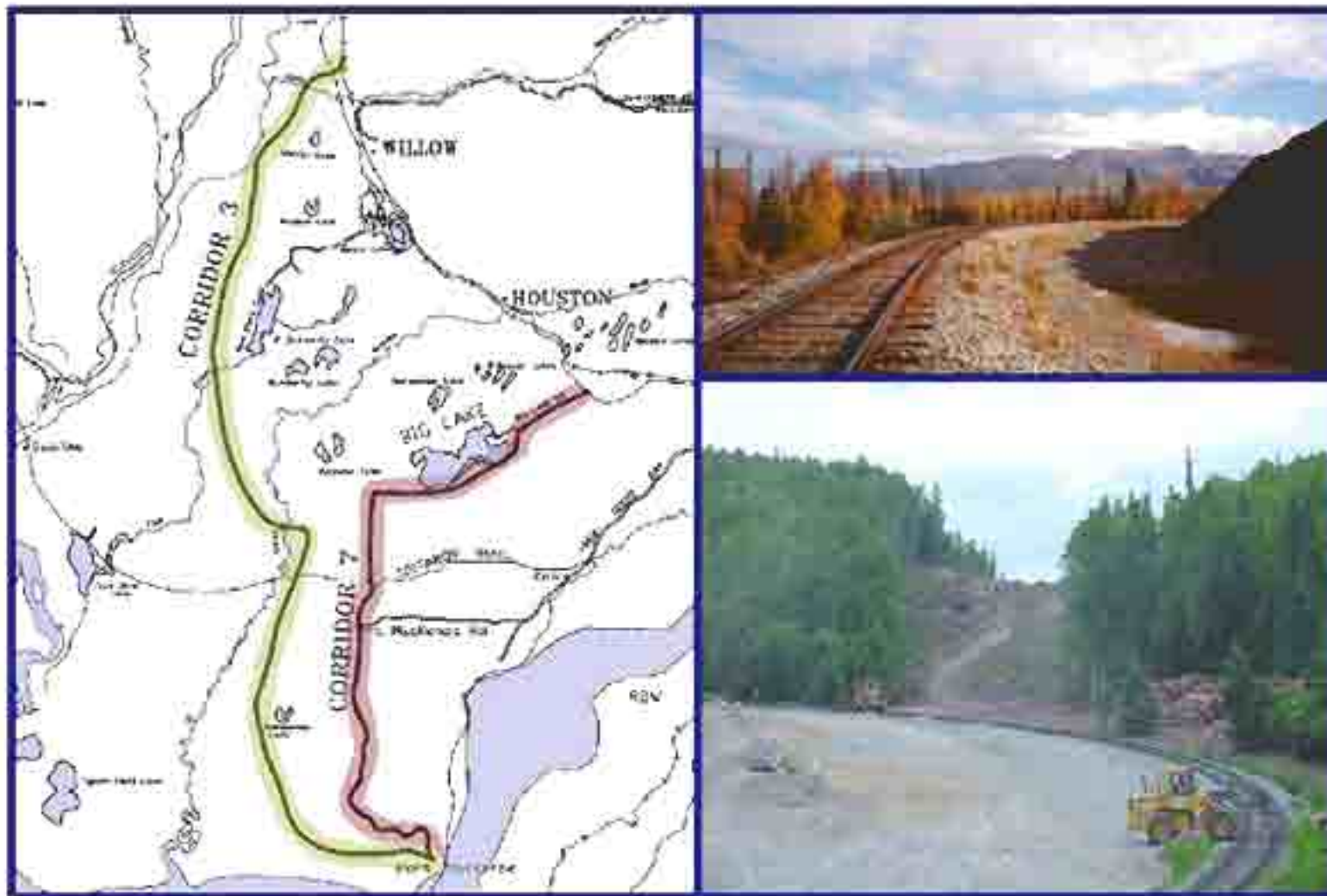


# MATANUSKA-SUSITNA BOROUGH RAIL CORRIDOR STUDY

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## **EXECUTIVE SUMMARY**

### **Introduction**

A deep-water port near Point MacKenzie has long been a dream of the Matanuska-Susitna Borough (MSB). Planning documents as far back as 1978 pointed to the desirability of a port in the Point MacKenzie area. The general thinking was that such a port facility would complement the already well-established Port of Anchorage. Numerous studies through the 1980s and 1990s looked at various aspects of developing a port in that area. These planning efforts culminated with the construction of a sheet pile type barge dock in 1999. Plans are currently underway to provide an access trestle extended off the upstream corner of the barge dock to access moorage facilities suitable for deep draft vessels, which would be necessary for the export of bulk cargo such as wood chips or coal. There are also plans under way to use Port MacKenzie as one terminus of a ferry system proposed to operate between Anchorage and Point MacKenzie.

Through all of the previous work, one common thread was present, the need to provide good surface transportation access if a port at Point MacKenzie was to be a viable facility that would grow to be a strong economic engine for the MSB.

The purpose of the MSB Rail Corridor Study was to determine a mix of railroad and highway options for surface access to Port MacKenzie that would:

1. Provide the level of surface transportation access necessary to allow for the safe and efficient movement of material into and out of the MSB and the rest of Alaska.
2. Provide that access in a manner that was generally acceptable to the residents of the project area.
3. Keep the environmental impacts of this major project to a manageable level.

An additional complication for the study was the potential for development of the Knik Arm Crossing (KAC) project by the KNIK ARM BRIDGE AND TOLL AUTHORITY (KABATA). While addressing the impact of the KAC was not part of the study scope, the team was ever cognizant of the potential for that project and attempted to accommodate that potential whenever possible.

### **Data Analyses**

Over the years since a port at Point MacKenzie was first envisioned, there have been numerous studies done which address access to the site and, as early as 1992, the MSB Assembly adopted a resolution selecting a specific route. In view of the previous work, this study effort began with a thorough review of the previous studies and of the construction projects the MSB had in project development. These studies and already programmed improvements formed the foundation for the remainder of the study. A total of eleven basic alternatives were identified from this research and presented to the public to show “this is what has been done to date.”

A key question at the outset of the study centered on the issue of how much material was likely to move through Port MacKenzie. To address that question, a “Commodities Flow” study was

done as part of the project. The consensus was that there would be little or no arriving freight passing through Port MacKenzie. Virtually all materials moving through the port would be exports. As shown in the table below, Petroleum products and Wood Chips are the most likely exports in the near future. Developments occurring after completion of the Commodities Flow Study suggest that sand and gravel mined on or near port property and coal trucked from Sutton and also pass through Port MacKenzie in the near future. It should be noted that Petroleum products only become a factor when the rail spur has been constructed and if storage is needed that exceeds the ability of the Port of Anchorage to accommodate them or if public concerns over safety issues lead to relocation of the existing fuel storage. There has been no discussions to date between Port MacKenzie and the Port of Anchorage relative to fuel storage. It is also important to note that at the time the Commodities Flow Study was done, the Usibelli coal mines at Healy had lost their overseas contracts and there was no coal being exported overseas, however talks were underway at time of this writing aimed at resuming coal export from Healy.

<b>Commodity</b>	<b>Base</b>	<b>Low</b>	<b>High</b>
Petroleum and Chemicals (thousands of short tons)	870	50	2608
Cargo Containers	0	0	0
Wood Products (thousands of dry tons)	300	200	400
Coal (thousands of short tons)	800	200	1500
Sand and Gravel (thousands of short tons)	800	200	2000
Oil Field Modules	1	0	3
Manufactured Homes	98	45	147
Selected Minerals	0	0	0
Natural Gas	0	0	12

\* Data relative to Coal, Sand and Gravel, and Oil Field Modules provided by the Port MacKenzie Manager subsequent to completion of the Commodities Flow Study.

Recognizing that port and industry based near the port will have employees, customers and deliveries of materials and supplies coming in from the surrounding areas, a Traffic Study was done to help understand the potential impacts on the surrounding roadway system that may result as the port grows. The Traffic Study also converted tons of commodities from the Commodities Flow Study to numbers of rail cars and/or trucks that would be necessary to move these commodities into the port area for loading onto vessels and shipment to the final destination. The Traffic Study also recognized that efforts are underway to establish a commuter ferry connection between the MSB and Anchorage and looked at how this traffic might distribute itself through the MSB area. Table 2-2 in Section 2, summarizes the rail and vehicular traffic impacts expected as a result of port development. The study indicates that without a Knik Arm Crossing being constructed, the vehicular traffic generated by port activities will be such that it can be comfortably accommodated, in addition to current traffic loads, on a well-constructed two-lane rural highway.

The most likely rail haul will be wood chips originating north of Willow and with the production zone extending well into the interior. It is expected that this market will take time to develop and the demand for rail service will be toward the end of the 20-year planning period. It also appears that the rail line, when constructed, will be an investment in future growth rather than a response to current demand. Again, if the Knik Arm Crossing is constructed, the picture changes for the rail line in that the Alaska Railroad is on record stating that "Corridor three has

the added benefit of appearing to align with the Knik Arm Crossing more favorably especially as a transportation link from Anchorage to Fairbanks.”

### **Environmental Review**

The focus of this study was to locate corridors for roadway and railway access to Port MacKenzie. The scope of the study did not include an in-depth analysis of the environmental impacts of the project. Rather the study team established a baseline of existing conditions and looked at probable impacts. The intent was to determine if there were any “deal breakers” associated with any of the corridors that were reviewed. The primary areas of concerns ultimately were reduced to the amount of wetlands being impacted and the amount of private property to be acquired for right-of-way (ROW). It is clearly understood that prior to construction of major improvements, particularly a new corridor for the railroad, an environmental document must be prepared.

The environmental review began with an agency meeting and a review of the controlling state and federal regulations. Because any project of this magnitude will most likely be constructed with federal funds, it is assumed that the full NEPA process will have to be followed.

There are no known threatened or endangered species within the study area.

There are a number of anadromous fish streams in the study area and each corridor crosses one or more of them. Corridor 3 crosses both the Little Susitna River and Willow Creek. These crossings will be bridges. All other stream crossings are expected to be culverts and will be designed to accommodate fish passage.

There were no critical habitat areas identified within the study area.

Wetland impacts may be significant. As currently defined, Corridor 3 impacts approximately 295 acres of wetland, 266 acres of that area are “scrub shrub wetlands.” Corridor 7 impacts approximately 25 acres of wetlands. As the project develops, the actual alignment for each corridor may be adjusted to reduce wetlands impacts. However, it is recognized that it will not be possible to totally avoid any wetland encroachment.

Wildlife impacts are relatively limited. No critical habitat is being taken, although there will be some loss of habitat, the impact is expected to be minor.

Fisheries impacts are relatively limited. No critical habitat is being taken. Stream crossings are with bridges or culverts designed to accommodate fish passage.

It is not likely that construction of either corridor alternative will generate long-term population growth unless there is significant resource development beyond the level currently forecast. As a result, impacts on housing are expected to be short term primarily due to increased demand during construction. Both corridor 3 and 7 have been defined to minimize, if not totally eliminate, the need to take any homes, although some private land will be required. Hence, it is not expected that the project will have a negative impact on housing stocks.

Lands required for either project falls into one of six ownership categories – Private, Borough, Native Corporation, State, Alaska Mental Health Trust and the University of Alaska. Private land and Native Corporation land must be purchased for use as ROW. The state land, including Mental Health and University lands, can be acquired through land swaps. Construction of either corridor is not expected to have large impacts on adjacent lands, although there may be some increase in land value.

Recreational facilities abound within the study area. There is a trail system that covers the area like a spider web. These trails are used year round. The intent is to grade separate rail or roadway from the trails.

## **Recommendations**

The Rail Corridor Study evolved through an intense study effort over a period of just over a year. The study team was charged with developing a recommended mix of roadway and railway access to Port MacKenzie that were:

1. Feasible and constructible from a technical perspective.
2. As gentle on the environment as constructing a major transportation corridor could be.
3. Generally acceptable to the residents and business community through which the corridors would pass.

The recommendations presented in this report satisfy each of these three charges.

Corridor 3 is recommended primarily as a railroad corridor. The alignment was selected specifically to meet the railroad requirements for grades and curvature. Input received during the public meetings and through discussions with the MSB staff suggested that the ROW for Corridor 3 should be wide enough to accommodate a major highway and to provide space for the wide range of utilities that often seek location within public transportation corridors. While the study did not address the potential impacts of the proposed Knik Arm Crossing, Corridor 3 includes a recommendation that an 800-foot wide corridor be preserved so that there is space available within the ROW for the railroad, with sidings, utilities, bicycle pathways and a four-lane divided highway. This would then provide a corridor that ADOT&PF could use should KAC be constructed.

Corridor 7 is recommended as the highway access. This alternative was selected as the highway access because it is essentially the completion of a series of projects that the MSB has already programmed and started work on. It includes the least amount of new alignment construction and the overall least impact on private property and wetlands because significant sections of Corridor 7 can be constructed within existing ROW. Where new ROW is required, a 300-foot ROW is recommended so that there is sufficient width to accommodate the roadway, pathway and the utilities that so often occupy public ROW. Where new ROW has been acquired, no additional ROW should be acquired for this phase of project development as a cost control measure and to avoid causing ill will in the community.



## **Public Process**

The public process for the Mat-Su Rail Corridor Study included three public meetings and extensive mailings. All three public meetings were evening meetings held at the Houston High School.

The first meeting in May 2002, summarized the various studies that had been done over the 30-year period preceding the current effort. This meeting generated a significant volume of public comment. This public comment was then used together with technical analysis to reduce the number of alternatives to be studied.

The second meeting was held in November 2002. At this meeting, five corridors were presented in an open house format. Those presented included Corridor 3 as rail only; Corridor 4 as the one which had the least impact on private property and with the potential to be either roadway, rail or both; Corridor 5 as the one that was a balance between private property impacts and environmental (primarily wetlands impacts). This corridor was presented as potentially being roadway, rail or both. This corridor closely follows the one that was adopted by Borough assembly resolution in 1992. This meeting also drew a large volume of public comment with strong support for Corridor 3 as a rail route and with mixed preference for a roadway, but Corridor 7 was a slight favorite.

The third meeting was held in April 2003. At this meeting, Corridor 3 was presented as a rail corridor with provision for ADOT&PF to add a highway in the future. Corridor 7 was presented as the roadway access. Corridor 7 was presented as a two-lane facility based on the study traffic analysis showing traffic increases resulting from Port MacKenzie operations being in the range of 2,250 per day, well with in the capacity of a two-lane facility even when added to the current and expected future traffic without KAC construction.

## 1.0 INTRODUCTION

The Matanuska-Susitna Borough (MSB or Borough) undertook a study to examine routing options for a rail and road corridor connecting Port MacKenzie with the Alaska Railroad Corporation (ARRC) mainline track. The Location Study Report (LSR) chronicles the process used to complete the study. It describes the purpose of the project, the alternatives studied, the process by which the alternatives were selected, a brief discussion of alternatives not evaluated, and the reasons for not pursuing them. The LSR includes a discussion of the possible environmental consequences and a concept level design for the rail and highway alternatives that best meet the goals and objectives of the project. In addition to the LSR, the following reports were prepared as stand-alone documents and are referenced as appendices to the LSR:

- Geotechnical Investigations Report
- Environmental Geographic Information System (GIS) database
- Commodities Study (also an appendix to the LSR)
- Traffic Analysis (also as an appendix to the LSR)
- Preliminary Environmental Review (PER) document
- Land Status Maps
- Public Involvement Report

## 1.1 Background

Some years ago, the leaders of the Mat-Su Borough realized that conditions at the Port of Anchorage were such that significant expansion would not be feasible and the Borough embarked on a program to provide an alternate deep-water port facility easily accessible by both rail and highway. This facility, known as Port MacKenzie, is now in limited service and is located almost directly across Knik Arm from the Port of Anchorage. Port MacKenzie has long been the preferred site for a deep-water port for the Borough. The location has access to deep water, there are both Borough and state uplands available for port and industrial development, and the site is close to the Anchorage port and airport systems that could be linked through the Knik Arm Crossing or by other transportation modes.

The Borough is now focused on improving the access to Port MacKenzie. Currently, Knik-Goose Bay Road and the Point MacKenzie Road serve the port. Knik-Goose Bay Road is a two-lane, paved facility with 4-foot shoulders. For the most part the facility operates under a 55-mph rural speed limit with frequent driveways, side road intersections and frequent passing restrictions from both vertical and horizontal alignment. The route is a total of approximately 22 highway miles which extends northeasterly to connect with the Parks Highway and the Alaska Railroad in Wasilla. The bulk of the freight movement for the Alaska Railroad is in the Anchorage-Fairbanks corridor passing through Wasilla. A transportation system connection that facilitates north-south movement of freight will be necessary to make Port MacKenzie a



competitive shipping operation. ADOT&PF has scheduled a rehabilitation project for Knik-Goose Bay Road to be constructed in 2005. The proposed project will improve the northerly 19.8 miles, providing a new typical section with two 12-foot lanes throughout. The northerly 4+ miles will have 6-foot wide shoulders while the remaining 15.8 miles will have 4-foot shoulders. There will also be turn lane channelization at the appropriate locations.

## 1.2 Study Purpose

Industrial development was first evaluated in 1978 with the Point MacKenzie Industrial Siting Study prepared by Environmental Services Limited. Port development appears to have been initially addressed in April 1981 with the Matanuska-Susitna Borough Port Study prepared by Peratrovich & Nottingham, Southwest Alaska Pilots Association and Alaska Development Consultants. Since that time, additional studies have addressed roadway and/or rail access to the Point MacKenzie area. Some of these study efforts have created considerable resistance from area residents and businesses.

The MSB has moved to begin development of a deep-water port facility at Point MacKenzie. Initial construction of an open cell sheet pile barge dock was completed in August, 2000. Additional development work has been on-going since that time and there has been some initial export activity, along with industrial manufacturing beginning in the Point MacKenzie uplands area with the AMC Modular Home plant.

The real issue remains - in order for there to be a viable and competitive port facility at Point MacKenzie or anywhere else in the MSB, there must be good surface transportation facilities serving the port. The purpose of this study is to identify a corridor or corridors that will provide the level of surface transportation access necessary for Port MacKenzie to be successful. That access must, logically, include both rail and highway access and should, to the extent possible, gain the support of the residents of the MSB.

## 1.3 Study Objectives

The Mat-Su Borough Rail Corridor Study is intended to serve as a Location Study Report (LSR) addressing the options for a surface transportation system to serve Port MacKenzie.

The LSR has the following objectives:

1. Identify roadway and rail access corridors that would provide the appropriate level of surface transportation access to the port.
2. Identify roadway and rail access corridors that would be acceptable to the majority of the area residents.
3. Identify a surface transportation system that would serve the Port with or without Knik Arm Crossing being constructed, but one that would work with the crossing should that project progress forward.



4. Provide a route location analysis that would serve as the beginning point for any future project development including environmental studies and/or design.

To accomplish these objectives, the study was designed to do the following:

- ✓ Evaluate the types of commodities that may be moving through Port MacKenzie and where, within Alaska, these commodities are originating from or going to.
- ✓ Identify issues and concerns of landowners, residents, business and industry, and local, state, and federal agencies regarding rail and road routes in the study area.
- ✓ Describe the environmental, socio-economic, and engineering characteristics and constraints of the potential rail and road corridor options.
- ✓ Develop a route recommendation for both rail and highway that provides a balance between apparent environmental impacts, property impacts, development costs and service to the port.

There were three major phases to the study including:

### **Phase One: Issues Identification**

The first phase of the study focused on defining one or more corridors through which rail and/or highway facilities could be routed. Issues and concerns by landowners, residents, business and industry, and local, state, and federal agencies were identified. Environmental and engineering baseline conditions were documented and potential corridors were defined. During this phase, the study team reviewed the previous studies and used the data presented in these studies as a beginning point. A preliminary informational meeting was held with the Federal and State agencies and a public meeting was held in an effort to identify issues of concern for both the agencies and the public. As a result of public input during this phase, an additional alignment, Corridor 3, was added to the scope of work.

### **Phase Two: Route Alternatives and Analyses**

The second phase of the study included a refinement of the corridor options based on public comment, land ownership, and environmental and engineering constraints. During this phase, additional studies were prepared including:

- ✓ An economic study which evaluated the potential for materials that may be expected to flow through Port MacKenzie during the next 20 years, including where within the State of Alaska these materials may come from or go to.
- ✓ A preliminary traffic study which looked at how Port MacKenzie traffic might distribute through the study area. The data from this effort also was used to help select the design criteria for the roadway and railway elements of the project.
- ✓ A preliminary geotechnical review of the study area was made to provide input as to the soils conditions that may be expected along each of the alignments. This work



consisted of a review of available data and a windshield type field reconnaissance. The results of the effort were documented in a brief report.

- ✓ Working with the MSB tax records, an evaluation was made as to the classification of land ownership by parcel, whether it was private, native allotment, state or federal. Land values for the different classifications were determined from comparable sales within the study area.
- ✓ A preliminary environmental review was done which focused on a review of the literature and available mapping and aerial photography to determine if there were critical environmental issues and to quantify the potential impact on wetlands and/or the various categories of land ownership.

These data, together with the input received from the public during the initial public meeting, were used to conduct a constraint analysis and thereby select alternatives that either minimized impacts on wetlands or on private property or defined a balance between these two issues. This analysis resulted in refining the number of alternatives under review to five, including the “no-build” alternate. The analysis leading to the selection of these alternates, including property and environmental impacts, construction costs and other factors was then presented at a second public meeting held within the project area. The project area, because of the addition of Corridor 3 was expanded to include the Willow area during this phase of the work.

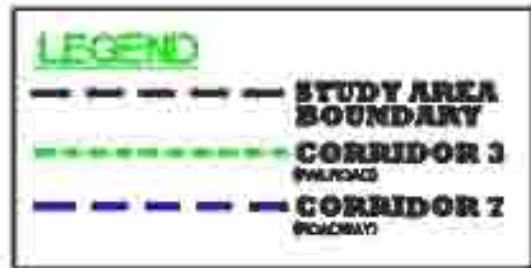
### **Phase Three: Preferred Route Recommendation**

The third phase of the study, working with the input received during the second public meeting, included preparation of preferred route options. Two options were presented. The roadway alternate, without construction of the Knik Arm Crossing is an upgrade and/or realignment of existing MSB roadways. The alignment follows the Point MacKenzie Access Road, Burma Road and South Big Lake Road connecting with the Parks Highway near Big Lake. This alternative is viewed as a two-lane highway. The MSB is currently working to upgrade these roadway sections and this alternative does nothing more than utilize a facility that was already scheduled for improvements.

The railroad alternative follows Corridor 3 across the Little Susitna River and north along a glacial morain lying west of Red Shirt Lake, crossing Willow Creek west of the Parks Highway, crossing the Parks Highway north of Willow Creek and tying into the existing mainline track. This is a spur of over 40 miles in length. The majority of the right-of-way for this alternative crosses public land and the recommendation includes retaining a right-of-way wide enough that a major highway could be built within the same right-of-way should the Knik Arm Crossing be constructed.

