ALASKA CANADA RAIL LINK PROJECT
FEASIBILITY STUDY REPORT

TRAFFIC DATA DEVELOPMENT FOR TOURISM/PASSENGER TRAVEL
Passenger Revenue Potential

WORK PACKAGE A3(f)

Prepared For:

University of Alaska Fairbanks

Prepared By:

Klugherz & Associates
P.O. Box 15911
Seattle, WA 98115
206.522.2111
June 2006

Table of Contents

1.0 Introduction

The purpose of this work package is to evaluate the potential for passenger revenue on the Alaska Canada Rail Link. The scope of work included:

- Executive interviews with a cross-section of tourism providers, including cruise lines, tour companies, motorcoach and rail operators, and tourism agencies and organizations involved in the promotion and development of tourism in the region.
- The development of tourism traffic projections based on the data collected in Work Package A3(c).
- A review of the competitive and comparable rail products.
- Passenger rail revenue projections.

In addition to the above scope of work, a review of Alaska and Yukon population trends is provided.

The passenger rail revenue projections are explained in this document. A revenue model has been prepared in MS Excel and accompanies this report.

NOTE: The projections provided in this document are based on data that are available at this time and assumptions about the market. These projections provide a snapshot of what the revenue opportunity *might* look like in the future. The projections are intended to give a range of outcomes to be used as guidance in evaluating the general potential for passenger rail service. Actual revenues from this service will in all likelihood vary from these base-level projections and will be dependent on a variety of factors that are outside the control of this analysis. Uncertainties in the market, actual marketing expenditures, and unforeseen events are examples of those factors.

2.0 Summary of Executive Interviews

A series of interviews was conducted with executives from a cross-section of businesses related to tourism, tour operations, and rail operations in Alaska, the Yukon, and Northern BC. Interviews included the following entities:

- Alaska Railroad
- Colorado Railcar
- Fairbanks Convention and Visitors Bureau
- Holland America Line
- Northern British Columbia Tourism Association
- Orient Express Hotels, Trains, and Cruises
- Princess Cruises
- Princess Tours
- Royal Celebrity Tours
- Rocky Mountaineer Vacations/Armstrong Hospitality Group
- Tourism Yukon
- Westours

The purpose of these interviews was to gather information from the perspective of the different entities on the future opportunities for the development of tour train travel as a result of the proposed rail link. The information provided by these interviews is summarized by general market interest in rail to Alaska, the Yukon, and Northern BC, product options and type of service most suited to the route, and interest in product development.

2.1 Tourism Market Interest in Alaska Canada Rail Link Concept

Based on the executive interviews, travel by rail is considered an attractive opportunity for tourists visiting Northern British Columbia, Yukon, and Alaska. While interest varied by individual interviewed, it was generally agreed that the opportunity for long-distance rail through a vast wilderness will have appeal to some markets.

- Providers of rail experiences in Alaska indicated that rail is highly popular among their markets and that travel by rail is preferable to travel by motorcoach.
- Cruise/tour companies that offer Alaska rail experiences in private rail cars (pulled by the Alaska Railroad) question how many days their clientele would be willing to spend on a train. Some indicated two days was enough, while others would consider using rail for more than two days depending on the itinerary and the market.
- The Alaska Railroad caters to a variety of markets, including a number of independent visitors who may have an interest in extended rail opportunities.

- Other rail companies, such as Rocky Mountaineer Vacations and Colorado Railcar, felt there was a small market that would be interested in the long-distance rail experience to or from Alaska.
- All individuals interviewed agreed that a primary destination or key selling proposition was needed as the focus for the Alaska Canada Rail Link concept. In this case, all agreed that Alaska is the key selling proposition, with the rail experience an alternative to a cruise ship experience or as a circle trip combining an Alaska cruise one way with rail the other.
- Primary interest in the proposed Alaska Canada Rail Link concept would most likely come from people interested in visiting Alaska and the Yukon who are rail buffs, tour operators catering to the rail or long-distance travel market, and overseas markets who have longer vacations.

