

13. LAND USE

This chapter describes the regulatory settings, study areas, analysis methodologies, affected environments (existing conditions), and potential environmental consequences (impacts) to land use, recreation, and hazardous materials sites under the proposed action and the No-Action Alternative. Section 13.1 addresses land use not related to recreation uses. 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.] Section 303 and 23 U.S.C. Section 138); and Section 6(f)(3) of the Land and Water Conservation Fund Act of 1964 (Public Law 88-578, 16 U.S.C. 4601-4). Appendix M provides the full Section 4(f) and 6(f) evaluation. Section 13.3 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 (Public Law 97-98/ 7 U.S.C. 4201 *et seq.*) and Coastal Zone Management Act (Public Law 92-583/16 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), are within the Point MacKenzie Agricultural Area 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 of 1972 and implementing regulations at 15 CFR 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 (AS) 38.04.065, Land Use Planning and Classification, and 11 Alaska Administrative Code (AAC) 55.010-55.030 require that the Alaska Department of Natural Resources (ADNR), with local governmental and public involvement under AS 38.05.945, adopt, maintain, and, when appropriate, revise regional land use plans that provide for the use and management of State 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.

ADNR implements Alaska's federally approved coastal management program and is responsible for consistency reviews of Federal agency activities. ADNR has indicated that 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).¹ 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 CFR 930, after a design has been finalized and permit applications have been submitted (ADNR, 2010).

13.1.1.3 Local Regulations

AS 29.35 and AS 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 two 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 AS 29.40. The MSB may delegate these powers to a city within the Borough (AS 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 Matanuska-Susitna Borough 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 AS 19.30.151(b). The MSB uses both Borough-wide and special-use district ordinances. 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.

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

¹ 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 CFR 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 CFR 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).

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 main line (see Figure 2-2).

13.1.3 Analysis Methodology

To identify potential impacts to land use and ownership under the proposed action, SEA 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. SEA 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 the State of Alaska, Federal Government, MSB, Alaska Mental Health Trust, University of Alaska, private citizens, and Native Alaskans/Native Alaskan Corporations. 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 370 acres of state-owned land within the proposed rail line ROW. Public 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 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.

Table 13.1.1-1
Land Ownership (acres) within the 200-Foot Right-of-Way of Proposed Port MacKenzie Rail Extension Rail Line Segments^a

Segment	MSB	City of Houston	Mental Health Trust Authority	Public Roads (MSB ^b and State)	Native Corporation	No Data ^c	Private	University	State	Total ^d
Big Lake	150	1	5	47	48	16	244	7	2	521
Connector 1	41	0	0	<1	0	33	32	0	6	113
Connector 2	0	0	0	<1	34	1	30	0	24	90
Connector 3	68	0	0	1	17	3	35	0	0	123
Houston	43	0	97	4	12	17	11	44	22	251
Houston North	0	0	34	21	0	79	24	0	38	197
Houston South	8	0	48	22	72	1	59	0	0	210
Mac East	235	0	92	<1	57	0	73	0	12	469
Mac West	300	0	11	<1	0	52	131	<1	0	493
Willow	222	0	4	46	6	98	75	0	266	715
Grand Total	1066	1	292	143	246	300	713	51	370	3183

^a Source: MSB, 2007a.

^b MSB = Matanuska-Susitna Borough.

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

^d Totals might not equal sums of values due to rounding.

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 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 Lands

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 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 Land

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

Matanuska-Susitna Borough

MSB owns approximately 1,066 total acres of land within the ROW of the proposed rail line across all of the proposed rail line segments. The MSB acquired land within the study area through tax foreclosures, purchases, and donation. In addition, the State of Alaska provides Alaskans local governance and use of public land through transfer of public land to municipalities such as 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. 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 Land

Private land in the vicinity of the proposed rail line is characterized as forested and some agricultural, and development is typically low-intensity, residential. Development typically occurs near area lakes and ponds and linearly along highways. There are areas of private land in the vicinity of the proposed rail line east of the northern portion of the Willow Segment, around

Big Lake, and agricultural land associated with the Point MacKenzie Agricultural Area between the Mac West and Mac East segments.