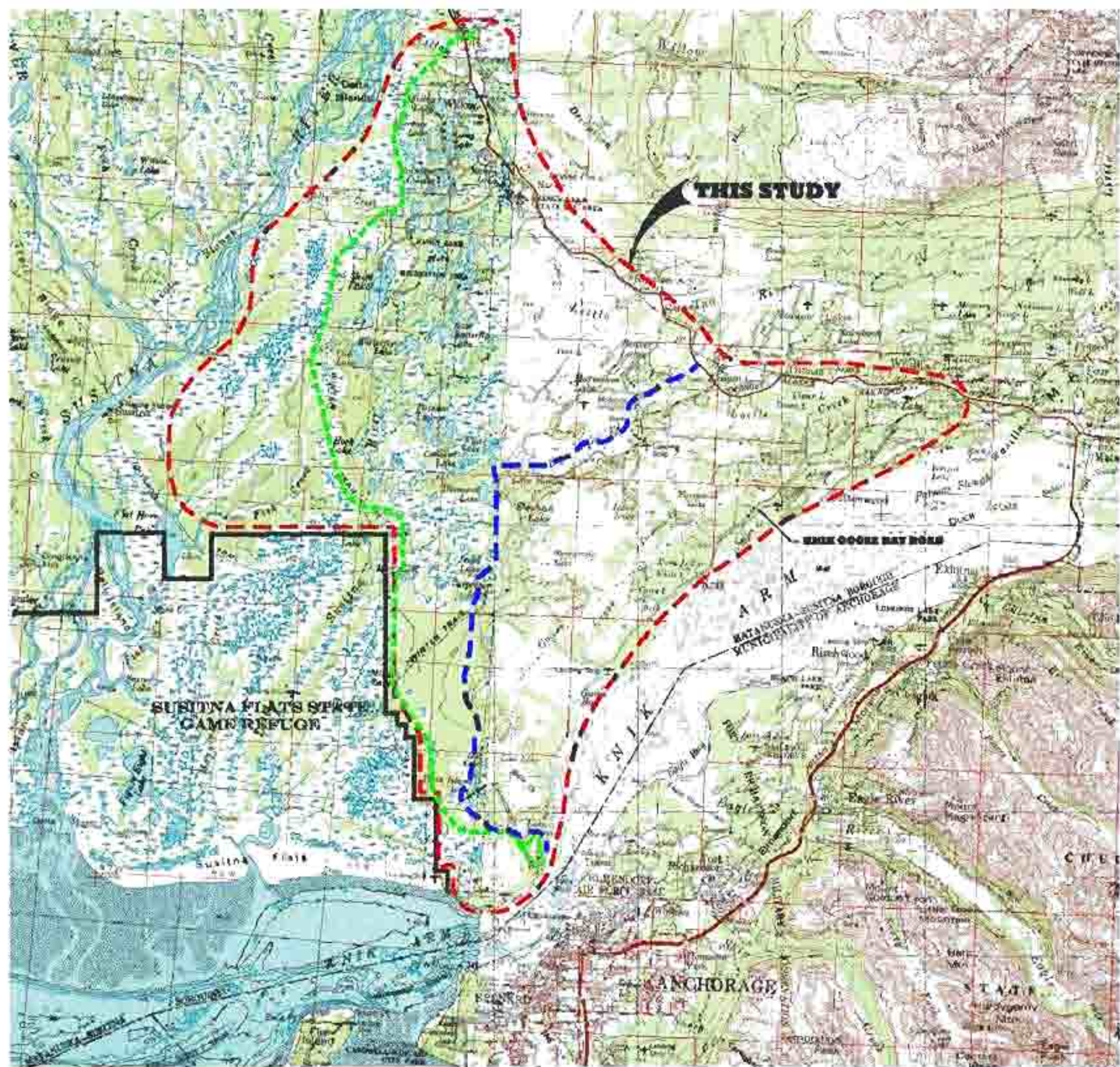
The recommended alignments were presented at a third public meeting.





**FIGURE 1  
CORRIDOR STUDY  
LOCATION**

SCALE: N.T.S.



## 1.4 Historical Studies – Point MacKenzie and Knik Arm Crossing

The impetus for the entire project is the development of a deep-water port at Point MacKenzie on the MSB side of the Knik Arm of Cook Inlet, generally across Knik Arm from the Port of Anchorage. From the beginning, Port MacKenzie has been viewed as a bulk cargo port because the area designated as uplands is virtually undeveloped leaving space for a wide range of commodities and/or industrial uses whereas the Port of Anchorage currently has very little land available for uses that require large amounts of land. Early thinking seemed to be that the two facilities may be developed to be complementing each other to the benefit of the upper Cook Inlet region rather than being competing facilities. The following is an overview of past studies:

1. The Point MacKenzie Industrial Siting Study, 1978 by Environmental Services Limited addressed Industrial development in the Point MacKenzie area. This study identified a number of potential industrial uses for the Point MacKenzie area.
2. The Matanuska-Susitna Borough Port Study, 1981 by Peratrovich & Nottingham, et al, evaluated port sites and recommended Point MacKenzie as the preferred site.
3. The Comprehensive Development Plan: Transportation, 1984, Mat-Su Borough, built on the previous studies. Two possible port locations were evaluated, Point MacKenzie (Site A) and a location directly across from Cairn Point (Site B). This study looked at the bathymetry, currents, ice and other pertinent factors, developed a decision matrix and ultimately recommended Point MacKenzie. The study states that the Point MacKenzie site is suitable for large-scale industrial development and that “anticipated users include mining, petroleum and transportation interests.” The study addressed surface access using Knik-Goose Bay Road and an old existing gravel road that extended to the Point MacKenzie area. Rail access was included in terms of “a 23-mile railroad spur” that would connect Point MacKenzie to the Alaska Railbelt to provide a means of moving heavy bulk cargo to and from the port area. This study also contained brief mention of a ferry system connecting Point MacKenzie with Anchorage.
4. A study entitled “The Essential Elements of a Master Plan for the East Port Area at Point MacKenzie,” 1989, VEI, et. al focused on two critical aspects of the Port MacKenzie development: 1) anticipated freight movements through the proposed Port and the transportation facilities that would be needed to facilitate these freight movements. This report clearly showed that the primary freight would be bulk cargo such as coal, logs, wood chips, sand and gravel, petroleum and other similar materials. It also restated the need for both improved roadway access and new rail access to the Point MacKenzie area to facilitate these freight movements.
5. Economic Evaluation of the Port of Alaska, March, 1990, Temple, Barker & Slane, Inc. – This report focused strictly on the economic potential of a Port and Point MacKenzie. The conclusions were that a port facility was economically viable in the long term and that the primary exports may be expected to be coal and wood chips although there was also a potential for other materials.



6. The “Economic Evaluation and Planning of a Cook Inlet Marine Transportation System” report, June, 1990; BST Associates, et. al, documents an indepth look at the potential for ferry service throughout Cook Inlet. Port MacKenzie was just one of a number of potential ports of call. However, the report further emphasized the need for improved roadway access into the port area.
7. In 1993, the MSB Assembly adopted the “Point MacKenzie Area Which Merits Special Attention Plan” (Point MacKenzie AMSA). This study added to the database and analysis supporting development of a deep-water port at Point MacKenzie and refined 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.
8. In 1998, a master plan for Port MacKenzie was adopted by the Borough. The plan describes port site and facility characteristics, potential uses, a land use plan, a port operating plan, and recommendations, guidelines, and procedures for future Borough actions to implement port management. The purpose of the master plan was to help the Borough work with potential users and also to obtain assistance in developing the port facility. A key recommendation of the master plan was the need to improve access to the port facility.
9. “Matanuska-Susitna Borough Long Range Transportation Plan (LRTP); September, 1997, MSB. This document is a Borough wide transportation plan which includes elements addressing the development of a deep-water port at Point MacKenzie and improved roadway and rail access to that facility. This document states that the MSB approved the East Port site (Point MacKenzie) as the preferred deep-water port for the Borough. Access to the port area included in the LRTP echos the recommendations of the 1993 Point MacKenzie ASMA. The LRTP re-emphasizes the need for rail connection between the port and the Alaska Railroad if the port is to be viable. That access was identified as extending northward from the port to connect with the Alaska Railroad south of the Little Susitna River near Houston. The LRTP also states that development of a pipeline into the port area could be beneficial if not necessary if any extensive bulk fuel storage may be contemplated for the port. The LRTP briefly mentions the potential for ferry service between Anchorage and the port.
10. In 1999, the initial construction at Port MacKenzie was done. This work consisted of construction of an Open Cell design sheet pile barge dock.
11. In 2000, the first industrial user moved into the Point MacKenzie area when AMC constructed a plant for the construction of modular homes and buildings specifically designed for export to western Alaska. AMC has exported homes each of the past three years over the Port MacKenzie dock.
12. Efforts have been on-going to improve the roadway access. The Point MacKenzie access road has been widened and straightened to provide an upgraded gravel road into the port and that facility is scheduled for paving in the near future. The MSB has also been moving ahead with the design for reconstruction of Burma Road and plans





to acquire some or all of the right-of-way for this work in 2004 - 2005. They have also initiated design and ROW acquisition for sections of South Big Lake Road and will move ahead with construction when funds are available.

There have been two “Knik Arm Crossing” studies conducted by State of Alaska Department of Transportation and Public Facilities (ADOT&PF) – one in 1972 and the second in 1984. A number of smaller studies were also conducted by the Borough. The Knik Arm Crossing project is once again under study, this time by the KABATA. The significance of the Knik Arm Crossing was recognized early in this study effort and while truly addressing the full impact of implementation of the Knik Arm Crossing was beyond the scope of this effort, the study team has developed a port access plan that provides the needed access with or without the Knik Arm Crossing, yet provides an option for a major highway route extending north from the crossing should ADOT&PF choose to use it. Design criteria were selected for both roadway and rail. The criteria selected for roadway provide for an improved two-lane facility if the crossing is not constructed and a four-lane divided facility if the crossing is constructed in recognition of the higher volumes and operating speeds that could result. Design criteria prepared for the rail access were selected so that the facility would serve heavy freight traffic as the Alaska Railroad is on record that this alignment may become their new mainline should the Knik Arm Crossing be constructed.

The 1984 study considered a combined rail/highway bridge with some alternatives. Rail and/or highway connections between the port and the Parks Highway/Rail corridor to the north have a direct impact on travel times and consequently freight costs. Current conditions result in travel times between Anchorage and the Parks Highway at Houston approaching 2 hours, exclusive of time lost meeting other trains. The corridors previously studied suggest that a route connecting near Houston could cut the travel time between tidewater and the Houston area in half.

The ARRC has embarked on an ambitious program to improve mainline train operations. The original track alignment from Anchorage north included many curves that were, and still are, 25 mph curves, limiting train speeds to 25 mph for much of the distance between Anchorage and Wasilla with other shorter but similar sections further north. With all planned track improvements completed, the anticipated train trip time, Anchorage to Willow, the northerly terminus of Corridor 3, will be reduced by approximately 30 minutes. Model studies conducted by ARRC suggest that routing trains across the KAC and up Corridor 3 to Willow will shorten the travel time between Anchorage and Willow an additional 30 minutes, resulting in a total trip time reduction, Anchorage to Willow, of approximately one hour over current conditions and 30 minutes over the best time to be achieved through just a realignment of tracks within the existing rail corridor.

The significance of a one-hour travel time reduction is in the long-term operational cost benefit to the railroad and to the long-haul trucks with the greatest benefit being to the railroad. Additionally, if ARRC operating costs decrease, there should be a beneficial impact on freight tariffs. The study indicates that the time-savings to be realized hauling from Port MacKenzie rather than from Anchorage could have an even greater impact on freight costs. Significantly lower freight rates could make Port MacKenzie an attractive alternate to the Port of Anchorage for the movement of freight through the Railbelt.



## 2.0 DATA ANALYSES SYNOPSIS

### 2.1 Description of the study area and the route options analyzed

A basic premise of the study is that the majority of material that may move through Port MacKenzie will have an origin or destination in the interior of Alaska rather than in the major metropolitan areas of Wasilla, Palmer and Anchorage. This is based upon the economic analyses that have previously been done and was confirmed by the economic analysis prepared as part of this study. With this in mind, connecting to the Parks Highway Corridor north of Wasilla will serve to keep the bulk of port traffic separated from the growing traffic and circulation issues in the Wasilla area. This separation is felt to be desirable in view of both capacity and safety concerns.

The study area is roughly triangular with Point MacKenzie at the southern tip. On the east, the area is bounded by Knik-Goose Bay Road. On the west, by the Susitna River and on the north by the Parks Highway corridor. Within this study area a total of eleven different corridors were identified that had been studied in some depth in the 1982 Knik Arm Crossing study and/or other previous studies. Each of the eleven corridors identified included additional specific alignment alternatives, however, the variations were considered to be relatively minor and adequately addressed by the corridors shown.

**Corridor 1** – This alternate begins at Point MacKenzie and moves west to skirt the east boundary of the Susitna Flats State Game Refuge. The alignment turns west across the top of the refuge meeting the Susitna River near the community of Susitna. From there it follows the east shore of the Susitna River to connect with the Parks Highway Corridor north of Willow Creek. Corridor 1 has the advantage of providing access to lands north of the refuge currently designated by the State of Alaska as a potential agricultural development, however, it is also the longest of the alternatives and traverses considerable amounts of wetlands.

**Corridor 2** – This corridor is coincident with Corridor 1 from Point MacKenzie up to the crossing of the Little Susitna River near the northeast corner of the refuge. From that point, Corridor 2 turns north and follows a glacial moraine that lays west of Red Shirt Lake and then ties back into Corridor 1 north of Rolly Creek. This corridor is shorter than Corridor 1 and has less encroachment on wetlands. Corridor 2 is also quite close to Corridor 3 and was combined with Corridor 3 as the analysis went forward.

**Corridor 3** – This corridor initially was a westerly extension of the end of the Little Susitna River access road and extended into the northeast corner of the Susitna Flats State Game Refuge (SFGR) before turning north. After turning north, the corridor follows the glacial moraine traveling west of Red Shirt Lake and skirting west of the boundary of the Nancy Lake Recreational Area, ultimately tying back into Corridor 1 before crossing Willow Creek and rejoining the Parks Highway Corridor north of Willow Creek.

**Corridor 4** – This corridor as originally defined left the port area in a westerly direction passing into the SFGR before turning north around Middle Lake before passing back out of the SFGR to pass between Crooked Lake and the Pappoose Twins Lakes, northwest of Horseshoe Lake and



across the bogs to connect with the Parks Highway Corridor at Houston. This corridor, as originally defined, appears to have the largest impact on wetlands and encroaches on the SFGR.

**Corridor 5** – This corridor extends west from the port area about four miles then turns north up a section line through the Point MacKenzie agricultural project and west of Carpenter Lake and Diamond Lake before passing between Crooked Lake and Flat Lake and between Big Lake and Horseshoe Lake and north of Beaver Lakes to meet the Parks Highway Corridor a bit south of Houston. This corridor passes through a relatively large amount of private property and a significant amount of wetlands.

**Corridor 6** – This corridor leaves the port area following the existing Point MacKenzie access road north to the Little Susitna River access road to the north on the east side of Carpenter Lake, along Burma Road, to pass across the isthmus between Big Lake and Flat Lake, tying back into Corridor 5 south of Horseshoe Lake. The corridor then follows Corridor 5 onto the Parks Highway Corridor south of Houston. This corridor also impacts significant amounts of private property although it appears to be on better ground until nearing Big Lake.

**Corridor 7** – This corridor is coincident with Corridor 6 up to the Little Susitna River access road. It then follows a slightly different route than corridor 6 to a point just north of the South Big Lake Road where it reconnects with and follows Corridor 6 to the Parks Highway.

**Corridor 8** – This corridor is coincident with Corridor's 6 and 7 up to the South Big Lake Road then follows South Big Lake Road easterly around the south side of Big Lake and through the community of the same name and northeasterly about four miles to a connection with the Parks Highway Corridor. Much of this corridor is already programmed for improvement by MSB as funds become available. Design has been done on sections of the Point MacKenzie access road, Burma Road and South Big Lake Road and the MSB is moving ahead with ROW acquisition and construction working from the port area northward.

**Corridor 9** – This corridor is coincident with Corridor's 7, 8 and 11 leaving the port area and following the Point MacKenzie access road north to the Little Susitna access road. From that point, Corridor 9 goes to the northeast and is positioned roughly half-way between Corridor 8 and Corridor 10. The corridor passes through a large amount of private property and connects with the Parks Highway Corridor at Pittman Road.

**Corridor 10** – This corridor follows the Point MacKenzie access road and Knik-Goose Bay Road to the Parks Highway in Wasilla. This corridor was carried forward as the “no build” alternate in that it is the current access to Port MacKenzie and would continue in that role if no other action were taken. This facility has the capacity to handle the projected increases in traffic generated by Port MacKenzie and is already programmed for improvements by ADOT&PF and by the MSB. This corridor does not serve to keep increases in freight traffic away from the Wasilla urban area, rather it draws additional traffic into the heart of the Wasilla area.

**Corridor 11** – This corridor is not new but an aggregate of Corridor's 5 and 6. This corridor was approved by the MSB assembly in 1992.











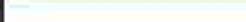


Each of these corridors, including variations, has been studied as part of the 1982 Knik Arm Crossing and other subsequent studies. This project began with the team going to the public initially to state, “this is what has been studied to date and please tell us your views on any or all of the alternatives.”

During the initial public meeting there was strong public sentiment expressed that the routing selected for either a road or a railroad should be one that minimized the need to take private property. Following this meeting, the team initiated a constraint analysis and used that technique to adjust and/or eliminate alternates. The primary constraints turned out to be private property and wetlands. Obviously there are a number of socioeconomic impact issues associated with development of a major transportation corridor through an established community, even one with the rural to semi-rural characteristics of the Big Lake area of the Mat-Su Borough. Figure 2 shows the original corridors and boundary of the study area.



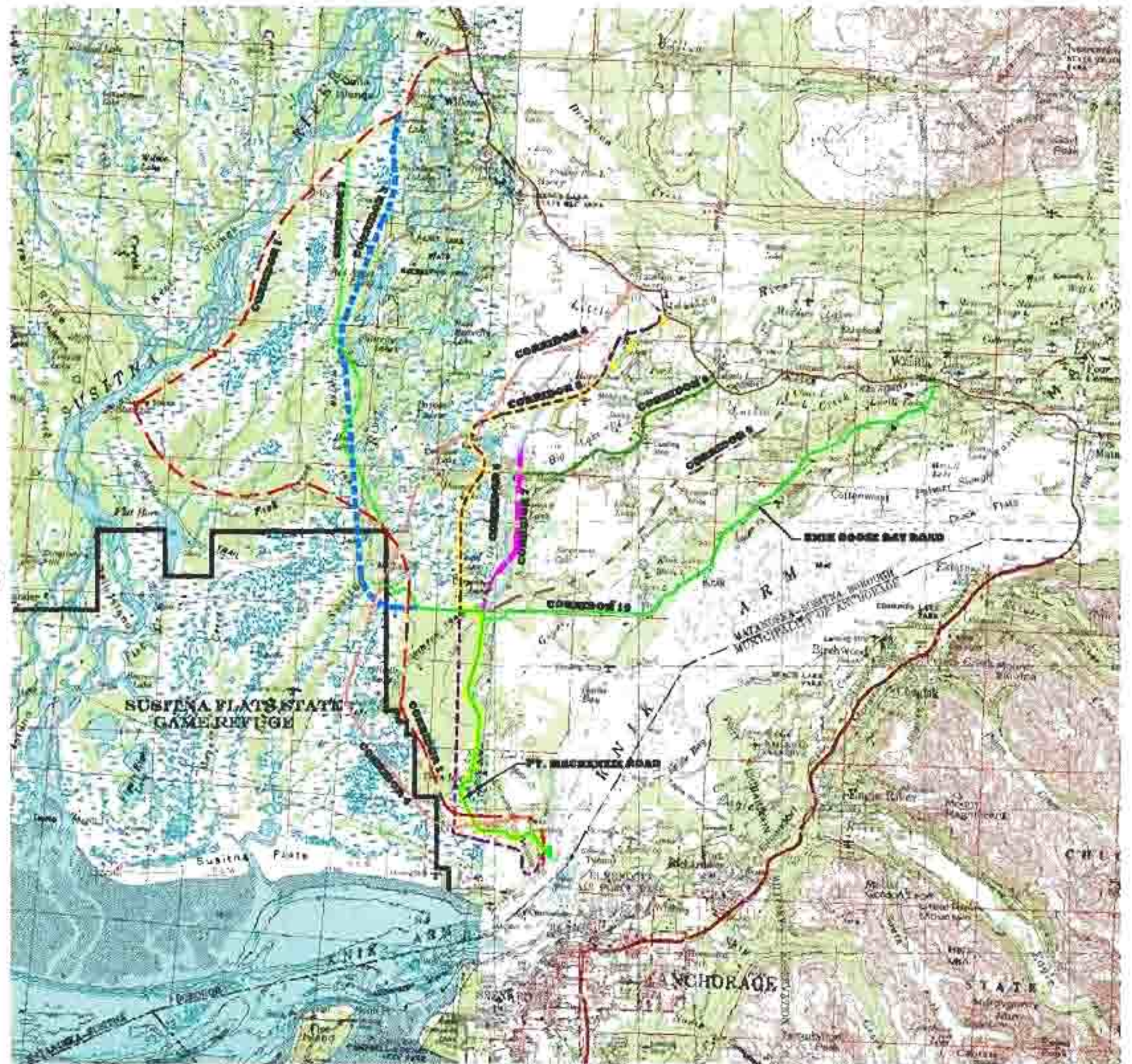
**LEGEND**

-  CORRIDOR 1
-  CORRIDOR 2
-  CORRIDOR 3
-  CORRIDOR 4
-  CORRIDOR 5
-  CORRIDOR 6
-  CORRIDOR 7
-  CORRIDOR 8
-  CORRIDOR 9
-  CORRIDOR 10
-  CORRIDOR 11



**FIGURE 2  
ORIGINAL ALTERNATIVES**

SCALE: N.T.S.



As a result of the constraint analysis the number of alternates was significantly reduced and additional analysis was done on each of those remaining. The remaining corridors were:

**Corridor 3** – This corridor was modified from the original so that as it left the port area the alignment shifted to the west near but outside of the SFGR boundary then extending north to cross the Little Susitna River, following a moraine deposit north on a line west of Red Shirt Lake and the boundary of the Nancy Lake Recreation Area (NLRA), crossing Willow Creek and connecting with the Parks Highway/ARRC corridor north of Willow Creek. Although Corridor 3 was viewed as a rail only corridor at this point, discussions with the MSB staff it was determined that this corridor width should be planned as a multimodal corridor providing sufficient ROW width for highway, rail, pathway and a full range of utilities. The suggested width for this corridor was determined to be 800 feet. Much of this corridor is public land, although it is a mix of borough, state and federal with some private land mixed in. Much of the private land is located immediately north of Point MacKenzie and near Willow Creek. The highway element of the corridor was included to provide a location for an alternate to the Parks Highway should the Knik Arm Crossing be constructed. This corridor received considerable public support at the second public meeting and there were numerous comments recommending that a roadway be included in the corridor.

