Central Alternative Segments</b>			
Central Alternative Segment 1	Yes	No	0
Central Alternative Segment 2	Yes	No	0
Connector E	Yes	No	0
<b>Donnelly Alternative Segments</b>			
Donnelly Alternative Segment 1	--	- Silver Fox Lodge Trail (202 feet or 0.04 mile) - Koole Lake Trail (541 feet or 0.1 mile) - ADNR Forestry Winter Road (482 feet or 0.09 mile) - Donnelly-Washburn Trail (1,023 feet or 0.2 mile) - U.S. Army Permit Route (416 feet or 0.08 mile) - ADNR Winter Trail (201 feet or 0.04 mile) - ADNR Dispersed Use Areas (Public Recreation Primary Use) (10.5 acres)	6

**Table M-2  
Comparison of Potential Impacts per Alternative (continued)**

<b>Alternatives</b>	<b>Feasible and Prudent Alternative?<sup>a</sup></b>	<b>Uses 4(f) Land? (Resource and Area Impacted)</b>	<b>Number of 4(f) Recreation Access Route Intersections<sup>b</sup></b>
Donnelly Alternative Segment 2	--	<ul style="list-style-type: none"> <li>- Silver Fox Lodge Trail (216 feet or 0.04 mile)</li> <li>- Koole Lake Trail (226 feet or 0.04 mile)</li> <li>- Donnelly-Washburn Trail (200 feet or 0.04 mile)</li> <li>- ADNR Winter Trail (266 feet or 0.05 mile)</li> <li>- ADNR Dispersed Use Areas (Public Recreation Primary Use) (11.5 acres)</li> </ul>	3
South Common Segment	Yes	<ul style="list-style-type: none"> <li>- ADNR Forestry Winter Road (402 feet or 0.08 mile)</li> <li>- Rainbow Lake Trail (205 feet or 0.04 mile)</li> <li>- ADNR Dispersed Use Areas (Public Recreation Primary Use) (254.2 acres)</li> </ul>	2
<b>Delta Alternative Segments</b>			
Delta Alternative Segment 1	--	<ul style="list-style-type: none"> <li>- ADNR Dispersed Use Areas (Public Recreation Primary Use) (307 acres)</li> </ul>	0
Delta Alternative Segment 2	--	<ul style="list-style-type: none"> <li>- Phillips Road/Delta Junction Area Trail Network (503 feet or 0.1 mile)</li> <li>- ADNR Dispersed Use Areas (Public Recreation Primary Use) (28.5 acres)</li> </ul>	1

<sup>a</sup> According to Federal Highway Administration's Section 4(f) Policy Paper, if all alternatives use Section 4(f) resources, a prudent and feasible avoidance alternatives analysis is not required (U.S. DOT, 2005).

<sup>b</sup> Includes both the recreation access route intersections with crossings proposed by ARRC and those that are not currently designated for crossings.

One of the potential Salcha area alternatives, called N1, would cross the Tanana River and run along the southwestern side of the river. This option, like those described earlier, would cross too much of the Tanana Flats TA, and is not feasible. The alternative known as N3 was an alignment on the eastern side of the river in the Salcha area. This alternative would affect the same Section 4(f) resources as the Salcha Alternative Segment 2, providing no avoidance scenario. Additionally, the alternative would impact 304 acres of wetlands and more directly affect the historic Salchaket Village, which are environmental impacts considered unacceptable. The alternative that suggests the rail alignment cross into the Tanana River channel to bypass Salchaket Village and the Flag Hill area before crossing back to the northeastern bank is not feasible due to the river hydraulics and shifting sands.

One alternative suggested following Richardson Highway all the way to Delta Junction but this alternative is not feasible to design due to topography and slope issues. The Blair Lakes Spur and the Alaska Range alternatives do not meet the project's purpose and need. Two alternatives in the Donnelly area would cross the same trails as Donnelly Alternative Segments 1 and 2, providing no avoidance option and also affecting more residential property, with the potential for safety issues in steep terrain.

Alternatives to the South Common Segment included routes further to the east and west. Alternatives east of the South Common Segment (formerly named S2 and Donnelly East) raised concerns regarding fish habitat along the Tanana River and also crossed the same trails as the South Common Segment. Alternative routes to the west encounter topography with poor geotechnical conditions for a rail line, and an option to route even farther southwest (formerly called S5) added considerable distance and cost and encroached on military training areas.