Alaska Native Corporations

Alaska Native Corporations owns approximately 246 acres of land within the proposed rail line ROW. Native Corporations administer the land and financial resources awarded under the Alaska Native Claims Settlement Act. Native Corporation land is often used for subsistence purposes or developed or sold to generate revenue for the Corporation. 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 Knikatu, Inc., a village Native Corporation.

Native Land (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 Corporation private land discussed above. There are five Native Allotments within 4 miles of the proposed rail line alternatives. None of these allotments overlap the alternatives.

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 the State of Alaska, with much of the population concentrated in Knik-Fairview, Wasilla, and Meadow Lakes (MSB, 2006b). The study area supports a combination of public recreation uses and wildlife habitat on public land, low-density residential uses, light industrial uses, commercial enterprises, commercial and noncommercial aviation uses, forestry, agriculture, and mineral and timber resource development.

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 use). 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, the Goose Bay State Game Refuge; the Willow Creek State Recreation Area; the Little Susitna State Recreation River; and the 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 Title 17.01, Acknowledgment of Existing Land Use Regulations. The MSB

does have platting authority and a Code Compliance Division. The State Fire Marshal 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 [population 1,202 (U.S. Census Bureau, 2000)] 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 Alaska Railroad Corporation (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 (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. In addition, the Port MacKenzie District includes land that could be developed for commercial, industrial, and recreational uses.

Point MacKenzie Agricultural Area

The Point MacKenzie Agricultural Area 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 on-site development. The anticipated economic feasibility of the land's productivity for agricultural pursuits has not been realized. In 1997, AS 38.05.321 was amended to ease restrictions on the subdivision of agricultural land. The statute allows farmers to subdivide their land into smaller farm parcels so that the resulting lots could be sold with the right to construct housing.

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. SEA reviewed the plans to determine if the proposed project would be consistent with the plans. Section 13.2 addresses recreational land use plans.

Table 13.1-2
Summary of Applicable Land Use Plans and Documents (page 1 of 3)

Land Use Plan/ Document	Author/ Agency^a	Date^b	Relationship with the Proposed Action
State Plans			
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.
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.

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

Land Use Plan/ Document	Author/ Agency^a	Date^b	Relationship with the Proposed Action
Matanuska-Susitna Borough Regional Plans			
MSB Comprehensive Development Plan Update ^b	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 and 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 ^b	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 ^b	MSB	2003 (2003b)	The purpose of the MSB Rail Corridor study was to determine a mix of railroad and highway 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 ^b	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."
Matanuska-Susitna Borough Community Plans			
City of Houston Comprehensive Plan ^b	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).

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

Land Use Plan/ Document	Author/ Agency^a	Date^b	Relationship with the Proposed Action
MSB Community Plans (cont'd)			
Big Lake Comprehensive Plan	MSB	1996 – currently being updated	Regional Transportation Goal: “To support regional development though 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 ^b	MSB	2005 (2005b)	The Big Lake Segment would lie just to the west of the Meadow Lakes community council boundary. “Circulation-related Comp 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 ^b	MSB	Working Draft Aug 2008 (2008a)	No mention of rail corridors or goals for rail travel or rail links.
Fish Creek Management Plan ^b	MSB	Final Draft July 2008 (2008b)	Area Wide Goals & 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 ^b	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 rail corridor connection the Port to existing rail lines.
MSB Specialty/Functional Plans			
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). “[...]if 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).
^a ADF&G = Alaska Department of Fish and Game; ADNR = Alaska Department of Natural Resources; MSB = Matanuska-Susitna Borough; USDA = U.S. Department of Agriculture. ^b Year in parentheses indicates how document is referenced in Chapter 20.			

13.1.5 Environmental Consequences

13.1.5.1 Proposed Action

SEA 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 roadway improvements from Port MacKenzie to Houston, a subdivision, the MSB-proposed Port MacKenzie Town Center, and the expansion of the Big Lake Airport, which the proposed rail line construction could affect. In addition, the proposed rail line would affect land currently used or planned for low-density residential development, agriculture, timber harvesting, and mining.

SEA considered the project's potential to influence or redirect development trends in the study area. While land uses outside the 200-foot ROW could be changed by the landowner as allowed by building or zoning rules and could be influenced by development trends in the area, the proposed rail line extension would offer only freight transport and access to the rail line and associated facilities would be restricted to rail use; and therefore, SEA does not foresee induced development or changes in land use outside the ROW as a result of the proposed project. Further, substantial portions of the study area are state owned and designated for public recreational purposes. Development trends would be less likely to influence these areas.

