1.0 Introduction

1.1 Project Overview

The Matanuska-Susitna Borough (MSB) and the Alaska Railroad Corporation (ARRC) jointly propose to connect Port MacKenzie to ARRC's rail system by constructing and operating a new rail line. The new rail line would be approximately 30 to 45 miles long, depending on the route selected, extending from Port MacKenzie to a point on the ARRC's existing main line between Wasilla and north of Willow.

Port MacKenzie is a deepwater port on the north side on Knik Arm. It lies about 30 miles southwest of Wasilla and 5 miles north of Anchorage across Knik Arm. Capable of serving large ships (such as Cape Class and Panamax vessels), the deep draft dock is enhanced by the port's 8,940 upland acres and 1,300 tideland acres (the Port MacKenzie District). These resources make Port MacKenzie an excellent area for bulk storage, transport, and processing facilities.

Previous studies have noted that good surface transportation access is necessary to accommodate growth at Port MacKenzie and develop as a strong economic driver in the MSB. Currently, the Port is only connected to the transportation network via roadways.

A rail line serving Port MacKenzie has been considered for nearly 30 years. Most recently, in 2003, the MSB completed a preliminary study of road and rail corridor alternatives that would connect Port MacKenzie to the Alaska Railroad. Rail line extensions such as this fall under the jurisdiction of the Surface Transportation Board (STB). As part of the process for authority to construct and operate the new line, the STB will serve as the lead federal agency in the conduct of environmental review under the National Environmental Policy Act (NEPA).

The MSB and ARRC have jointly prepared preliminary engineering and environmental studies for the new rail line. The information developed during this phase has been collected and is presented in this Preliminary Environmental and Alternatives Report. This report will:

- Re-evaluate the findings of the previous 2003 rail corridor study.
- Provide information in support of the NEPA process that the STB will be conducting, including alternatives development and study, preliminary design and engineering data, and anticipated construction cost estimates.

It is anticipated that the NEPA process should be completed, a decision whether to grant authority to construct and operate the line should be issued, and project design should be completed as early as 2009. If authority to construct and operate the line is issued, construction likely would extend from 2009 to 2011, and the rail extension should be operational in 2011 or 2012.

1.2 Project Objective

As freight traffic moving from upper Cook Inlet to the Alaska Interior continues to grow, Port MacKenzie has developed facilities to participate in the intermodal movement of goods. Presently, the only surface mode of freight available to the Port is trucking. The purpose of the Port MacKenzie Rail Extension project is to establish a rail link between Port MacKenzie and the Alaska Railroad, providing Port MacKenzie customers and shippers cost efficient rail transportation between the Port and Interior Alaska. The construction of a rail line would offer an additional mode of transportation available to Port users providing an economical alternative for movement of bulk materials.

The project would provide rail service to Port MacKenzie as an alternative means of surface transport and is consistent with MSB economic development plans (MSB 2006).

The proposed rail link is consistent with ARRC's enabling statute to foster and promote long-term economic growth and development of the State. It draws upon over 30-years of planning documents and studies relating to potential port development and related access. The project would represent a milestone in the continued development of the port.

Specifically, the project proposes to support Port MacKenzie's continuing development as a multi-modal and bulk material resources export and import facility. The project would also provide an alternative mode of surface transportation to Port MacKenzie.

1.3 Project Description

The ARRC operates and maintains a 470-mile main line that runs from the port of Seward, Alaska, generally north through many communities including Anchorage, Wasilla, Houston, and Willow to a terminal in Fairbanks, Alaska. The Port MacKenzie rail extension would begin at the existing Port MacKenzie facility and tie into ARRC's existing main line track at a location between Mile 167 north of Wasilla and Mile 190 north of Willow. Major elements of the project would include:

- Between 30 and 45 miles of new railroad track depending on the alignment
- A 200-foot-wide right-of-way (ROW)
- Crossings (depending on the alignment) of the Little Susitna River, Lake Creek, and Willow Creek, along with many other small stream crossings
- The crossing of local roads and streets, including grade-separations as required
- Pipeline, utility, and recreational trail crossings
- Sidings along the route
- Ancillary railroad support facilities including, but not limited to, communication towers and facilities, maintenance, power, signals, and access roads

The anticipated foreseeable train traffic would be two trains daily, which would entail one train traveling in each direction. There is a possibility of an incremental increase in train traffic over time, although such increase is not anticipated during the reasonably foreseeable future.

