

## **13. LAND USE**

This chapter describes the regulatory settings, study areas, analysis methodologies, affected environments (existing conditions), and potential environmental consequences (impacts), and unavoidable environmental consequences to land use, recreation, visual resources, and hazardous materials sites under the proposed action and the No-Action Alternative. Section 13.1 addresses land use not related to recreation. Section 13.2 addresses land used for recreation and summarizes the analysis of effects to properties protected under sections 4(f) of the U.S. Department of Transportation Act of 1966, 49 United States Code (U.S.C.) § 303 and 23 U.S.C. § 138, and section 6(f)(3) of the Land and Water Conservation Fund Act of 1964, 16 U.S.C. §§ 4601-4. Appendix M provides the full Section 4(f) and 6(f) Evaluation. Section 13.3 addresses potential impacts to visual resources. Section 13.4 describes potential impacts related to hazardous materials and hazardous waste sites.

### **13.1 Land Use**

#### **13.1.1 Regulatory Setting**

##### **13.1.1.1 Federal Regulations**

There is no Federal land with the potential to be affected by the proposed Port MacKenzie Rail Extension. However, the following Federal land use regulations apply: Farmland Protection Policy Act, 7 U.S.C. § 4201, and the Coastal Zone Management Act of 1972, 16 U.S.C. §§ 1451-1456.

No prime, unique, or farmland soils of statewide importance were identified within the study area. Most locally important soils, as designated by the Matanuska-Susitna Borough (MSB or the Borough), are within the Point MacKenzie Agricultural Project between the Mac West and Mac East segments. Chapter 3, Topography, Geology, and Soils, addresses compliance with the Farmland Protection Policy Act.

All proposed rail line alternatives would include construction in Alaska's coastal zone (ADNR, 2008). The Coastal Zone Management Act and its implementing regulations at 15 Code of Federal Regulations (C.F.R.) part 930 require Federal agency activities with reasonably foreseeable effects on coastal zones to be consistent with state programs approved under Federal coastal management programs. The state agency that implements or coordinates a state's federally approved coastal management program is responsible for Federal consistency reviews.

##### **13.1.1.2 State Regulations**

Alaska Statute (Alaska Stat. § 38.04.065), Land Use Planning and Classification, and Alaska Administrative Code (Alaska Admin. Code 11 § 55.010-55.030) require that the Alaska Department of Natural Resources (ADNR), with local governmental and public involvement under Alaska Stat. § 38.05.945, adopt, maintain, and, when appropriate, revise regional land use plans that provide for the use and management of Alaska-owned land. Section 13.1.4.4 describes state plans applicable to the study area, including the Susitna Area Plan, the Susitna Basin

Forestry Guidelines, and the Willow Sub-Basin Area Plan. Alaska Stat. § 38.05.321 establishes covenants on agricultural land to limit use to agricultural purposes.

ADNR implements Alaska's federally-approved coastal management program and is responsible for consistency reviews of Federal agency activities. ADNR has indicated that the Surface Transportation Board's (STB's or the Board's) issuance of authorization to construct and operate a rail line (if the Board decides to do so in this case) does not require review by ADNR for consistency with the Alaska Coastal Management Program (ACMP).<sup>1</sup> Rather, ADNR would review the proposed rail line for ACMP consistency in the context of other Federal licenses or permits that are subject to review under Subpart D of 15 C.F.R. part 930, after a design has been finalized and permit applications have been submitted (ADNR, 2010).

### 13.1.1.3 Local Regulations

Alaska Stat. §§ 29.35 and 29.40 define the authority of cities and boroughs to provide for planning, platting, and land use regulations. Planning powers are either mandatory or optional, depending on the classification of the city or borough. As a Class 2 borough, the MSB is required to provide for planning, platting, and land use regulations on an area-wide basis (both inside and outside cities) within the Borough in accordance with Alaska Stat. § 29.40. The MSB may delegate these powers to a city within the Borough (Alaska Stat. § 29.40.010).

The MSB Planning Commission was established to perform the area-wide functions of planning, platting, and zoning. The Commission's recommendations are then transmitted to the MSB Assembly, a body of elected district representatives that sets policy and exercises legislative power within the Borough. According to MSB chapter 15.24, Assembly; Zoning Functions, the Assembly has the authority, with the Planning Commission's recommendation, to establish building and land use regulations and create districts (MSB 15.24.015). With the assistance of the Planning Commission, the Assembly prepares and revises a comprehensive Borough-wide development plan. The MSB also has broad powers pursuant to Alaska Stat. § 19.30.151(b). The MSB uses both Borough-wide and special-use district ordinances. The MSB-wide ordinances employ setback standards, including a 75-foot waterbody setback adopted by voter initiative, sanitary solid waste disposal sites, and mobile home park standards. Special-use districts are tailored to local communities' special conditions and are unique to the geographic boundary of each community. Local communities may redefine a particular Borough-wide measure through their special-use district ordinances (MSB, 2005a). To improve the level of compliance with existing code, the MSB provides regulatory information to persons proposing development. Before the development activity begins, the owner or developer signs a Statement of Acknowledgement of Existing Land Use Regulations, as provided in MSB Title 17.

The MSB has delegated powers regarding land use regulations, planning, and zoning to the cities of Houston, Palmer, and Wasilla. Section 13.1.4.4 summarizes applicable land use plans and policies for cities and other entities in the Borough that also lie in the study area.

---

<sup>1</sup> A decision by the Board to authorize construction and operation of the proposed rail line would meet the definition of a Federal license or permit at 15 C.F.R. § 930.15. Such a decision by the Board is not included in the list of Federal permits subject to ACMP review by ADNR. Under 15 C.F.R. § 930.54, ADNR is not required to review a Federal license or permit for consistency if it is not so listed and has elected not to do so (ADNR, 2010).

The MSB Coastal Zone Management District and the associated MSB Coastal Management Plan cover the entire study area, and the MSB Coastal Management Plan's associated Point MacKenzie Area Which Merits Special Attention Plan (which the MSB adopted in 1993 and amended in 2006, MSB, 2006a) also applies to the southern portion of the study area.

### **13.1.2 Study Area**

The land use study area is in the Susitna River valley and extends between the Susitna River, Cook Inlet, Knik Arm, and the existing Alaska Railroad Corporation (ARRC) main line (see Figure 2-2).

### **13.1.3 Analysis Methodology**

To identify potential impacts to land use and ownership under the proposed action, OEA consulted land ownership maps, aerial photography, land management plans and regulations, and other information available in the public domain. The term "structure" was used in cases where it was not possible to determine with certainty that the structure is a residence. OEA evaluated consistency of the proposed project with existing land use objectives for areas within 5 miles of the 200-foot right-of-way (ROW), referred to as "in proximity to" the rail line alternatives.

### **13.1.4 Affected Environment**

#### **13.1.4.1 Existing Land Ownership**

Land owners in the study area include Federal and state governments; the MSB; the Alaska Mental Health Trust Authority; University of Alaska; private citizens; the Alaska Native Regional Corporation (Cook Inlet Regional Incorporated [CIRI]) and the Alaska Native Village Corporation (Knikatnu Inc.) established under the Alaska Native Claims Settlement Act of 1971, 43 U.S.C. § 1601; and land given to an authorized individual Indian, Aleut, or Eskimo in Alaska under the Native Allotment Act of 1906, 43 U.S.C. § 270. Table 13.1-1 lists the amount of land, by owner classification, the proposed rail line segments could affect.

#### **Federal**

There is no federally-owned land within the proposed rail line ROW and few federally-owned parcels within the study area. Federal land within the study area includes a post office near Willow Lake and several parcels on Flat Lake near Big Lake.

#### **State of Alaska**

There are approximately 382 acres of state-owned land within the proposed rail line ROW, which can be found in 8 of the rail line segment ROWs. State-owned land in the study area includes land the ADNR Division of Mining, Land, and Water manages for multiple purposes, including recreation, hunting, and fishing. State parks, wildlife refuges, and recreation areas in proximity to the ROW include Willow Creek State Recreation Area, Nancy Lake State Recreation Area, Little Susitna State Recreation River, Little Susitna Public Use Facility, Susitna Flats State Recreation Area, Goose Bay State Game Refuge, Fish Creek Park, Big Lake North

**Table 13.1-1  
Land Ownership (acres) within the 200-Foot Right-of-Way of Proposed Rail Line Segments<sup>a</sup>**

Segment	MSB	City of Houston	Mental Health Trust Authority	Public Roads (MSB <sup>b</sup> and State)	Native Regional Corporation (CIRI, Knikatu)	No Data <sup>c</sup>	Private	Ag. Covenant Land <sup>d</sup>	University of Alaska	State	Total <sup>e</sup>
Big Lake	150	1	5	47	48	16	244	0	7	2	521
Connector 1	41	0	0	<1	0	33	32	32	0	6	113
Connector 2	0	0	0	<1	34	1	30	55	0	24	90
Connector 3	68	0	0	1	17	3	35	33	0	0	123
Connector 2a	0	0	0	0	6	0	0	0	0	0	6
Connector 3 Variant	68	0	0	2	23	3	32	32	0	0	127
Houston	43	0	97	4	12	17	11	0	44	22	251
Houston North	0	0	34	21	0	79	24	0	0	38	197
Houston South	8	0	48	22	72	1	59	0	0	0	210
Mac East	230	0	92	<1	57	0	79	91	0	12	471
Mac West	300	0	11	<1	0	52	131	131	<1	0	493
Mac East Variant	194	0	92	1	18	0	129	141	0	12	446
Willow	222	0	4	46	6	98	75	19	0	266	715
<b>Grand Total</b>	<b>1151</b>	<b>1</b>	<b>292</b>	<b>145</b>	<b>293</b>	<b>303</b>	<b>881</b>	<b>533</b>	<b>51</b>	<b>382</b>	<b>3498</b>

<sup>a</sup> Source: MSB, 2007a.

<sup>b</sup> MSB = Matanuska-Susitna Borough.

<sup>c</sup> Assumed to be State- and MSB-owned public land because the source of data is the MSB Tax Assessor codes. Public land would not appear on these codes.

<sup>d</sup> Land subject to agricultural use covenants established under Alaska Stat. § 38.05.321. Acreage shown could include private land, state land, public university land, and MSB land and is therefore not included in "Total Acres."

<sup>e</sup> Totals might not equal sums of values due to rounding. Totals also only count the Mac East terminal reserve area once, which is included in both the Mac East and Mac East Variant totals.

State Recreation Site, Big Lake South State Recreation Site, and Rocky Lake State Recreation Site. The Alaska Department of Fish and Game and the ADNR Division of Parks and Outdoor Recreation own and manage most of this land. See Section 13.2 for more information on state recreation sites and potential impacts to recreational use.

Timber harvest and mining are also allowed by permit in certain areas. The primary areas designated for timber harvest in proximity to the ROW are the southern-most tip near the proposed rail line in the vicinity of the Port MacKenzie District, and some public land adjacent to the intersection of the Iditarod Historic Trail and the Little Susitna River (ADNR, 1991). The primary areas designated for mining are the Alaska Mental Health Trust Authority lands north of Big Lake and east of Susitna Flats State Game Refuge (see the next paragraph for more information).