2.2 Product Options

Executives interviewed were asked their opinions on the type of rail service that would be most suited to the distance and region served. Product options considered were:

- Daylight service with overnight in hotels – i.e. Rocky Mountaineer Vacations, Alaska Railroad, and Alaska cruise/tour companies.
- Sleeper Car Service – i.e. Amtrak or VIA Rail
- Sleeper Car and Day Seat service – i.e. Great Southern Railway (Australia)
- Sleeper Car Service – i.e. Private luxury rail such as Orient Express Trains
- Motorrail – i.e. Amtrak Auto-Train

Everyone interviewed indicated that the service should be with sleeper cars and cater to the tourism market. Daylight service was not considered a viable option due to the distances involved and the lack of land-based infrastructure along the proposed routes, such as tourism attractions, hotels, transfer vehicles, restaurants, and catering. It is not until the train reaches Whitehorse that this type of infrastructure is available to accommodate a train of several hundred people.

Sleeper car service was considered the most viable passenger option for serving this route. The level of service recommended should cater to the tourism market and include mid- to-upscale service. The exclusive private luxury rail concept, such as the trains operated by Orient Express Hotels, Trains, and Cruises, was considered too narrow of a market by those interviewed.

One product option discussed that catered to a range of markets was a service operated by the Great Southern Railway in Australia, known as The Ghan. The Ghan operates from Adelaide to Darwin, through Alice Springs. The level of service includes luxury sleeper cars (with full amenities in each cabin) and dining, mid-level sleeper cars (with toilet and

shower at the end of the car), and sleeper seats. The Ghan also operates motorrail and carries cars, SUVs, and pick-up trucks. This option appeared to have the most appeal to a variety of markets, including the drive market. .

2.3 Product Development Interest

Among the tour company and rail operators interviewed, interest in the development of the product was mixed. Specifically:

- Holland America Line/Westours indicated that if a rail line were available between Whitehorse and Fairbanks they would be interested in using private rail cars, possibly self-propelled) along this route for their tour passengers. The rail would substitute for motorcoach travel currently used.
- Neither Princess Tours and Cruises nor Royal Celebrity Tours (a division of Royal Caribbean Cruises) were interested in using the Alaska Canada Rail Link for their cruise/tour passengers. This was primarily due to the fact that neither company currently offers tours to the Yukon as part of their cruise/tour packages and neither has plans to do so in the near future.
- Rocky Mountaineer Vacations is not interested in developing any sleeper car service and the Alaska Canada Rail route does not have the necessary infrastructure for them to consider this service.
- Orient Express Hotels, Trains, and Cruises is not interested in operating in North America.
- Colorado Railcar is the new owner of the American Orient Express, recently renamed Grandluxe Rail Journeys. This private luxury train has operated itineraries in the U.S., Canada, and Mexico for many years. The new owners have no interest in operating this train on the Alaska Canada Rail route, but might consider another type of operation on this route if the product is economically viable.

3.0 Tourism/Visitor Traffic Projections

Projections of tourism/visitor traffic to Alaska and the Yukon were developed to aid in developing the potential size of the rail market for the Alaska Canada Rail Link. These traffic projection consider past and current volumes, as well as past growth trends, current market trends, and opinions from tourism industry executives.

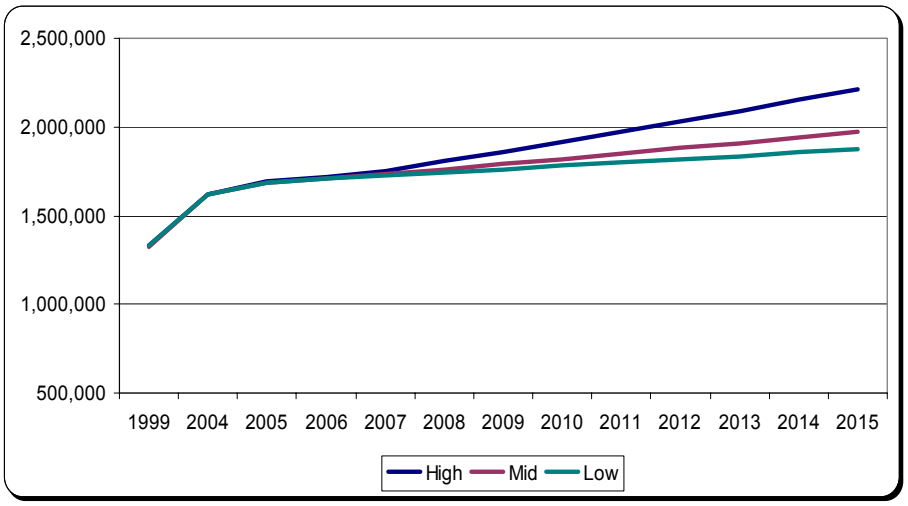
3.1 Summer Traffic

Visitor arrivals in Alaska during the summer months have increased, on average, 3.8% annually between 1999 and 2004. In the Yukon, the growth has been slower, just over 1.5% annually during the same five years. Growth in visitor arrivals to the region in recent years has slowed in the past few years due to a slower growth in the cruise industry, a continued decline in the number of visitors arriving by highway, and little or no growth in other independent visitors.