Common Impacts to Land Use

The MSB and the State of Alaska own most of the land the proposed Port MacKenzie Rail Extension would directly affect (see Table 13.1-1). ARRC would acquire the land within the proposed rail line ROW from existing land owners, which includes the Alaska Mental Health Trust Authority, Public University, and Native Corporations in addition to the MSB and State of Alaska. If the Board's authority were granted, the railroad would have the right to acquire ROW through condemnation pursuant to state condemnation laws. That land would then shift to ARRC management for rail line operations and maintenance, and any non-rail uses within the ROW would be only by ARRC-issued entry permits. Once the ROW was legally established on MSB, State of Alaska, and private land, any occupancy, use, or crossing of the ROW without an ARRC-issued entry permit would be considered trespass. ARRC would purchase Native Corporation lands. All State of Alaska, Alaska Mental Health Trust Authority, and MSB land within the ROW would shift to use as a rail line. At present, this land 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. All surrounding State of Alaska land uses would remain unchanged. The Alaska Mental Health Trust Authority land outside the ROW would continue to be managed as defined by the Trust Authority. All alternatives cross lands owned by the above-mentioned entities. Rail line construction and operations 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 of Alaska 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.

Existing land use for a small portion of land in proximity to the proposed ROW would be permanently changed, and any non-rail activities within the proposed ROW would require an ARRC-issued entry permit. While construction activities could affect access to farms and residential areas in the study area, restrictions would be temporary and access would be restored upon completion of rail line construction.

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 Segment, the Big Lake Segment, and the Mac East Segment, 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 Segment, Connector 2 Segment, and Connector 3 Segment, and 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 200-foot ROW. 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 for the rail line ROW. 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 ROW would ensure that timber resources affected by the project were properly utilized.

Construction Impacts to Land Use

Rail line construction activities would occur in a designated 200-foot rail line ROW. Rail line construction and operations 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 cleared for construction but not needed for permanent structures would be restored to conditions consistent with rail line maintenance requirements.

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

**Table 13.1-3
Forested Land (acres) within the 200-Foot Right-of-Way by Rail Line Segment^a**

Segment	Deciduous Forest		Deciduous Forest		Deciduous Forest		Evergreen Forest		Evergreen Forest		Evergreen Forest		Mixed Forest		Mixed Forest		All Forests ^b	
	Forest Closed	Forest Open	Forest Closed	Forest Open	Forest Closed	Forest Open	Forest Closed	Forest Open	Forest Closed	Forests								
Big Lake	3	114	15	<1	<1	43	2	2	3	115	5	0	0	300				
Connector 1	0	1	0	0	33	1	1	23	<1	0	60							
Connector 2	0	<1	0	<1	12	<1	2	19	<1	0	34							
Connector 3	0	12	<1	<1	40	0	<1	49	<1	0	101							
Houston	<1	47	1	0	63	1	<1	42	1	0	157							
Houston North	5	31	11	0	19	<1	1	26	4	0	98							
Houston South	<1	8	2	0	2	1	<1	5	2	0	205							
Mac East	13	121	9	<1	47	0	6	186	8	0	390							
Mac West	10	36	4	<1	76	<1	4	139	2	0	272							
Willow	5	228	20	<1	89	<1	4	270	7	<1	625							
Grand Total	36	598	62	1	424	5	22	874	31	<1	2242							

^a Source: USGS, 2001; Homer et al., 2004.

^b Totals might not equal sums of values due to rounding.

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 extension. 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 would be in the 200-foot ROW. An existing recreation trail and associated trailhead parking lot cross the area planned for the terminal reserve. 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 not affect potential future mining on this land.

Operations Impacts to Land Use

No passenger service is proposed. SEA does not foresee that 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 rail line. Rather, commercial uses, such as resource extraction, would utilize the existing road network to transport goods to and from the study area and proximity to the mainline and existing businesses along the main line to market the goods. Existing land ownership and use of the terminal reserve area and communications tower and track siding locations would be permanently changed to allow for these facilities associated with rail line operations and maintenance.