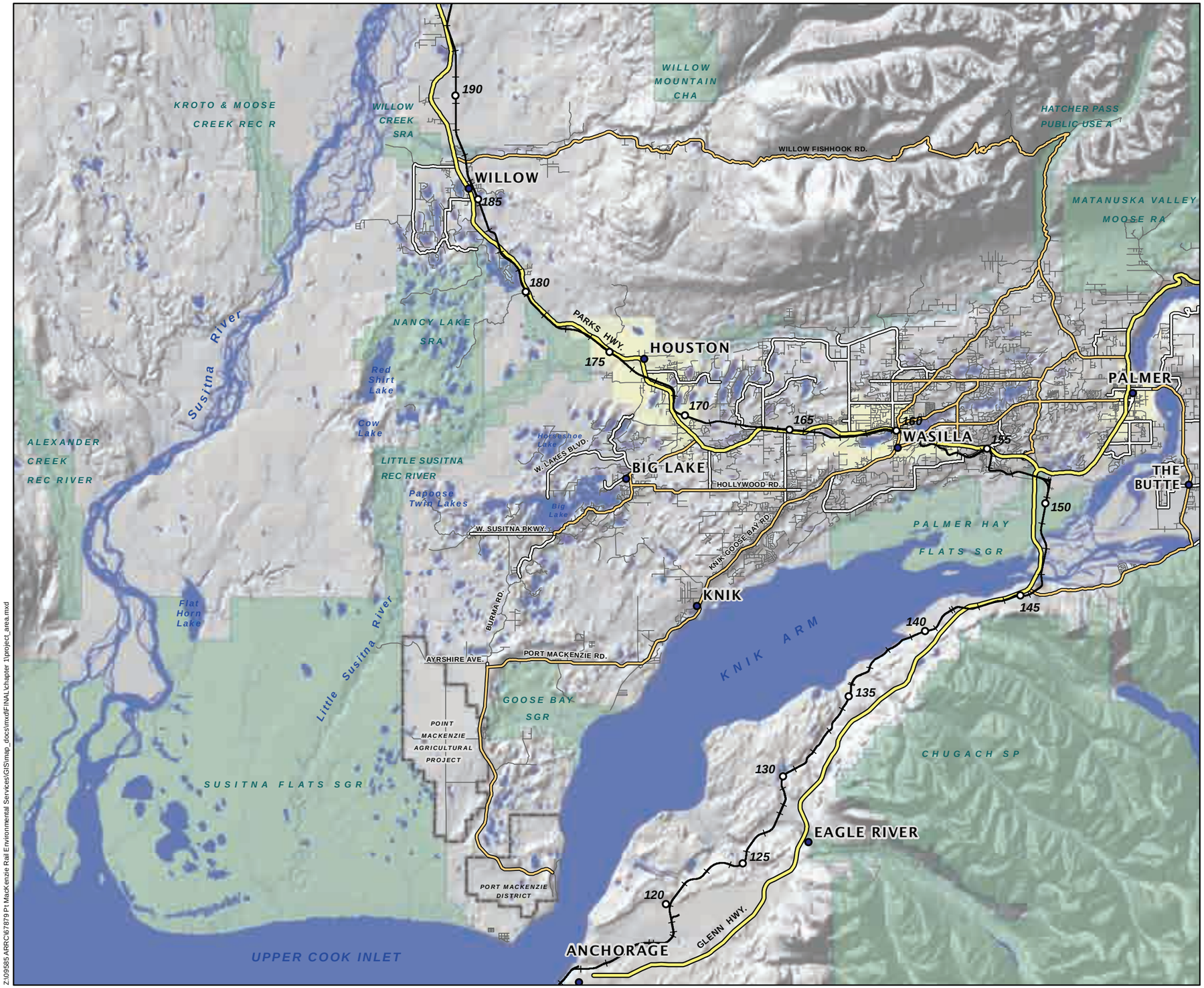
1.4 Project Setting

The project area is within the Susitna River valley and extends between the Susitna River, Cook Inlet, Knik Arm, and the existing Alaska Railroad main line (Figure 1.1).