### **Alaska Mental Health Trust Authority**

Approximately 292 acres of land are under the ownership of the Alaska Mental Health Trust Authority, a public corporation established in 1994. The Trust Authority land is located in 8 of the rail line segment ROWs. The Trust Authority contracts with the ADNR to manage Trust Authority-owned land, and income derived from Trust Authority land is used to fund a comprehensive integrated mental health program for the citizens of Alaska. Resource categories managed by the Trust Authority Land Office include coal, gas, materials, minerals, oil, real estate, and timber. Mining of minerals, coal, oil, and gas is permitted on much of the Trust Authority's land. In proximity to the proposed rail line ROW, mining of minerals, coal, oil, and gas is permitted in the extensive Trust Authority land northwest of Big Lake. Oil and gas mining is also permitted throughout the Trust Authority land west of Port MacKenzie and in the larger Trust Authority land northwest of Knik. Mining of minerals and coal is also permitted in selected areas in the vicinity of Port MacKenzie and Knik (AMHT, 2006).

### **University of Alaska**

The University of Alaska owns and manages approximately 150,000 acres (University "trust land") in Alaska. Approximately 51 acres of trust land are within the proposed rail line ROW and can be found in 3 of the rail line segment ROWs. University trust land is for the use and benefit of the University and is not considered state public domain land. The University develops, leases, and sells land and resources to generate funds for its Land Grant Trust Fund.

### **Matanuska-Susitna Borough**

The MSB owns approximately 1,151 total acres of land within the ROW of the proposed rail line and can be found across most of the proposed rail line segment ROWs. The MSB acquired land within the study area through tax foreclosures, purchases, and donation. In addition, the state provides Alaskans local governance and use of public land through transfer of public land to municipalities such as the MSB under the Municipal Entitlement Act. There is MSB-owned Municipal Entitlement land throughout the study area; however, this land is concentrated in the vicinity of the Port MacKenzie District and the MSB land south of Big Lake. The MSB uses its Municipal Entitlement land for a variety of purposes, including the generation of revenue

through sales, leases, and permits; to provide sites for public facilities; and to offer public recreational opportunities.

## **Private**

Most private land in the vicinity of the proposed rail line is forested; however, there are some developed and agricultural areas. Developed areas are typically characterized as low-intensity residential, and are predominantly near area lakes, ponds, and along area roadways. In the vicinity of the proposed rail line, most private land is located east of the northern portion of the Willow Segment and around Big Lake. Private agricultural land in the study area is primarily associated with the Point MacKenzie Agricultural Project that is located between the Mac West and Mac East segments.

## **Alaska Native Regional Corporation**

Alaska Native Regional Corporations own approximately 293 acres of land within the proposed rail line ROW and can be found in 10 of the rail line segment ROWs. Native Regional Corporations administer the land and financial resources awarded under the Alaska Native Claims Settlement Act. Within the study area, this land is typically held in large tracts and consists of parcels owned by Cook Inlet Region, Inc., a regional Native Corporation, and Knikatnu, Inc., a village Native Corporation. In 1971, the Alaska Native Claims Settlement Act established rights of ownership between surface and subsurface rights. Knikatnu, Inc. owns the surface rights to lands claimed near their village, while CIRI, the regional corporation, owns the subsurface rights.

## **Native Allotments**

A Native Allotment is land given to an authorized individual Indian, Aleut, or Eskimo in Alaska under the Native Allotment Act of 1906. The Alaska Native Allotment Act was repealed in 1971 with the passage of Alaska Native Claims Settlement Act. This land is different from Native Regional Corporation private land discussed above. There are 5 Native Allotments within 4 miles of the proposed rail line segment ROWs. None of these allotments overlap the proposed rail line segments.

### **13.1.4.2 Existing Land Use**

A large percentage of the land in the study area is undeveloped; however, in recent years the MSB has been the fastest growing area in Alaska, with much of the population concentrated in Knik-Fairview, Wasilla, and Meadow Lakes (MSB, 2006b). The study area supports a wide variety of land uses, including low-density residential, light industrial, commercial enterprises, commercial and noncommercial aviation, forestry, agriculture, mineral development, and public recreation and wildlife habitat on public land.

Land in the area is commonly used for sport hunting and fishing and for traditional hunting, fishing, and gathering. Recreational use of land in the area by MSB and Anchorage residents and tourists is high, and wildlife habitat and water features are extensive (38 percent of land cover). According to the Susitna Forestry Guidelines (1991), forestry and timber harvesting are some of the designated uses of public land, particularly west in the vicinity of the Port

MacKenzie District and near the intersection of the Iditarod Historic Trail and the Little Susitna River.

Land in proximity to the rail line ROW includes portions or all of the Port MacKenzie District, which occupies 8,940 acres at the southern tip of the MSB; the Point MacKenzie Agricultural Project, which is the largest contiguous agricultural area in Alaska; the Susitna Flats State Game Refuge, Goose Bay State Game Refuge; Willow Creek State Recreation Area; Little Susitna State Recreation River; and Nancy Lake State Recreation Area.

### **13.1.4.3 Existing Zoning**

#### **Matanuska-Susitna Borough**

The MSB has zoning, land use, and building regulations. All land development in the Borough is subject to MSB chapter 17.01, Acknowledgment of Existing Land Use Regulations. The MSB does have platting authority and a Code Compliance Division. The State Fire Marshall is the State Building Official (MSB, 2003a). While the MSB does not have a Borough-wide zoning code, it regulates land use through special land use districts, residential land use districts, and other mechanisms.

#### **City of Houston**

The City of Houston includes about 22.4 square miles in the MSB between Big Lake and Wasilla. Houston is primarily a residential community with some commercial uses along Parks Highway and light industrial uses along the ARRC existing main line. Land designated for public and institutional use is set aside for schools and other public uses. The City of Houston Land Use Ordinance describes existing land uses in the City. Houston's land use districts were established by MSB Title 17 (17.40.405) on December 15, 1987 and amended by Houston Ordinance 90-032 on May 1, 1990, Ordinance 98-046 on June 2, 1998, and Ordinance 98-085 on July 21, 1998.

#### **Port MacKenzie District**

The MSB has plans for the 8,940-acre (about 14-square-mile) Port MacKenzie District to provide services for bulk commodity import, export, and storage (bulk commodities include fuel, timber, sand and gravel, peat, grain), a floatplane base to serve Anchorage air taxi and private pilots, and a public boat launch ramp for companies and individuals based in Anchorage and statewide. The Port MacKenzie District also includes land that could be developed for other commercial, industrial, and recreational uses.

#### **Point MacKenzie Agricultural Project**

The Point MacKenzie Agricultural Project covers 14,893 acres (about 23 square miles) for the purpose of dairy farming and general agricultural use. The Matanuska-Susitna Borough Agricultural Land Sale Programs Summary, updated August 24, 2004 (MSB, 2004), describes the history and process for the conveyance of this land for agricultural purposes. 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. They also restrict use of some resources, such as gravel, to onsite development. In 1997, Alaska Stat. § 38.05.321 was amended to revise restrictions on the subdivision of agricultural land such that farmers may subdivide their land into a maximum of 4 smaller parcels with a minimum size for each parcel of 40 acres.

### **Knik Sled Dog and Recreation Special Use District**

In 2008, the MSB approved an ordinance adopting the Knik Sled Dog and Recreation Special Use District. The special use district was established to ensure zoning and land use compatibility and to protect the homestead lifestyle which places a high value on recreational, cultural, and historical resources in the Knik District.

### **Nancy Lake State Recreation Area Special Use District**

Established in 1966, the Nancy Lake Recreation Special Use District was enacted to protect recreational use in the Nancy Lake State Recreation Area. Conformance and zoning requirements state that no new building or structure may be erected outside of the guidelines.

#### **13.1.4.4 Existing Land Use Plans**

Table 13.1-2 summarizes existing land use and land management plans applicable to the study area. OEA reviewed the plans to determine if the proposed project would be consistent with the plans. Section 13.2 addresses recreational land use plans.

### **13.1.5 Environmental Consequences**

#### **13.1.5.1 Proposed Action**

OEA analyzed the consistency of the project with existing land use and management plans (see Table 13.1-2). Review of land use and management plans in the study area revealed that proposed rail line construction could affect roadway improvements from Port MacKenzie to Houston, a subdivision, the MSB-proposed Port MacKenzie Town Center, and the expansion of the Big Lake Airport. In addition, the proposed rail line would affect land currently used or planned for low-density residential development, agriculture, timber harvesting, and mining.

OEA also considered the project's potential to influence or redirect development trends in the study area. OEA determined that while land uses outside the 200-foot ROW could be influenced by non-rail related development trends in the area, OEA does not foresee induced development or changes in land use outside the ROW as a result of the proposed rail line. For example, there are currently no proposals to install any rail spurs to new shippers (or new industrial development) along the proposed rail line. Additionally, a flag-stop or any other form of passenger rail service, which could encourage new residential development, is not part of the proposed action. The Applicant has also stated that the majority of rail traffic on the proposed rail line would likely move to and from locations in Interior Alaska (far removed from the project area). Substantial portions of the study area are state-owned and designated for public recreational purposes, and development trends would be less likely to influence these areas.

**Table 13.1-2  
Summary of Applicable Land Use Plans and Documents (page 1 of 4)**

<b>Land Use Plan/ Document</b>	<b>Author/ Agency<sup>a</sup></b>	<b>Date<sup>b</sup></b>	<b>Relationship with the Proposed Action</b>
<b>State Plans</b>			
State of Alaska Coastal Management Program	ADNR	2006	“Land and water uses and activities that may be addressed by a coastal district plan and subject to that plan [include]...transportation routes and facilities” (p. A27). “Uses of state concern (AS 46.40.210(12)) are defined to include...facilities serving statewide or interregional transportation and communication needs” (p. A108) “...[T]ransportation, and communication facilities are extensively regulated by state and Federal statutes. Unreasonable restriction or exclusion of such facilities by local ordinance would likewise be impermissible under state law” (p. A34). “Under the 11 AAC 112.280, Transportation routes and facilities standard, a transportation route or facility will not be approved unless the Applicant demonstrates compliance with the avoid, minimize, or mitigate sequencing process regarding the three listed impacts: alterations in surface and groundwater drainage patterns, disruption in known or reasonably foreseeable wildlife transit, and blockage of existing or traditional access” (p. A59).
Susitna Area Plan	ADNR, ADF&G, MSB, USDA	1985	“A right-of-way has been established by DOT/PF [the Alaska Department of Transportation & Public Facilities] as part of a route (the Goose Bay extension) to link the McGrath and Beluga areas to lands east of Susitna River by either road or rail. The right-of-way originates at the Parks Highway or Alaska Railroad and travels west across the Susitna River in the vicinity of Alexander. On the west side of the Susitna River, one spur would head northwest through Rainy Pass towards McGrath. The second spur would travel south through the Game Flats to Beluga” (p. 262).
Willow Sub-Basin Plan	ADNR, MSB, and ADF&G	1982	“The ADOT/PF [Alaska Department of Transportation & Public Facilities] has located an approximate alignment for a transportation corridor (road or railroad) to the Beluga Coal Fields, including alternate alignments to the Susitna River” (p. 28). “A north-south connection between Pt.MacKenzie and Houston has been proposed by various agencies...it is likely that a corridor through the area would be for railroad only and not include a conventional road” (p. 31).
Southeast Susitna Area Plan - DRAFT	ADNR	January 2008	The Plan revises the entire Willow Sub-Basin Area Plan (1982) and a portion of the South Parks Highway Subregion of the Susitna Area Plan. According to the ADNR Web site, this plan was adopted in April 2008 and supersedes the Willow Sub-Basin Area Plan. While this plan does not specifically reference land use for development of a rail line, it does categorize the Southeast Susitna Area into several land use parcels and indicates the management intent of each parcel. Several parcels in proximity to the rail line are designated under this plan for alternate uses such as for public recreation, timber harvest, and the use of the Iditarod Historic Trail.