**Corridor 4** – This corridor was modified from the original to avoid conflicts with the SFGR and minimize the impact of private property. The trade off to private property impacts for this alignment was to maximize the amount of wetland area impacted. As modified, Corridor 4 left the port area northward following the Point MacKenzie access road north to the Little Susitna River Access Road, then followed the Little Susitna Access Road westerly about one mile turning north to follow a section line alignment west of Carpenter Lake, leaving the section line to pass immediately west of Diamond Lake and between Crooked Lake and Flat Lake then moving north of Horseshoe Lake across large wet areas to connect with the Parks Highway corridor at Houston. The wetland areas west and north of Horseshoe Lake average 8 to 10 feet of organic soils over competent material according to data obtained from MSB for roadway improvements recently constructed in adjacent areas. This corridor was, for a time considered as potentially a combined roadway/ railway corridor. This corridor received considerable opposition at the second public meeting and was ultimately dropped due to the adverse public reaction and the amount of wetlands impacted.

**Corridor 5** – This corridor remained much as discussed earlier. Analysis of the alternate suggested that it provided a reasonable balance between wetland impacts and private property impacts. It followed very closely an alignment approved by the MSB Assembly in 1992 and was presented at the second public meeting as roadway only. Based on input received during the second public meeting Corridor 5 was subsequently dropped from further consideration based on adverse public reaction, the amount of private land that would have been needed and the still significant level of wetland impacts.

**Corridor 7** – This corridor originates at the port and follows the Point MacKenzie Access Road north, crossing the Little Susitna River Access Road, following and realigning portions of the Burma Road to connect with the South Big Lake Road and then following South Big Lake Road east through the community of Big Lake to connect with the Parks Highway. This corridor was



presented as roadway only that was deliberately designed to take advantage of roadway improvements already under design and/or ROW acquisition. With this approach, Corridor 7 appeared to have the least private property impacts and limited wetlands impacts. It also appeared to have the least construction costs of any alternative other than the No-Build. This corridor received good support at the second public meeting although not overwhelming.

**Corridor 10** – This corridor, as previously stated, followed the Point MacKenzie Access Road north to connect with Knik-Goose Bay Road then followed Knik-Goose Bay Road to the Parks Highway in Wasilla. It was presented as a roadway option only and as the “No-Build” option in that it is the current roadway access to the port. Knik-Goose Bay Road is a state facility and is included in the STIP for improvement. The primary drawbacks to this alternative is that it brings all of the port traffic into and through the Wasilla urban area with all of the associated traffic and safety issues and it would involve nearly 10 miles of additional travel for all truck haul materials with an origin or destination north of Big Lake. Overtime that constitutes a significant increase in vehicle miles travels with the associated impacts on air quality both from additional travel and additional delays in passing through the more congested Wasilla urban area. This corridor did receive significant support during the second public meeting.

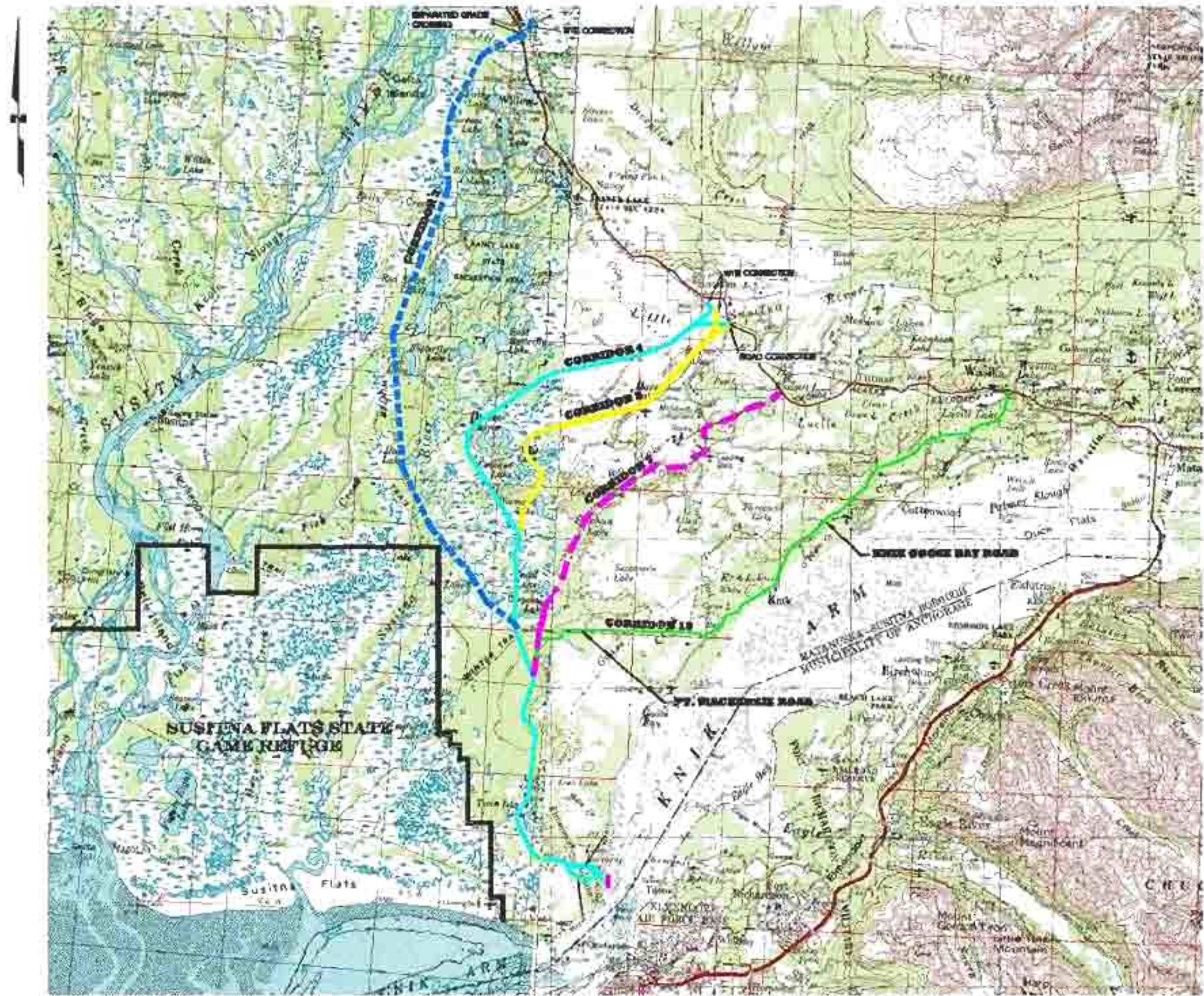


**LEGEND**

	<b>CORRIDOR 3</b> (RAILROAD)
	<b>CORRIDOR 4</b> (RAILROAD AND ROADWAY)
	<b>CORRIDOR 5</b> (RAILROAD AND ROADWAY)
	<b>CORRIDOR 7</b> (ROADWAY)
	<b>CORRIDOR 10</b> (ROADWAY)



**FIGURE 3  
CURRENT  
ALTERNATIVES**  
SCALE: N.T.S.







Following the second public meeting, November 20, 2002, an analysis of public input, functionality, and potential environmental consequences a decision was made to narrow the alternates down to two corridors as follows:

**Corridor 3** – This would be the railroad alignment, however, the ROW reserved for the corridor should be 800 feet wide to accommodate a highway, pathways, and utilities.

**Corridor 7** – This would be roadway only access and would serve as the vehicular access until the Knik Arm crossing is built. Selection of this alternate eliminates the need for an entire new roadway corridor through areas that are felt, by the area residents, to be sensitive.

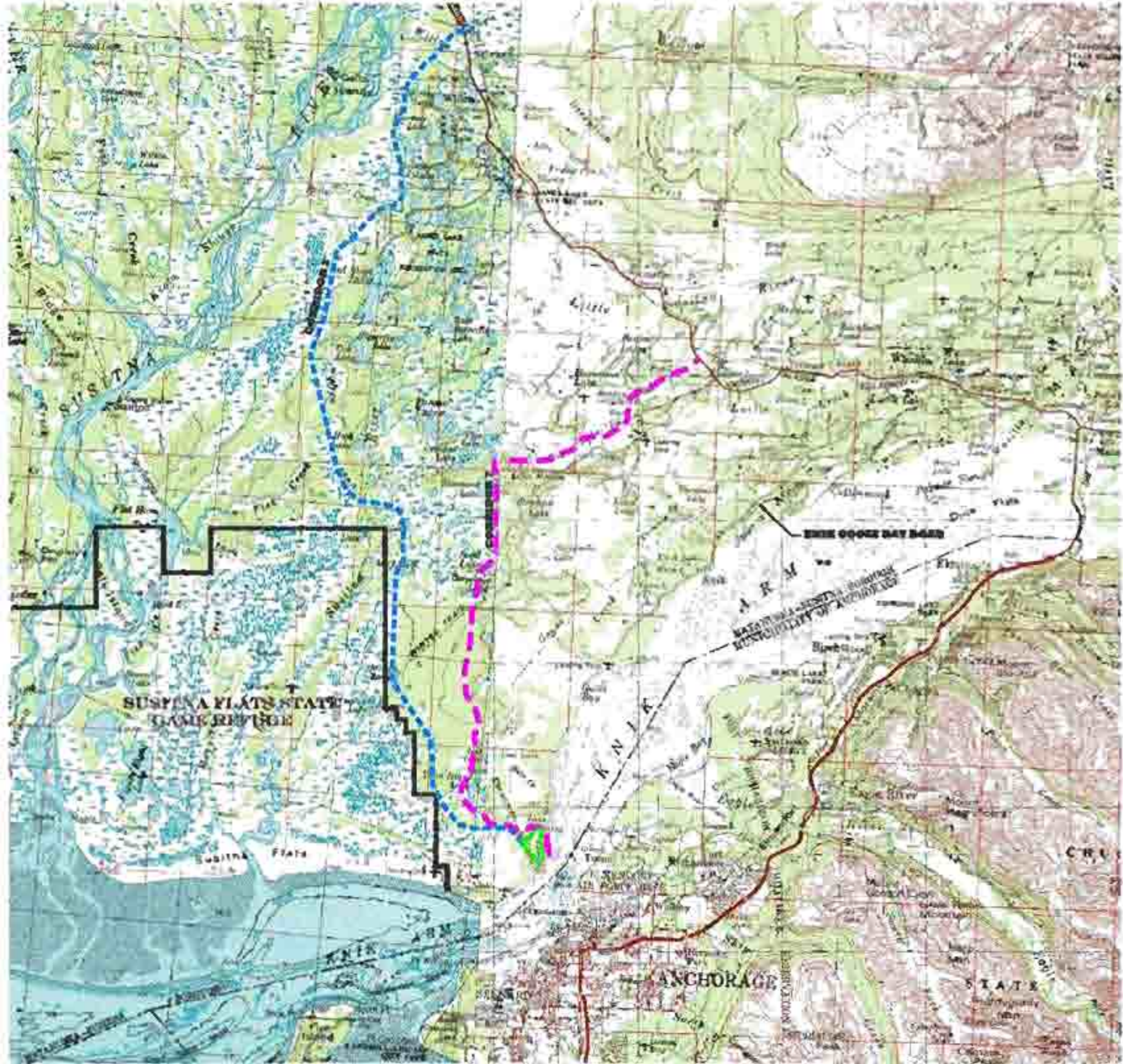
Figure 4 shows the recommended routes by corridor.

**LEGEND**

-  **CORRIDOR 3**
-  **CORRIDOR 7**



**FIGURE 4**  
**CORRIDORS 3, AND 7**  
SCALE: N.T.S.



## 2.2 Field Reconnaissance and Baseline Geotechnical Engineering Report

The purpose of the report was to compile existing subsurface information along the various proposed corridors, to verify the accuracy of this information by ground proofing in the field, and provide baseline geotechnical observations regarding the constructability of a new rail spur along two corridors: East and West. The primary goal of the report was to determine the correlation of existing, mapped soils with observed soil conditions in the field. Field reconnaissance was conducted during three different times. The first exercise was conducted May 31, 2002 along the proposed East corridor; the second from November 5<sup>th</sup> to 9<sup>th</sup> along the southern two-thirds of the West corridor; and January 14, 2003, along the remaining northern section of the West corridor.

The report concluded that the literature sources and observations made in the field reconnaissance are in good agreement. According to the report, there is a strong correlation between hydric soils from the NRCS survey and deposits delineated in the ADOT study as organic deposits and other low-lying, potentially silty deposits like marine, glaciomarine, fluted and lowland tills, and abandoned floodplains. Observations made during the field reconnaissance agree strongly with the existing literature in that many of the low-lying areas are poorly drained and (especially in the northern and western extents of the East corridor) in these areas, many lakes and peat bogs have formed. The report also found that while the correlation between the literature sources and the field observations was generally good, observations made in the field suggest a weaker correlation in specific areas. These weaker correlations occur in the extreme north and west portions of the study area, specifically along the West corridor.

The geotechnical reconnaissance report (Appendix G) includes photographs representative of the soil conditions that may be expected throughout the area.

Once preliminary studies have been completed, more extensive subsurface exploration should be conducted in the design phase of the project.

## 2.3 Archeological and Historic Resources Summary

### Previous Research

Throughout the study area, there have been numerous cultural resource inventories and reconnaissance studies dating from 1930 to the present. A complete analysis of previous research is in Appendix H, Cultural Resources.

### Prehistoric and Historic Cultural Sequence

The Alaska Heritage Resource Survey (AHRS) sites recorded thus far in the vicinity of the two proposed transportation corridors consist of 43 separate entries representing primarily two types of sites: standing buildings or ruined cabin sites, and clusters of large and small depressions most of which are the remains of traditional Native dwellings and cache pits. In the identified constraint analysis, these cultural resources were avoided.

## 2.4 Commodities Study Summary

The Rail Corridor Commodity Flow study includes descriptions and market analysis of the types and quantities of goods that could pass through Port MacKenzie. The purpose of the study was to assess the volume of goods and materials that might move across the port if a rail link were available connecting the port with the Alaska Railroad main line near Willow or Houston.

Low, base and high case forecasts for the state and region were used to guide the assessment. These forecasts came from the Institute of Social and Economic Research (Scott Goldsmith, 2001).

Low	Base	High
<ul style="list-style-type: none"> <li>✓ Paved road to Port MacKenzie by 2005. Rail link established by end of study period</li> <li>✓ Electricity and gas available at Port MacKenzie</li> <li>✓ Port of Anchorage expands to handle anticipated cargo, cruise ship traffic through 2020</li> <li>✓ No direct transportation link across Knik Arm between Anchorage and Point MacKenzie</li> </ul>	<ul style="list-style-type: none"> <li>✓ Paved road to Port MacKenzie by 2003. Rail corridor established and operations commence about 2015</li> <li>✓ Electricity and gas available at Port MacKenzie</li> <li>✓ Port of Anchorage has limited expansion of cargo handling capabilities and reaches limit of cargo capacity before 2020</li> <li>✓ Ferry service links Port MacKenzie and the Port of Anchorage</li> <li>✓ There is no Knik Arm bridge, hence no change in rail or highway access between the MSB and Anchorage</li> <li>✓ A fuel pipeline from Port MacKenzie to the POA is constructed late in the study period</li> </ul>	<ul style="list-style-type: none"> <li>✓ Paved road access to Port MacKenzie by 2003. Rail service commences about 2010</li> <li>✓ Electricity and gas available at Port MacKenzie</li> <li>✓ Port of Anchorage has limited expansion of cargo handling capabilities and reaches limit of cargo capacity before 2020</li> <li>✓ Bridge links Point MacKenzie and Anchorage about 2010</li> <li>✓ Highway access to the MSB via Knik Arm bridge.</li> <li>✓ Spur from natural gas pipeline to the Lower 48 states serves Port MacKenzie</li> <li>✓ Air cargo handling operations at Anchorage International Airport shift to new airport at Point MacKenzie</li> </ul>



Under the base and high case scenarios, the prospects for some economic development and significant cargo handling seem likely for Port MacKenzie by 2020. Below is the commodity flow summary for various development scenarios for Port MacKenzie in 2020.

<b>Commodity</b>	<b>Base</b>	<b>Low</b>	<b>High</b>
Petroleum and Chemicals (thousands of short tons)	870	50	2608
Cargo Containers	0	0	0
Wood Products (thousands of dry tons)	300	200	400
Coal (thousands of short tons)	800	200	1500
Sand and Gravel (thousands of short tons)	800	200	2000
Oil Field Modules	1	0	3
Manufactured Homes	98	45	147
Selected Minerals	0	0	0
Natural Gas	0	0	12

\* Data relative to Coal, Sand and Gravel, and Oil Field Modules provided by the Port MacKenzie Manager subsequent to completion of the Commodities Flow Study.

## 2.5 Review of Design Criteria

Design criteria have been selected for the rail line and for two classes of roadway, a two-lane rural highway and a four-lane divided rural highway. The design criteria selected for the rail line conform to AREMA and to the design criteria controlling the design of current Alaska Railroad track improvement projects. The design criteria selected for both roadway sections conform to AASHTO and ADOT&PF requirements for the respective class of facility.

The table below describes the design criteria used for analyzing a future two-lane highway, a future four-lane highway, and a future railroad.

<b>ROAD NAME:</b>	<b>FUTURE TWO LANE HIGHWAY</b>	<b>FUTURE FOUR LANE HIGHWAY</b>	<b>FUTURE RAILROAD</b>
DESIGN YEAR:	N/A	N/A	2025
PRESENT ADT (& YEAR):	NONE (5,000 TO 20,000 FUTURE ADT)	NONE (20,000 TO 40,000 FUTURE ADT)	0-NO RAIL LINE
DESIGN YEAR ADT (& YEAR)	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
DESIGN SPEED:	65 MPH	65 MPH	60 MPH
MINIMUM LANE WIDTH:	12 FEET	12 FEET	N/A
MINIMUM NUMBER OF LANES (EACH WAY):	ONE	TWO	N/A



MINIMUM SHOULDER WIDTH (INSIDE & OUTSIDE):	10 FEET	10 FEET	N/A
MINIMUM HORIZONTAL RADIUS:	1660 FEET (WITH SUPERELEVATION)	1660 FEET (WITH SUPERELEVATION)	N/A
MAXIMUM GRADE FOR DESIGN SPEED:	4%	4%	N/A
STOPPING SIGHT DISTANCE:	645 FEET	645 FEET	N/A
PASSING SIGHT DISTANCE:	2285 FEET	2285 FEET	N/A
MAXIMUM SUPERELEVATION:	6%	6%	N/A
TYPE OF TERRAIN:	ROLLING	ROLLING	N/A
RATE OF VERTICAL CURVATURE:	SAG <u>157</u>	SAG <u>157</u>	
	CREST <u>193</u>	CREST <u>193</u>	N/A
SIDE SLOPE RATIOS:	FORESLOPE <u>3:1</u>	FORESLOPE <u>5:1</u>	
	BACKSLOPE <u>3:1</u>	BACKSLOPE <u>5:1</u>	N/A
ILLUMINATION:	NEW LIGHTING SYSTEM AT SELECT INTERSECTIONS	NEW LIGHTING SYSTEM AT SELECT INTERSECTIONS	NEW LIGHTING SYSTEM PORT LOOP TRACK ONLY
DESIGNER/CONSULTANT:	NORM GUTCHER-TRYCK NYMAN HAYES	NORM GUTCHER-TRYCK NYMAN HAYES	TED TRUEBLOOD – TRYCK NYMAN HAYES
APPROVED BY:	MAT-SU BOROUGH	MAT-SU BOROUGH	ARRC
DESIGN LOADING:	N/A	N/A	E-80
RULING GRADE:	N/A	N/A	N.B/S.B. 0.5% (ULTIMATE MAX 1%)
MINIMUM RADIUS OF CURVE:	N/A	N/A	2.0 DEGREES MAINLINE=2864.93 FEET (5.0 DEGREES WYE CONNECTION TO MAINLINE AND 7.5 DEGREES FOR PORT LOOP TRACK
RAILS/TIES:	N/A	N/A	141 LB TIE: CONCRETE
SIDING:	N/A	N/A	6,200 FEET CLEAR SIDING EVERY 10 MI UPGRADE WILLOW SIDING AT CONNECTION TO MAINLINE POWER SWITCHES WITH ABS & CTC
NUMBER OF TRACKS:	N/A	N/A	1 PLUS SIDING @ 10 MI INTERVALS
DEGREE OF ACCESS CONTROL:	PARTIAL	PARTIAL	GRADE SEPARATE ALL ROAD AND TRAIL SYSTEM CROSSINGS OUTSIDE OF PORT AREA



## 2.8 Rail and Vehicular Traffic Analysis Summary

The traffic estimates compiled for this report are directly derived from Northern Economics, Inc. (NEI) *Rail Corridor Commodity Study*, dated September 2002, the *Knik Arm Crossing Draft Environmental Impact Study* by ADOT&PF, dated August 1984 (KAC ADOT&PF 1984 study), assumptions on traffic movement and existing traffic counts. The economical land based modes of transportation viable for commodities and general public travel to and from the proposed Port MacKenzie development are by roadway and/or railroad. The origin for most commodities exported through the Port is expected to be from within the Mat-Su Borough (MSB) for the short-term condition. As development continues within the state of Alaska, specifically the interior and northern regions, additional commodities are expected to contribute to the exporting progression at Port MacKenzie. Many of the exports would be nationally and internationally bound. A portion of the exports would be bound intrastate.

Traffic with a trip end at Port MacKenzie will primarily fall into three categories:

1. Employees of the port and/or associated businesses maintaining facilities at Point MacKenzie.
2. Freight moving into or out of Port MacKenzie. This may be freight moving by either truck or rail.
3. Commuter traffic. Without either a bridge or a ferry system, there will be virtually no commuter traffic. The proposed ferry system is expected to bring additional vehicles through the port area, depending on the trip frequency and other factors.

The primary focus of the study is the movement of freight into and out of the port area. The NEI study identified several possible bulk commodities with associated quantities that could be exported through Port MacKenzie up to the study period of 2020. The commodity flow through the Port is presented in Table 1 from the executive summary of the NEI report. The commodities listed are petroleum and chemicals, cargo containers, wood products, coal, sand and gravel, oil field modules, manufactured homes, select material and natural gas. The NEI report identified these commodities as possible exports, however, market conditions will ultimately dictate which materials will move through the Port and in what quantities. The NEI report listed commodities and their associated quantities based on a low, high and base level of development. Imports identified by the NEI report are containerized cargo, petroleum products and logs. These imports were only considered and not realized as potential goods that would be transported into the MSB. No commodities were identified within the study period as import commodities, however, future market conditions will determine when commodities will begin to move through the Port.