Impacts to Land Use by Alternative Segment and Segment Combinations

Southern Segments and Segment Combinations

Mac West-Connector 1 Segment Combination

Construction activities 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 SEA assumes this is State of Alaska public land because this land is within the Point MacKenzie Agricultural Area and Susitna Flats State Game Refuge.

For approximately 8 miles, the Mac West ROW would cross or closely border private land. It is likely that all 131 acres of private land is in agricultural use, which the MSB considers to be locally important for agricultural purposes, and rail line construction would convert this land to railroad use. SEA coordinated with the U.S. Department of Agriculture Natural Resources Conservation Service regarding impacts to locally important farmland soils from the proposed rail line. There is no “prime and unique” farmland as defined by the Natural Resources

Conservation Service in the vicinity of the proposed rail line. See Chapter 3, Geology and Soils, for a more detailed discussion of the Natural Resources Conservation Service farmland evaluation process.

The Mac West Segment's 200-foot ROW would either cross or be close to undeveloped 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 within about 289 feet, respectively, of two individual residences. Access to these residences could be affected during construction because the ROW would cross the driveway or access route to the homes.

Construction activities would affect approximately 113 acres of land along Connector 1 (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 SEA assumes to be State of Alaska or MSB land. 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 Connector 1 would affect is undeveloped. The segment would affect about 34 acres of land currently in agricultural use. SEA coordinated with the Natural Resources Conservation Service regarding impacts to locally important farmland soils the proposed rail line could affect. There are no residences in the vicinity of the Connector 1 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.

Construction activities would affect approximately 90 acres of land along Connector 2 (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 Corporation land, 24 acres of State of Alaska land, and 30 acres of private land. No data is presently available for ownership of the approximately 1 remaining acre, but SEA assumes this is public land.

The Connector 2 ROW would cross through or abut State of Alaska, Native Corporation, and private land used for agricultural purposes. Approximately 55 acres of agricultural land would be affected. 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

Construction activities would affect approximately 469 acres of land along the Mac East Segment (see Table 13.1-1). The affected area would include about 235 acres of MSB land, 92 acres of Mental Health Trust Authority land, 57 acres of Native Corporation land, 12 acres of State of Alaska land, and 73 acres of private land.

Within the rail line ROW, the Mac East Segment would require taking 1 structure to the west of Port Access Road. Connector 3 would require taking 2 structures on one lot of Native Corporation land within the ROW just north of Ayrshire Road. There are several more structures within about 400 feet of Connector 3. The southern portion of Connector 3 is undeveloped Native Corporation land.

The Mac East Segment would border Point MacKenzie Road. The Mac East Segment ROW would affect 1 acre of agricultural land. 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 SEA 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 would directly conflict with the proposed Big Lake Segment. 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. 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-Connector 3 Segment Combination 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 two segments of two-lane divided highway 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).

There is some residential development in the area. The Mac East Segment ROW would cross directly through one residence and associated out buildings and storage areas. 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 600 feet of two residences – one to the west of the ROW and one to the east. The rail line would not affect access to either residence.

Construction activities would affect approximately 123 acres of land along Connector 3 (see Table 13.1-1). The affected area would include about 68 acres of MSB land, 17 acres of Native Corporation land, and 35 acres of private land. SEA assumes the remaining 3 acres are publicly owned. The northern portion of Connector 3 would be in mostly undeveloped MSB land. As the connector turned east and southeast, it would cross State of Alaska land that on aerial photography appears to have been cleared for future development. The ROW would cross a small access road. Connector 3 might intersect a small portion of public land currently managed

for timber harvest; any land within the ROW could be affected because the land would shift to use as a rail line (ADNR, 2008). Rail line operations through this area could affect potential future development of the land because of access restrictions and incompatible land use.

Northern Segments and Segment Combinations

Willow Segment

Rail line construction activities 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 Corporation land, 266 acres of State of Alaska land, and 75 acres of private land. There are no available data for ownership of the remaining 98 acres, but SEA assumes this is State of Alaska or MSB land. Most of the land is publicly owned, but ARRC would purchase or lease about 81 acres of private and Native Corporation land.

Most of the land the Willow Segment would cross is undeveloped. Much of the surrounding land use is State of Alaska land that is designated for public recreational purposes. North and east of Red Shirt Lake, the segment would cross State of Alaska 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 two residences or cabins within 800 feet of the ROW. As the alignment 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 five 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 one residence within 300 feet.