**Table 13.1-2  
Summary of Applicable Land Use Plans and Documents (page 2 of 4)**

Land Use Plan/ Document	Author/ Agency <sup>a</sup>	Date <sup>b</sup>	Relationship with the Proposed Action
<b>State Plans (cont'd)</b>			
Susitna Basin Forestry Guidelines	ADNR	1991	The Forestry Guidelines indicate, “the goals of the timber sale program are to make timber available for existing timber harvesting and processing businesses, and to expand harvesting and processing to provide additional jobs and income while being compatible with other designated uses of the area” (p. 7). There is state land in proximity to the rail line where forestry is one of the designated uses.
<b>MSB Regional Plans</b>			
MSB Comprehensive Development Plan Update	MSB	2005 (2005a)	Goal (E-3) “Create an attractive environment for business investment” (p. 6). Policy E3-3 “Enhance the transportation infrastructure to reduce travel times and improve transport efficiencies and safety” (p. 6). Goal (T-1) “Develop an integrated surface transportation network that facilitates the efficient movement of people, goods, and services throughout the Borough and region” (p. 8). Policy T1-4 “Develop an effective multi-modal transportation plan that provides recommendations for all modes of transportation including surface, air, waterborne, rail, public transit and trails, pipeline, electrical, and communications” (p. 8).
Matanuska-Susitna Borough Long-Range Transportation Plan, Draft Final Report	MSB	February 2007 (2007b)	Rail Transportation (p. 2-8) – Goal: “Develop and operate a rail system to benefit Mat-Su’s population and economy.” Objective: “Extend a rail connection from the Alaska Railroad Main line to Port MacKenzie.”
Matanuska-Susitna Borough Rail Corridor Study	MSB	2003 (2003b)	The purpose of the MSB Rail Corridor study was to determine a mix of railroad and roadway options for surface access to Port MacKenzie. The study analyzes several “corridors.” It includes a list of Federal and state regulatory and permitting requirements, and list of state and local plans. The study provides a discussion of the land use affected environment and environmental consequences.
Matanuska-Susitna Borough Public Facilities Plan	MSB	1984 – currently being updated	No specific mention of future rail corridor or plans for rail connections.
Matanuska-Susitna Borough Coastal Management Plan	MSB	2006 (2006c)	4.3.5 Transportation and Utilities (p. 15) <u>Goal 1</u> : “To encourage economic development and coordination of short and long-term transportation and utility plans within the MSB coastal zone.” <u>Objective B</u> : “Prepare road and rail access plans for currently non-accessed areas where there are resources of significant economic potential such as mining, forestry, recreation, and fish and game.” <u>Objective C</u> : “Identify and reserve material sites (i.e., sand and gravel) for road, railroad, airport, and port development.”

**Table 13.1-2  
Summary of Applicable Land Use Plans and Documents (page 3 of 4)**

<b>Land Use Plan/ Document</b>	<b>Author/ Agency<sup>a</sup></b>	<b>Date<sup>b</sup></b>	<b>Relationship with the Proposed Action</b>
<b>MSB Community Plans</b>			
City of Houston Comprehensive Plan	MSB	Amended 2003 (2003c)	Community Objectives include: "Strengthen and broaden the economic base of Houston by encouraging the continued growth and development of the tourism industry, service industries, transportation-related industries, and natural resource development industries in the Houston area" (p. 7). Industrial Land Use Objectives include: "Design transportation routes to and from industrial areas to avoid mixing residential and industrial vehicular traffic. No industrial traffic should flow through residential areas" (p. 9). "Houston can ... work toward encouraging the development of the transportation infrastructure critical to the development of a natural resource extraction industry" (p. 25).
Big Lake Comprehensive Plan	MSB	1996 – currently being updated	Regional Transportation Goal: "To support regional development through transportation improvements within the community. Recommendations: ...Support improvement of existing transportation links to provide feasible access to Point MacKenzie. Support construction of new transportation links to provide feasible access to Point MacKenzie. Development of the railroad is supported within a corridor west of Papoose Lakes..." (p. 20).
Meadow Lakes Comprehensive Plan	MSB	2005 (2005b)	The Big Lake Segment would lie just to the west of the Meadow Lakes community council boundary. "Circulation-related Comprehensive Plan Goals include: ...Plan For Continuing Railroad Use; Maintain Opportunities for Transit, including Rail and Carpools" (p. ix). No specific mention of a rail link to the Port MacKenzie area.
Knik-Fairview Comprehensive Plan	MSB	1997	No mention of railroad. Transportation planning discussed in the document only considers road development.
Willow Comprehensive Plan	MSB	Working Draft Aug 2008 (2008a)	No mention of rail corridors or goals for rail travel or rail links.
Fish Creek Management Plan	MSB	Final Draft July 2008 (2008b)	Area Wide Goals and Guidelines for the Railroad Corridor: "The Alaska Railroad Corporation (ARRC) has proposed a railroad route to connect Point MacKenzie with the Parks Highway railway north of Wasilla. The alternative routes proposed include one that goes north and south through the Moraine Unit of the Fish Creek area. The State and Borough should work with ARRC to design and develop any railroad corridors through the Fish Creek area to ensure compatibility with this plan" (p. 27).
Point MacKenzie Comprehensive Plan	MSB	Draft Vision Statement and Goals, May 2008 (2008c)	"Goals of the Point MacKenzie Comprehensive Plan include: ...Work with railroad to provide a passenger and freight loading area in the northern area of the community" (p. 1). No mention of a rail corridor connection from Port MacKenzie to existing rail lines.

**Table 13.1-2  
Summary of Applicable Land Use Plans and Documents (page 4 of 4)**

Land Use Plan/ Document	Author/ Agency <sup>a</sup>	Date <sup>b</sup>	Relationship with the Proposed Action
<b>MSB Specialty/Functional Plans</b>			
Point MacKenzie Port Master Plan	MSB	1999	"A rail connection will be required to make the shipment of coal and other bulk commodities such as timber and gravel possible and would also facilitate use of the facility as a general cargo port" (p. 3-4). "...[I]f necessitated by higher volumes of coal or timber export, development of a rail connection from the Alaska Railroad near Houston to Point MacKenzie..." (p. 4-13).
Point MacKenzie Area Meriting Special Attention Management Plan	MSB	2006	<u>Issue 1: Improved Access</u> : "...Point MacKenzie is distant from Anchorage by road...The development of a railroad connection to the Alaska Railroad system is also crucial to full utilization of a port facility" (p. 7). <u>Goal 1</u> : "To support the development of, or improvement to existing, intermodal surface transportation systems that serve the Port, including but not limited to road, marine, railroad, and pipeline modes" (p. 8). <u>Goal 3</u> : "To promote a cost-effective, convenient, well-integrated transportation system that provides safe, convenient, and environmentally sound access that links Point MacKenzie with the local community and the region" (p. 8).

<sup>a</sup> ADF&G = Alaska Department of Fish and Game; ADNRR = Alaska Department of Natural Resources; MSB = Matanuska-Susitna Borough; USDA = U.S. Department of Agriculture.

<sup>b</sup> Year in parentheses indicates how document is referenced in Chapter 20.

### Common Impacts to Land Use

The MSB and the state own most of the land the proposed rail line would directly affect (see Table 13.1-1). The Applicant would acquire the land within the proposed rail line ROW from existing land owners, which includes the Alaska Mental Health Trust Authority, University of Alaska, and Native Regional Corporations, in addition to the MSB and the state. If the Board's authority were granted, ARRC would have the right to acquire the ROW through condemnation pursuant to state condemnation laws. That land would then shift to ARRC management for rail line operation and maintenance, and any non-rail uses within the ROW would be only by ARRC-issued entry permits. Once the ROW was legally established, any occupancy, use, or crossing of the ROW without an ARRC-issued entry permit would be considered trespass. ARRC would also purchase land that is managed for the mining of minerals, coal, oil, and gas. Whether the proposed rail line might affect potential future mining on this land would depend on the resource extraction technique and the vertical location of the resource. Outside of the ROW, all surrounding state and Alaska Mental Health Trust Authority land uses would remain unchanged, and Alaska Mental Health Trust Authority land outside the ROW would continue to be managed as defined by the Trust Authority.

Rail line construction and operation could temporarily block access roads and other access points such as driveways. However, road users would be notified of temporary road closures and other construction-related activities so that alternative routes could be planned.

State-owned land in the study area is used for recreation, hunting, and fishing. Mining and timber harvest are also allowed by permit. Section 13.2 describes impacts to recreation

activities; impacts to timber harvesting are discussed below. Crossing of the proposed ROW to reach timber harvest areas, mining claims, or land disposal areas could be allowed under the ARRC entry permit program.

The Iditarod Historic Trail traverses the study area and intersects the Willow, Houston, and Big Lake segments. See Section 13.2, Parks and Recreational Resources, for impacts to the Iditarod Historic Trail.

Some land within the study area is used for agricultural purposes and the use of some land is limited to agricultural purposes under Alaska Stat. 38.05.321. The proposed rail line would result in conversion of land within the rail line footprint to railroad uses. In addition, the use of some adjacent land also could be converted through acquisition of land beyond the ROW to prevent the creation of uneconomic parcel remnants.

There are timber resources in the deciduous, evergreen, and mixed forests of the study area. White spruce, black spruce, paper birch, balsam poplar, and aspen in these forests have potential commercial value as saw logs, poles, and firewood. The primary areas designated for timber harvest in proximity to the ROW are the southern-most tip of the proposed rail line in the vicinity of the Port MacKenzie District, and some areas adjacent to the intersection of the Iditarod Historic Trail and the Little Susitna River. There are additional timber resources throughout the study area. The rail line segments with the greatest acreages of forested areas are the Willow, Big Lake, and Mac East segments, though these are not specifically designated as timber resources to be harvested for commercial and personal uses (ADNR, 1991). Portions of the study area in proximity to the Mac West, Connector 2, Connector 3, and Connector 3 Variant segments; the northern half of the Big Lake Segment; and west to the Houston South Segment have limited forest land. Table 13.1-3 lists the acres of forest that would be cleared within the proposed rail line footprint. There has been no timber survey to quantify the volume of commercial timber in the area that would be cleared. The Applicant has not developed specific plans for timber salvage from land that would be cleared from the rail line footprint. For ROW areas on public or MSB land, applicable land management plans, policies, and regulations require that timber with commercial- or personal-use values be salvaged from land that is to be cleared for other uses such as mining and transportation or utility corridors, where feasible and prudent (ADNR, 1991). Similar provisions for timber salvage on other non-Federal and non-public land that would be cleared for the rail line footprint would ensure that timber resources affected by the project were properly utilized.

### **Construction Impacts to Land Use**

Rail line construction activities would occur in the designated 200-foot ROW. Rail line construction and operation would change, affect, or curtail existing land uses in the ROW by changing existing land use designations, permanently or temporarily, to designation as a rail line. The area in the ROW that would be cleared for construction but not needed for permanent structures would be restored to conditions consistent with rail line maintenance requirements following project-related construction.