Low, mid and high levels of tourism/visitor growth to the Alaska and Yukon region have been prepared using conservative assumptions (See Tourism/Visitor Traffic Projection tables in the Appendix). Based on these assumptions, growth rates for tourism/visitor traffic to the region between 2004 and 2015 range from 1.35% average annual growth in the low case, to 1.8% in the mid case and 2.9% in the high case. The volume of visitors to the region in 2015 ranges from 1.9 million in the low case to 2.2 million in the high case.

These figures should be considered rough estimates, serving to provide a general sense of the size of the market, as the data do not include May visitors to the Yukon.

Figure 3.1
Tourism/Visitor Traffic Projections Through 2015 - Summer
Alaska and Yukon Region



The mid case is used as the base case for the tourism passenger revenue model developed in this study. The detail of the mid case traffic projection is presented in Table 3.1 and in more detail in the Appendix of this report. The mid case includes the following assumptions:

Alaska (May through September)

- Cruise market growth from 2004 to 2007 based on actual and scheduled volumes.
- Cruise market from 2007 to 2015 – 2% annual growth
- Highway market flat from 2004 to 2015
- Ferry market flat from 2004 to 2015
- Other markets – 1.5% annual growth from 2004 to 2015

Yukon (June through September)

- Highway market flat from 2004 to 2015
- Motorcoach market – 1% annual growth (primarily from Skagway train excursion) from 2004 to 2015
- Air market – 1.5% annual growth from 2004 to 2015

Market Overlap

- Highway market to Alaska is part of the Yukon Highway market, therefore there is market overlap that equals the Alaska Highway market figure.
- A small portion of the ferry market to Alaska also visits the Yukon via the Highway. This number is not known, therefore no overlap of this market is shown.

Table 3.1

Summer Tourism/Visitor Traffic Projections to 2015 – Mid Case

	1999	2004	2009	2015
Alaska Total - May-Sept	**1,199,000**	**1,447,400**	**1,614,507**	**1,788,321**
Cruise	570,000	850,000	978,434	1,101,875
Non-Cruise				
HIghway	110,000	80,800	80,800	80,800
Ferry	20,800	16,200	16,200	16,200
Other	498,200	500,400	539,073	589,446
Yukon Total - June-Sept	**232,770**	**251,703**	**257,836**	**265,684**
Highway - Personal Vehicle	152,520	145,582	145,582	145,582
Motorcoach	54,960	78,724	82,740	87,830
Air	25,290	27,397	29,514	32,272
TOTAL	**1,431,770**	**1,699,103**	**1,872,343**	**2,054,005**
Less Market Overlap	**110,000**	**80,800**	**80,800**	**80,800**
Alaska/Yukon Summer Total	**1,321,770**	**1,618,303**	**1,791,543**	**1,973,205**

3.2 Fall/Winter Traffic

The months of October through April are indicated as the fall/winter months, or the off-season. During this time visitor traffic is dramatically reduced from summer volume levels. Growth in visitor arrivals to Alaska during the fall/winter months has primarily occurred in air arrivals to the state. Highway arrivals have increased marginally, while Ferry arrivals have decreased.

The projections for the Alaska fall/winter season show a low case with no growth, a mid case with growth at approximately 1% annually, and a high case with growth at 1.9% annually. In all cases, no growth is assumed in ferry or highway arrivals. In the mid case, growth in the "other" category, which includes domestic and international air visitor arrivals, is assumed at 1% annually.