The Delta Central alternative would share some of the same Section 4(f) impacts of the Delta Alternative Segments 1 and 2 and involve greater adverse impacts to residential property and impacts to 40 percent more wetlands. For the reasons discussed above, none of the eliminated alternatives can provide avoidance or minimization options for Section 4(f) resources.

## **M.5.2 Avoidance Techniques by Alternative Segment**

### **North Common Segment**

This segment would affect Section 4(f) resources in the Chena River Flood Control Project. Avoidance of this resource would not be possible, as the North Common Segment bisects a large swath of Flood Control Project land, which cannot be avoided through minor route alteration or changes in the facility footprint.

### **Eielson Alternative Segments**

These segments would affect Section 4(f) resources including Twentythreemile Slough Dog-Sledding Trails and Eielson AFB Outdoor Recreation Area. Avoidance of the Twentythreemile Slough Dog-Sledding Trails would not be possible, as trails are numerous on either side of the alternative segment and various trails cross the route at numerous points. Avoidance of the Eielson AFB Outdoor Recreation Area would not be possible, as segments cross Piledriver Slough and continue southward near Richardson Highway, which requires traversing Eielson AFB land.

### **Salcha Alternative Segments**

Salcha Alternative Segment 1 would not affect Section 4(f) resources; therefore, avoidance measures would not be required. Salcha Alternative Segment 2 would affect Twentythreemile

Slough Dog-Sledding Trails, Salcha School, Salcha Ski Area, and cultural resource sites. Avoidance of the dog sled trail crossing would not be feasible, as it would require bridging several watercourses by continuing directly south, which would be cost prohibitive. Although Salcha School and Salcha Ski Area are grazed by the Salcha Alternative Segment 2 ROW, avoidance would not be possible, as the proposed segment would wrap around Salcha Bluff at this location, and topographic considerations dictate that the alternative segment would need to pass through this area to successfully navigate the bluff and the Salcha River to the south. Likewise, the connected action of re-routing Richardson Highway at the site (where it would directly cross both the school and ski area) would most likely be unavoidable, as the displaced road alternative segment could not shift away from the school to the west due to topography. The precise extent of cultural resource discoveries is not known; therefore site-specific avoidance measures cannot be determined at this time.

### **Connector Segments and Central Alternative Segments**

These segments would not affect Section 4(f) resources; therefore, avoidance measures would not be required.

### **Donnelly Alternative Segments**

Donnelly Alternative Segment 1 would affect Silver Fox Lodge, Koole Lake, Donnelly-Washburn, U.S. Army Permit Route, ADNR Winter Trail, ADNR Forestry Winter Road, and ADNR dispersed use recreation areas. None of the trails could be avoided without substantial route alterations. Although only a small portion of dispersed use recreation areas would be affected, avoidance would not be possible as Donnelly alternative segments would eventually need to connect with the South Common Segment, which ends within a dispersed use area.

### **South Common Segment**

This segment would affect ADNR Forestry Winter Road, Rainbow Lake Trail, and ADNR dispersed use recreation areas. The trails extend from the Tanana River and cannot be avoided, as routes further south and west, away from the trails, are not feasible. South Common Segment passes entirely through dispersed use recreation areas, so avoidance would not be possible.

### **Delta Alternative Segments**

Delta alternative segments would affect ADNR dispersed use recreation areas. Additionally, Delta Alternative Segment 2 would affect Phillips Road Winter Trail. Total avoidance would not be possible as the segments traverse a long stretch of dispersed use area. Avoidance of the Phillips Road Trail would not be possible without substantial route alteration.

## **M.6 Measures to Minimize Harm**

Many of the Section 4(f) resources affected by the proposed NRE are trails; however, ARRC has proposed only 10 trail crossings at this time. SEA has also made preliminary recommendations for additional trail crossings as part of the proposed mitigation package (see Chapter 20). As part of the land conveyance process, ARRC would consult with affected agencies to come to agreement on trail crossing locations along the proposed rail line (see Chapter 20). Other measures to minimize impacts to Section 4(f) resources are discussed below.

## **M.6.1 Park and Recreation Areas**

### **Chena River Lakes Flood Control Project**

Minimization techniques for construction-period impacts (increased noise, dust and visual effects, including presence of construction vehicles and vegetation clearance) would include timing construction activities to result in the least disturbance to recreation users, and best practices for noise and dust control. Mitigation for vegetation clearance activities would include use of the minimum ROW required for construction of the rail line, and restoration of the ROW as near as possible to its original condition following construction.