The dominant climate for all of Southcentral Alaska, including the project setting, is classified as "maritime." Summers and winters are milder than what is normally seen in continental climates of similar latitude, with average temperatures ranging from 64.8 °F in July to 19.2 °F in January. In addition to relatively mild temperatures, the maritime climate of Alaska is characterized by heightened precipitation and persistent winds (Knik Arm Bridge and Toll Authority [KABATA] 2006a).

The area is generally composed of upland boreal forest—characterized by mixed stands of paper birch and white spruce, with occasional balsam poplar, quaking aspen, willow, and alder—interspersed with lakes, ponds, and wetland complexes associated with glacial tills and outwash deposits. Freshwater bogs and fens are the dominant wetlands in the project area. Coastal estuaries also occur at Susitna Flats (near the mouths of the Susitna and Little Susitna rivers) and Goose Bay. The wetlands are fed by multiple drainages that originate in the surrounding mountains, several of which are large, glacially fed, braided rivers with heavy sediment loads draining into the Susitna River and Knik Arm, which feed into Cook Inlet. The National Wetlands Inventory (NWI) has classified more than 200 wetland types in the project area. These

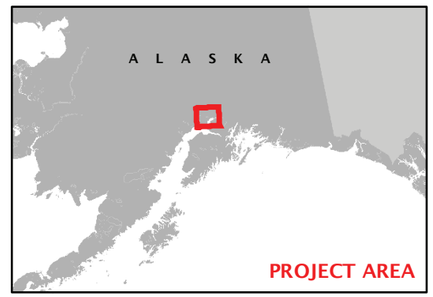
Figure 1.1
PROJECT AREA



PORT MACKENZIE RAIL EXTENSION

LEGEND

- ARRC Milepost
- ARRC Track
- Highway
- Major Rd.
- Medium Rd.
- Minor Rd.
- City Boundary
- Park or Refuge



This map represents a conceptual level of utility, detail, and accuracy. The information displayed here is for planning purposes only. Base information shown constitutes data from various federal, state, public, and private souces. These maps are for review purposes only and are not intended for use in securing permits, design or for construction purposes.

N

0 3 6 Miles

Date: August 29, 2007
Projection: Alaska State Plane Zone 4, NAD 83
Author: HDR Alaska, Inc.
Sources: ADNR, ARRC, HDR Alaska, Inc., MSB GIS, TNH- Hanson, USGS.

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can be categorized as forested, scrub-shrub, and sedge or grass emergent. Common wetland plants in project area wetlands include black spruce, Labrador tea, dwarf birch, sweet gale, a variety of sedges, and sphagnum mosses. Wetlands are described in more detail in Section 4.2.1, and the distribution of wetlands and uplands in the project area is shown in Figure 4.2.

Drainage in the project area is generally to the west and south, with wetland complexes and small streams draining into larger stream systems (Susitna River and Little Susitna River) and into Knik Arm and Cook Inlet. In addition to the Little Susitna River, the primary streams in the project area include Cottonwood, Fish, Goose, Wasilla, and Willow creeks. These primary streams and many of the smaller associated streams provide habitat for anadromous and resident fish. All five species of Pacific salmon (Chinook, sockeye, coho, chum, and pink) occur in the project area and resident fish in the area include Dolly Varden, eulachon, northern pike, rainbow trout, arctic char, arctic grayling, lake trout, burbot, and whitefish (Alaska Department of Fish and Game [ADF&G] 2007a, KABATA 2006a). Water resources and fisheries are described in greater detail in sections 4.2.2 and 4.2.3, respectively, and streams are shown in Figure 4.4.