Figure 3.2
Tourism/Visitor Traffic Projections Through 2015 – Fall/Winter
Alaska Only

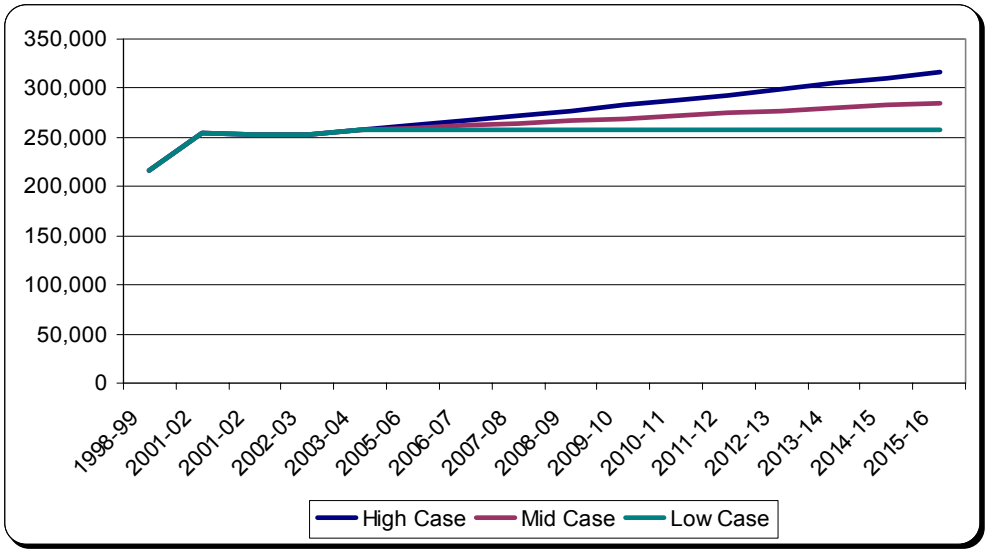


Table 3.2
Fall/Winter Tourism/Visitor Traffic Projections to 2014-15 – Mid Case

	1998-99	2003-04	2008-09	2014-15
Alaska Total - May-Sept	216,300	257,100	269,536	285,300
Cruise	200	0	0	0
Non-Cruise				
HIghway	11,300	11,600	11,600	11,600
Ferry	3,100	1,700	1,700	1,700
Other	201,700	243,800	256,236	272,000

4.0 Competitive and Comparable Rail Product Review

Rail tourism is a product that is available in many variations, from luxury overnight sleeper car service to trips as short as a few hours on historic trains and rail routes. The Alaska Canada Rail Link concept is a long distance route characterized by beautiful scenery with a rich cultural and historical background. The route also evokes a sense of adventure as it winds north to the Yukon and Alaska.

Competitive and comparable rail experiences are found around the world but are relatively few in number. This section provides a brief description of a selected group of rail experiences that are comparable to the Alaska Canada Rail Link concept in one or more aspects. Both passenger rail and motorrail experiences are discussed. All fares mentioned are in US dollars.

4.1 Passenger Rail

4.1.1 Overnight Excursions

Overnight rail journeys targeted to the tourism markets include excursions on private luxury trains, public-oriented scheduled rail service, and day trains with overnight hotel stays. The experiences included below include a range of offerings, from well-known places in North America to more exotic locales in other parts of the world. They all share the sense of adventure and to some degree romance, which is part of a rail journey.

Private Luxury Trains
Private trains typically cater to an upscale market, and include high levels of service, most meals, on-board entertainment, and often side excursions at places of interest. The following list of private rail experiences covers the most well-known and successful operations.

- **Orient Express Hotels, Trains, and Cruises** is a London-based company that offers luxury private rail experiences at the high end of the rail tourism spectrum. This company has successfully penetrated the luxury rail market with product offerings ranging from $400 to as high as $2600 per night. Products include:
    - **Venice-Simplon-Orient Express** – Journeys from London to Venice (1,065 miles) over 31 hours in vintage rail cars. Several departures are offered between London and Venice, with a few itineraries to Rome, Istanbul, Vienna, and Budapest.
    - **British Pullman** – Day and weekend trips to various destinations in the UK are offered aboard this train. Passengers travel in restored carriages from the 1920s and 30s.
    - **Northern Belle** – This sister train to the British Pullman operates from stations in the Midlands and the North of England, providing day trips and short breaks.

- **The Royal Scotsman** – Based in Edinburgh, this luxury train offers one to seven day tours throughout Scotland aboard a specially-built train.
- **Eastern and Oriental Express** – Modeled after the Venice-Simplon Orient Express, this service offers multi-day itineraries in Thailand, Malaysia, and Singapore aboard a modern train designed in a colonial style.
- **PeruRai**l – A relatively recent acquisition for Orient Express, PeruRail operates the "Hiram Bingham", named after the explorer who found Machu Picchu. Day trips are offered between Cuzco and Machu Picchu, and Cuzco and Lake Titicaca. This is one service offered by Orient Express that offers regular rates and "backpacker" rates.