### **Twentythreemile Slough Area Trails**

Minimization techniques for construction-period impacts include selecting a construction period that would have the least impact on trail recreation to minimize the impact of temporary construction-period disruptions to trail use. Both dog-sledders and ARRC have indicated that at-grade crossings could present a safety hazard for dog teams.

### **Eielson AFB Outdoor Recreation Area**

Measures for minimizing construction-period impacts include timing construction to have the least impact on the outdoor recreation area. Use of best available practices for dust suppression and noise reduction during construction and operation would decrease potential user impacts; however, periodic noise would remain an issue during operation. Minimizing impacts to campsites would include relocation of campsites to locations outside of the affected area.

Potential impacts arising from fill operations in Scout Lake would be decreased through implementation of water quality mitigation measures proposed in Chapter 20 of the EIS. These would include compensation or in-kind habitat replacement, and development of best management practices specific to minimizing turbidity during construction (*i.e.*, use of silt membranes in lake, silt fences and hay bales on construction cuts, and limiting construction period windows). In addition, minimization methods would include timing the construction period to have minimal impact on public fishing activity at Scout Lake. Please refer to Chapter 20 for a more detailed discussion of mitigation measures to preserve water quality.

At this time, ARRC has proposed two trail crossings along Eielson Alternative Segment 3 for access to Scout Lake and Rainbow Lake within the outdoor recreation area. Minimization of impacts to recreational users would include adequate trail crossings and grade crossings for park roads. Minimization of impacts to parking within Scout Lake campsites would include replacing entrances and parking areas in other locations, or constructing alternate campsites outside the affected area, in consultation with Eielson AFB staff.

### **Salcha Elementary School and Salcha Ski Area**

Minimization of impacts to school and ski area recreation facilities would include, but is not limited to, determination of a construction period with the least disruption possible to school and ski area recreation activities, and replacement of all recreation facilities to be removed from school and ski area grounds to areas outside of Richardson Highway re-route ROW. These facilities would include the public parking area, playground, ball field, basketball court, start/finish stadium area, Lower Loop trail, Fall Trail, and all support buildings that service school and ski area recreation activities.

### **Silver Fox Lodge Trail**

Donnelly Alternative Segments 1 and 2 would each cross this trail. No trail crossings have been proposed by ARRC at this time. Mitigation measures would be the same as for the Twentythreemile Slough trail system.

### **Koole Lake Trail (Donnelly-Washburn Trail)**

Donnelly Alternative Segment 2 would cross the Koole Lake Trail (Donnelly-Washburn Trail) at two locations and Donnelly Alternative Segment 1 would cross trails at two points; however, land managers have indicated that Donnelly Alternative Segment 2 could have adverse effects on recreational and other resources due to its proximity to the Tanana River. ARRC has proposed crossings for the collocated Koole Lake/ADNR Winter/Donnelly-Washburn Trail for Donnelly Alternative Segment 2 and for the ADNR Winter Trail at Donnelly Alternative Segment 1. Points where Donnelly Alternative Segment 1 would cross the U.S. Army permit route, the collocated Koole Lake/Donnelly-Washburn Trail, and the Koole Lake Trail (on its own) have no proposed crossings and would require mitigation to preserve public recreation access. Mitigation measures would be the same as for the Twentythreemile Slough trail system.

### **ADNR Forestry Winter Road**

Donnelly Alternative Segment 1 and South Common Segment would cross this route at separate points. Mitigation measures would be the same as for the Twentythreemile Slough trail system.

### **Rainbow Lake Winter Trail**

The South Common Segment would cross this trail. Mitigation measures would be the same as for the Twentythreemile Slough trail system.

### **Phillips Road/Delta Junction Area Trail Network**

Delta Alternative Segment 2 would cross one segment of the trail network. Mitigation measures would be the same as for the Twentythreemile Slough trail network.

### **Dispersed Use Areas**

Mitigation for vegetation clearance activities and for impacts to ADNR lands would be the same as for the Twentythreemile Slough area.

## **M.6.2 Cultural Resource Areas**

Large portions of the Salchaket village area were not surveyed due to the presence of private property and native allotments. Predictive modeling identified the area as having high probability for prehistoric and historic archaeological resources. This information would be used to guide subsequent field investigations if the segment was a component of any overall route authorized for construction and operation by the STB.

If Salcha Alternative Segment 2 were chosen, future data collection would be necessary to determine National Register eligibility. A comprehensive survey supported with oral history and archival research to situate these resources within the overall context of Salchaket Village is recommended. The two sites identified are likely to be considered eligible under Criteria A, B, and D, but more research is needed to fully assess their significance.