The project area provides habitat for numerous species of mammals and birds. The project area has one of the largest concentrations of moose in the State, including habitat for general year-round use, calving, rutting, and wintering. Both brown and black bears are common in the project area (KABATA 2006a). Numerous fur bearing and small mammals are also found in the project area. The diversity of upland forests, freshwater wetlands, and coastal marshes provide habitat for a wide variety of bird species, including shorebirds, waterfowl, other wetland and water dependent species, migratory and resident songbirds, raptors, and other upland species (KABATA 2006a).

The Castle Mountain Fault is one of several major east-northeast-striking faults in Southcentral Alaska, and the western Susitna lowlands portion of the Castle Mountain Fault runs through the middle of the project area. It is an active fault that presents an earthquake hazard. Two earthquakes are known to have occurred along the fault in areas where there is no surface expression.

Land use in the area is a mix of public recreation uses and wildlife habitat on State lands, residential uses, industrial uses, commercial enterprises, aviation uses, forestry, agriculture, and mineral resource development. In general, the amount of public land greatly exceeds the amount of privately owned land. Public land is owned by MSB, City of Houston, City of Wasilla, State of Alaska, Native corporations, public university, and the Alaska Mental Health Trust Authority (The Trust). Residential, urban, and commercial areas are concentrated near the Parks Highway and along the ARRC main line in the northern portion of the project area. Currently, the Alaska Department of Corrections (ADOC) owns and operates a rehabilitation facility in the area—the Pt. MacKenzie Correctional Farm. ADOC and MSB also have plans to construct and operate a large $300 million medium-security prison at a site north of the Port MacKenzie District. This prison project is planned to be operational by 2010. Land use and land ownership are discussed in greater detail in Section 4.3, and Figure 4.10 shows general land ownership in the project area.

The Point MacKenzie Agricultural Project is also located in the area. The project, initiated by the State in the 1980s, is a group of privately-owned agricultural lands that were sold by the State with agricultural covenants. Owners are required to submit conservation plans for each parcel to the Division of Agriculture (DOA) to ensure that the agricultural resources in the area are preserved. Agricultural use of the project area is discussed in greater detail in Section 4.3.1 and shown in Figure 4.10.

Recreation is one of the area's major land uses. The project area includes State parks and refuges, such as the Nancy Lake State Recreation Area (SRA), Susitna Flats State Game Refuge (SGR), Willow Creek SRA, Little Susitna State Recreation River, and Goose Bay SGR (Figure 1.1).

State lands in the project area that are not dedicated for a specific purpose currently are primarily used for recreation. There are numerous year-round and winter trails that loop through the project area or act as a starting point for access across the Susitna River to remote locations. The major trails providing access across the Susitna River include the Iditarod National Historic Trail (INHT), RS 2477 trails[1] (Nancy Lake-Susitna and Knik-Susitna trails), the Iron Dog trail, and the Flathorn Lake trail. There are numerous loop trail systems in the project area, including the West Gateway trails that originate in Willow and the Aurora Dog Mushing trails near Knik. Recreation and trails are discussed further in Section 4.3.2, and trails are shown in Figure 4.11. The primary trail uses are winter dog mushing and snowmachining. Some trails are dry enough for year round use by all-terrain vehicles. Additional trail uses include cross-country skiing, biking, and hiking (Alaska Department of Natural Resources [ADNR] 2007).

Land in the area is also commonly used for both sport and subsistence hunting and fishing. Wildlife habitat and water features are extensive in the MSB. Privately-owned recreational cabins and properties are located along many of the lakes that are scattered throughout the project area including Big Lake, Red Shirt Lake, Delyndia Lake, Flat Horn Lake, Cow Lake, Horseshoe Lake, Papoose Twins Lakes, and Beaver Lakes.