- **Rovos Rail** – Based in South Africa, this privately-owned railway company operates regular itineraries between Cape Town and Pretoria. Occasionally itineraries to other locales, such as Tanzania and Namibia, are offered. Rates range from $500 to over $1,000 per day.

- **The Blue Train –** This train is also based in South Africa and operates between Cape Town and Pretoria. This train has operated as the Blue Train since 1946, but has its origins in 1923. The South African government owns and operates this train through Transnet, the government-owned transportation agency, responsible for all transportation matters in South Africa. Rates are similar to other luxury rail, ranging from $500 to $1,000 per day and higher.

- **Shongololo Express –** Another Africa-based private rail service, the Shongololo Express offers rail excursions that tour South Africa, with some traversing neighboring countries such as Namibia, Zimbabwe, Botswana, Zambia, Tanzania, Lesotho, and Swaziland. Rates range from $200 to $500 per day.

- **Trans-Siberian Express** – The longest railway journey in the world, the Trans-Siberian Express, (owned by GW Travel Ltd), traverses Russia (5,771 miles), and offers rail options to Mongolia and China. Rates range from $400 to $800 per day.

- **Grandluxe Rail Journeys (formerly American Orient Express) –** Based in North America, the former American Orient Express has offered a range of itineraries traversing the U.S. and Canada. New owners are changing the name to Grandluxe Rail Journeys and are operating itineraries in the Western U.S. and Mexico. Rates range from $400 to $800 per day.

Scheduled Rail Services
Scheduled rail services, in this discussion, are often state-owned and provide a range of rail services at a level of service below that of private luxury rail. Fares usually include passage only and, with a few exceptions, no meals. The three rail services mentioned represent a sample of the type of scheduled rail services that offer long-distance routes.

- **VIA Rail** – VIA Rail, Canada's national rail service, operates throughout Canada. A classic long-distance route is The Canadian, which offers scheduled service between Toronto and Vancouver. Fares range from $200 to $900 per day.

- **Amtrak** – Amtrak, the national rail service in the U.S., includes regularly scheduled long-distance rail on a variety of routes traversing the country east and west, north and south. Amtrak is a subsidized service and fares range from $50 to $300 per day.

- **Great Southern Railway** – This private company operates regularly scheduled long-distance rail service in Australia, east-west between Sidney and Perth (and Melbourne and Perth), and north-south between Adelaide and Darwin. The trains are tourist-oriented and offer three levels of service, from luxury cabins to sleeper seats. Fares range from $200 to over $700 per day.

Rail Excursions with Hotel Overnights

- **Rocky Mountaineer Vacations** – A very successful rail excursion product combining long distance rail with overnights in hotels, Rocky Mountaineer Vacations operates between Vancouver and Banff, Jasper, and Calgary. Two classes of service are offered and fares range from $450 to $950 per day.

4.1.2 Day Excursions

Many day excursions by rail exist throughout the world. In Alaska and the Yukon there are a handful of rail excursions that demonstrate the high level of market interest in travel by rail.

- **Alaska Railroad –** The Alaska Railroad operates between Seward and Whittier to Fairbanks. It offers year-round service between Anchorage and Fairbanks, and seasonal service to Seward and Whittier. The service appeals to tourists, but also provides an important transportation link for Alaskans.

- **Cruise/Tour Rail in Alaska** – Over 20 years ago, cruise/tour companies began to offer travel by rail between Anchorage, Denali, and Fairbanks as an alternative to motorcoach travel. These companies built private rail cars that are pulled by the Alaska Railroad. This model has been a great success, and rail travel for cruise/tour passengers in Alaska has become a standard feature on most itineraries.

- **White Pass & Yukon Railroad** – This historic railroad, built in 1898, operates on narrow gauge between Skagway, Alaska and Fraser, British Columbia. The three hour tour includes rail one direction and motorcoach the other.