**Table 13.1-3  
Forested Land (acres) within the Rail Line Footprint by Segment<sup>a</sup>**

Segment	Deciduous Forest	Deciduous Forest Closed	Deciduous Forest Open	Deciduous Forest Woodland	Evergreen Forest	Evergreen Forest Closed	Evergreen Forest Open	Mixed Forest	Mixed Forest Closed	Mixed Forest Open	Mixed Forest Woodland	All Forests <sup>b</sup>
Big Lake	2	84	11	<1	<1	32	1	2	79	3	0	214
Connector 1	0	<1	0	0	<1	18	<1	<1	11	<1	0	31
Connector 2	0	<1	0	0	<1	5	<1	<1	7	<1	0	13
Connector 3	0	7	<1	0	<1	19	0	<1	25	<1	0	52
Connector 2a	0	<1	0	0	0	0	0	0	2	0	0	2
Connector 3 Variant	<1	7	<1	0	<1	19	0	<1	31	<1	0	58
Houston	0	32	1	0	1	31	1	<1	22	1	0	88
Houston North	4	27	8	0	0	16	<1	1	20	3	0	79
Houston South	1	3	1	0	0	1	<1	<1	2	1	0	8
Mac East	7	104	9	<1	1	44	0	6	158	7	0	336
Mac West	4	25	2	<1	1	65	<1	2	112	1	0	214
Mac East Variant	3	67	9	<1	1	39	0	2	129	5	0	255
Willow	2	138	12	<1	<1	46	<1	3	147	4	<1	352
<b>Grand Total</b>	<b>22</b>	<b>434</b>	<b>46</b>	<b>1</b>	<b>4</b>	<b>298</b>	<b>3</b>	<b>15</b>	<b>639</b>	<b>21</b>	<b>&lt;1</b>	<b>1485</b>

<sup>a</sup> Source: USGS, 2001; Homer *et al.*, 2004.

<sup>b</sup> Totals might not equal sums of values due to rounding. Totals also only count the Mac East terminal reserve area once, which is included in both the Mac East and Mac East Variant totals.

In addition to the rail line, ARRC would develop associated facilities to support construction activities. The location of construction staging areas and temporary associated facilities to support construction activities would be decided during the design phase and would vary depending on the segments constructed. Where possible, ARRC has indicated it would site construction staging areas inside the 200-foot ROW. Impacts to land use from these staging and construction areas would be temporary because ARRC would remove them and rehabilitate the areas after completing construction of the rail line and associated facilities.

Permanent facilities would include a terminal reserve area at the southern terminus of the proposed rail line. New communications towers would also be required for the project. New permanent access roads to communications towers might be required, depending on the characteristics of specific sites. In addition, ARRC would construct an 8,000-foot double-ended siding to the north of the proposed tie-in point with the main line. The siding would allow train passage and access to rail services. The arrangement of the track siding and tie-in would be a “wye” connection. The siding would be placed, where possible, on tangent sections of the alignment and within the rail line footprint. In addition, the terminal reserve area could result in conversion of the use of the Mental Health Trust Authority land near Point MacKenzie, which is currently managed for the mining of minerals, coal, oil, and gas. Depending on the resource extraction technique and the vertical location of the resource, the siting of the terminal reserve might or might not affect potential future mining on this land.

### **Operation Impacts to Land Use**

No passenger service is proposed. OEA does not foresee that the introduction of new freight rail service as part of the proposed project would stimulate changes in existing land uses or shift development patterns along the proposed rail line. Existing land ownership and use of the terminal reserve area, communications tower, and track siding locations would be permanently changed to allow for these facilities associated with rail line operation and maintenance.

### **Impacts by Segment and Segment Combination**

#### **Southern Segments and Segment Combinations**

##### *Mac West-Connector 1 Segment Combination*

The rail line ROW would affect approximately 493 acres of land along the Mac West Segment (see Table 13.1-1). The affected area would include about 300 acres of MSB land, 11 acres of Mental Health Trust Authority land, less than 1 acre of University of Alaska land, and 131 acres of private land. There are no available data for ownership of the remaining 52 acres, but OEA assumes this is state-owned public land because this land is within the Point MacKenzie Agricultural Project and the Susitna Flats State Game Refuge. The segment ROW also includes 131 acres of land with agricultural covenants.

For approximately 8 miles, the Mac West segment ROW would cross or closely border private land. It is likely that all 131 acres of private land within the ROW is in agricultural use, which the MSB considers to be locally important for agricultural purposes. The proposed rail line construction would convert this land to rail line use. OEA coordinated with the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) regarding impacts to locally

important farmland soils from the proposed rail line. There is no “prime and unique” farmland as defined by the NRCS in the vicinity of the proposed rail line. See Chapter 3, Topography, Geology and Soils, for a more detailed discussion of the NRCS farmland evaluation process.

The Mac West ROW would either cross or be close to undeveloped land or light industrial development for the remainder of the ROW. There is some residential development along the Mac West Segment. The ROW would come within about 150 feet and 289 feet, respectively, of 2 individual residences. Access to these residences could be affected during construction because the ROW would cross the driveway or access route to the homes. Any potential impacts would be temporary.

The rail line ROW would affect approximately 113 acres of land along the Connector 1 segment (see Table 13.1-1). The affected area would include about 41 acres of MSB land, 32 acres of private land, and 6 acres of state land. There are no available data for ownership of the remaining 33 acres, which OEA assumes to be state or MSB land. The segment ROW also includes 32 acres of land with agricultural covenants. All land within the ROW would be permanently set aside for the rail line and ARRC would manage that land. ARRC would purchase or lease about 32 acres of private land.

Most of the land the Connector 1 Segment would affect is undeveloped. OEA coordinated with the NRCS regarding impacts to locally important farmland soils the proposed rail line could affect. There are no residences in the vicinity of the Connector 1 segment ROW. The segment would cross the Iditarod Historic Trail. See Section 13.2 for a description of potential impacts to the Iditarod Historic Trail and other trails in the area.

### *Mac West-Connector 2 Segment Combination*

Impacts from the Mac West Segment would be as previously described.

The rail line ROW would affect approximately 90 acres of land along the Connector 2 Segment (see Table 13.1-1). This land within the ROW would be permanently set aside for the rail line and ARRC would manage the land. The affected area would include about 34 acres of Native Regional Corporation land, 24 acres of state land, and 30 acres of private land. There are no available data on ownership of the approximately 1 remaining acre, but OEA assumes this is public land. The segment ROW also includes 55 acres of land with agricultural covenants.

The Connector 2 segment ROW would cross through or abut state, Native Regional Corporation, and private land used for agricultural purposes. The remaining areas are undeveloped and would not be affected outside the ROW. There are no structures in the Connector 2 segment ROW.

### *Mac East-Connector 3 Segment Combination*

The rail line ROW would affect approximately 471 acres of land along the Mac East Segment (see Table 13.1-1). The affected area would include about 230 acres of MSB land, 92 acres of Mental Health Trust Authority land, 57 acres of Native Regional Corporation land, 12 acres of state land, and 79 acres of private land. The segment ROW also includes 91 acres of land with agricultural covenants.

There is some residential development in the area. Within the rail line ROW, the Mac East Segment would not require the taking of any structures. One residence and associated out buildings and storage areas are located approximately 30 feet outside the Mac East Segment ROW. Those buildings and storage areas are at the northeast edge of a cultivated field, immediately west of Point MacKenzie Road. The ROW would also come within about 650 feet of 3 residences – two to the west of the ROW and one to the east. The rail line would not affect access to these residences. The Mac East Segment would border Point MacKenzie Road. The remainder of the segment's 200-foot ROW would either cross or be close to undeveloped or light industrial development.

The MSB drafted a Vision Statement and Goals for the Point MacKenzie Comprehensive Plan that includes locating and constructing a Town Center for the Point MacKenzie community. The concept for the Town Center would include mixed-use, pedestrian-oriented development such as meeting locations, restaurants, and commercial establishments. While exact location, planning, and funding for the Town Center has not yet been secured, in a letter to OEA dated November 18, 2008, the MSB Planning Department identified a site near the intersection of Point MacKenzie Road and Burma Road as a potential future location for the Town Center. This location would be in proximity to the proposed Mac East Segment, and the Big Lake Segment would cross this current planned location. In a letter dated January 14, 2009, ARRC indicated it would consider ways to shift the Mac East Segment to the west to lessen potential impacts to the proposed development. The Mac East Variant Segment represents this western option. In addition, the MSB has indicated that final planning and placement of the Town Center is contingent on the location of rail line construction. See the discussion for the Big Lake Segment for potential impacts to construction of the proposed Town Center.

The Mac East segment ROW could also be in proximity to a series of roadway improvements that would eventually connect Port MacKenzie to Houston and enable residents in Point MacKenzie to access more easily the more populous areas to the north (MSB, 2009). The proposed roadway improvements would connect Big Lake Road to Burma Road through realignment of 2 sections of 2-lane divided roadway along Burma and Big Lake roads and would require upgrading of Point MacKenzie Road. While the Point MacKenzie Road upgrade has already been completed, the full extent of the roadway improvements are not likely to be completed for 5 to 6 years (Sworts, 2009).

The rail line ROW would affect approximately 123 acres of land along the Connector 3 Segment (see Table 13.1-1). The affected area would include about 68 acres of MSB land, 17 acres of Native Regional Corporation land, and 35 acres of private land. OEA assumes the remaining 3 acres are publicly owned. The segment ROW also includes 33 acres of land with agricultural covenants. The northern portion of the Connector 3 Segment would be in mostly undeveloped MSB land. As the connector turns east and southeast, it would cross state land that on aerial photography appears to have been cleared for future development. The ROW would cross a small access road. The Connector 3 Segment might intersect a small portion of public land currently managed for timber harvest; timber harvest within the ROW could be affected because the land would shift to use as a rail line (ADNR, 2008). Rail line operation through this area could affect potential future development of the land because of access restrictions and incompatible land use.

The Connector 3 segment would require taking 2 structures on a lot of Native Corporation land within the ROW just north of Ayrshire Road (Figure 13.1-1). There are several more structures within about 400 feet of the Connector 3 segment. The southern portion of the Connector 3 segment is undeveloped Native Regional Corporation land.

### *Mac East Segment*

Potential impacts from the Mac East Segment would be as previously described.

### *Mac East Variant-Connector 2a Segment Combination*

The rail line ROW would affect approximately 446 acres of land along the Mac East Variant Segment (see Table 13.1-1). The affected area would include about 194 acres of MSB land, 92 acres of Mental Health Trust Authority land, 18 acres of Native Regional Corporation land, 12 acres of state land, and 129 acres of private land. The Segment ROW also includes 141 acres of land with agricultural covenants.

The Mac East Variant Segment runs directly north through the Point MacKenzie Agricultural Project. It is likely that all 129 acres of private land within the ROW is in agricultural use, which the MSB considers to be locally important for agricultural purposes. OEA coordinated with the NRCS regarding impacts to locally important farmland soils from the proposed rail line. There is no “prime and unique” farmland as defined by the NRCS in the vicinity of the proposed rail line. See Chapter 3, Topography, Geology and Soils, for a more detailed discussion of the NRCS farmland evaluation process.

Within the rail line ROW, the Mac East Variant Segment would require taking a structure within the ROW, south of Holstein Ave. and west of the rail line (Figure 13.1-2). The ROW would also come within approximately 60 feet of a residence on the same property. Access to this residence could be affected.

The rail line ROW would affect approximately 6 acres of land along the Connector 2a segment (see Table 13.1-1), which is all Native Regional Corporation land. There are no structures in the Connector 2a segment ROW.

### *Mac East Variant-Connector 3 Variant Segment Combination*

Impacts from the Mac East Variant Segment would be as previously described.