1.5 Background Information

Over 35 years ago, the leaders of the MSB realized that conditions at the Port of Anchorage were such that significant expansion would not be feasible. The MSB embarked on a program to provide an alternate deepwater port facility easily accessible by both rail and highway. This facility, known as Port MacKenzie, is now in service and is located almost directly across Knik Arm from the Port of Anchorage. The location has access to deep water and offers significant uplands for port and industrial development.

Route specific access to Port MacKenzie has been addressed at least three times since 1990; as part of coastal zone planning, in the 1997 Long Range Transportation Plan (LRTP), and in a preliminary study of road and rail access to the port. In response to these studies, the MSB Assembly has passed resolutions supporting road and rail development. These resolutions are included in Appendix A.

In 1993, the MSB Assembly adopted the "Point MacKenzie Area Which Merits Special Attention (AMSA) Plan." The AMSA was updated in 2006 (ADNR 2006a). Through the AMSA the MSB established the Port MacKenzie area as a Designated Major Energy Facility intended to facilitate the growth and development of the port while maintaining wise use of coastal resources. This plan supports development of a deepwater port at Point MacKenzie and refines the proposals for roadway access to the area. In the short term, road access was envisioned as improving and using the existing Point MacKenzie access road, Burma Road, and South Big Lake Road. A long-term alternative crossed the Little Susitna River and extended north to the Willow area.

The MSB LRTP was adopted in September 1997 (MSB 1997a). This document is a Borough-wide transportation plan which includes elements addressing the development of a deepwater port at Point MacKenzie and improved roadway and rail access to that facility. The LRTP states that the MSB approved the East Port site (Point MacKenzie) as the preferred deepwater port site. Access to the port area included in the LRTP echoes the recommendations of the Point MacKenzie AMSA (ADNR 2006a). The 1997 LRTP re-emphasizes the need for a rail connection between the port and the Alaska Railroad if the port is to meet its full potential. The LRTP

[1] RS 2477 trails, named from Revised Statute 2477 of the Mining Act of 1866, refer to the grant of public ROW access across unreserved federal land to guarantee access as land is transferred to State or private ownership.

specifies a rail connection to the port connecting with the Alaska Railroad south of the Little Susitna River near Houston.

Construction of an access road and barge dock at Port MacKenzie began in the fall of 1999. A deep-draft dock was added and became operational in 2005.

Currently, Knik-Goose Bay Road and the Point MacKenzie Road serve the port. Knik-Goose Bay Road is a two-lane, paved road with 4-foot shoulders. For the most part the road operates under a 55-mph rural speed limit with frequent driveways, side road intersections and frequent passing restrictions because of curves and hills. The route is approximately 22 miles long, which extends northeasterly to connect with the Parks Highway in Wasilla.

The MSB is undertaking improvements to access Port MacKenzie. The Alaska Department of Transportation and Public Facilities (ADOT&PF) executed a rehabilitation project for Knik-Goose Bay Road in 2005. The project improved the northerly 19.8 miles, providing a new typical section with two 12-foot lanes throughout and established turn lanes at the appropriate locations. The last 14 miles of the Point MacKenzie Road is still a gravel surface. The MSB has scheduled the paving of the road for 2008.

Currently, the bulk of the freight movement for the Alaska Railroad is in the Anchorage-Fairbanks corridor passing through Wasilla.

In 2003, the MSB commissioned a study to locate separate or combined corridors for roadway and railway access to Port MacKenzie (MSB 2003). The scope of the study did not include an in-depth analysis of the environmental impacts of the project. Rather, the study team summarized and considered apparent existing conditions and provided a preliminary review of constraints and probable impacts. The intent was to determine corridor feasibility. The primary areas of concern, identified from public meetings, were wetlands, geotechnical considerations, and the amount of private property to be acquired for ROW.

For the 2003 effort, a constraints analysis was conducted and 11 alternatives were initially identified. A more thorough description of all the 2003 alternatives that were originally considered can be found in Section 3.1 and Table 3-1. The study recommended two alignments as separate corridors for rail and road access to the port, which would need further study. The recommendations were approved by the MSB Assembly. Appendix A lists the MSB resolutions.