4.1.3 Fare Comparisons

The fares of two rail operations have been compared in Table 4.1. The Ghan, which operates between Adelaide and Darwin, was selected for comparison because the excursion is a similar distance to the Alaska Canada Rail route and traverses a remote and somewhat isolated region. The Ghan offers three levels of service:

- Gold Kangaroo – Deluxe sleeper cabins with shower, toilet, wash basin, meals included.
- Red Kangaroo Sleeper Cabin – Standard sleeper cabin (upper/lower), with wash basin. Toilet and shower facilities at the end of the carriage. Meals available for purchase.
- Red Kangaroo Daynighter Seats – Recliner seat. Washing facilities, toilet and shower at the end of the carriage. Meals available for purchase.

Per diem rates for the Ghan range from $171 in a daynighter seat to $713 in Gold Kangaroo service for the two day trip. Children's fares are provided.

The Rocky Mountaineer excursions were selected because they operate in similar terrain to the Alaska Canada Rail route and cater to a mid-to-upscale market. The Rocky Mountaineer does not operate sleeper trains, but uses trains outfitted for day use and provides overnight accommodations in hotels along the route. Two levels of service are offered:

- Gold Leaf – Dome cars, dining room, meals included, moderately-priced hotel accommodations.
- Red Leaf – Picture windows, meal service at seat, moderately-priced hotel accommodations.

Fares range from $450 to $950 per day, depending on the service level chosen.

Table 4.1
Sample Passenger Fares - 2006

Per Diem Comparisons(US$)	Distance	Time (hrs)	Time (days)	Gold Kangaroo	Red Kangaroo Cabin	Red Kangaroo Seat
Ghan - Adelaide to Darwin	1862 miles	47.25	2.0			
Adult				$713	$542	$171
Child/Student				$485	$321	$77
Rocky Mountaineer - Vancouver to Jasper	528 miles*		1.4			
Adult				$893	$446	NA
Rocky Mountaineer - Vancouver to Calgary	604 miles*					
Adult			1.5	$941	$476	NA

**Miles are road miles from Mapquest.com. Actual rail miles may differ slightly.*

4.2 Motorrail

Motorrail is another option to consider for the Alaska Canada Rail Link. Three motorrail services have been selected for comparison, one in Australia, one in the U.S., and one in Europe:.

- .**The Ghan** – The Ghan, which operates between Adelaide and Darwin, takes cars, camper vans/trailers, and SUVs. Larger vehicles are charged slightly more than smaller ones.

- **Amtrak** – A very popular service for Amtrak, the Autotrain between Virginia and Florida, operates daily. Of the three services compared, the Amtrak fares are the lower per mile.

- **SNCF** – The national railroad of France, the SNCF offers motorrail on selected routes. These routes have proved very popular with travelers, particularly during busy holiday times when the autoroutes are very crowded. Of the three services, the SNCF motorrail rates are the highest.

Table 4.2
Sample Vehicle Fares

Fare Comparisons(US$)	Distance	Fare	Fare/Mile
The Ghan - Adelaide to Darwin	1862 miles		
Motorrail (up to 5.5 m)		$613	$0.33
Motorail (5.5 to 7m)		$690	$0.37
Amtrak – Lorton, VA to Sanford, FL	860 miles		
Auto		$149	$0.16
Van/SUV		$296	$0.34
Motorcycle		$109	$0.13
SNCF – Paris to Nice	584 miles		
Auto		$204	$0.35
SUV/Van		$237	$0.41
Motorcycle		$122	$0.21

5.0 Resident Populations

While the tourist market will provide the largest pool of potential train users, the residents of the northern areas including Northern BC, the Yukon, and Alaska may also have occasion to ride the train. While few in number, residents of the region may rely on train service to travel long distances, particularly during the winter months.

5.1 Alaska Population Trends

The number of Alaska residents was estimated at 663,661 in 2005. Alaska's population is not large but it has grown steadily for several decades. From 1990 to 2005, population growth has averaged between 1.2% and 1.3% annually. Average annual growth since 2000 has been steady at 1.2%.

Table 5.1
Alaska Population Growth 1990 to 2005

Alaska Population Growth	1990	2000	2001	2002	2003	2004	2005
Alaska Total	**550,043**	**626,931**	**632,249**	**640,699**	**648,510**	**657,755**	**663,661**
Anchorage - Mat-Su	266,021	319,605	325,824	333,031	337,672	348,500	352,282
Gulf Coast Region	64,063	73,799	73,804	74,259	76,330	74,791	74,904
Interior Region	92,111	97,417	98,119	99,055	97,428	99,793	102,005
Northern Region	20,380	23,789	23,735	23,840	24,145	23,916	23,669
Southeast Region	68,989	73,082	72,128	71,935	72,673	70,964	70,822
Southwest Region	38,479	39,239	39,064	39,362	40,262	39,791	39,979

Source: Alaska Department of Labor and Workforce Development; Research and Analysis Section.