The rail line ROW would affect approximately 127 acres of land along the Connector 3 Variant Segment (see Table 13.1-1). The affected area would include about 68 acres of MSB land, 23 acres of Native Regional Corporation land, and 32 acres of private land. OEA assumes the remaining 3 acres are publicly owned. The segment ROW also includes 32 acres of land with agricultural covenants.

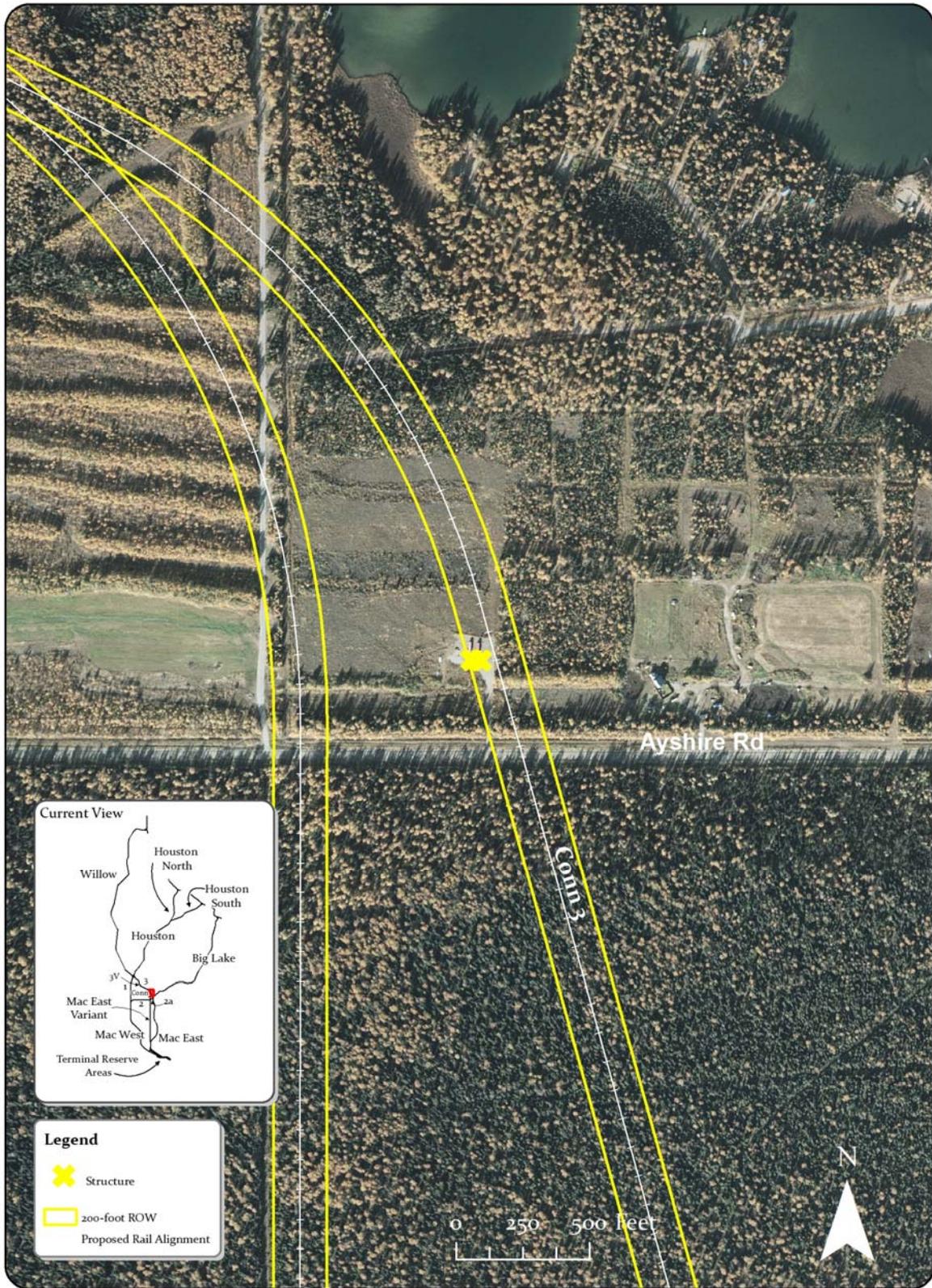


Figure 13.1-1 Structures located within the Connector 3 Segment ROW

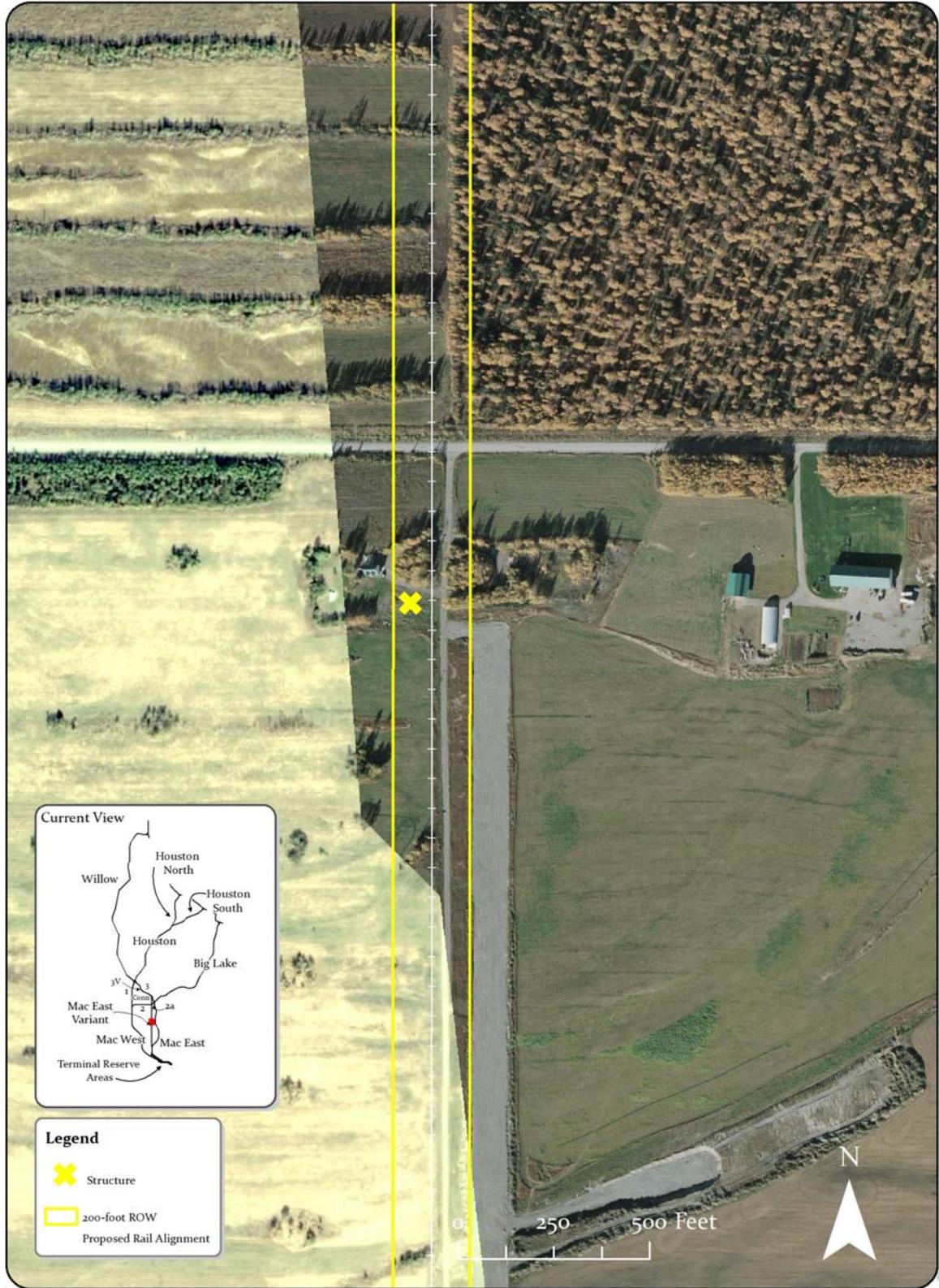


Figure 13.1-2 Structures within Mac East Variant ROW

The northern portion of the Connector 3 Variant Segment would be in mostly undeveloped MSB land. As the connector turns east and southeast, it would cross state land that on aerial photography appears to have been cleared for future development. The ROW would cross a small access road. The Connector 3 Variant Segment might intersect a small portion of public land currently managed for timber harvest; timber harvest could be affected because the land would shift to use as a rail line (ADNR, 2008). Rail line operation through this area could affect potential future development of the land because of access restrictions and incompatible land use. The southern portion of the Connector 3 Variant Segment is undeveloped Native Regional Corporation land. No structures are located within the Connector 3 Variant segment ROW.

## **Northern Segments and Segment Combinations**

### *Willow Segment*

The rail line ROW would affect approximately 715 acres of land along the Willow Segment (see Table 13.1-1). The affected area would include about 222 acres of MSB land, 4 acres of Mental Health Trust Authority land, about 6 acres of Native Regional Corporation land, 266 acres of state land, and 75 acres of private land. There are no available data for ownership of the remaining 98 acres, but OEA assumes this is state or MSB land. The Segment ROW also includes 19 acres of land with agricultural covenants. Most of the land is publicly owned, but ARRC would purchase or lease about 81 acres of private and Native Regional Corporation land.

Most of the land the Willow Segment would cross is undeveloped. Much of the surrounding land use is state land that is designated for public recreational purposes. North and east of Red Shirt Lake, the segment would cross state land where forestry is designated as a co-primary land use (ADNR, 1991). The Willow Segment would intersect a small portion of public land currently managed for public recreation; any land within the ROW would shift to use as a rail line.

Near the southern end of the segment, there are 2 residences or cabins within 800 feet of the ROW. As the alternative approaches Deshka Landing Road, there is a subdivision on several lakes that is accessed by Crystal Lake Road, Crystal Shores Road, Crescent Court, and Clover Road. Approximately 5 structures on the western edge of the subdivision are between 1,300 to 1,800 feet from the ROW. There are other structures in the vicinity of Deshka Landing Road. One is within 130 feet of the ROW; one is about 700 feet from the ROW. Just east of the Parks Highway crossing, there is a residence within 300 feet of the ROW.

### *Big Lake Segment*

The rail line ROW would affect approximately 521 acres of land along the Big Lake Segment (see Table 13.1-1). The affected area would include about 150 acres of MSB land, about 1 acre of municipal land, 5 acres of Mental Health Trust Authority land, 48 acres of Native Regional Corporation land, 7 acres of University of Alaska land, 2 acres of state land, and 244 acres of private land. There are no available data for ownership of the remaining 16 acres, but OEA assumes this is state or MSB land. Most of this land (292 acres) is private or Native Regional Corporation land.

Most of the private land along the Big Lake Segment is developed for residential or recreational use. Near New Homesteader Avenue, the segment would pass through Native Regional Corporation land that is being logged.

After the segment turns north, it would cross through mostly undeveloped land. There is a small private airport to the west of the segment as it approaches the more populated northern area surrounding Big Lake. The MSB has indicated its goal to identify public land surrounding the airport and within the airport approach zones and to reserve them for airport protection and expansion (MSB, 1996, 2009). Despite this goal, no planning or funding for airport expansion is currently in place. The runway is perpendicular to the Big Lake Segment, with its eastern end about 100 feet west of the ROW. Rail operation would not be compatible close to the airstrip and ARRC would potentially have to purchase the property. There are approximately 10 structures within 2,000 feet of the ROW in the vicinity of the airstrip.