**Table 2-2  
Traffic Volume  
Based on Bulk Commodity Flow and Port Commuters**

**CASE I**

	Train	Vehicle			TOTAL (trips/day)
		Trucks (per/day)	Commuters (per/day)	Other (per/day)	
Wood Products	n/a	54	12	n/a	<b>66</b>
Gravel Products	n/a	22	8	n/a	<b>30</b>
Manufactured Homes	n/a	14	22	n/a	<b>36</b>
Ferry Transport	n/a	see note <sup>1</sup>	1056	n/a	<b>1056</b>
Petroleum Products	n/a	n/a	n/a	n/a	n/a
<b>TOTAL (Trips/day)</b>		<b>90</b>	<b>1098</b>		

**CASE II**

	Train	Vehicle			TOTAL (trips/day)
	Cars (loads)	Trucks (per/day)	Commuters (per/day)	Other (per/day)	
Wood Products	(per/week) 187	111	32	n/a	<b>143</b>
Gravel Products	(per/mo) 6	11	12	n/a	<b>23</b>
Manufactured Homes	n/a	14	45	n/a	<b>59</b>
Ferry Transport	n/a	see note <sup>1</sup>	2108	n/a	<b>2108</b>
Petroleum Products	(per/day) 96	n/a	14	n/a	
<b>TOTAL (Trips/day)</b>		<b>136</b>	<b>2211</b>		

Notes:

1 Commuter counts would have to be converted to truck counts.

Case I - Occurs within 1 to 5 years of 2003

Case II - End of study timeline, year 2020





The commodities likely to be moved through Port MacKenzie will initially be moved exclusively via truck using existing or improved roadways and by conveyor system within the Port District for sand and gravel. Port employees for the various export businesses and dock operations will travel to work by this new or improved roadway. Without implementation of the Knik Arm Crossing project, anticipated vehicular volumes are in the range of 2,350 vehicles/day with an estimated 6% of the vehicles being trucks. These volumes are well within the capacity range of a two-lane rural arterial road.

Completion of the rail spur and the need to expand beyond the local area for resources, such as wood and gravel, will promote rail transport to the Port instead of truck haul. Commodities that would most likely be transported exclusively by rail are petroleum products from the North Pole refinery and potentially coal from the established Usibelli Mines and the Wishbone Hill Mine. In addition, future mining of select minerals from interior Alaska could also be transported by the rail to the Port.

The potential for petroleum products being transported to and through Port MacKenzie is included in the recognition of the current, relatively limited space available in the Port of Anchorage for expansion of existing tank farms. The residents of the Government Hill area of Anchorage for years have been actively urging relocation of the existing tank farms. These objections, coupled with limited land availability may make Port MacKenzie an attractive alternate for additional tankage with a pipeline under water across Knik Arm to connect with the existing tankage and distribution system in Anchorage. Should these changes occur, the nearly daily petroleum train from the North Pole refinery could off-load at Port MacKenzie instead of in Anchorage.

Wood Chips seems to be the most likely significant bulk commodity with a potential for export through Port MacKenzie at this time. The Commodities Study prepared by Northern Economics provides estimated tonnage of chips, these figures have been used to generate estimates of rail car and/or truck loads of chips. The tables included above suggest that initially approximately 54 truck loads per day may be expected while late in the 20 year planning period the volume may be expected to increase to an estimated 187 railcars per week and 111 truck loads per day. This would equate to two trains per week in addition to the truck traffic. It should be noted that Port MacKenzie has negotiated agreements with a chip exporter to begin the export of chips as soon as the loadout facilities can be constructed. The Port is moving ahead with design of an extension of the existing barge dock that will allow moorage of deep draft vessels suitable for chip export and that a conveyor load out facility is also being planned.

Gravel products are thought to be a long-term possibility for export. The Port controls sizable deposits of sand and gravel suitable for construction and feels there are opportunities to mine and export those materials. Doing so will not generate traffic into the port area other than the employees involved in the mining and export operations. As development continues in South Central Alaska, the need for sand and gravel construction materials will grow while the development will tend to occupy the surface of deposits. The net effect may be that in the longer term, these materials may be brought from deposits further afield.



Manufactured Homes is an existing industrial use at Point MacKenzie today. The presence of this industry brings raw materials by truck to Point MacKenzie, estimated at 14 truck loads a day. This is expected to remain static over time. The plant is not currently operating full time. The feeling is that as demand increases, they will respond by increasing the number of days of operation and that the material deliveries will remain at about the same level on a daily bases, but experiencing a net increase in the number of days of operation.

Ferry Transport is a very likely function for Port MacKenzie. The MSB is currently moving ahead with planning, environmental studies and design of a prototypical vessel and with the terminal facilities for both Port MacKenzie and Anchorage. Operations could begin in two to three years but are subject to availability of funding.

These activities are felt to be the predominate trip generators involving Port MacKenzie during the next 20 years. The Traffic and Circulation Study used the projected movement of goods and people to generate anticipated rail and vehicle trips included in the tables above. This information was used as input to the selection of design criteria for both the railroad and the roadway elements of the project.

## **2.9 Right-of-Way Costs**

### **Corridor 3**

The Right-of-Way for Corridor 3 impacts seven different types of property ownership as determined by the study team in a detailed analysis. These property types are listed on the following page with the heading of PROPERTY COST FOR RIGHT OF WAY ACQUISITION OF CORRIDOR 3. The cost of property for the local area of Corridor 3 was based on sale prices for comparable parcels in and around the project area and includes pricing for several area sizes and improved/unimproved land values. The specific area of the matrix relating to Corridor 3 is T14N to T17N of 05W. In general, the cost of each property increases as the property size decreases. The information describes the cost of property per property size and location versus the property type. The complexity involved in estimating land values exceeded the level of effort planned for this element of the work, therefore an assumption was made to provide average land costs by property type.

The majority of the 4556 acres Corridor 3 will impact is publicly held. This includes the 'N/A or No data' property that is most likely held by a public entity. The cost to acquire these public lands will presumably be on a non-cash basis where property is exchanged for compensation or some other formal agreement is made between the public entities. This would require the developing entity of Corridor 3 be a public entity with sufficient land holdings.

Based on the available data determined from this study, assumptions were made to calculate the property costs for Corridor 3.

- Private property and Native property will be purchased on cash basis.

- All property excluding private and Native will be acquired through land swaps rather than through direct purchase.
- The cost of private property per acre will be based on values shown in Table 2-3. The cost will be an average of improved land versus unimproved land and an average of the five-acre cost and the 100-acre cost. This is based on impacted areas comprising of a combination of large parcels and smaller residential lots.

### **Calculations:**

#### **Unimproved land**

5 acres = \$6152 per acre & 100 acres = \$500 per acre  
Average = \$3326 per acre

#### **Improved land**

5 acres = \$29,638 per acre & 100 acres = \$41 per acre  
Average = \$14,840 per acre

Combined Average of above averages = \$9083 per acre

### **Corridor 7**

The Right-of-Way for Corridor 7 also impacts seven different types of property ownership. These are the same property types as listed on the page with heading of PROPERTY COST FOR RIGHT OF WAY ACQUISITION OF CORRIDOR 3. The cost of property for the local area of Corridor 7 was based on the sale prices for comparable parcels in and around the project area and includes pricing for several area sizes and improved/unimproved land values. The specific area of the matrix relating to Corridor 3 is T14N to T17N of 05W. In general, the cost of each property increases as the property size decreases. With Corridor 7, the majority of the ROW acquisition will be strips of land rather than an entire parcel. This tends to also increase the per acre price. The information presented describes the cost of property per property size and location versus the property type. The complexity involved in estimating land values exceeded the level of effort planned for this element of the work, therefore, an assumption was made to provide average land costs by property type.

The majority of the ROW for Corridor 7 is already owned by the MSB or ADOT&PF because the route follows existing facilities and lies largely within existing ROW. The strip takes from private property that will be required and is estimated at 180 acres. Corridor 7 will impact largely privately held land, although there also is some publicly held land. The large ROW costs for this corridor will be the New Burma Road segment and the 2.2 miles of South Big Lake Road planned for total realignment. The ROW costs for these two sections are excluded from the figures presented in this report because that ROW has already been acquired or is programmed for acquisition during 2004 - 2005. The estimates do not include any ROW costs for the section from Big Lake to the Parks Highway either, as it appears that any proposed improvements would be easily contained within the existing ROW in this section. The cost to acquire any



public lands will presumably be on a non-cash basis where property is exchanged for compensation or some other formal agreement is made between the public entities.

Based on the available data determined from this study, assumptions were made to calculate the property costs for Corridor 7.

- Private property and Native property will be purchased on cash basis.
- All property, excluding private and Native, will be acquired through land swaps rather than through direct purchase.
- The cost of private property per acre will be based on values shown in Table 2-3. The cost will be an average of improved land versus unimproved land and an average of the one-acre costs. This is based on impacted areas comprising of strip takes off of existing developed and undeveloped land.

**Calculations:**

**Unimproved land**

1 acre = \$11,308 per acre

**Improved land**

1 acre = \$50,810 per acre

Combined Average of above averages = \$31,059 per acre



**Table 2-3**  
**Mat-Su Corridor**  
**Estimated Cost by Parcel Size**  
**11/11/02**

**UNIMPROVED LAND VALUES**

TOWNSHIP	RANGE	<= 1 ACRE	<= 5 ACRE	<= 10 ACRE	<= 20 ACRE	<= 50 ACRE	<= 100 ACRE	>= 100 ACRES	> = 300 ACRES
T16N	03W	\$ 7,938.00	\$ 6,759.00	\$ -	\$ -	\$ 674.00	\$ 550.00	\$ -	\$ -
T17N	03W	\$ 14,747.00	\$ 6,247.00	\$ 3,197.00	\$ 2,307.00	\$ 1,701.00	\$ 3,689.00	\$ 7,863.00	
T18N	03W	\$ 10,320.00	\$ 6,442.00	\$ 3,742.00	\$ 2,154.00	\$ 1,180.00	\$ 711.51	\$ 476.00	
T14N	04W	\$ 6,095.00	\$ 9,298.00	\$ 6,921.00	\$ 2,723.00	\$ -	\$ 619.00	\$ -	\$ 203.00
T15N	04W	\$ -	\$ 2,041.00	\$ -	\$ 708.00	\$ -	\$ 630.00	\$ -	\$ 187.00
T16N	04W	\$ 11,853.52	\$ 6,336.05	\$ 2,065.00	\$ 2,202.00	\$ 118.52	\$ 715.89	\$ -	\$ 578.00
T17N	04W	\$ 27,932.00	\$ 8,433.90	\$ 3,716.50	\$ 2,978.07	\$ 1,694.47	\$ 1,286.08	\$ 525.12	\$ -
T18N	04W	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,290.60	\$ 1,010.60
T14N	05W	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
T15N	05W	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 500.08	\$ -
T16N	05W	\$ 4,285.71	\$ -	\$ -	\$ -	\$ 459.08	\$ 400.16	\$ -	
T17N	05W	\$ 18,330.59	\$ 6,152.95	\$ 800.00					
<b>AVERAGE</b>		<b>\$ 8,458.49</b>	<b>\$ 4,309.16</b>	<b>\$ 1,703.46</b>	<b>\$ 1,188.37</b>	<b>\$ 529.73</b>	<b>\$ 860.16</b>	<b>\$ 1,059.53</b>	<b>\$ 247.33</b>

**IMPROVED LAND VALUES**

TOWNSHIP	RANGE	<= 1 ACRE	<= 5 ACRE	<= 10 ACRE	<= 20 ACRE	<= 50 ACRE	<= 100 ACRE	>=100 ACRES	> = 300 ACRES
T16N	03W	\$ -	\$ 88,742.00	\$ -	\$ -	\$ 1,771.00	\$ -	\$ 158.24	\$ 357.80
T17N	03W	\$ 137,689.00	\$ 52,852.00	\$ 17,459.00	\$ 10,038.00	\$ 5,309.00	\$ 1,860.00	\$ 114.00	\$ -
T18N	03W	\$ 66,364.00	\$ 37,130.00	\$ 12,592.00	\$ -	\$ -	\$ 2,056.00	\$ -	\$ -
T14N	04W	\$ 46,773.00	\$ 24,922.00	\$ 4,555.00	\$ -	\$ 1,305.00	\$ -	\$ 405.00	\$ 432.00
T15N	04W	\$ -	\$ 10,265.00	\$ -	\$ 7,364.00	\$ 1,556.00	\$ -	\$ 486.00	\$ 484.00
T16N	04W	\$ 50,819.00	\$ 23,342.00	\$ 125,278.00	\$ 4,812.00	\$ 2,340.00	\$ 1,285.00	\$ 666.00	\$ -
T17N	04W	\$ 194,867.63	\$ 107,508.00	\$ 13,828.59	\$ 7,024.00	\$ 5,092.00	\$ 1,112.00	\$ 1,206.00	\$ -
T18N	04W	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
T14N	05W	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 158.00
T15N	05W	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 358.00	\$ 203.00
T16N	05W	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
T17N	05W	\$ 50,810.81	\$ 29,638.40	\$ -	\$ -	\$ -	\$ -	\$ 41.52	\$ -
<b>AVERAGE</b>		<b>\$ 45,610.29</b>	<b>\$ 31,199.95</b>	<b>\$ 14,476.05</b>	<b>\$ 2,436.50</b>	<b>\$ 1,447.75</b>	<b>\$ 573.91</b>	<b>\$ 286.23</b>	<b>\$ 136.23</b>

## 2.10 Construction Costs

Conceptual level project costs were estimated for each of the five alternatives presented at the second public meeting, November 20, 2002. However, these costs were not used as a major decision factor in selecting the recommended alternatives. The alternatives presented at that meeting included a number of differences that made a fair cost comparison unrealistic. For example, Corridor 3 was railroad only. Corridors 4 and 5 were presented as rail only or as both road and rail, and Corridor 7 and 10 were presented as roadway only.

Differences between the alternatives that significantly impacted costs included length, the amount of wetlands crossed, the amount of private property crossed and the amount of new construction versus the amount of reconstruction of an existing facility. Construction costs were estimated based on unit prices applied to estimated quantities. Earthwork, the single largest cost item, was estimated by creating a Digital Terrain Model based on available topographic data and superimposing horizontal and vertical alignments together with typical sections. Schematic drawings were prepared for each of the bridges. Culverts were estimated based on available data for local streams plus providing relief culverts at appropriate locations. Base and sub base materials were estimated based on neat line calculated volumes with appropriate unit weights applied to convert to weight. Unit prices experienced by ADOT&PF and by ARRC on recent projects were applied to the estimated quantities to develop estimated costs.

The Railroad work, Corridor 3 (43.7 miles in length) was estimated at a total project cost of \$165,825,000.

The costs for the Railroad include \$14,338,000 for track work within the Port MacKenzie uplands area. These costs also include \$3,524,000 for an additional siding on the mainline at the location where the spur track joins the mainline. These costs include grade, sub-ballast, ties, rail, power switches, controls and signals, bridges and culverts, and separated grade crossings.

The roadway work was estimated in three sections as follows:

• Point MacKenzie Access Road (13.3 miles)	\$ 25,372,000
• Burma Road (6.6 miles)	\$ 16,822,000
• South Big Lake Road (10.7 miles)	<u>\$ 28,100,000</u>
Total estimated project cost for roadway improvements	<u>\$ 70,294,000</u>

The costs estimates included here include the following:

- Estimated cost of construction with contingency
- Preliminary Engineering
  - Environmental Clearance
  - Surveying and Mapping

- Geotechnical Investigations
- Design
- Preparation of Plans, Specifications and Estimates
- Assistance with the Bid Process
- Construction Administration
- Utility Relocation
- Right-of-Way Acquisition

The details of the cost estimates are included in Appendix C.

## 2.11 Review of Agency Issues

An agency meeting was held at the beginning of the study in May 2002 to introduce the study objectives, review past studies, present the schedule and to identify issues. Local, state, and federal resource agencies were invited. Below is a table summarizing the attending agency issues:

<b>Agency</b>	<b>Issues</b>
Alaska Railroad Corporation	<ul style="list-style-type: none"> <li>✓ Consider double track design</li> <li>✓ Consider more than just access to the Port; look at signalization, crossings, trails network, and expansion of Wasilla community</li> </ul>
City of Wasilla	<ul style="list-style-type: none"> <li>✓ Consider trail and road corridors accommodating utilities</li> <li>✓ Limit access and driveways to “new” road</li> <li>✓ Consider wider corridor options</li> </ul>
ADOT&PF	<ul style="list-style-type: none"> <li>✓ Updated group on the regional transportation planning authority currently considering the Knik Arm Crossing</li> </ul>
U.S. Army Corps of Engineers	<ul style="list-style-type: none"> <li>✓ Stay out of the wetlands</li> <li>✓ Keep corridor as narrow as possible</li> <li>✓ Look at the whole project – no “piece-mealing”</li> <li>✓ Prepare for mitigation</li> <li>✓ Consider practicable alternatives once the NEPA process commences</li> </ul>
Alaska Department of Fish and Game	<ul style="list-style-type: none"> <li>✓ Mitigate impacts to wetlands</li> <li>✓ Fish passage is very important: bridges versus culverts</li> </ul>



	<ul style="list-style-type: none"> <li>✓ No piece-mealing</li> <li>✓ Consider Goose Bay habitat</li> </ul>
Matanuska-Susitna Borough	<ul style="list-style-type: none"> <li>✓ Trails will be very important</li> <li>✓ Looking at immediate need to replace Knik Goose Bay Road</li> <li>✓ Existing roads could be upgraded to design speed and used as part of the system</li> <li>✓ New road will be part of National Highway System</li> <li>✓ Need to work with ARRC and ADOT&amp;PF on appropriate design criteria</li> </ul>

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Several federal, state, and local permits and approvals may be required before either a new rail or road access project could be initiated. The majority of federal, state, and local permitting processes require public review and solicitation of public comment. Some permits require public notification for review of a proposed project, while other permits, primarily local government permits, require public hearings within the community that could be affected.

## 2.12 Federal Requirements

Federal regulatory and permitting requirements described in this section include:

- National Environmental Policy Act (NEPA).
- Environmental and Section 4(f) DOT Documentation – Administered by the Federal Railroad Administration (FRA).
- National Pollutant Discharge Elimination System (NPDES) – Administered by the U.S. Environmental Protection Agency (EPA).
- Spill Prevention, Control and Countermeasure (SPCC) – Administered by the EPA.
- Section 106 National Historic Preservation Act – Administered by the State Historic Preservation Office (SHPO).
- Section 401 and 404 of the Clean Water Act– Administered by the U.S. Army Engineer District, Alaska (COE).
- Section 7 of the Fish and Wildlife Protection Act – Administered by the U.S. Fish and Wildlife Service (USFWS).
- FLPMA--Grant of Right-of-Way – Administered by the BLM.
- Executive Order (EO) 11988 – Floodplain Management
- EO 11990 – Protection of Wetlands
- EO 12898 – Environmental Justice





- EO 13084 – Government to Government Coordination

**National Environmental Policy Act (NEPA):** NEPA (Public Law 91-190, 42 USC 4321 et seq.) establishes policy, sets goals, and provides means for carrying out the policy of protecting the nation's environment. The Council on Environmental Quality (CEQ) in 1978 issued regulations to implement the procedural provisions of NEPA (40 CFR Parts 1500-1508).

Because the proposed project includes a federal action that could significantly affect the human and natural environment, it requires consideration under NEPA. "Federal actions" include projects and programs entirely or partially "financed, assisted, conducted, regulated, or approved by federal agencies." The proposed railroad track realignment is partially funded by federal funds, and would involve federal lands and numerous permits and approvals from federal agencies.

NEPA requires the designation of a federal lead agency to oversee preparation of the EA and to issue the Decision Record; for this project, the lead agency would likely be FHWA or FTA.

**Section 4(f) Documentation:** A Section 4(f) evaluation must be prepared for each location within a proposed project before the use of Section 4(f) lands can be approved (23 CFR 771.135(a)). Section 4(f) applies to recreational lands managed by the BLM, National Park Service, National Wildlife Refuge System, and determinations of adverse effects for Wild and Scenic Rivers. Lands subject to 4(f) evaluation include sites eligible for the National Register of Historic Places (NRHP) and any significant, publicly-owned recreation area, public park, or waterfowl or wildlife refuge.

**COE Section 401 and 404 Permit Requirements:** COE permits anticipated for the proposed project include:

- COE Section 401 Permit, which is required when the project includes the potential to affect water quality.
- COE Section 404 Permit, which is required when the project includes the potential for filling, construction, or placement of structures in wetlands and waters of the United States.

**SHPO Section 106 Consultation:** Section 106 Consultation, required by the National Historic Preservation Act, assesses the potential impacts of the project to cultural resources. The consultation is conducted by Alaska's SHPO in the Office of History and Archaeology, in conjunction with the review of the Section 404 Permit by federal resource agencies.

Section 106 is a requirement of the federal land manager for any federal land crossed. The land manager must present the Proposed Action and discuss potential impacts on cultural resources. Mitigation measures to reduce or lessen the impacts on cultural resources must be provided by the land manager. The SHPO reviews the documentation and either agrees with the plan or provides comments otherwise. The latter may require a follow-up meeting with the SHPO and agreements to modify or change the plan and mitigation for the project.



**USFWS Section 7 Consultation:** A Section 7 Consultation with the USFWS is required when a project has the potential to effect threatened and endangered species. Since this project would not involve any T&E species, it is unlikely that this consultation would be required.

**NOAA Fisheries EFH Consultation:** Under the Sustainable Fisheries Act, consultation with NOAA Fisheries is required when a project has potential for adverse effects on habitat important (EFH) to a federally managed species such as salmon. Any activities that involve potential impacts to anadromous fish streams would require EFH consultation.

**EPA Related Requirements:** A NPDES General Permit for storm water, which applies to non-point sources associated with construction activities, may be required depending upon the extent of construction and development of additional facilities. The NPDES General Permit would apply to construction of a railroad. The General Permit would also necessitate the creation of a Storm Water Pollution Prevention Plan during the construction phase of the project.

A SPCC Plan for the storage of large amounts of fuel (greater than 1,320 gallons [4,997 liters] cumulative, or 660 gallons [2,498 liters] in a single tank) would be required in the event that fuel for construction equipment is stored onsite during the construction phase of the project.

**Executive Order 11988:** EO 11988 directs each agency to take actions to reduce the risk of flood loss; to minimize the impacts to human safety, health, and welfare; and to restore and preserve natural and beneficial values of floodplains.

**Executive Order 11990:** EO 11990 directs each agency to take actions to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities for acquiring and disposing of federal lands and facilities or federal activities affecting land use.

**Executive Order 12898:** EO 12898 directs each agency to take actions to address Environmental Justice in minority and low income populations to determine if any minority or low income communities could potentially be disproportionately affected by the Proposed Action or Action Alternatives.