Big Lake Segment

Construction activities 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 Corporation land, 7 acres of University land, 2 acres of State of Alaska land, and 244 acres of private land. There are no available data for ownership of the remaining 16 acres, but SEA assumes this is State of Alaska or MSB land. Most of this land (282 acres) is private or Native 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 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. MSB has indicated its goal to identify public land surrounding the airport

and included in the airport approach zones and 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, its eastern end about 100 feet west of the ROW. Rail operations 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.

Within the rail line ROW, the Big Lake Segment would require taking a total of approximately 17 residences and 3 structures. This includes approximately 10 structures located near the western shore of Loon Lake, 1 structure immediately south of Hollywood Road, and 1 structure approximately 1,300 feet south of Hollywood Road. The segment would also cross a nonresidential area requiring the taking of structures south of Calonder Way. Immediately south of the La Rae Road crossing, the segment would bisect one area requiring the taking of three structures.

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 SEA 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 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.

Houston-Houston North Segment Combination

Construction activities 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 Corporation land, 44 acres of University land, 22 acres of State of Alaska land, and 11 acres of private land. SEA assumes the remaining 17 acres are public land.

Nearly all of the land this segment would affect is undeveloped Trust Authority, State of Alaska, and University 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; any land within the ROW could be affected because they would also shift to use as a rail line (ADNR, 2008).

Construction activities 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 of Alaska land, and 24 acres of private land. There are no available data for ownership of the approximately 79 remaining acres, and SEA assumes this is State of Alaska 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 Recreational River Area. The segment would not cross any roads and there are no structures in proximity to the proposed ROW. 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 3.4.2 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.

Construction activities 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 Corporation land, and 59 acres of private land. There are no available data for ownership of the approximately 1 remaining acre, and SEA assumes this is State of Alaska or MSB land.

Most of this segment would cross undeveloped land. However, there are three residences within about 1,100 feet of the ROW in the Horseshoe Lake area near the southern terminus of the segment. There are three 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 operations would not likely affect use of the airstrip because of its distance from the proposed segment.

Summary of Impacts by Alternative

Tables 13.1-4 and 13.1-5 summarize impacts to land ownership and use for each of the eight rail line alternatives. The Mac West-Connector 1-Houston-Houston North Alternative would impact the least amount of private land (210 acres) and cross mostly undeveloped land. Overall, this alternative would impact the fourth lowest total number of acres (1,054 acres) after the Mac East-Big Lake Alternative (990 acres), the Mac East-Connector 3-Houston-Houston North Alternative (1,040 acres), and the Mack East-Connector 3-Houston-Houston South Alternative (1,053 acres). However, the Mac East-Big Lake Alternative would impact many more acres of private land (317), and would require taking 18 residences and 3 structures within the 200-foot ROW. The Mac West-Connector 2-Big Lake Alternative would require taking 17 residences and

3 structures, and the Mac East-Connector 3-Willow and Mac East-Connector 3-Houston-Houston South alternatives would directly impact one residence and two structures each.

The Mac West-Connector 1-Houston-Houston South Alternative would impact the fifth lowest amount of total acres (1,067 acres). The Mac West-Connector 1-Houston-Houston South Alternative ROW would border land used for agricultural purposes along the Mac West Segment and Connector 1, but would not directly cross any land presently in agricultural use. Sixty-four acres of private land is in agricultural use, which the MSB considers to be locally important for agricultural purposes, and rail line construction would convert the land to railroad use.

The Mac East-Connector 3-Houston-Houston North Alternative would impact only 142 acres of private land and a total of 1,040 acres. This alternative would cross mostly undeveloped land along Connector 3, the Houston Segment, and the Houston North Segment, and residential land along Mac East and Willow segments. The Mac East-Connector 3-Houston-Houston North Alternative would border agricultural land and would directly cross about 2 acres of this land.

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.