If additional resources were discovered during field investigations, they could be subject to a separate 4(f) evaluation depending on eligibility and other factors. As part of agency coordination, mitigation and/or avoidance measures for each significant site would be developed.

Mitigation of adverse effects to significant archaeological sites could include preservation in place, accomplished through avoidance, easements, or protection. When preservation in place is not feasible, adverse effects to significant archaeological sites generally could be mitigated through data recovery (excavation) of the site's valuable information.

A draft Programmatic Agreement (PA) has been developed by the STB for consideration by the Alaska State Historic Preservation Office (SHPO), Advisory Council on Historic Preservation and cooperating agencies. If executed, the PA would guide future efforts to identify and evaluate cultural resources, as well as procedures for avoiding and mitigating impacts. The draft PA is provided as Appendix H of the EIS.

## **M.7 Coordination**

### **M.7.1 Parks and Recreation Areas**

The location and status of recreational features was determined through informal consultation with public land managers and review of land management plans. SEA has conducted informal consultations with the FNSB's Department of Parks and Recreation, ADF&G, ADNR, Alaska State Mental Health Trust Authority, Eielson AFB, Fort Greely, and Fort Wainwright. Discussions included characterization of recreational access and available activities, and possible impacts that would result from selection of various alternative segments. Section 4(f) applicability, impact avoidance, and possible mitigation were subjects of discussion.

Prior to publishing the EIS, SEA presented a preliminary determination of Section 4(f) resources and requested that affected agencies provide their formal response to the significance of the resources. SEA will continue coordination with public land managers to determine the significance of resources identified in this evaluation.

### **M.7.2 Cultural Resources Coordination**

Following consultation with the Alaska State SHPO and the BLM, SEA surveyed the APE where available for entry (*i.e.*, excluding private and Native land) to identify cultural historical resources and characterize the affected environment. By agreement with the above mentioned parties, SEA focused on identification, and did not conduct systematic excavation to determine site boundaries horizontally. Therefore, systematic survey and testing was shifted to a later phase of the project (*i.e.*, pre-construction surveys).

As part of the Section 106 process, the STB will continue with the consultation process with appropriate regulatory agencies, tribal entities, and affected private parties. Future consultation could involve meetings to determine protocols for assessment and mitigation of cultural resource data, and by formalizing and signing a PA among agencies and consulting parties. The Draft PA stipulates specific cultural resource considerations for administration, definitions of terms, tribal consultation, identification and evaluation of historic properties and assessment of adverse effects, treatment of historic properties and human remains, monitoring, curation, annual review and reports, procedures for inadvertent discoveries, training for ARRC employees, procedures for consultation, dispute resolution, procedures for amendment or termination of the PA, failure to carry out the PA, duration; and execution and implementation.

Execution and implementation of the Final PA would evidence that the STB has satisfied its responsibilities under Section 106 of the National Historic Preservation Act pursuant to 36 CFR 800, and that the state has satisfied responsibilities under the Alaska Historic Preservation Act

pursuant to AS 41.35. Coordination with the involved parties will be ongoing to determine the proper handling of identified Section 4(f) resources.

## **M.8 Conclusion**

SEA has identified 14 potential resources protected under Section 4(f) of the USDOT Act that could be affected by the proposed NRE. Most are recreational trails used for dog-sledding, snowmachining, and skiing, and two are cultural resources. All of the proposed route segments evaluated in the EIS and discussed in this Section 4(f) evaluation are technically feasible to build. Likewise, any combination of the alternative segments between the project's termini of North Pole and Delta Junction satisfy the project's purpose and need.

The alternative route with the least impact to Section 4(f) resources would include the North Common Segment, Eielson Alternative Segment 3, Salcha Alternative Segment 1, any of the connectors, either of the Central Alternative Segments, Donnelly Alternative Segment 2, South Common Segment, and either Delta alternative segment.

Minimization techniques for impacts to Section 4(f) resources would include timing construction to avoid times of heavy trail use, ensuring adequate trail crossings appropriate to the use of the trail, moving campsites and facilities where appropriate, and incorporating best practices for management of dust and noise emissions during construction activities. Implementation of the measures to minimize harm and consultations with the managing agencies for eligible Section 4(f) properties described in Section M.6 would reduce overall impacts to Section 4(f) resources. Mitigation of adverse effects to significant archaeological sites could include preservation in place, accomplished through avoidance, easements, or protection. When preservation in place is not feasible, adverse effects to significant archaeological sites generally would be mitigated through data recovery (excavation) of the site's valuable information.

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