**Executive Order 13084:** EO 13084 directs each agency to establish regular and meaningful consultation and collaboration with federally recognized tribal governments on federal matters that significantly or uniquely affect their communities.

## 2.13 State of Alaska Requirements

State of Alaska permitting requirements described in this section include:

- Alaska Coastal Management Program (ACMP) Consistency Review processes directed by the Division of Governmental Coordination (DGC).
- Review permits by the Alaska Department of Natural Resources (ADNR).



- Review and consultation with the Alaska Department of Environmental Conservation (ADEC).
- Review and consultation with the Alaska Department of Fish and Game (ADF&G).
- Review and consultation with the Alaska Department of Transportation and Public Facilities (ADOT&PF).

**Alaska Department of Natural Resources:** ADNR has four divisions with regulatory power over a project of this type, under AS 38 and 11 AAC. The approvals required from ADNR for the proposed project include:

- Material Sale Permit for the use of state materials, such as sand and gravel, would be granted by the Division of Land.
- Land Use Permit and ROW would have to be issued by Division of Land for any use of or construction on state lands.
- Fish Habitat Permit under Title 41 from the Alaska Department of Natural Resources, would be required for any structures placed below the ordinary high water line or for equipment crossing fish-bearing streams

**Division of Governmental Coordination (now under ADNR):** Due to a change in responsibility for permitting at the State level in 2003, the lead coordinating agency for the state’s permitting review of the project within the state’s coastal zone is the ADNR. The process is the same as under the Division of Governmental Coordination for the time being but the function is under ADNR. Each coastal district defines the extent of its coastal zone. The MSB manages the district coastal management program within the project study area.

ADNR is directed by the Alaska Coastal Management Act and ACMP to coordinate the state’s review of projects requiring more than one state agency’s permit, or federal permits requiring state concurrence. ADNR coordinates permitting by initially holding “pre-application” meetings and reviewing permit application packets for completeness. Once the packet is considered complete, the Department starts the state’s review program. When the application has been submitted, the applicant receives a review number and schedule. The state must complete the review in 30 to 50 days, depending on the review requirements. However, if a final determination cannot be agreed upon, the review may be elevated, resulting in a longer review period lasting up to 15 days. The COE also receives notice that the state’s review has begun.

Upon completion of the state’s review, the Department issues a “Consistency Determination,” which triggers the issuance of state permits and also allows any federal permits to be finalized. Issuance of federal permits in the state’s coastal zone requires concurrence on the part of the state that the project is consistent with the ACMP. The Department may extend the review time frame if there are information requests from reviewers.



The COE coordinates the federal review of a project if a Section 401, 404, or Section 10 permit is required. The COE then issues the Section 401, 404, or 10 permit after receiving notice that the state has found the project consistent with the ACMP.

**Alaska Department of Environmental Conservation:** A range of ADEC permits is generally required under AS 46 and AS 18 AAC, including:

- Wastewater Discharge Permit for any direct discharges of wastewater to waters of the United States.
- Certificate of Reasonable Assurance (Section 401) is necessary when any federal permit is issued under the Federal Clean Water Act. In this case, the COE Section 404 permit will trigger the need for state certification.
- An Air Quality Permit to Construct and Operate may be required if more than 100 tons (110 metric tons [MT]) of criteria pollutants are emitted. This would typically only occur if construction activities are likely to generate considerable dust. The most likely air pollutant would be particulate matter emitted during ground disturbing activities (i.e., ROW clearing and road construction). If road dust is to be controlled by oiling during construction, ADEC may require a Surface Oiling Permit.
- Burn Plan is required when more than 39.5 acres (16 hectares) of land are to be cleared and the slash burned during the construction phase of the project.

**Alaska Department of Fish and Game:** ADF&G permits for the proposed project would include:

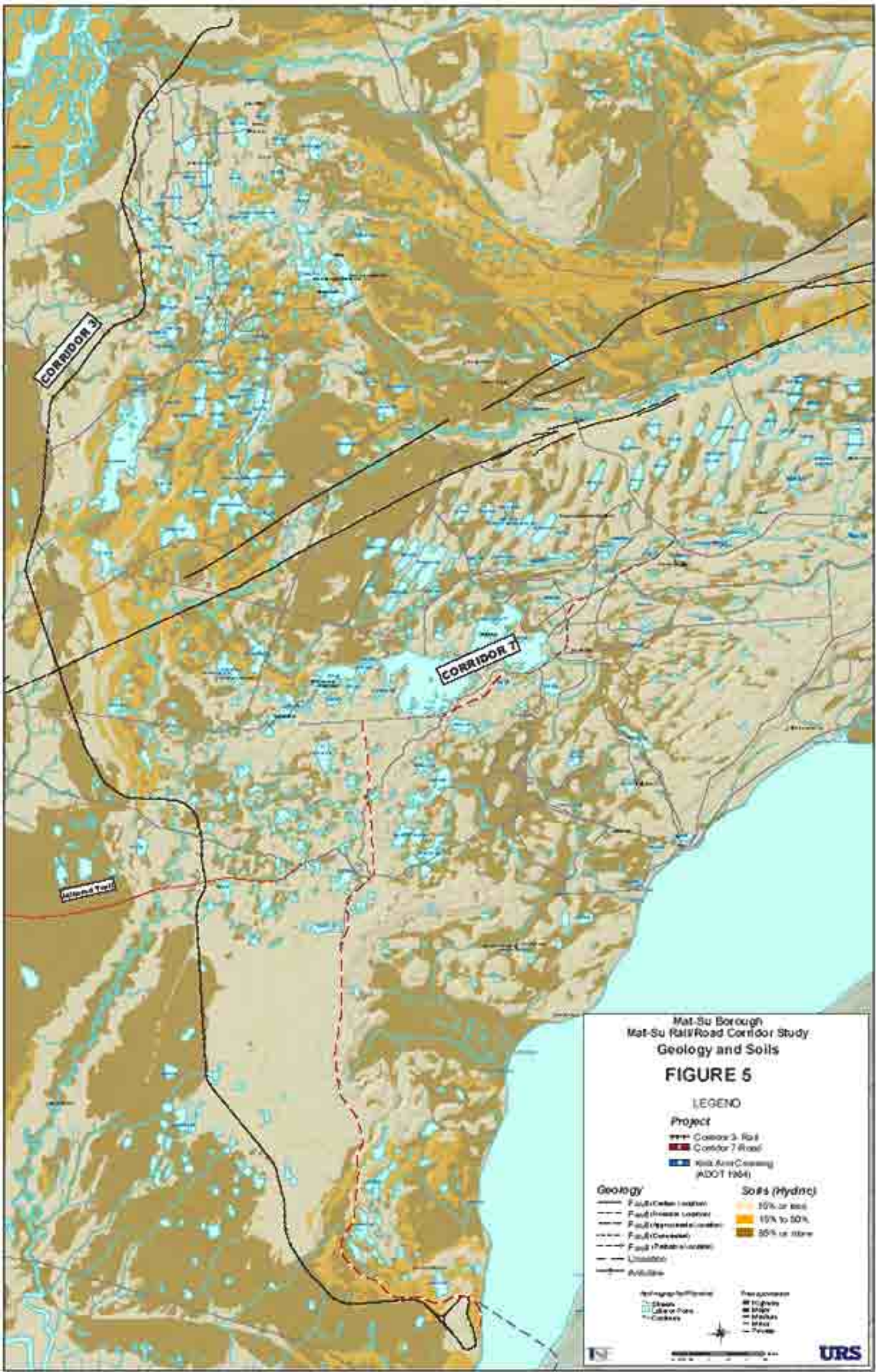
- Activities in any Special Management Area managed by the ADF&G are controlled through AS 16.20 and 5 AAC 95.

**Alaska Department of Transportation and Public Facilities:** ADOT&PF would require the completion of an Environmental Check List to identify specific project requirements.

## 2.14 Environmental Characteristics Summary

### Physical Environment

**Geology and Soils:** The geology of the project areas is dominated by glacial landforms include nearly level and undulation outwash and till plains, pitted outwash plains, steep hills and wind deposited sand sheet (USDA, Natural Resource Conservation Service (NRCS), 1998). One of the prominent geologic features in the project area is the Castle Mountain Fault, which is the only active fault in the MatSu region with an obvious surficial expression but is not expected to be a constraint to construction of either a road or rail route to Port MacKenzie. Organic or peat soils, which have limitations for construction of road and building, are found on both Corridor 3 (183 acres) and Corridor 7 (18 acres) and are closely associated with forested and scrub shrub and emergent wetlands (Figures 5 and 6).



Mat-Su Borough  
Mat-Su Rail Road Corridor Study  
Geology and Soils

**FIGURE 5**

LEGEND

**Project**

- Corridor 3 Road
- Corridor 7 Road
- Rail Area Crossing (ADOT 1984)

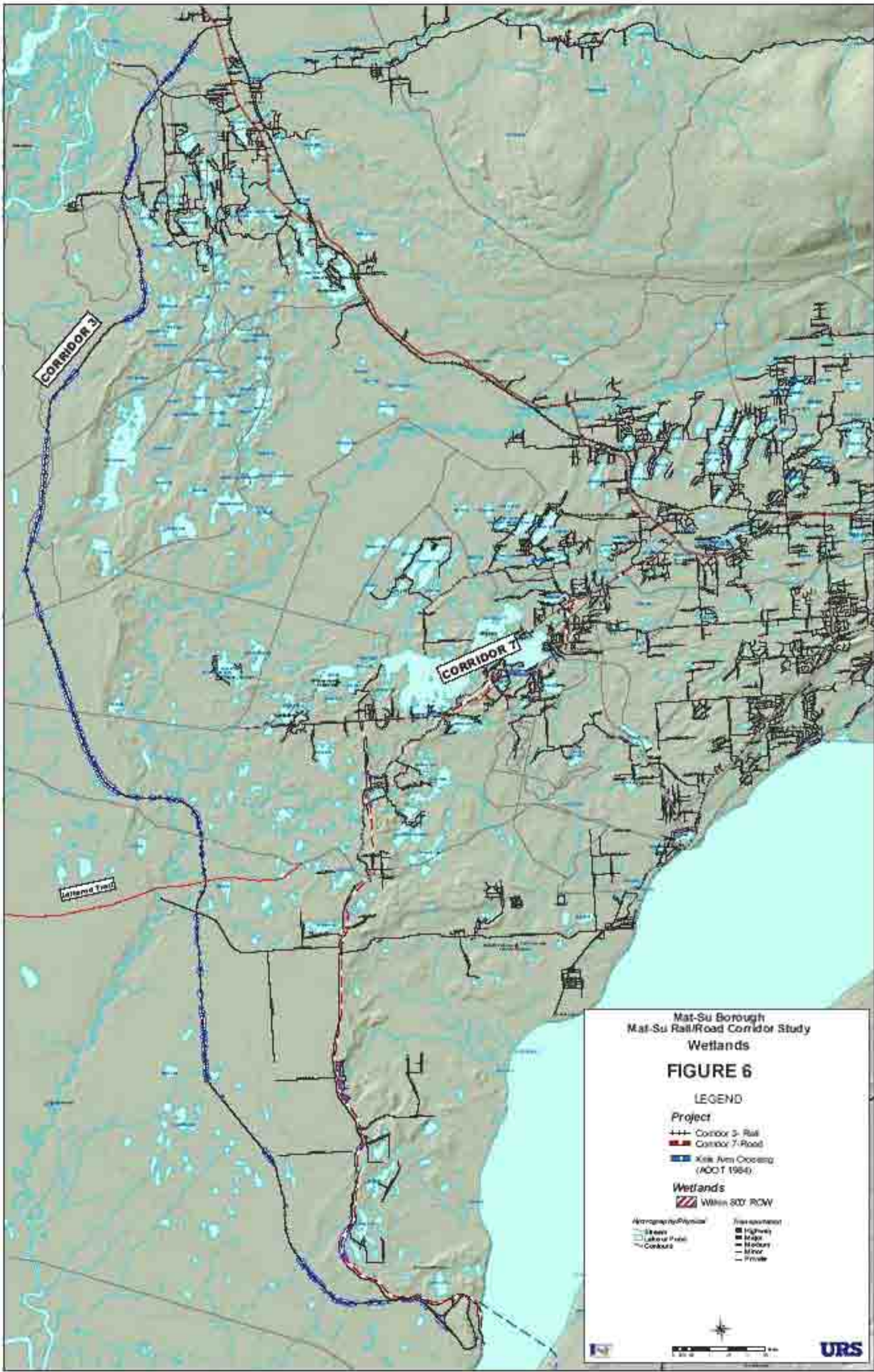
**Geology**

- Fault (Carbon location)
- Fault (Hessle location)
- Fault (Hessle location)
- Fault (Covehead)
- Fault (Pebble location)
- Unconformity
- Anticline

**Soils (Hydric)**

- 10% or less
- 15% to 50%
- 50% or more

- Rail Area Crossing
- Highways
- Creeks
- Bridges
- Trails



Mat-Su Borough  
 Mat-Su Rail/Road Corridor Study  
 Wetlands

**FIGURE 6**

LEGEND

Project

- +++ Corridor 3- Rail
- Corridor 7- Road
- Kill Area Overlay (AOC-T 1984)

Wetlands

- ▨ Within 500' ROW

- |                      |                |
|----------------------|----------------|
| Hydrography/Physical | Transportation |
| — Streets            | ■ Highways     |
| — Lakelse Falls      | ■ Major        |
| — Contours           | ■ Medium       |
|                      | — Minor        |
|                      | — Private      |



**Water Resources:** Surface water resources in the Project Area include non-glacial rivers, such as the Little Susitna River and Willow Creek, small perennial streams, which drain the moraine deposits, and numerous small lakes and ponds, and large lakes. Lakes within ½ mile of the centerline of Corridor 3 include Lorraine Lake, My Lake, North Rolly Lake, Vera Lake and Little Lonely Lake.

For Corridor 7, non-glacial perennial streams cross the corridor include Fish Creek, Meadow Creek and one unnamed tributary to Meadow Creek. Small and large lakes within ½ mile of the centerline of this corridor include Lorraine Lake, Twin Islands Lake, Lost Lake, Carpenter Lake, Jewell Lake, Anna Lake, Big Lake and Echo Lake. The only waters affected by Corridor 7 would be the extension of the culverts at the existing stream crossing.

Groundwater resources in the general project area have been described from well data by Montgomery (1990). Regional water tables in the central Matanuska Valley generally slope towards the Matanuska River. Water well logs indicate that groundwater in the Big lake area is typically less than 60 feet whereas in the Knik Road and Goose Bay regions, groundwater is from 120 to 150 feet deep. Impacts to ground water resources are not expected with development of either corridor.

**Floodplains:** Corridor 3 intersects the floodplains of both the Little Susitna River and Willow Creek. The alignment would cross approximately 1000 feet of Little Susitna River floodplain and approximately 3,800 feet of the Willow Creek floodplain. The engineering of the floodplain crossing would need to take the 100-year flood events into consideration so that the rail bed would not adversely alter flood flow and impact adjacent properties and public safety. The existing road alignment in Corridor 7 passes through the floodplain of both Fish Creek and Meadow Creek and floodplain would likely not be an issue. The additional new sections of road, which would need to be built to straighten several curves, are outside of the floodplains of these streams.

### **Biological Environment**

**Vegetation:** Vegetation communities affected by both corridor alignments are primarily deciduous and mixed deciduous/needleleaf forests in upland areas and black spruce (bog and muskegs) in lowland areas. Assuming a 150-foot right-of-way, Corridor 3 would require as much as 560 acres needing to be cleared of the tall vegetation. Clearing for the development of Corridor 7 would require substantially less clearing since the ROW is currently developed but would likely require clearing of over 100 acres in adjacent areas and new sections of road.

**Wetlands:** Wetland communities within both corridors are generally similar and dominated by palustrine and emergent wetlands (Figure 6). Development of Corridor 3 would result in the loss of approximately 294 acres of wetlands, primarily scrub shrub wetlands. Loss of this area of wetlands would likely be considered a significant adverse impact due to the loss of wildlife habitat function of these areas. Development of the access road in Corridor 7 would affect approximately 25 acres and these wetlands would be primarily shrub wetlands. Wetlands would only be affected in new sections of the road and in areas adjacent to the existing road where the road surface would need to be widened.



**Fisheries Resources:** Anadromous fish in streams crossed by the alignments include all five species of salmon. Development of Corridor 3 would require the crossing of the six anadromous streams: the Little Susitna River and two unnamed tributaries, Fish Creek, Willow Creek and an unnamed tributary. Some lake habitat could be affected by fill for the rail bed near Little Lonely Lake, but final design could potentially avoid this area. Corridor 7 crosses only three anadromous fish streams: Fish Creek, Meadow Creek and an unnamed tributary of Meadow Creek. All of these streams are presently crossed by the existing road alignment. Some extension of the culverts would likely be required in upgrading the road.

**Wildlife:** The terrestrial and aquatic habitats of the Project Area support a wide range of both small and large mammals as year-round residents or as seasonal migrants from other areas in the Matanuska and Susitna River watersheds. Moose are the most abundant large mammals in the area and occur as residents in these areas, with higher concentrations during the winter as snow forces animals out of the higher elevations of the Talkeetna Mountains to the north and the Alaska Range. The development of Corridor 3 would result in direct habitat loss and some unknown level of increased moose mortality from collisions with trains. However, effects are not expected at the population level. Corridor 7 would affect a relatively small area of habitat but increased traffic could result in some increase in moose mortality for vehicle collisions. Overall, impacts to moose would be minimal.

For Corridor 3, waterfowl, songbirds and raptors, which presently use the habitat within the corridor, would be affected by the loss of habitat and disturbance during construction. However, since the corridor is relatively narrow and projected traffic would be relatively light in the near term, wildlife would likely be displaced to some degree into adjacent areas. Overall effects on wildlife populations are expected to be minimal. For corridor 7, upgrading the existing road and constructing new sections of road would result in some minor wildlife habitat loss and some species would be displaced due to disturbance from construction and road traffic during operation. The amount of habitat loss is relatively small since the corridor follows the existing road for much of its length, therefore, the overall effects of developing Corridor 7 on wildlife are expected to be minimal.

### **Threatened and Endangered Species**

There are no threatened or endangered wildlife species within the project area. The Steller's eider (*Polysticta stelleri*), is listed as threatened under the Endangered Species Act (62 FR 31748). This small sea duck winters in lower Cook Inlet and could potentially occur in the upper Cook Inlet area, but would not be expected to occur in the vicinity of the project area. There are no threatened or endangered plant species that occur in this area of Alaska.





### 3.0 SOCIOECONOMIC ENVIRONMENT

#### 3.1 Affected Environment

##### Area Demographic Profile

**Population:** In the 1960s, the MSB had a population of just over 5,000 people. Between 1980 and 1990, the Borough population more than doubled from 17,816 to 39,683. During the past decade, the population grew forty-nine percent, compared to thirteen percent statewide and fourteen percent in Anchorage. The following is a table of Federal Census Designated Places (CDPs) within the MSB for the year 2000.

**Table 3-1  
Federal Census Designated Places – Population Figures**

2000 CDPs	Year 2000
Big Lake	2,635
Buffalo Soapstone	699
Butte	2,561
Chase	41
Chickaloon	213
Farm Loop	1,067
Fishhook	2,030
Gateway	2,952
Glacier View	249
Houston City	1,202
Knik River	582
Knik-Fairview	7,049
Lake Louise	88
Lakes	6,706
Lazy Mountain	1,158
Meadow Lakes	4,819
Palmer City	4,533
Petersville	27
Point MacKenzie	111
Skwetna	111
Susitna	37
Sutton-Alpine	1,080
Talkeetna	772
Tanaina	4,993
Trapper Creek	423
Wasilla City	5,469
Willow	1,658
Y	956
Remainder of Borough	5,101
<b>TOTAL</b>	<b>59,322</b>

MSB 2002 Fact Book



The locations in the borough closest to the two project corridors include the following CDPs: Big Lake, Houston City, Point McKenzie, Wasilla, and Willow. The potentially affected population is the sum of these CDPs, which are 11,075. Estimated MSB population for 2008, based on Department of Labor figures, is 77,074.

**Age, Sex, and Race Breakout in the year 2000:** The median age in the MSB for the year 2000 was 34.1 years, compared to 32.4 in the state and 35.3 in the nation. Thirty-five percent of the MSB population is under that age of 20, and six percent over the age of 65. The retirement age category has been relatively stable over the past 10 years. Fifty-two percent of the MSB population is male and forty-eight percent female. About eighty-eight percent of the population is white and six percent American Indian or Alaska Native. The remaining population is listed as other races or two or more races.

### **Area Housing Profile**

The MSB has a higher owner occupancy rate than the state. About seventy-five percent of the 20,556 occupied houses are owner-occupied, the remaining are renter-occupied. The average number of persons per household is nearly three. The vast majority of the unoccupied units in the MSB are considered seasonal, recreational, or occasional use units.

About half of the MSB population is located in the “core area,” which encompasses approximately 100 square miles between and around the cities of Palmer and Wasilla. Other MSB residents live along or near the Glenn Highway and the Parks Highway, which provide access to Fairbanks and Anchorage.

Within the study area, housing can be roughly broken into four categories: primary residences located in Wasilla and along main road systems such as the Parks Highway; primary residences located along secondary road systems and more developed areas such as Big Lake; primary residences located in more rural or remote areas; and second or vacation homes located in Big Lake and more remote or rural areas, primarily on lakes. The area along Corridor 7 includes a mix of all four types of housing. The area along Corridor 3 primarily includes residences located in more rural or remote areas, and second/vacation homes located in more remote or rural areas. The number and density of housing is much greater along Corridor 7 than Corridor 3.

### **Area Economic Profile**

**Employment:** As with population, and in many cases directly related to population growth, employment has grown considerably faster in the MSB than elsewhere in the state. During the past decade, employment in the MSB grew at nearly six percent per year, three times faster than the rest of the state. Two-thirds of the growth came from retail and services. Services represent one quarter of all wage and salary employment in the MSB. Health care is one of the fastest growing service industries, with business and social services close behind. As population and second home use has grown, retail and service establishments have also grown, particularly in areas outside the primary cities of Palmer and Wasilla. Year 2000 employment data for the MSB is listed in Table 3-2.



**Table 3-2  
Area Employment**

<b>Employment</b>	<b>Number</b>
Total Potential Work Force (Age 16+)	42,705
Total Employment	25,356
Civilian Employment	24,981
Military Employment	375
Civilian Unemployed (seeking work)	2,867
Percent Unemployed	10.3%
Adults Not in Labor Force (not seeking work)	14,482
Percent of All 16+ Not Working (unemployed + not seeking)	40.6%
Private Wage and Salary Workers	16,925
Self-Employed Workers (in own not incorporated business)	2,734
Government Workers (City, Borough, State, Federal)	5,186
Unpaid Family Workers	136

MSB 2002 Fact Book

In 2001, the unemployment rate in MSB was listed at 7.7 percent, compared to 6.3 percent for the state and 4.8 percent for the nation.