While Alaska's population has been growing at a slow, steady pace, the state experienced very high level of migration. Between 12% and 13% of Alaska's residents either move to (in migration) or move from (out migration) the state each year. Some reasons for large migration figures are the military rotations and workers coming to Alaska for short term employment in the construction, fishing, and tourism industries. Migrating population does represent a potential market for the Alaska Canada Rail Link.

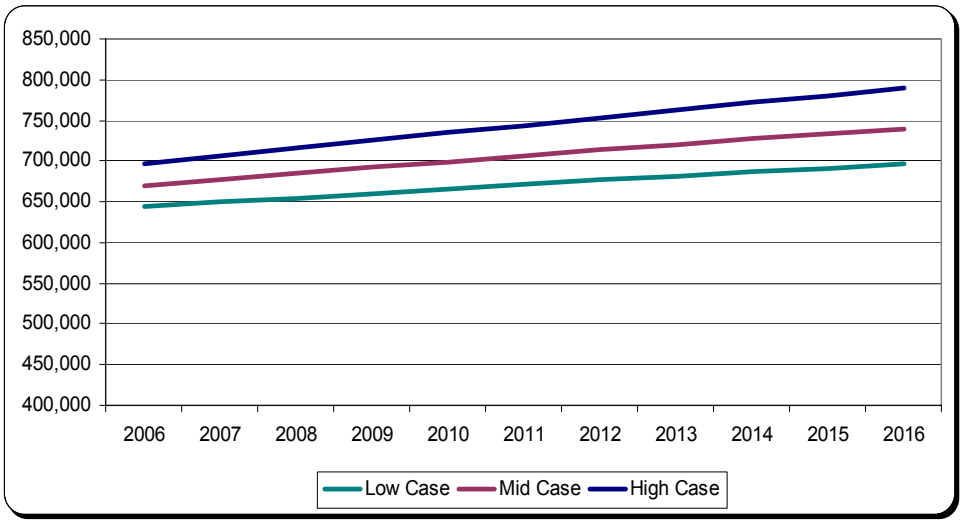
Table 5.2
Alaska Migration Rates – 1996 to 2000

Alaska Migration 1996 to 2000	In Migration	Out Migration	Gross Migration	Popoulation	Gross Migration Rate
2000	38,776	40,348	79,124	626,931	12.6%
1999	39,885	42,222	82,107	622,000	13.2%
1998	40,974	40,829	81,803	617,082	13.3%
1997	41,476	44,477	85,953	609,655	14.1%
1996	40,282	44,023	84,305	605,212	13.9%
Five Year Average	40,279	42,380	82,658	616,176	13.4%

Source: Alaska Department of Labor and Workforce Development; Research and Analysis Section, U.S. Census 2000

The Alaska population is projected to continue its growth trend. The Alaska Department of Labor and Workforce Development has developed projections of the Alaska population at three levels. The low case projects population to reach nearly 700,000 residents, the mid case projects nearly 750,000 residents, and the high case nearly 800,000 residents in the next ten years.