During the 2007 Alaska state legislative session, the MSB received an appropriation to perform conceptual engineering and environmental documentation for the Port MacKenzie rail extension, which is the subject of this document. The intent of this new effort is to take a fresh and more detailed look at the project area for a designated rail-only corridor, including those corridors identified in the 2003 MSB study.

In November 2007, the MSB Assembly passed a resolution (No. 07-139) recognizing the need for further study and asking the STB to include a thorough evaluation of local issues in the NEPA document that would be prepared (Appendix A).

1.6 Public and Agency Coordination

The MSB and ARRC jointly conducted public open houses and agency overview meetings to support the development of this document. A summary can be found in the Public Involvement Activities Summary Report in Volume 4. Several agency consultations and public meetings were held with stakeholders and interested parties between September through December 2007. Area residents, landowners, businesses, native corporations, tribal entities, community groups, MSB representatives, and agency officials were invited to comment on the proposed project during a formal public involvement period and preliminary design scoping process. Communities

potentially impacted by the project include: Wasilla, Big Lake, Houston, Knik, Point MacKenzie, and Willow. At these meetings, several issues and concerns were raised by the public and regulatory agencies, including:

- Impacts to private property
- Impacts to floodplains, wetlands and hydrology, specifically natural drainage from Beaver Lakes, Horseshoe Lake, and West Lake
- Impacts to anadromous streams, such as the outlet streams from Crooked Lake flowing into the Little Susitna River
- Potential archaeological sites, specifically in the Red Shirt Lake area
- Impacts to public property and parks
- Impacts to recreation
- Access to undeveloped areas
- Impacts to moose and sandhill cranes in the project area
- Impacts to socio-economic issues
- Noise impacts
- Wetlands
- Impacts to farms and agricultural parcels
- Seismic concerns
- Traffic impacts to urban centers potentially effected by the alignments

Although this report considers practicable alignment alternatives and their potential impacts on the natural and human environment, the issues raised during the preliminary public and agency coordination process were used to focus the review of this report and help describe impacts and develop preliminary voluntary mitigation measures. Therefore, some of these areas identified in this preliminary public process have been developed in more detail throughout the document.

1.7 Report Objectives and Contents

The STB must examine the potential environmental impacts of a proposed action under NEPA in considering whether to grant authority to construct and operate the new rail line. This report is structured to provide background information on the preliminary alternatives and environment of the project area. Section 1.0 of this report provides project background and overview. Section 2.0 explains the methodology for developing the alternatives through a constraints analysis and details the engineering and environmental constraints that were used in the analysis. Section 3.0 describes the alternatives. Section 4.0 describes the natural and human environment in the project area and develops a preliminary evaluation of the potential impacts of the alternatives considered. Section 5.0 compares the alternatives using a matrix and presents the strengths and weaknesses of the alternatives. Section 6.0 provides cost estimates for the alternatives. Section 7.0 describes permits and clearances that would likely be required for project construction.

This Preliminary Environmental and Alternatives Report represents Volume 1 of 4 prepared for this project. In addition to this report, there are three other volumes. Volume 2 contains the associated appendices to this document, which includes the following:

- Appendix A: Relevant Past MSB Assembly Resolutions and Actions
- Appendix B: NWI Wetland Categories in the Project Area
- Appendix C: Preliminary Letters Received from Regulatory Agencies
- Appendix D: Minutes of Preliminary Regulatory Agency Meetings
- Appendix E: ARRC Preliminary Voluntary Mitigation Measures
- Appendix F: Road Crossing Hazard Index Calculations
- Appendix G: Preliminary Hydrology Report

- Appendix H: Preliminary Geological Investigations
- Appendix I: Cultural Resource Probability Modeling
- Appendix J: Train Energy Calculations

Volume 3 contains the conceptual plan set (engineering drawings). Volume 4 contains the Public Involvement report which details the public involvement activities during the fall of 2007.