The Big Lake Segment would require taking a total of approximately 5 residences, 10 structures, and 1 business (Figures 13.1-3 through 13.1-6). This includes approximately 4 residences near the western shore of Loon Lake due to the relocation of Ray Street, 1 business due to the relocation of Hawk Lane on Parks Highway, and 1 residence and 6 structures south of La Rae Road, 1 structure south of Calonder Way, and 3 structures south of Hollywood Road within the rail line ROW.

As discussed in the description of impacts for the Mac East Segment, the MSB drafted a Vision Statement and Goals for the Point MacKenzie Comprehensive Plan that includes locating and constructing a Town Center for the Point MacKenzie community. While the MSB has not identified an exact location, completed detailed planning, or secured funding for the Town Center, in a letter to OEA dated November 18, 2008, the MSB Planning Department identified a site near the intersection of Point MacKenzie Road and Burma Road as a potential future location for the Town Center. The proposed Big Lake Segment would cross the area of the intersection of Point MacKenzie Road and Burma Road. However, if the Big Lake Segment were licensed, the Applicant has stated that it would work with the MSB to find another location for the Town Center. The MSB selected the potential future location for the Town Center based on the availability of essential infrastructure and its proximity to the only grocery store in Point MacKenzie. In a letter dated January 14, 2009, ARRC stated that, unlike the situation with the Mac East Segment, the topography to the north and east of the proposed Town Center is such that avoidance of the planned development does not appear to be practicable.

The Big Lake Segment ROW could also be in proximity to a series of roadway improvements that would eventually connect Port MacKenzie to Houston and enable residents in Point MacKenzie to more easily access the more populous areas to the north (MSB, 2009). The proposed roadway improvements would connect Big Lake Road to Burma Road through realignment of 2 segments of 2-lane divided roadway along Burma and Big Lake roads and would require the upgrade of Point MacKenzie Road. While the Point MacKenzie Road upgrade has already been completed, the full extent of the roadway improvements are not likely to be complete for 5 to 6 years (Sworts, 2009).

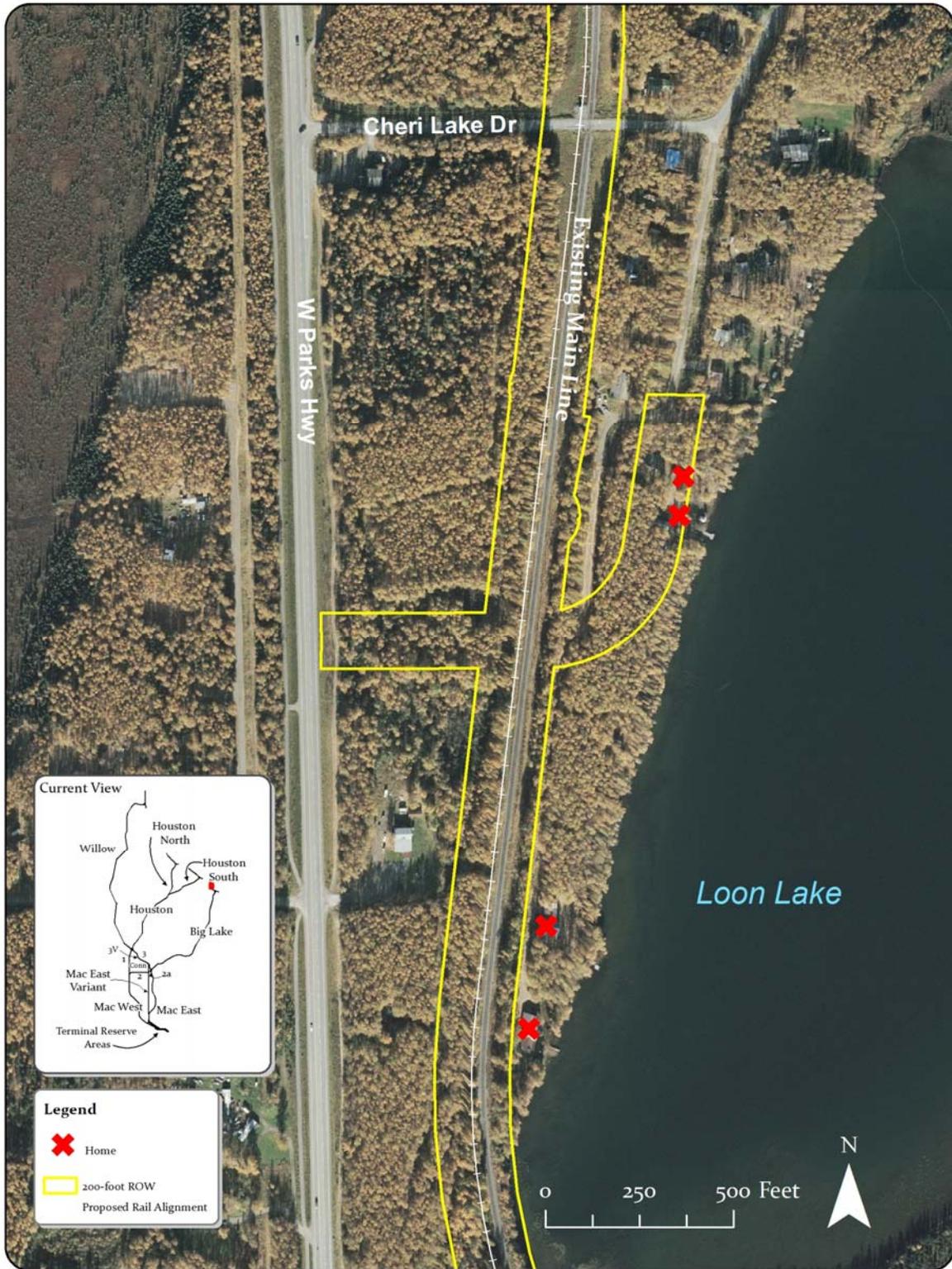


Figure 13.1-3 Residences taken by the Big Lake Segment near the Existing ARRC Main Line