Table 13.1-4
Summary of Impacts to Land Ownership (acres) by Alternative^a

Impact ^b	Mac West- Connector 1- Willow	Mac West- Houston- North	Mac West- Connector 1- Houston- South	Mac West- Connector 2- Big Lake	Mac East- Connector 3- Willow	Mac East- Houston- North	Mac East- Connector 3- Houston- South	Mac East- Big Lake
Total Acres	1,322	1,054	1,067	1,105	1,308	1,040	1,053	990
Private Land Ownership								
Private Land	238	198	232	405	183	142	177	317
Native Corporation Land	6	12	85	82	79	86	158	105
Total Private Land^c	244	210	317	487	262	228	335	422
Matanuska-Susitna Borough Land	563	384	391	450	525	346	353	385
State of Alaska Land	272	67	28	26	277	72	34	14
Mental Health Trust Authority Land	15	143	157	16	96	224	238	97
Public University Land	<1	44	44	7	0	44	44	7
Other Public Land ^d	46	26	27	49	47	27	28	49
Total Public Land	896	663	647	549	945	713	696	552

^a Sources: MSB, 2007a; USGS, 2001; Aero-Metric, Inc., 2007, 2008.

^b Acres affected are only those within the 200-foot right-of-way.

^c Totals might not equal sums of values due to rounding.

^d 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^a (page 1 of 2)**

	Mac West- Connector 1- Houston- North	Mac West- Connector 1- Houston- South	Mac West- Connector 2- Big Lake	Mac East- Connector 3- Willow	Mac East- Connector 3- Houston- North	Mac East- Connector 3- Houston- South	Mac East- Connector 3- Houston- Big Lake
Impact	Mac West- Connector 1- Willow	Mac West- Connector 1- Houston- South	Mac West- Connector 2- Big Lake	Mac East- Connector 3- Willow	Mac East- Connector 3- Houston- North	Mac East- Connector 3- Houston- South	Mac East- Connector 3- Houston- Big Lake
Number of Residences or Structures within the 200-foot right-of-way	0	0	17 residences, 3 structures	1 residence, 2 structures	1 residence, 2 structures	1 residence, 2 structures	18 residences, 3 structures
Forested Land ^b (acres)	941	574	606	1,093	721	643	678
Undeveloped Land Present?	Yes, along all segments.	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.
Agricultural Land Present?	Yes, 66 acres of agricultural land in ROW	Yes, 64 acres of agricultural land in ROW	Yes, 94 acres of agricultural land in ROW	Yes, 7 acres of agricultural land in ROW	Yes, 5 acres of agricultural land in ROW	Yes, 5 acres of agricultural land in ROW	Yes, 1 acres of agricultural land in ROW
Residential Land Present	Yes, along Mac West and Willow.	Yes, along Mac West and Houston South.	Yes, several subdivisions along the Big Lake Segment, including proposed Mystery Subdivision.	Yes, along Mac East and Willow.	Yes, along Mac East and Connector 3	Yes, along Mac East, Connector 3, and Houston South	Yes, several subdivisions along the Big Lake Segment, including proposed Mystery Subdivision.

**Table 13.1-5
Summary of Impacts to Land Use by Alternative^a (page 2 of 2)**

Impact	Mac West-Connector 1-Willow	Mac West-Connector 1-Houston North	Mac West-Connector 1-Houston South	Mac West-Connector 2-Big Lake	Mac East-Connector 3-Willow	Mac East-Connector 3-Houston North	Mac East-Connector 3-Houston South	Mac East-Big Lake
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 right-of-way.	Two radio towers 2,000 feet and 400 feet from right-of-way; private airstrip within 1,800 feet of right-of-way.	Would cross land that is being logged; private airstrip within 100 feet of right-of-way; could prevent or alter planned airport expansion near Big Lake Segment and the development of proposed bike and roadside trails.	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 right-of-way; Mac East could alter placement of the proposed Port MacKenzie Town Center.	Some light industrial development; two radio towers 2,000 feet and 400 feet from right-of-way; private airstrip within 100 feet of right-of-way; could prevent or alter planned airport expansion near Big Lake Segment and the development of proposed bike and roadside 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 right-of-way; could prevent or alter planned airport expansion near Big Lake Segment and the development of proposed bike and roadside trails; Big Lake and Mac East segments could alter placement of the proposed Port MacKenzie Town Center.

^a Sources: MSB, 2007a; USGS, 2001; Aero-Metric, Inc., 2007, 2008; Homer et al., 2004.

^b 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 one, necessary connector "arm" (as the extra "arm" connecting to the other segment would not be necessary if that route was built).