**Wage and Income:** In 1999, the average annual wage in the MSB was \$26,893 compared to \$35,557 in Anchorage. The primary reason for the discrepancy can be found in a higher percentage of employment in sectors such as services and retail compared with a higher Anchorage percentage in the sectors of oil, government, and transportation.



**Table 3-3  
Employment by Industry**

<b>Industry</b>	<b>Number</b>
Agriculture, Forestry, Fishing and Hunting, Mining	1,413
Construction	2,841
Manufacturing	594
Wholesale Trade	606
Retail Trade	3,217
Transportation, Warehousing and Utilities	2,046
Information	977
Finance, Insurance, Real Estate, Rental and Leasing	924
Professional, Scientific, Management, Administrative and Waste Management	1,659
Education, Health and Social Services	5,312
Arts, Entertainment, Recreation, Accommodation and Food Services	2,059
Other Services (except Public Administration)	1,348
Public Administration	1,985

MSB 2002 Fact Book

The following list represents income statistics for families in the MSB:

Per Capita Income	\$21,105
Median Household Income	\$51,221
Median Family Income	\$56,939
Persons in Poverty	6,419
Percent Below Poverty	11.0%

### **3.2 Area Quality of Life Considerations**

Many people chose to have primary or secondary residences in the MSB because of quality of life values. These include larger lots and rural residential settings, less traffic and other urban problems (such as noise and air quality), and access to recreation opportunities such as hunting, fishing, boating and snowmobiling. The locations of the two corridors under consideration have been adjusted to a certain degree to minimize adverse effects on quality of life considerations.

Many quality of life issues are discussed elsewhere in this document (for example, noise and recreation). However, further research may need to be done to determine impacts to other quality of life issues like 1) facilities and activities; 2) annual local events; and 3) open space.



### **3.3 Environmental Consequences**

#### **Area Demographic**

Development of either Corridor 3 and 7 are not likely to generate long-term population growth unless there is significant resource development, which is not currently forecast. Some short-term population increase associated with construction employment could occur, but would not be permanent.

#### **Area Housing**

Effects on housing would come from short-term increased demand from the construction workforce. Due to its more remote location, development of Corridor 3 may require construction of a construction camp to house the workforce. Construction crews working on widening the route for Corridor 7 will likely use existing facilities for lodging during construction periods. Widening the route for Corridor 7 might involve some property takes that would affect housing.

#### **Area Economic**

Construction of the proposed project in both Corridors 3 and 7 would generate construction employment, and would likely result in increased earnings for materials suppliers. The number of positions and length of employment will vary depending on the route chosen, the contractors selected, and the construction schedule. Corridor 3 would generate some operation employment and associated income. Construction crews working on widening the route for Corridor 7 will likely use existing facilities for food and lodging during construction periods, which would likely have a positive economic benefit to the area. Widening the road for Corridor 7 might involve some property takes that would affect local businesses.

#### **Area Quality of Life**

There are obvious short and long-term quality of life effects from construction traffic, noise and dust, and operation traffic and noise. Widening of Corridor 7 would affect more people than construction of Corridor 3. The railroad associated with Corridor 3 will represent a significant change in the nature of the area and likely interfere with valued aspects of rural living (for example recreational values like trails, and quiet and solitude). Many social impacts, such as quality of life issues, are subjective in nature and cannot be accurately quantified.

## 4.0 LAND USE

### 4.1 Affected Environment

#### Land Ownership/Status

The two potential corridor routes evaluated traverse private, Borough, Native Corporation, State, Alaska Mental Health Trust Lands, and University of Alaska lands. No Federal lands are involved in either corridor route.

**Private:** For the purposes of this study, private land holdings are properties owned by individuals or businesses, but not by Native Corporations, certified Alaska Native Allotments, municipal governments, or the state or federal governments. Concentrations of private lands are located primarily along Corridor 7, although some private lands are located in the vicinity of Corridor 3.

**Borough:** Borough-owned properties were conveyed by the State of Alaska as Municipal Entitlement Lands (MEL), and also were acquired through tax foreclosure, purchase, and donation. MEL lands are used to generate revenue through sales, leases, and permits; to provide sites for public facilities; and to offer public recreational opportunities. Both corridors pass through lands owned by the MSB.

**Native Corporation:** Under the Alaska Native Claims Settlement Act of 1971, Native Corporations were allowed to select lands from federal land holdings. These selections were then adjudicated and conveyed to the Native Regional and Village Corporations. Cook Inlet Region Incorporated (CIRI) is the Native Regional Corporation for the Cook Inlet area. CIRI owns lands within the study area. Corridor 7 is the only route that passes through CIRI owned land.

**State:** The State of Alaska was granted over 100 million acres of land when it achieved statehood in 1959. The State owns land in both study corridors, although Corridor 3 impacts more State land.

**Alaska Mental Health Trust Lands:** State of Alaska Mental Health Trust Lands were granted to the territory by the federal government prior to statehood to generate revenue to support Alaska's mental health programs. In 1978, the state legislature waived the trust status of these lands, allowing land to be leased, sold, and transferred to municipalities. In the 1980s, mental health advocates sued, and the state was ordered to "reconstitute, as nearly as possible, the holdings which comprised the trust when the 1978 law became effective." A new Mental Health Trust Land Unit under ADNR has been created to manage these trust lands. Both corridors minimally involve Mental Health Trust Lands within the study area.

**University of Alaska:** The land owned and managed by the University of Alaska was originally granted to the University by the federal government in accordance with two Acts of Congress dated March 4, 1915, and January 21, 1929. This property, and other trust land which was subsequently deeded to the University by the State of Alaska, is for the exclusive use and



benefit of the University of Alaska, and therefore, is not state public domain land. Both corridor routes pass through a minimum acreage of University land, although Corridor 3 potentially affects more land.

## 4.2 Generalized Land Use

Land uses in the study area are a mix of public recreation use and wildlife habitat on state lands, low-density residential uses; light industrial uses; commercial enterprises, commercial and noncommercial aviation uses; forestry; agriculture; and mineral resource development. The study area is also commonly used for subsistence and sport hunting, fishing, and gathering. Land use along Corridor 7 includes more residential and commercial use, due to the existing road access and development near Port MacKenzie. Land use in the vicinity of Corridor 3 includes more public recreation and wildlife habitat, with some rural residential use.

Recreation is one of the area's major land uses. The study area is the focus of much recreational activity on the part of the MSB and Anchorage residents and tourists (see section 7.0 Recreational Resources). Wildlife habitat is abundant in the study area.

## 4.3 Formally Classified Lands

Formally classified lands include nationally or state designated lands, such as wildlife refuges, national parks, and other areas. No nationally designated lands exist in the project area. Corridor 3 will pass adjacent to Nancy Lake State Recreation Area and the Susitna Flats State Game Refuge, and will traverse Willow Creek State Recreation Area and Little Susitna State Recreation Area. Corridor 7 will pass adjacent to the Goose Bay State Game Refuge. Both corridors pass over the Iditarod Trail route.

## 4.4 State and Local Plans

State and Local land management plans that may affect the planning area include the following:

- Matanuska-Susitna Borough Coastal Management Plan (State and local)
- Willow Sub-Basin Area Plan (State)
- Susitna Basin Recreation Rivers Management Plan (State)
- Susitna Flats State Game Refuge Management Plan (State)
- Matanuska-Susitna Borough Comprehensive Development Plan: Transportation
- Matanuska-Susitna Borough Comprehensive Development Plan: Public Facilities
- Matanuska-Susitna Borough 1990 Solid Waste Management Plan Update (local)
- Point Mackenzie Area Which Merits Special Attention Plan (State and local)
- Big Lake Management Plan
- Other lake management plans

These plans address allowable uses and provide guidance for potential development projects.

## 4.5 Environmental Consequences

**Private:** Private lands owners are expected to be more sensitive to construction and operation of a railroad route on their property than State or MSB land management agencies. Privately owned lands in the study area are primarily used for residences and small businesses. Construction and operation of the proposed project would create temporary impact on existing land uses for Corridor 7 during construction, but would not result in any change in land use outside of the ROW, except potentially at the Point Mackenzie port site. The land use most sensitive to siting of a railroad is low density residential. The land use that is typically least sensitive to siting of a railroad is industrial. Between these two extremes, various land uses are more or less sensitive to a railroad siting, depending on the specific area. In this study area, the highest potential land use conflicts occur in the residential areas of Corridor 7 as private land “takings,” and the residential and recreational areas of Corridor 3 (especially in and around the state recreational set asides).

**State and Borough:** State and Borough lands are more often managed to allow multiple uses that are in the public interest, including rail projects. The proposed project would primarily require ROW permits for construction and operation of the project across state lands for both corridors, although Corridor 3 impacts more state land. Corridor 3 will traverse the Willow Creek State Recreation Area and Little Susitna State Recreation Area, which is land dedicated to recreational pursuits. Both corridors pass through lands owned by the MSB.

State and Borough lands within the project area are primarily managed for wildlife habitat and recreation. Construction and operation of the railroad are not expected to substantially affect the use of the study area for wildlife habitat, particularly because the habitats crossed are abundant locally, and a small percentage of total available habitat will be lost. There is also a substantial amount of recreational use of the area, including use by hunters, fishermen, trappers, skiers, boaters, snowmachiners, and many others. Limitations on access to wildlife and recreation are the most likely issues. Construction and operation of the railroad are not expected to substantially affect recreation, as discussed in Section 4.3.3, Recreational Resources.

**Mental Health, University, and Native Corporation Lands:** Both corridors minimally impact Mental Health Trust Lands within the study area. Both corridor routes pass through a minimum acreage of University land, although Corridor 3 impacts more land. Corridor 7 is the only route that passes through CIRI owned land. These lands are generally undeveloped and project development would not create land use conflicts at this time. However, should any of these lands be required for the proposed project, property acquisition or obtaining ROW will be required.



## 5.0 RECREATIONAL RESOURCES/TRAILS

### 5.1 Affected Environment

#### Recreational Resources

Recreation is one of the area's major land uses. The study area is the focus of much recreational activity on the part of the MSB and Anchorage residents and tourists. In almost every plan reviewed for this report, recreational resources were listed as one of the primary reasons for living in the MSB. The area's abundance of surface water is an important recreational feature which is used for fishing, water sports, and winter travel. Corridor 3 will pass adjacent to Nancy Lake State Recreation Area and the Susitna Flats State Game Refuge, and will traverse Willow Creek State Recreation Area and the Little Susitna State Recreation Area. Nancy Lake State Recreation Area, Willow Creek State Recreation Area, and the Little Susitna State Recreation Area offer year-round opportunities for fishing, canoeing, cross-country skiing, snowmobiling, and camping. Corridor 7 will pass adjacent to the Goose Bay State Game Refuge. In addition to these designated recreations areas, there are numerous lakes, rivers, trails, and roads that are used for recreation purposes.

The rivers, lakes, and wooded areas are accessible through numerous trails and are actively used for the following activities:

- dog mushing
- skiing
- sport fishing
- sport hunting
- trapping
- flightseeing
- river and lake boating (including airboating, power boating, kayaking, and rafting)
- snowmachining
- hiking
- berry picking
- wildlife observation
- photography
- camping
- backpacking
- canoeing
- OHVs
- horseback riding
- golfing at Settlers Bay
- other private and commercial recreation activities

## **Trails**

Land and lake trails play a key role in the enjoyment of residents and visitors alike in the project area. Many trail opportunities exist for those who enjoy hiking, OHVs, horseback riding, biking, and canoeing in the summer, or snowmachting, skiing, and dog mushing in the winter.

A largely undeveloped trail network serves non-road-accessed areas. The most notable of the many trails is the historic Iditarod Trail. The Iditarod National Historic Trail, which crosses the project area, was the winter route used to transport mail and supplies from Seward to Nome during the early part of the 1900s. The Iditarod National Historic Trail and the Iditarod Race Trail cross the project area on borough and state lands near Yohn Lake. The race trail has used alternate routes in recent years. Trails in the immediate vicinity of the two corridor routes are as follows:

### **Corridor 3**

- Susitna West Trail
- Rolly Creek, Ramp Hill
- West Gateway Trail
- Red Shirt Lake Trail
- Iditarod Trail
- Four primitive trails

### **Corridor 7**

- West Parks Highway
- Iditarod Trail
- Big Lake Road Trail
- Hollywood Road Trail
- Three Mile Lake Trail
- Burma Road Trail
- South Big Lake Trail
- One primitive trail

## **5.2 Environmental Consequences**

The project area as noted earlier, especially Corridor 3, has a high value in terms of recreational resources. Numerous trails exist in the area and people enjoy the outdoors through hiking, camping, boating, fishing, hunting, skiing, snowmachting, airboating, flying and other means. The project would be expected to have some direct impacts on recreation, especially trail use and limiting access to recreation sites, particularly if mitigation measures such as below or above ground crossings over trails for example are not utilized. Users who are seeking a natural landscape for their recreational activity may experience visual or noise impacts from the presence of the railroad corridor. Much of the area crossed is remote, and although it is actively used for recreation, users are typically spread out through the area, and impacts are expected to occur for few people and on an infrequent basis. Indirect impacts such as increasing the number of people accessing the area are not expected unless, or until, a road is added to Corridor 3. When that happens access may be significantly increased.

During public involvement for this project, public concern was expressed over the potential recreational and developmental pressures that might be imposed on local fish and wildlife habitat, game refuges, and resources of the area as a result of development of Corridor 3. In the past, the public expressed concern over the potential recreational and developmental pressures that might be imposed on local fish and wildlife habitat, game refuges, and resources of the area as a result of the development of new residential areas, support facilities, and new transportation corridors. Improved access to the area around Corridor 3 could generate conflicts between habitat management and seasonal and weekend visitor-industry demands in the surrounding area. Sports fishing and hunting pressures are anticipated to increase over time as the population of the area grows, and corridor development could potentially infringe on limited open space areas.

Construction impacts to recreation users are expected to be of short duration. Wintertime construction could cause some temporary disturbance to hunters, trappers, snowmachiners, and skiers recreating on the Willow Creek State Recreation Area and the Little Susitna State Recreation Area. Summer construction in the same area could potentially impact backcountry hikers, fishermen, hunters, and trappers where Corridor 3 crosses rivers and trails. However, because much of the rail corridor area is relatively remote and users of these areas are dispersed, the number of people impacted should be low.

As mentioned earlier, mitigation of potential recreation impacts will be important. Mitigation should include providing above or below ground passage for recreation trails, and scheduling construction to minimize potential effects. With proper mitigation, Route 3 is expected to have minimal impact on recreational uses.

Development of Corridor 7 is expected to have minimal impacts, primarily due to construction activities. Construction may delay access to recreation areas along the corridor such as Fish Creek and Settlers Bay and result in some noise and dust, but will be temporary for the duration of construction.

## **6.0 RESOURCE USE (SUBSISTENCE, PERSONAL USE, SPORT, AND OTHER)**

### **6.1 Affected Environment**

Important uses of fish and game in Alaska include subsistence, sport fishing, personal use fishing, and general hunting including trapping. Subsistence refers to the customary and traditional non-commercial use of wild resources (ADF&G 1990). Subsistence hunting and fishing are closed in non-rural areas of Alaska by both federal and state programs. The Alaska Joint Board of Fisheries and Game and the Federal Subsistence Board have determined that the areas around Anchorage, Mat-Su, Kenai, Fairbanks, Juneau, Ketchikan, and Valdez are non-rural areas, where fish and game harvests may be allowed under sport or personal use but not under subsistence regulations. No federal lands exist in the project area. No State of Alaska-recognized subsistence occurs on the state lands in the project area.



Personal use fishing is similar to subsistence fishing with nets, except that it is allowed in areas generally closed to subsistence and is for residents of urbanized areas. Sport fishing and hunting both contribute food to urban areas, but differ from subsistence because they are primarily conducted for recreational values and not as a major part of a family's nutritional requirements.

The project area supports sport fishing, personal use fishing, general hunting including trapping, and other resource use including use of berries, bird eggs, and wood and roots for fuel and art. Although the project area is closed to subsistence uses, fishers and hunters have harvest opportunities via general fishing and hunting regulations, and personal use net fisheries.

The following plants, animals, and fish are taken for sport, personal, and other use near or in the project area: bear, moose, all five species of Alaska salmon, rainbow trout, dolly varden, beaver, muskrat, mink, marten, lynx, red fox, bird eggs, berries, and roots. Fish Creek along Corridor 7 is particularly important for personal use fishing.

## **6.3 Environmental Consequences**

### **Corridor 3**

Construction activities may temporarily disrupt wildlife and reduce resource use opportunities in the areas adjacent to the rail corridor. Because the duration of construction activities in any one location would be short, no substantial construction effects on use of resources beyond one season is expected. There is the potential for obstruction of access by creating an elevated rail embankment. Mitigation is likely to result in providing access through or over the embankment. Placement of access should involve consultation with local residents.

The minimal clearing of vegetation along the ROW is not expected to reduce access to berries, roots, and other vegetation used within the study area. The amount of vegetation lost through clearing is expected to be negligible compared to the available vegetation.

The clearing of vegetation along a ROW may in some cases reduce or diminish habitat quality for some wildlife species, while enhancing habitat for other species. The area crossed is currently used for sport and personal use fishing, general hunting, and other resource use, and access exists throughout the year. Because of controls placed on public access along rail corridors, Corridor 3 is not expected to increase access into areas.

Operation of the line is not expected to have a substantial impact on resources. There may be occasional temporary disturbance to localized wildlife populations during rail maintenance, but based on the intermittent nature of these activities, resource use activities should not be substantially impacted.

### **Corridor 7**

Minimal disruption of use of resources is expected. The road systems along this corridor are used for access to Fish Creek when it has been open for personal use fishing, and to Point

Mackenzie. Any interference with access to resource use activities will be temporary during construction improvements to the road system.

## 7.0 RECOMMENDATIONS

Potential highway and railroad *route options* were identified and analyzed for present and future performance in areas of connectivity, congestion, safety, impacts to property owners, impacts to adjacent land use, and potentially the socio-economic and environmental impacts. From these analyses came key findings regarding the present and future performance and impact of the potential routes. These findings formed the basis for a *route recommendation*. Some of the route corridor options required refinement in order to resolve particular land use, land ownership, engineering, environmental or other issues. More in-depth analysis than ordinarily required to prepare a location study report will be conducted once the final route is recommended.



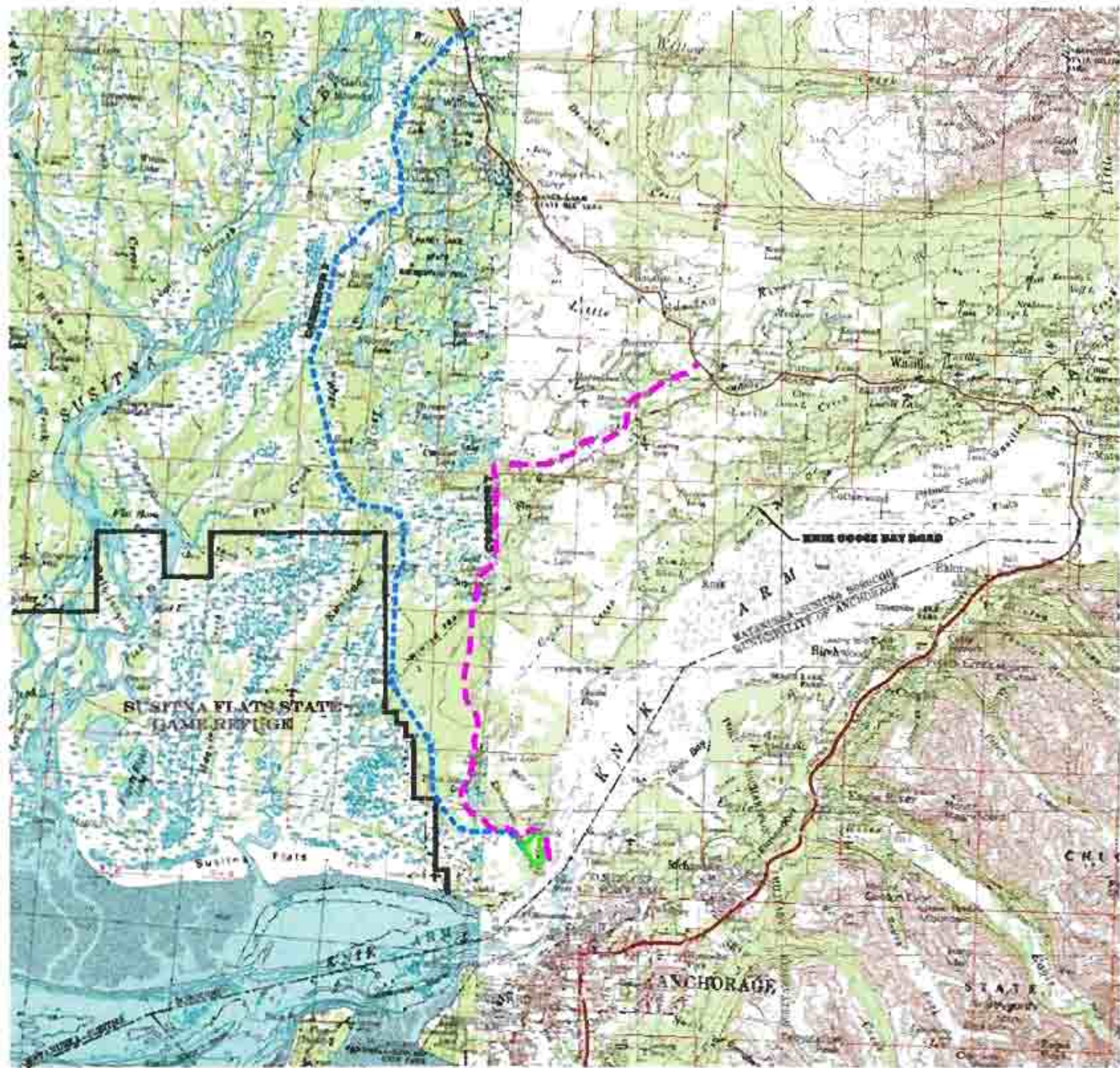
**LEGEND**

- CORRIDOR 3
- CORRIDOR 7



**FIGURE 7  
CORRIDORS 3, AND 7**

SCALE: N.T.S.



## 7.1 Rail

The recommended rail access to Port MacKenzie that evolved through this study effort extends from Port MacKenzie north to intersect the ARRC mainline tracks north of Willow Creek, a distance of approximately 44 miles. Rail traffic estimates based on the potential freight movements identified by the Commodities Study do not appear to provide an economic justification for the construction of the rail line. That being said, it should be noted that there are other factors at work in this decision process.