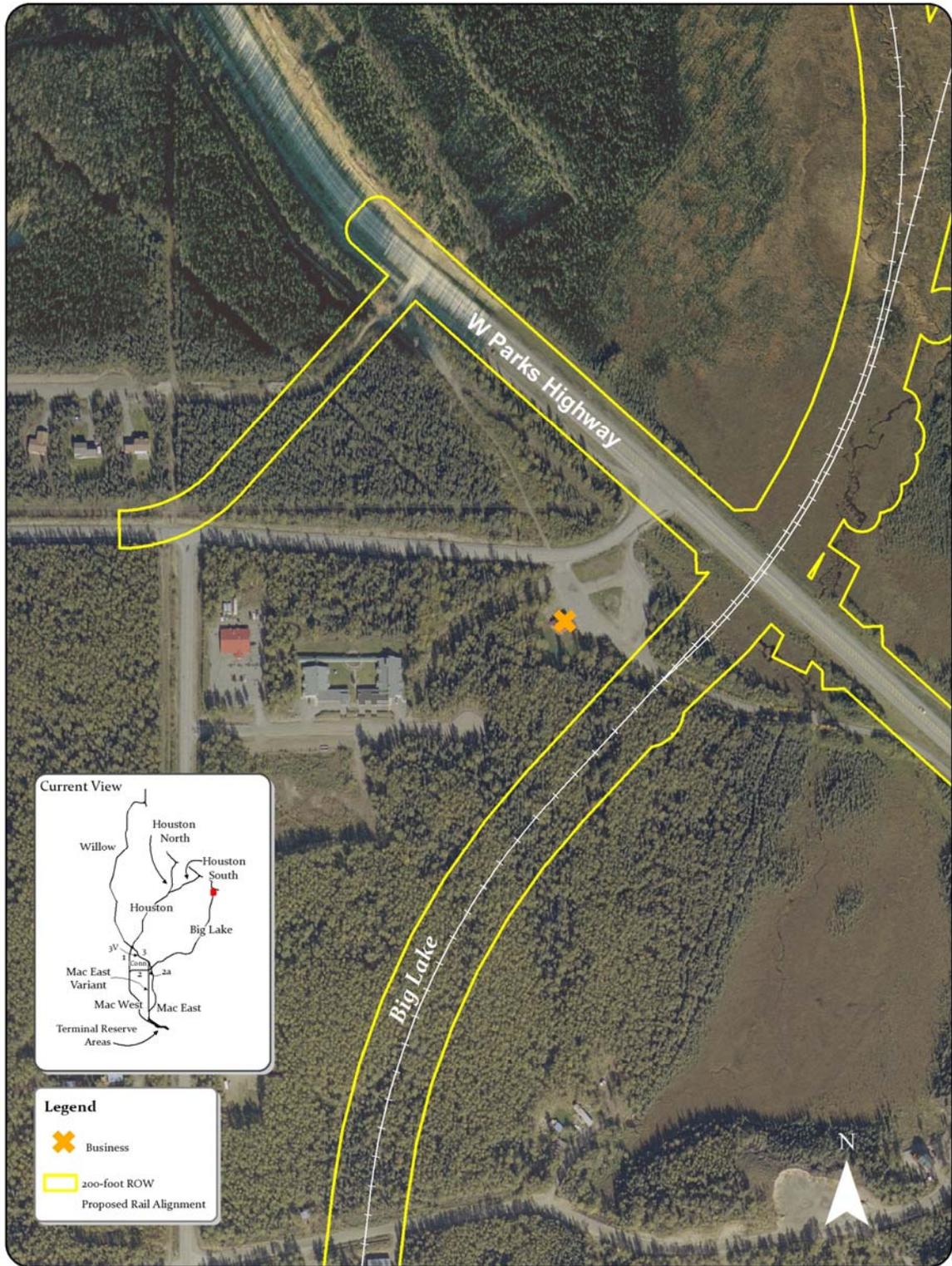


Figure 13.1-4 Businesses taken by the Big Lake Segment Hawk Lane Relocation

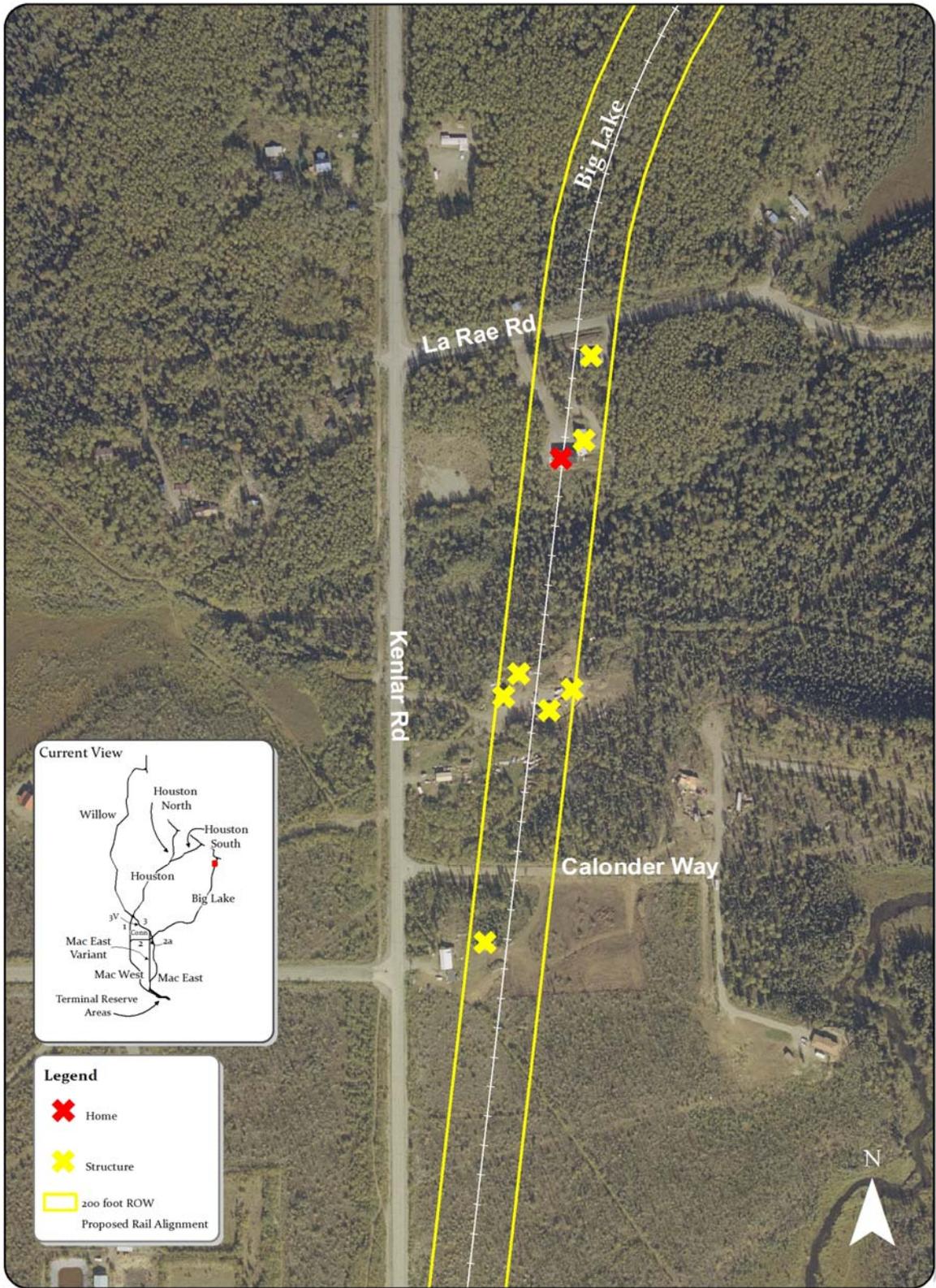


Figure 13.1-5 Residence and Structures located within the Big Lake Segment ROW South of La Rae Road and Calonder Way

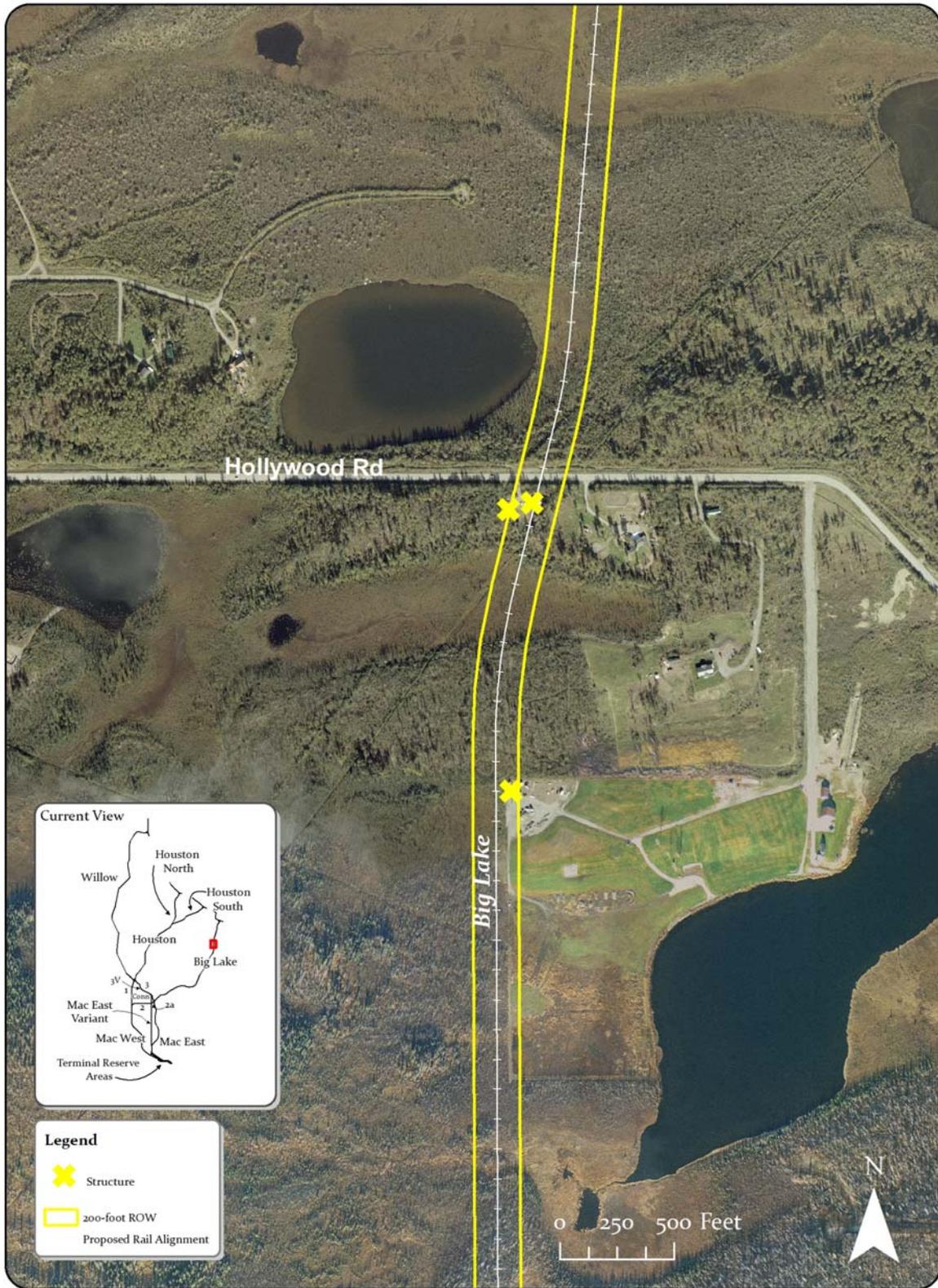


Figure 13.1-6 Structures located within the Big Lake Segment ROW South of Hollywood Road

### *Houston-Houston North Segment Combination*

The rail line ROW would affect approximately 251 acres of land along the Houston Segment (see Table 13.1-1). The affected area would include about 43 acres of MSB land, 97 acres of Mental Health Trust Authority land, 12 acres of Native Regional Corporation land, 44 acres of University of Alaska land, 22 acres of state land, and 11 acres of private land. OEA assumes the remaining 17 acres are public land.

Nearly all of the land this segment would affect is undeveloped Trust Authority, state, and University of Alaska land. There are no structures in proximity to the Houston Segment. Trust Authority lands in the vicinity of the Houston-Houston North Segment Combination are currently managed for the mining of minerals, coal, oil, and gas. Trust Authority land within the ROW could be affected because it would shift to use as a rail line. However, continued use of the land for resource extraction would depend on the resource extraction technique and the vertical location of the resource (AMHT, 2006). The Houston-Houston North Segment Combination might also intersect a small portion of public land currently managed for timber harvest; timber harvest within the ROW could be affected because the land would also shift to use as a rail line (ADNR, 2008).

The rail line ROW would affect approximately 197 acres of land along the Houston North Segment (see Table 13.1-1). The affected area would include about 34 acres of Mental Health Trust Authority land, 38 acres state land, and 24 acres of private land. There are no available data for ownership of the approximately 79 remaining acres, and OEA assumes this is state or MSB land.

The entire area of the Houston North Segment is undeveloped and expected to remain undeveloped because the segment would cross portions of the Little Susitna State Recreation River. The segment would not cross any roads and there are no structures in proximity to the proposed ROW. However, the creation of a bike trail along Parks Highway is documented in the City of Houston Comprehensive Plan. Already in the construction stage, the trail is eventually intended to traverse the entire length of Parks Highway from Wasilla to Willow Creek (MSB, 2003c). See Section 13.2 for further discussion on trail and recreation crossings and potential impacts.

### *Houston-Houston South Segment Combination*

Impacts along the Houston Segment would be as previously described.

The rail line ROW would affect approximately 210 acres of land along the Houston South Segment (see Table 13.1-1). The affected area would include about 8 acres of MSB land, 48 acres of Mental Health Trust Authority land, 72 acres of Native Regional Corporation land, and 59 acres of private land. There are no available data for ownership of the approximately 1 remaining acre, and OEA assumes this is state or MSB land.

Most of this segment would cross undeveloped land. However, there are 3 residences within about 1,100 feet of the ROW in the Horseshoe Lake area near the southern terminus of the segment. There are 3 additional residences within about 1,600 feet of the ROW. Farther north along the segment, there is a communications tower/cleared site within 400 feet of the ROW.

The rail line would cross the access road to the site. If ARRC did not construct a crossing at the access road to the site, use of the site for its existing purpose could be affected. There is a private airstrip (Reids Landing) off of Miller's Reach Road to the west of the segment. The runway is perpendicular to the segment and the eastern end of the airstrip is within 1,800 feet of the proposed ROW. However, rail line operation would not likely affect use of the airstrip because of its distance from the proposed segment. There is also another gravel runway located at the north end of Little Horseshoe Lake. This is a private landing strip that is located on both public and private property. The Houston South Segment would cross the north end of the runway located on land currently owned by the Mental Health Trust Authority. Constraints related to wetlands, property, and geotechnical concerns limit the ability to realign the segment. Therefore, closure of this runway could result if this alternative is authorized by the Board.

### **Summary of Potential Impacts by Rail Line Alternative**

Tables 13.1-4 and 13.1-5 at the end of this section summarize impacts to land ownership and use for each of the 12 rail line alternatives. All alternatives that include the Willow Segment would impact the greatest amount of total acreage. The Mac West-Connector 1-Willow Alternative would impact the greatest amount of total acres (1,322 acres) across all alternatives, but would impact the third least amount of private land (244 acres), crossing mostly undeveloped land. The Mac East-Connector 3-Willow Alternative would cross the second greatest amount of total acres (1,309 acres) across all alternatives, but would also cross mostly undeveloped land (269 acres private land). The Mac East Variant-Connector 3 Variant-Willow Alternative would impact 1,289 total acres, third greatest among all alternatives. Overall, this alternative would cross mostly undeveloped land and would only affect 283 acres of private land.

All alternatives that include the Big Lake Segment would impact the greatest amount of private land and would impact the greatest number of residences. The Mac West-Connector 2-Big Lake Alternative would have the greatest impact across all alternatives on private land (487 acres) and would impact 1,105 total acres with 10 structures, 5 residences and 1 business. The Mac East Variant-Connector 2a-Big Lake Alternative would impact the second highest amount of private land (445 acres), including impacts to 10 structures, 5 residences and 4 structures, and would cross the least amount of total acres (973 acres). Overall, the Mac East-Big Lake Alternative would impact the third highest amount of private land (429 acres), with 10 structures, 5 residences, and 1 business, and would cross the second least amount of total acres (992 acres). Aside from those alternatives already discussed, the alternatives that include the Houston-Houston North Segment Combination would impact the least amount of private land across all alternatives (between 200 and 250 acres). Those alternatives that include the Mac West-Connector 1 Segment Combination would have no impact to residences or structures; those alternatives that include Mac East-Connector 3 Segment Combination would impact 2 structures; and those alternatives that include the Mac East Variant-Connector 3 Variant Segment Combination would only impact 1 structure.

Overall, the Mac East Variant-Connector 3 Variant-Willow Alternative would impact 192 acres of land with agricultural covenants, highest among all alternatives. The Mac West-Connector 2-Big Lake Alternative would impact 185 acres of land with agricultural covenants, second highest among all alternatives. All alternatives that include the Mac East Segment would impact the lowest amount of land with agricultural covenants. The Mac East-Big Lake Alternative

would have the least amount of impact on land with agricultural covenants (91 acres) and the Mac East-Connector 3-Houston-Houston North and Mac East-Connector 3-Houston-Houston South would impact 124 acres of land with agricultural covenants, second lowest among all alternatives.

All those alternatives containing the Willow Segment would impact the largest amount of forested land within the rail line footprint. The Mac East-Connector 3-Willow Alternative would impact the greatest amount of forested land (716 acres). The Mac East Variant-Connector 3 Variant-Willow Alternative would impact the second largest area of forested land. The Mac West-Connector 1-Willow Alternative impacts the third largest area of forested land (590 acres). The Mac West-Connector 1-Houston-Houston South, Mac East Variant-Connector 3 Variant-Houston-Houston South, and Mac West-Connector 1-Houston-Houston North alternatives would impact the least amount of forested land (332, 397, and 403 acres, respectively).

### **13.1.5.2 No-Action Alternative**

Under the No-Action Alternative, ARRC would not construct and operate the proposed Port MacKenzie Rail Extension, and there would be no impacts to land use and ownership from the project. Restricted-use covenants that various governing bodies have put in place for rail line development could likely be lifted, thus allowing for other types of use and development.

### **13.1.6 Unavoidable Environmental Consequences of the Proposed Action**

To avoid or minimize the potential environmental impacts to land use from the proposed rail line as described above in Section 13.1.5.1, OEA is recommending that the Board impose up to 12 mitigation measures, including 8 measures volunteered by the Applicant and 1 alternative-specific mitigation measure (see Section 19.9). These measures include requiring: restoration of disturbed lands to their former use or original condition; maintenance of a Web site during construction; coordination with appropriate land, business, and farm owners to address construction activity issues; minimization of blocked entrances and exits for businesses during construction; minimization of damage and disruptions to utilities; salvage of timber within the ROW; ROW acquisition in conformance with appropriate Federal and state regulations; coordination with local airports on communication tower placement; establishment of a Community Liaison and a public outreach program; and restriction of construction vehicles, equipment, and workers from crossing residential properties without permission.

Notwithstanding the recommended mitigation measures, there still would be potential unavoidable impacts to land use from the proposed rail line. Potential impacts would include: the need to acquire land within the proposed rail line ROW from existing land owners; the conversion of lands within the rail line ROW, including agricultural lands, to rail line use; and the restriction of access within the ROW without an ARRC entry permit. In the area of the Big Lake Segment, the proposed rail line would require taking 5 residences, 10 structures, and 1 business. Two structures in the Connector 3 Segment ROW would be taken, and 1 structure in the Mac East Variant Segment ROW would be taken. Given the small number of residential displacements, difficulty in identifying and providing comparable nearby housing would not be expected.

**Table 13.1-4  
Summary of Impacts to Land Ownership (acres) by Alternative<sup>a</sup>**

Impact <sup>b</sup>	Mac West-Conn 1-Willow	Mac West-Conn 1-Houston-North	Mac West-Conn 1-Houston-South	Mac West-Conn 2-Big Lake	Mac East-Conn 3-Willow	Mac East-Conn 3-Houston-North	Mac East-Conn 3-Houston-South	Mac East-Big Lake	Mac East Var-Conn 2a-Big Lake	Mac East Var-Conn 3 Willow	Mac East Var-Conn 3 Var-Houston-North	Mac East Var-Conn 3 Var-Houston-South
Total Acres	1,322	1,054	1,067	1,105	1,309	1,041	1,055	992	973	1,289	1,021	1,034
<b>Private Land Ownership</b>												
Private	238	198	232	405	189	149	183	323	373	237	196	231
Native Regional Corporation	6	12	85	82	79	86	158	105	72	46	53	125
<b>Total Private Land<sup>c</sup></b>	244	210	317	487	269	235	342	429	445	283	249	356
<b>Ag. Covenant Land<sup>d</sup></b>	181	163	163	185	143	124	124	91	141	192	173	173
<b>Public Land Ownership</b>												
MSB	563	384	391	450	520	341	348	380	344	484	305	313
State of Alaska	272	67	28	26	277	72	34	14	14	277	72	34
Mental Health Trust Authority	15	143	157	16	96	224	238	97	97	96	224	238
University of Alaska	<0.1	44	44	7	0	44	44	7	7	0	44	44
Other Public <sup>e</sup>	228	207	130	117	148	126	49	65	65	148	127	50
<b>Total Public Land</b>	1,078	844	750	617	1,040	806	713	563	528	1,006	772	678

<sup>a</sup> Sources: (MSB, 2007a; USGS, 2001; Aero-Metric, Inc., 2007) 2008.

<sup>b</sup> Acres affected are only those within the 200-foot ROW.

<sup>c</sup> Totals might not equal sums of values due to rounding.

<sup>d</sup> Land subject to agricultural-use covenants established under Alaska Stat. § 38.05.321. Acreage shown could include all land ownership types and is therefore not included in "Total Acres."

<sup>e</sup> Includes public roads, city land, and land for which there are no data but are assumed to be public.

**Table 13.1-5  
Summary of Impacts to Land Use by Alternative<sup>a</sup> (page 1 of 2)**

Impact	Mac West-Conn 1-Willow	Mac West-Conn 1-Houston-North	Mac West-Conn 1-Houston-South	Mac West-Conn 2-Big Lake	Mac East-Conn 3-Willow	Mac East-Conn 3-Houston-North	Mac East-Conn 3-Houston-South	Mac East-Big Lake	Mac East Var-Conn 2a-Big Lake	Mac East Var-Conn 3 Var-Willow	Mac East Var-Conn 3 Houston-North	Mac East Var-Conn 3 Houston-South
Number of Structures within the 200-foot ROW	0	0	0	5 residences, 1 business, 10 structures	2 structures	2 structures	2 structures	5 residences, 1 business, 10 structures	5 residences, 1 business, 11 structures	1 structure	1 structure	1 structure
Forested Land <sup>b</sup> (acres)	590	403	332	441	716	531	460	545	470	653	468	397
Undeveloped Land Present?	Yes, along all segments.	Yes, Houston and Houston North both nearly all undeveloped.	Yes, along all segments.	Yes, along all segments.	Yes, along all segments.	Yes, especially along Connector 3, Houston, and Houston North.	Yes, along all segments.	Yes, along both segments.	Yes, along all segments.	Yes, along all segments.	Yes, especially along Connector 3 Variant, Houston, and Houston North	Yes, along all segments.
Ag Covenant Land Present?	Yes, 181 acres in ROW.	Yes, 163 acres in ROW.	Yes, 163 acres in ROW.	Yes, 185 acres in ROW.	Yes, 143 acres in ROW.	Yes, 124 acres in ROW.	Yes, 124 acres in ROW.	Yes, 91 acres in ROW.	Yes, 141 acres in ROW.	Yes, 192 acres in ROW.	Yes, 173 acres in ROW.	Yes, 173 acres in ROW.
Residential Land Present	Yes, along Mac West and Willow.	Yes, along Mac West only.	Yes, along Mac West and Houston South.	Yes, along Mac West and several subdivisions along the Big Lake Segment, including proposed Mystery Subdivision.	Yes, along all segments.	Yes, along Mac East and Connector 3	Yes, along Mac East, Connector 3, and Houston South	Yes, along Mac East and several subdivisions along the Big Lake Segment, including proposed Mystery Subdivision.	Yes, along Mac East Variant and several subdivisions along the Big Lake Segment, including Mystery Subdivision.	Yes, along all segments.	Yes, along Mac East Variant and Connector 3 Variant.	Yes, along Mac East Variant, Connector 3 Variant, and Houston South

**Table 13.1-5  
Summary of Impacts to Land Use by Alternative<sup>a</sup> (page 2 of 2)**

Impact	Mac West-Conn 1-Willow	Mac West-Conn 1-Houston-North	Mac West-Conn 1-Houston-South	Mac West-Conn 2-Big Lake	Mac East-Conn 3-Willow	Mac East-Conn 3-Houston-North	Mac East-Conn 3-Houston-South	Mac East-Big Lake	Mac East Var-Conn 2a-Big Lake	Mac East Var-Conn 3 Var-Willow	Mac East Var-Conn 3 Var-Houston-North	Mac East Var-Conn 3 Var-Houston-South
Other Impacts	Access to timber resources north and east of Red Shirt Lake would be affected; Willow could prevent or alter development of road between Port MacKenzie and Houston.	Radio tower 2,000 feet from ROW.	2 radio towers 2,000 feet and 400 feet from ROW; private airstrip within 1,800 feet of ROW. Private airstrip north of Little Horseshoe Lake would need to close.	Would cross land that is being logged; private airstrip within 100 feet of ROW; could prevent or alter planned airport expansion near Big Lake Segment and the development of proposed bike and roadsides trails. Big Lake Segment could alter placement of the proposed Port MacKenzie Town Center.	Access to timber resources north and east of Red Shirt Lake would be affected; Willow could prevent or alter development of road between Port MacKenzie and Houston; Mac East could alter placement of the proposed Port MacKenzie Town Center.	Some light industrial development; radio tower 2,000 feet from ROW; Mac East could alter placement of the proposed Port MacKenzie Town Center.	Some light industrial development; 2 radio towers 2,000 feet and 400 feet from ROW; private airstrip within 1,800 feet of ROW; Mac East could alter placement of the proposed Port MacKenzie Town Center. Private airstrip north of Little Horseshoe Lake would need to close.	Some light industrial development; would cross land that is being logged; private airstrip within 100 feet of ROW; could prevent or alter planned airport expansion near Big Lake Segment and the development of proposed bike and roadsides trails; Big Lake and Mac East segments could alter placement of the proposed Port MacKenzie Town Center.	Some light industrial development; would cross land that is being logged; private airstrip within 100 feet of ROW; could prevent or alter planned airport expansion near Big Lake Segment and the development of proposed bike and roadsides trails; Big Lake Segment could alter placement of the proposed Port MacKenzie Town Center.	Access to timber resources north and east of Red Shirt Lake would be affected; Willow could prevent or alter development of road between Port MacKenzie and Houston.	Radio tower 2,000 feet from ROW.	2 radio towers 2,000 feet and 400 feet from ROW; private airstrip within 1,800 feet of ROW; Mac East could alter placement of the proposed Port MacKenzie Town Center. Private airstrip North of Little Horseshoe Lake would need to close.

<sup>a</sup> Sources: MSB, 2007a; USGS, 2001; Aero-Metric, Inc., 2007, 2008; Homer *et al.*, 2004.

<sup>b</sup> Segment-level data does not sum to alternative-level data as a result of the method used to calculate the rail line routes. Connector segment acreages were calculated by summing both possible "arms" of each connector segment (the arms necessary to connect the segment to either the Willow or Houston segments). Alternative acreages were calculated by generating a smooth path from the respective Mac Terminal to either the Willow or Houston segment, and thus include only the necessary connector "arm" (as the extra "arm" connecting to the other segment would not be necessary if that route was built).