Probably the outside factor having the most direct influence on the details of the rail alignment is the potential for implementation of the Knik Arm Crossing project and including rail as part of that project. The Alaska Railroad is on record stating that this alignment would likely be their new mainline between Anchorage and Fairbanks. The Port MacKenzie to Willow alignment is a much more direct route north from Anchorage than the existing alignment (approximately 25 miles shorter) and could be expected to reduce travel times between Anchorage and Fairbanks by perhaps an hour or more. Because of the potential for this, the design criteria selected for the railroad alignment meets the following ARRC mainline track design criteria.

- Design Speed – 60 mph
- Ruling grade – 0.5%
- Maximum curvature – 2°
- Siding every 10 miles – 6,200 feet clear
- Remote controlled powered switches with signals
- 141 lb. rail
- Concrete ties

The south end of the rail alignment is a loop track in the port uplands area. The alignment shown works with the existing terrain in that area. There is space available for stockpiling wood chips, coal, sand and gravel, mineral ore and other bulk materials. There is also space available for a large tank farm should that option develop. The Port Director has indicated that the conveyor system being planned for the wood chip program is one that can be used for other bulk items such as gravel and coal. This can be accomplished by properly cleaning the conveyor belt at each change in product. To accomplish this, the port uplands area will have to be graded to essentially a flat area that will allow operation of a movable conveyor system. The loop track will be very flat grade and designed for yard speeds. Details of the loop track and uplands layout were not part of this study. The data presented was taken from a previous report, Matanuska-Susitna Borough Port Study by Peratrovich & Nottingham, Southwest Alaska Pilots Association and Alaska Development Consultants, April 1981.

From the port area, the alignment moves west and north through the edges of the Point MacKenzie agricultural area and staying just outside of the boundary of the SFGR. Just north of the SFGR, the alignment turns west and crosses the Little Susitna River then turns back north essentially following a glacial moraine deposit that is largely granular soil well suited to the construction of a railroad. The alignment is located west of Red Shirt Lake and moves west to the toe of the moraine to avoid conflict with recreational properties before moving back to the upper slopes of the moraine and staying west of the Nancy Lake Recreation Area boundary.



The alignment crossing the Willow Creek road and Willow Creek west of the Parks Highway then crosses the Parks Highway to connect to the existing ARRC mainline tracks.

Soils in the port area are predominately gravel. Between the port area and the Little Susitna River the same holds true except that there are localized pockets of organic soils. These tend to be relatively shallow and it is expected that the shallow organics will be excavated and replaced with granular material. On either side of the Little Susitna River crossing, the soils are more fine-grained sands and/or silts. These soils will require geotextiles and gravel embankments. Moving north from the Little Susitna River, the alignment crosses some small areas of wetlands where shallow organic soils may be expected. The organic soils may be removed or the embankments may be constructed using geotextiles and gravel fill. As the alignment moves northward, it traverses the west slope of a moraine deposit known to be generally good quality sand and gravel. Approaching the Cow Lake area, the alignment drops off of the moraine to go west of recreational properties along Fish Creek then, after crossing the creek, it moves back up onto the side slope. It is expected that there will be some wetlands and shallow to moderate depth organics for a relatively short section. Again, where the organics occur, the most probable method will be to use geotextiles on the surface of the organic soils and construct embankment over it using good quality gravel. Near the north end of Red Shirt Lake, the moraine deposit becomes less well defined and the area flattens out. There are scattered shallow lakes and bogs throughout the area up to Willow Creek, but the materials generally are good gravels. North of Willow creek is much the same. The area east of the Parks Highway where the tie into the existing ARRC mainline will occur is in one of the wet areas. It is expected that construction in this area will be geotextile placed on the surface and the necessary embankment constructed over that.

As a policy, all crossings are planned to be grade separated. Typically, the roadway will go over the railroad unless the terrain is conducive the taking the road under. Figures 8 shows the typical grade-separation with the roadway over. The initial planning includes roadway grade separations for Ayshire Road, Susitna Parkway, Willow Creek Parkway and the Parks Highway. The only exception to grade-separated crossings may be in the Port MacKenzie upland area where at-grade crossings may be appropriate.



DRAWN BY: J. J. ...  
 CHECKED BY: ...  
 DATE: ...  
 PROJECT NO.: ...

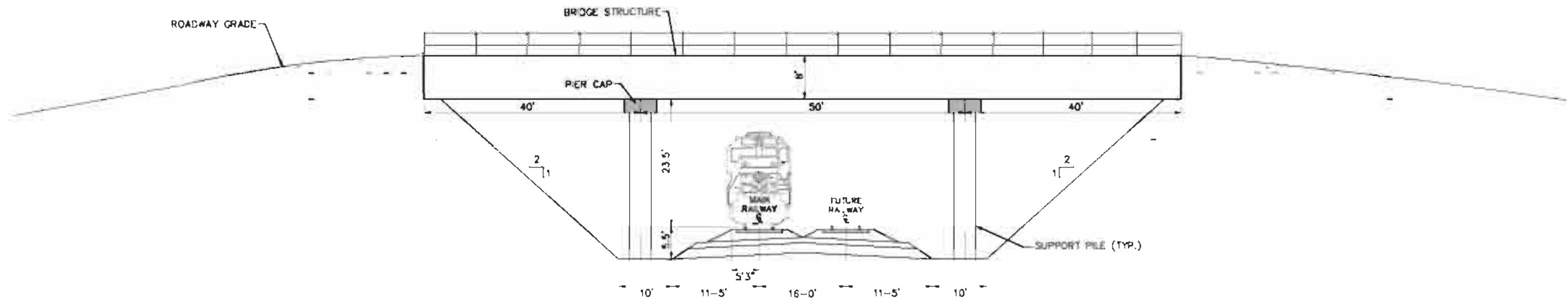


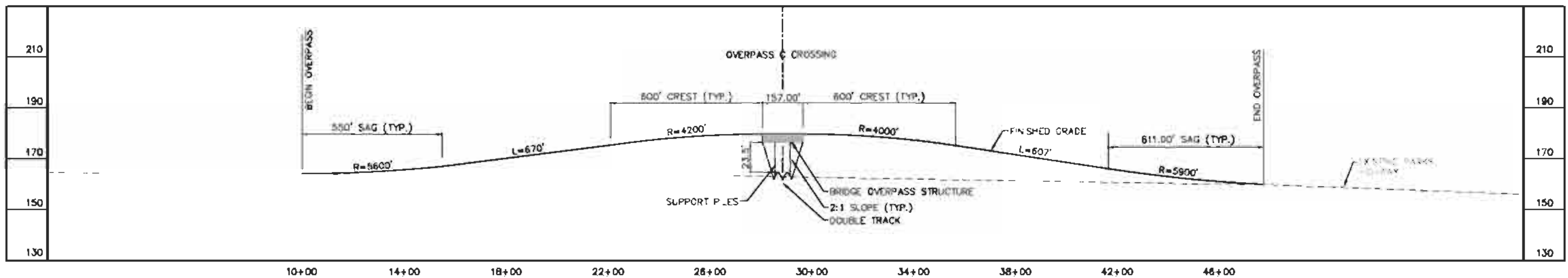
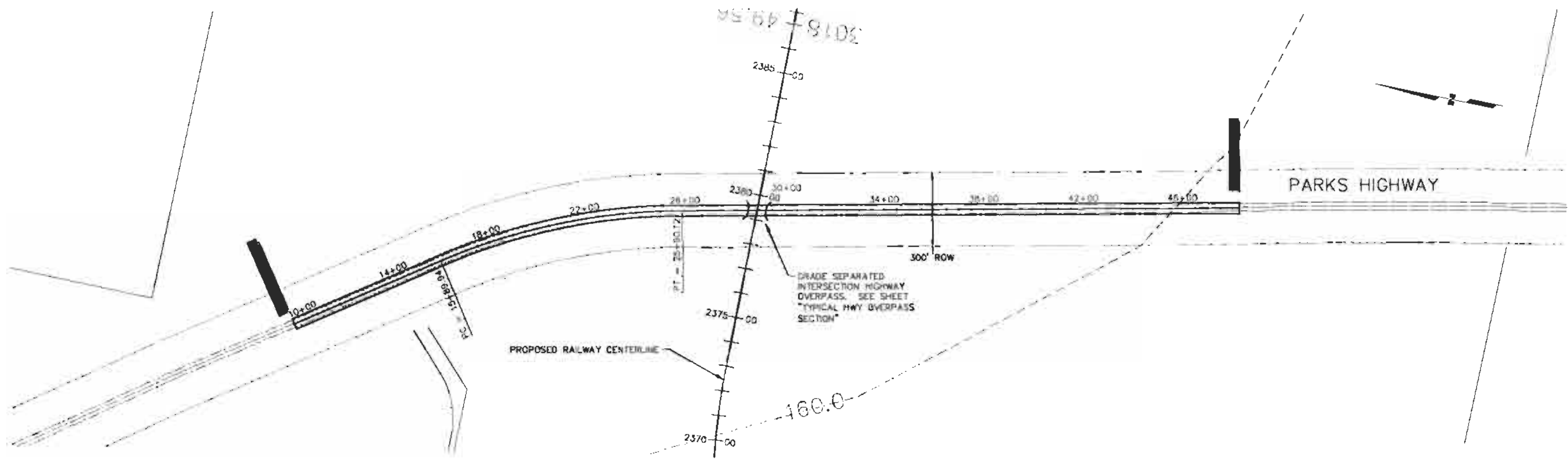


FIGURE 8

			FIELD BOOKS	DATE	BY	REVISION	 <p>             CONSULTING ENGINEERS              1000 ...              ...           </p>	<b>MAT-SU RAIL CORRIDOR STUDY</b> <b>TYPICAL OVERPASS SECTION</b>	 <small>SHEET</small>
REV	DATE	BY	DATE	BY	REVISION	<small>FILE NO.</small> <small>01228.000</small>			



\*NOTE: DRAWING SCALES REFERENCED ARE FOR HALF SIZE SHEETS

REV	DATE	BY	REVISION	FIELD BOOKS	DATE	BY
				1000	03/21/03	
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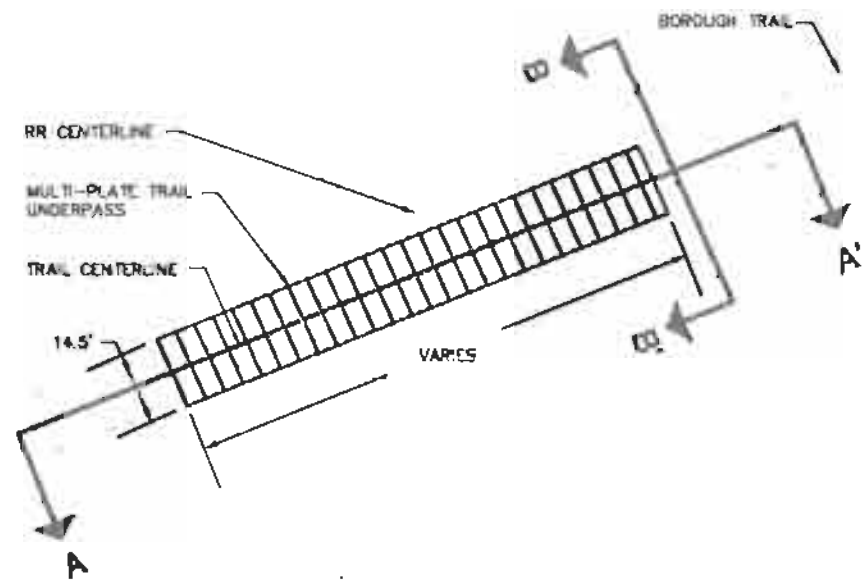


MAT-SU RAIL CORRIDOR STUDY  
**TYPICAL ROAD OVERPASS  
 PLAN & PROFILE**

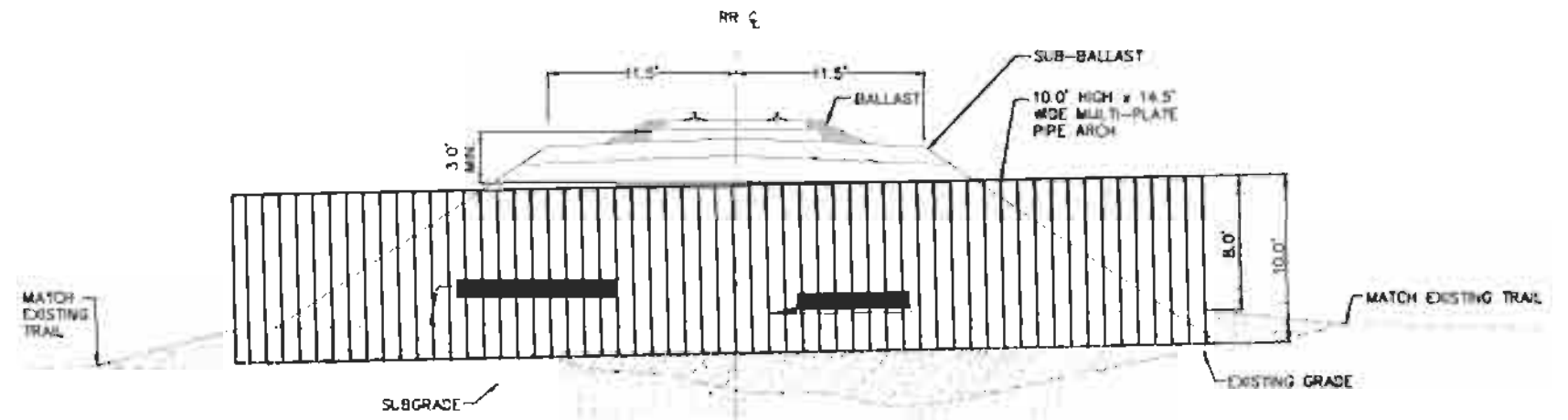
**FIGURE 8**

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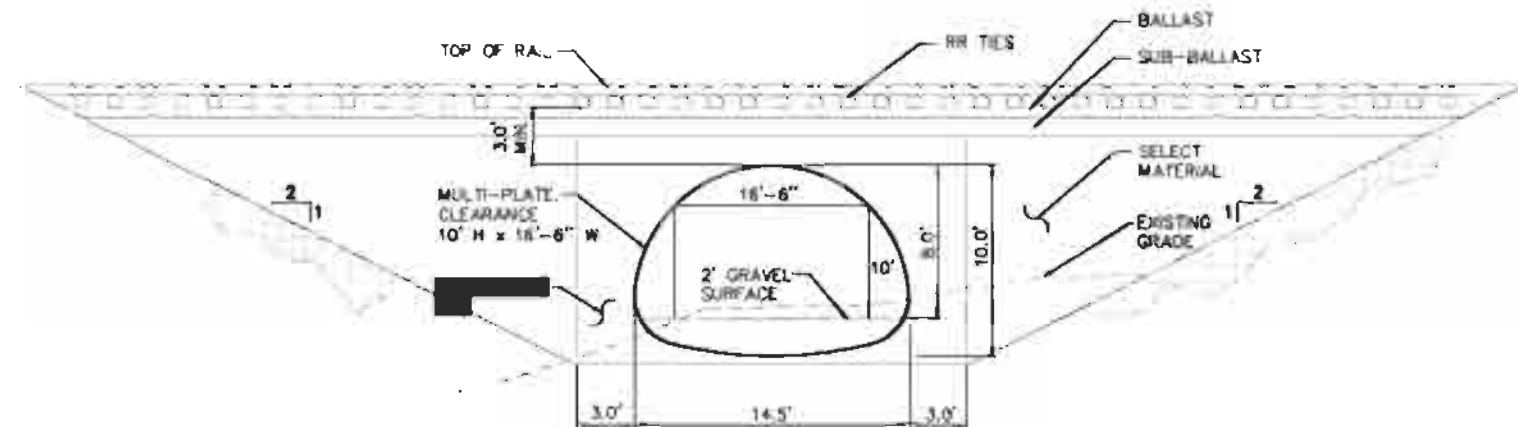
The rail alignment crosses a number of active winter trails, including the Iditarod Trail. Throughout the study effort there was concern regarding the safety of the trail crossings. The study team used the MSB Trails Plan to identify key recreational trails that pass through the study area. Where trails cross the rail alignment, grade separations will be provided. Figure 9 shows a prototypical trail grade separation with the trail going under the railroad. These structures envision use of multiplate culverts as the primary underpass structure. The surfacing section of the trail will be carried through the invert of the culvert to provide trail surface continuity.



**SEPARATED GRADE RECREATIONAL TRAIL CROSSING PLAN**  
SCALE: NTS



**A-A' SEPARATED GRADE RECREATIONAL TRAIL CROSSING PROFILE**  
SCALE: NTS



**B-B' MULTI-PLATE CROSS-SECTION**  
SCALE: NTS

**FIGURE 9**

REV	DATE	BY	REVISION	FIELD BOOKS	BOOK#	PAGE#	DATE		<b>MAT-SU RAIL CORRIDOR STUDY</b> <b>RECREATIONAL TRAIL CROSSING</b>	SHEET X / X FILE NO. 01228.000

The rail corridor crosses two major streams, Little Susitna River and Willow Creek and a number of smaller streams, several of which are anadromous fish streams. The Little Susitna River will require a bridge, which is currently envisioned as a 380-foot pile supported structure using a concrete ballasted deck design, see figure 10. The Willow Creek Bridge is currently envisioned as a 280-foot concrete ballasted deck design, see figure 11. The remaining stream crossings are currently planned as culverts. Each will be designed to accommodate fish passage in accordance with ADF&G and USF&WS requirements.

A total of four sidings are planned, each with a clear length of 6,200 feet, sufficient to accommodate a full standard length freight train. This length is the current ARRC standard. All switches will be remote controlled power switches with signals, identical to those currently being installed by the ARRC. The first of these sidings is planned to occur about eight miles north of Port MacKenzie. The second siding is planned to occur approximately four miles further to the north in the Point MacKenzie agricultural area. The third is about eleven miles further north and north of the Little Susitna River and a short distance north of the Susitna Parkway road crossing. The fourth siding is seventeen miles further north, just short of Willow Creek.

The plan view included in Appendix A show additional details for the railroad construction.

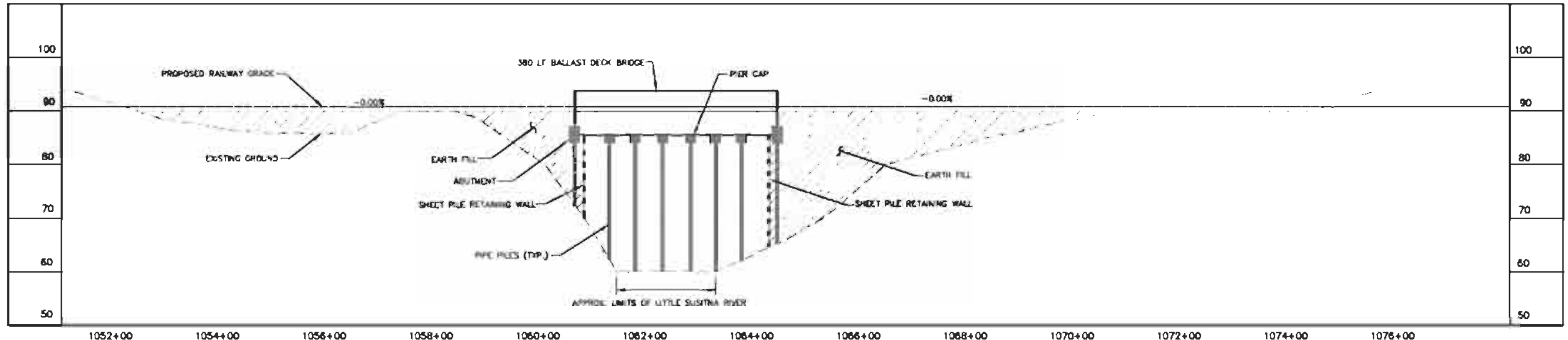
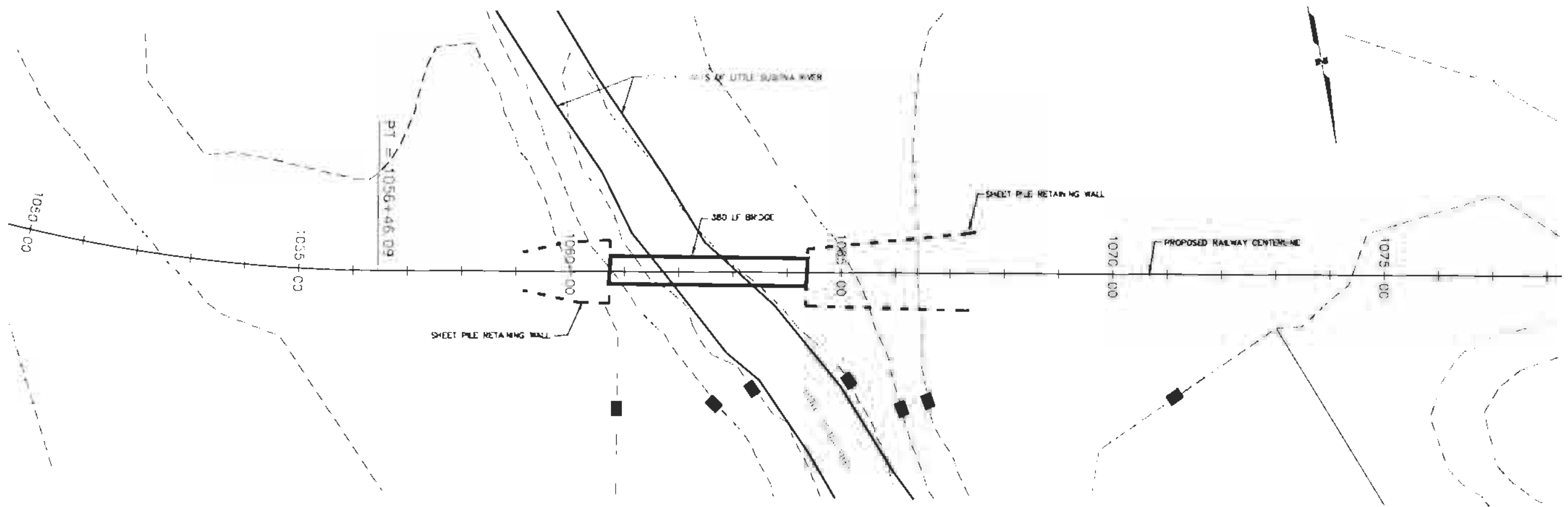


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**FIGURE 10**

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**MAT-SU RAIL CORRIDOR STUDY**  
**LITTLE SUSITNA BRIDGE CROSSING**  
 STA 1051+00 TO STA 1078+00

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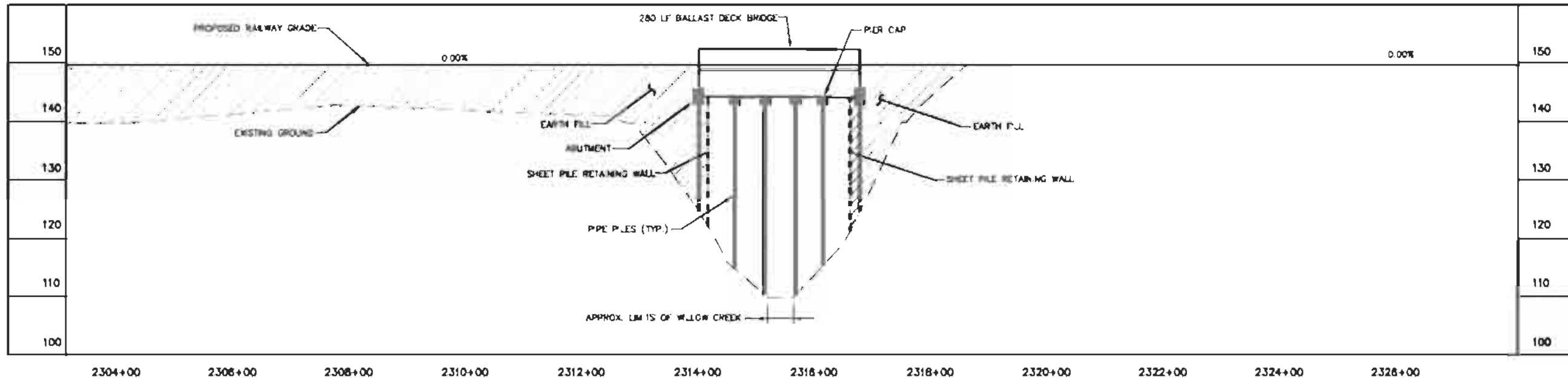
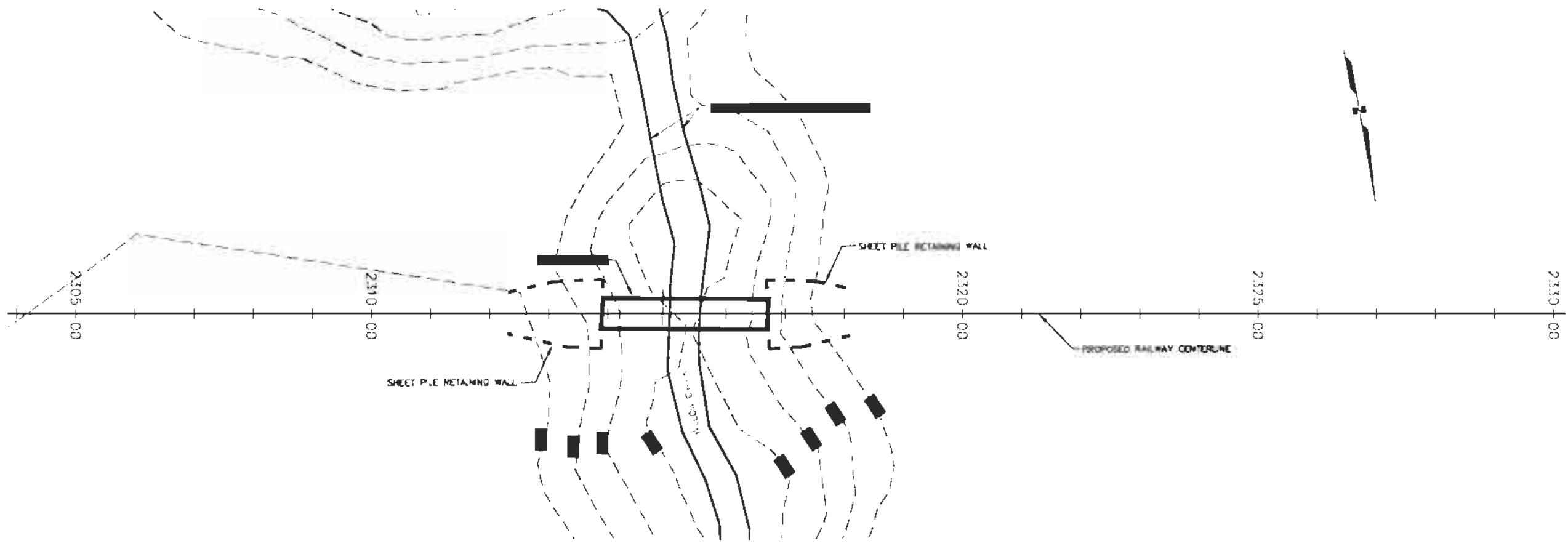


FIGURE 11

REV	DATE	BY	REVISION

FIELD BOOKS	DATE	BY



MAT-SU RAIL CORRIDOR STUDY  
**WILLOW CREEK  
 BRIDGE CROSSING**  
 STA 2303+00 TO STA 2328+00

SHEET

FILE NO.
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## 7.2 Highway

The roadway element of the project is an improved roadway providing direct access between Port MacKenzie and the Parks Highway. The selected alternative, Corridor 7, is not a new corridor but rather an upgrade with some straightening of existing facilities. The traffic study suggests that, at least within the 20 year planning horizon, the amount of freight and people, assuming implementation of the proposed ferry system, moving through Port MacKenzie will be of a nature that a two-lane rural arterial cross section will provide sufficient capacity to carry port traffic and anticipated increases in local traffic combined. The typical section for this roadway is shown on figure 12.

Beginning at the Port MacKenzie uplands, the roadway follows the existing Point MacKenzie access road northward for 11.4 miles. At that point, the Point MacKenzie Road turns east to connect with Knik-Goose Bay Road. The Point MacKenzie Access Road was designed and constructed as a low volume gravel road, therefore, through this first section, the horizontal and vertical alignments will have to be changed to bring the section into line with the desired 65 mph design speed. These changes will entail ROW acquisition to accommodate larger radius curves and, in some locations, wider cut and fill slope limits.

Between the Point MacKenzie Access Road and the South Big Lake Road, a distance of 6.6 miles, follows the alignment selected by the MSB for improvement of the Burma Road. This alignment passes northerly between Carpenter Lake and Cann Lake then northeasterly to a section line. It then follows the section line north, skirting the west edge of Marilee Lake to connect with the South Big Lake Road. The MSB has been moving ahead with the design and ROW phases for the construction of the Burma Road section as part of their road improvement programs, independent of the Port MacKenzie access issues. The Burma Road/South Big Lake Road intersection is expected to be a standard four-way stop sign controlled intersection with a north bound to east bound right turn lane to facilitate an expected heavy turn movement in the quadrant. A concept is shown on sheet 17 of Appendix B. Soils in this section are largely good gravels, however, near the southern end, the alignment crosses some wetland areas with moderate to deep organic soils. The organic soils are typically in the eight to ten foot depth range with occasional fossil channels that range to over 25 feet deep. Construction in the organic soils areas is expected to require the use of geotextiles with gravel embankment place over the organics. Due to the depth of the organic soils, surcharging may be desirable in order to reduce the potential for settlement issues later. However, the predominate soil type for the section is good gravel and should provide good service.

From the Bruma Road/South Big Lake Road intersection the route turns east and follows the South Big Lake Road. The first two miles of this section follows the existing South Big Lake Road along a section line. The vertical alignment will be improved to provide the sight distances necessary to conform with the desired design speed and a wider typical section will be constructed. The history of this section, in terms of the original Burma Road is that the section is wet silty soils with frequent areas of organics. There is generally gravel underlying the surface at some depth, however, generally shallow. It expected that the surficial organic soils will be removed, the underlying silts will be sub excavated sufficiently to provide an adequate pavement structure and a well drained subgrade, the structural section will be gravel taken from





cut sections or imported borrow. The pavement section will be as shown in the Typical Sections, figure 12.

The next 2.2 miles will be construction of a new, improved segment of the South Big Lake Road. This is a section that the MSB has been moving forward on with design and ROW acquisition. The new construction will bypass a section of the existing roadway that is narrow, very crooked and sharply rolling with a safe operating speed of 30 mph or less. The improvements already proposed by the MSB will be a significant safety improvement and generally conform the desired design criteria. The soils through this section are similar in nature to the Burma Road section. The terrain has more relief and preliminary analysis suggests that there will be greater cuts and fills through this section. It is expected that much of the gravel will be taken from the cuts or areas immediately adjacent to the ROW.

The next 2 miles is the west approach to the community of Big Lake. The existing alignment is slow and crooked. The proposed alignment smoothes these curves and enters the Big Lake commercial district in a sweeping curve. The Big Lake commercial district is approximately one mile in length and is characterized by numerous wide driveways. The existing roadway through the commercial district is a rural section with shoulders and no curbing. The proposed improvements would be similar in nature, although traffic data at the time of final design may suggest the need for turn lanes and/or additional control of driveway access. The soils through this section are similar in nature to the previous two sections. The impact on wetlands is expected to be very limited as the proposed alignment closely follows the existing, although there is some smoothing of curves. This section also crosses Fish Creek just downstream of the outlet of Big Lake. This is an important anadromous fish stream. The crossing will require, as a minimum, culverts designed to accommodate fish passage and may require a bridge, depending upon agency input.

The last 3.3 miles extends from the Big Lake commercial district to the intersection with the Parks Highway. This section has good line and grade and, while the shoulders are less than shown in the recommended design criteria, this section will provide the desired level of service for some time. When improvements are warranted, a project to provide the additional shoulder desired width and a pavement overlay would be most appropriate. Soils through this section are good gravels as evidenced by the existing cut slopes.

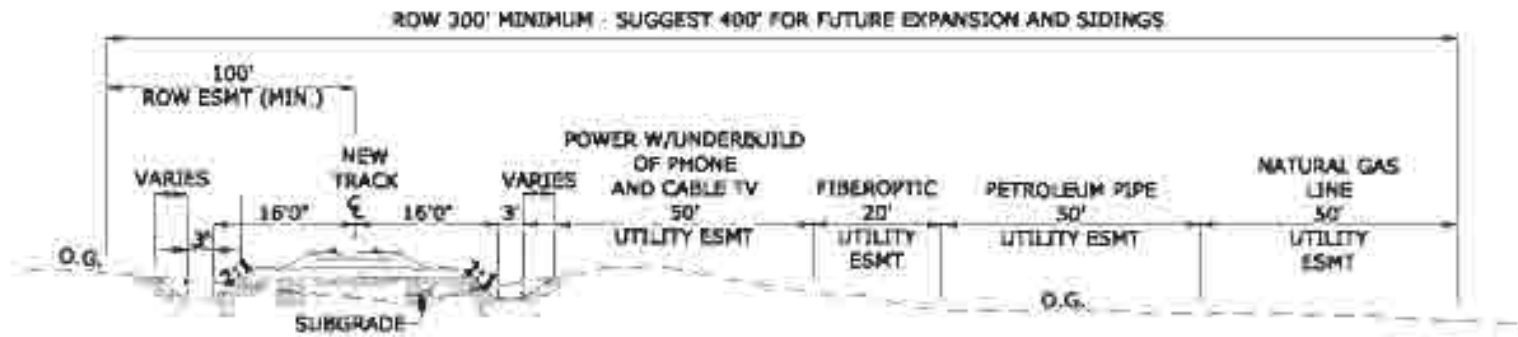
Roadway drainage will be accommodated with roadside ditches in the cut sections, relief culverts where appropriate, and culverts for all streams encountered. Culverts for streams will be designed to accommodate fish passage should there be evidence of fish resident in that stream. The Fish Creek crossing will be a culvert designed to facilitate fish passage unless the regulatory agencies force construction of a short bridge during the design and permitting phase of project development.

Roadway construction is expected to be in general conformance with the typical section shown on figure 12.

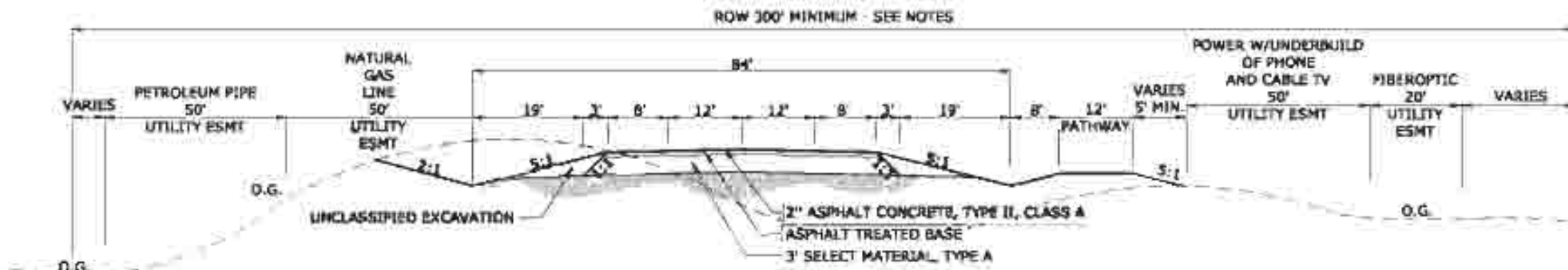
In recognition of the probability that the Knik Arm Crossing will be constructed, the study team has included provision for a future four-lane divided highway from the Point MacKenzie area to

Willow coincident with Corridor 3 as shown on the typical sections, figure 13. The public comment during the three public meetings supported keeping any high volume roadway in the same corridor as the railroad to minimize overall impacts to the area. Implementation of that high-type facility will be left to ADOT&PF. If Knik Arm Crossing is constructed, the advantage of having a high-type facility in Corridor 3 is the manner in which it would facilitate area circulation as the southern Susitna area develops in future years. With this facility in place, and working in conjunction with the existing Parks Highway there would be two primary feeders for the future local arterial system. This should be a very real advantage in the long term.

Refer to Appendix A and B for plan and profile detail.



TYPICAL SINGLE TRACK RAILWAY SECTION



NOTES

1. SUGGESTED MINIMUM RIGHT-OF-WAY IS 300 FEET; HOWEVER, 300 FEET IS PROPOSED FOR FUTURE ROAD EXPANSION AND ADDITIONAL UTILITIES. PREVIOUS ROAD DESIGNS FOLLOWING A PORTION OF THE PROPOSED CORRIDOR 7 ROADWAY MAY OBSERVE DIFFERENT RIGHT-OF-WAY WIDTHS THAN THIS DESIGN. THE MATANUSKA-SUSTINA BOROUGH MAY ADOPT A SINGLE WIDTH RIGHT-OF-WAY OR A VARIED WIDTH RIGHT-OF-WAY THROUGHOUT CORRIDOR 7 DEPENDING ON CONSTRAINTS.

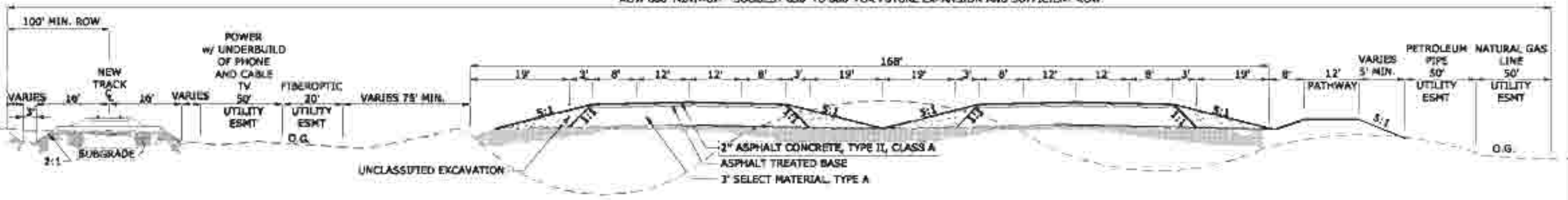
2-LANE TYPICAL ROADWAY SECTION

**INITIAL CONSTRUCTION**

FIGURE A



ROW 600' MINIMUM SUGGEST 630' TO 800' FOR FUTURE EXPANSION AND SUFFICIENT ROW



4-LANE  
TYPICAL ROADWAY SECTION W/SINGLE TRACK RAILWAY SECTION

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# ULTIMATE BUILD OUT IF KNIK ARM CROSSING IS CONSTRUCTED

FIGURE B



## 8.0 HAZARDOUS AND CONTAMINATED SITES

A search of EPA and ADEC hazardous and contaminated sites was conducted to determine if these facilities would be affect the siting of either the rail road or road alignment from Port MacKenzie to the existing transportation facilities. All recorded sites were plotted on the GIS project area map. Sites that fell within the 800-foot corridor for either of the corridors were listed according to their location and type of contamination.

**Corridor 3.** The search of ADEC and EPA records yielded no record sites within Corridor 3 from Port MacKenzie to the intersection with the existing railroad alignment north of Willow.

**Corridor 7.** A total of 12 contaminated sites or sources of contamination were identified within Corridor 7, all of which are on the exiting road system. Of the 12 sites, 8 are in the Big Lake Area, one in Wasilla, and 3 in the general Houston Area (Table 8-1). These sites include contaminated wells, fuel storage tanks, maintenance facilities, or commercial facilities. None of these sites pose a constraint to the development of this corridor as a new access road to Port MacKenzie.

**Table 8-1  
List of Contaminated sites within Corridor 7**

<b>Community</b>	<b>Location of Site</b>	<b>Type of Facility/Source of Contamination</b>
Big Lake	5.5 Mile Big Lake Road	Hardware stores
Big Lake	Big Lake Road	Motor vehicle rental facilities
Wasilla	Mile 5.5 S. Big Lake Road	Government vehicle maintenance facilities
Big Lake		Tanks, diesel (above ground)
Big Lake	Mile 4.2 Big Lake Road	Tanks, heating oil, nonresidential (aboveground)
Big Lake	Big Lake Road	Water supply wells
Big Lake	Big Lake Road	Water supply wells
Big Lake	Makati Road	Tanks, heating oil, nonresidential (aboveground)
Houston	Mile 3.5 Big Lake Road	Tanks, heating oil, nonresidential (underground)
Houston	Big Lake Rd	Tanks, heating oil, nonresidential (underground)
Houston	Big Lake Rd	Water supply wells
Big Lake	Big Lake Rd	Motor/motor vehicle supplies stores
	Big Lake Rd	Lumber processing and preservation
		Pit toilets (vaulted) nonresidential (one or more)

Source: Alaska Department of Environmental Conservation, 2003

## 9.0 PUBLIC PROCESS SUMMARY

A Public Involvement Plan (PIP) was developed to ensure that the public and state and federal agencies were informed about the study. The PIP served as a guide for gathering relevant information from stakeholders to be used in project development. The critical milestones where public input was gathered include:

Critical Milestone	Approximate Schedule
⇒ Issues Identification	Spring 2002
⇒ State and Federal Agency Coordination	Spring 2002
⇒ Office Study	Summer/Fall 2002
⇒ Field Reconnaissance	Summer 2002
⇒ Route Alternatives Development & Evaluation	Fall 2002
⇒ Alternatives Presentation	Winter 2002
⇒ Route Recommendation	Winter/Early Spring 2003
⇒ Route Recommendation Presentation	Spring 2003

### 9.1 Mailing List

A study mailing list of individuals and groups with an interest in the study area was developed (Appendix J). A comprehensive list of property owners was obtained from the MSB. In addition, the mailing list includes businesses, local government departments, and state and federal resource agencies. To date, the list has approximately 10,000 names on it.

### 9.2 Study Flyers

At the beginning of the study, a postcard mailer was distributed to all parties on the mailing list providing information regarding the status and schedule of the study, and inviting the public to a public meeting on May 15, 2002 in Houston.

For the second workshop, a two-sided, 8.5 x 11-inch flyer was mailed to an expanded mailing list containing names toward the Willow area. The flyer summarized issues identified at the May 15, 2002, meeting and invited the public to a route analysis workshop on November 20, 2002, in Houston.

A third flyer was prepared for the April 2, 2003 open house and was mailed to all names on the mailing list. This flyer described the proposed route and information on the rationale behind the selection.



### 9.3 Public Meetings

Three public meetings were held at Houston High School during the course of the study.

#### **Meeting #1: Issues Identification Meeting**

Study objectives, a review of past studies, and the schedule were presented followed by a facilitated discussion. Comments are organized in regard to the following issues: route, recreation, and land use. A full record of the results of the meeting are found in the Public Involvement Report, Appendix I.

#### **Meeting #2: Alternatives Presentation Workshop**

Route options were presented at a workshop where the public could review the proposed route options and supporting technical information. Information from the commodities study, soils constraints analysis, baseline environmental data on wetlands, fish and wildlife habitat and archeological sites, traffic volume estimates, and land status were available for review. A ranking sheet was distributed to the participants. Eighty-four participants turned in the ranking sheet. The following table displays their first choice for roadway and railroad corridor. It also describes the most important development criteria. Participants ranked the proposed roadway corridors from 1-4 with 1 being the highest. They ranked the railroad corridors from 1-3 with 1 being the highest. Participants rated the development criteria from 1-5 with 1 being the most important criteria.

ROADWAY	RATED AS FIRST CHOICE	RAILROAD	RATED AS FIRST CHOICE
Corridor 4	16	<b>Corridor 3</b>	<b>66</b>
Corridor 5	8	Corridor 4	9
Corridor 7	21	Corridor 5	6
<b>Corridor 10</b>	<b>30</b>		
Add a Roadway Corridor 3	6	No Rail/No project	1

PROJECT CRITERIA FOR ROADWAY	RATED #1 in importance	PROJECT CRITERIA FOR RAILROAD	RATED #1 in importance
Construction Cost	14	Construction Cost	9
Wetlands Impact	12	Wetlands Impact	12
<b>Private Property Impact</b>	<b>41</b>	<b>Private Property Impact</b>	<b>51</b>
Public Property Impact	4	Public Property Impact	5
Access to undeveloped area	9	Access to undeveloped area	9
Reduced commute time	16	Reduced commute time	7
<b>Build Road and Rail together</b>			<b>3</b>



### **Meeting #3: Recommended Route Presentation Open House**

An open house was held to present the recommended route option. Participants were invited to examine the information gathered to date on the route options and to review the rationale behind the selection. Exhibits included information on land ownership, environmental impacts, trail crossings, typical cross section for roadway and railroad, construction cost estimates, bridge crossings, and traffic analysis.

#### **9.4 Agency Pre-application Meeting**

An agency pre-application meeting was held on May 13, 2002 at the offices of URS Consulting in Anchorage. The purpose of the meeting was to introduce the study team, go over the study objectives and hold a roundtable discussion among local, state, and federal resource agencies regarding route location constraints, environmental baseline conditions, and information needs for future project permitting.

#### **9.5 Media Contacts**

Newspaper announcements and Public Service Announcements (PSA) were published in advance of each of the three public meetings. For the newspaper, display advertisements were designed and published at least one week prior to the meeting in the Anchorage Daily News and the Frontiersman. PSAs inviting the public to the meetings were sent to the following radio stations: KMBQ (Houston), KNIK, KSKA, KASH/KENI and KNBA.

#### **9.6 Additional Outreach and Communications**

Several presentations were made during the course of the study to the following groups:

- ✓ Matanuska-Susitna Borough Port Commission
- ✓ Knik-Goose Bay Community Council
- ✓ Matanuska-Susitna Borough Transportation Advisory Board





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Implementation Options – Volume 1	- February 28, 1985
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