Figure 5.1
Alaska Population Projections – 2006 to 2015

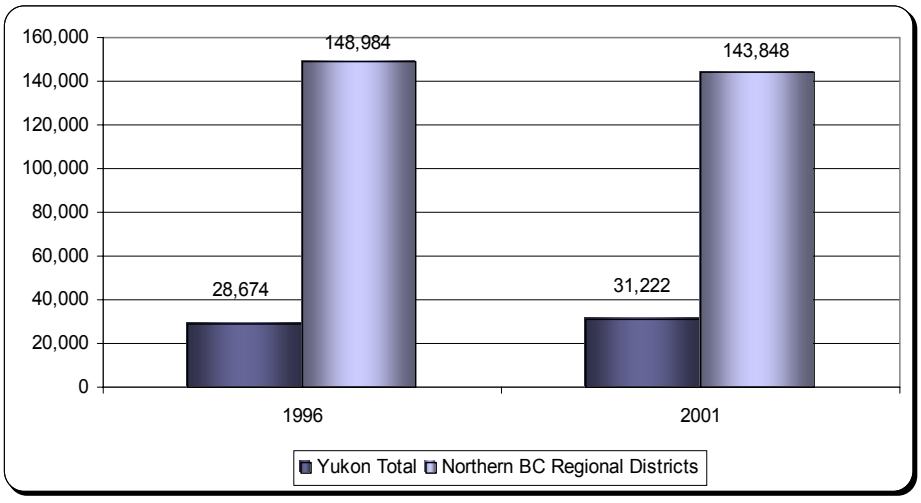


Source: Alaska Department of Labor and Workforce Development; Research and Analysis Section

5.2 Yukon and Northern BC Population Trends

Populations of Yukon and Northern BC are relatively small, with Yukon's population at 31,222 and Northern BC's at 144,000 in 2001, the date of the last census. Yukon's population increased nearly 9% over the previous census in 1996, while Northern BC's decreased 3.4% during the same period.

Figure 5.2
Yukon and Northern BC Populations



Source: Statistics Canada

Yukon's migration rate was 9.2% in 2001 and 8.1% in 2005, slightly lower than Alaska's. Migration rates for the Northern BC areas for 2001 and 2005 were slightly higher, 10% and 11.4% respectively.

Table 5.3
Yukon and Northern BC Migration Rates – 2001 and 2005

	Gross Migration	Population	Gross Migration Rate
Yukon			
2005	2,552	31,587	8.1%
2001	2,878	31,222	9.2%
Northern BC			
2005	15,544	155,984	10.0%
2001	16,422	143,847	11.4%

Source: Yukon Government/BC Stats.

Population projections for the Yukon provided by the Yukon Government show three scenarios. In the low case, the population shows a decline of 6.2% from 2001 to 2015; the base case, an increase of 4.4% during the same period; and in the high case, an increase of 15.6%. For Northern BC, one population projection is provided by BC Stats, which shows growth from 2001 to 2015 of 8.4%.

Table 5.4
Yukon Population Projections - 2015

	2001	2015	% Change 2001 to 2015	Average Annual Change
Low Case	31,222	29,285	-6.2%	-0.5%
Base Case	31,222	32,610	4.4%	0.3%
High Case	31,222	36,088	15.6%	1.0%

Source: Yukon Government

Table 5.5
Northern BC Population Projections - 2015

	2001	2015	% Change 2001 to 2015	Average Annual Change
Northern BC	143,848	155,984	8.4%	0.5%

Source: BC Stats

6.0 Passenger Rail Revenue Projections

Revenue projections for the Alaska Canada Rail Link passenger rail service have been prepared based a set of assumptions developed for this purpose. This section outlines the assumptions and provides a summary of the potential revenue opportunity from a passenger rail service. The primary assumption underlying these revenue projections is that the passenger rail is operated by the owner of the railroad, with 2015 as the base year for the projections.. The passenger rail could also be operated by a private company, with the railroad owner charging fees to use the track. (Whether the passenger rail is owned by the railroad or by a private company, it is useful to understand the revenue opportunity presented by a passenger rail service. Track fees generated by a private rail operation paid to the railroad are directly related to the potential total revenue of the operation).

These assumptions are the basis of a revenue model that is summarized in this section. The revenue model has been prepared in MS Excel and accompanies this report.

6.1 Assumptions

6.1.1 Market Assumptions

The market for the Alaska Canada Rail Link will include:

- **Existing Alaska and Yukon tourists/visitors** – The greatest volume potential for the rail link is likely from the existing Alaska and Yukon tourist/visitor market. Projections of the market volume prepared for this study suggest that nearly two million visitors will come to the Alaska/Yukon region annually by 2015.

- **Alaska, Yukon, (and possibly Northern BC residents)** – The combined Alaska/Yukon resident populations mid-level projections for 2015 suggest a population base in the region of 786,247. The estimated average migration rate assumption for Alaska and the Yukon in 2015 is nearly 10%, based on past migration rates.

- **Stimulated market** – The stimulated market is a group of new visitors to Alsaka and the Yukon who would be motivated to visit the region by the opportunity to take the train. The size of this market is unknown, but it can be assumed that the addition of the rail service would stimulate interest in the rail travel market.

In the absence of primary market research to measure the market interest and buying potential of the rail service among these markets, assumptions have been made to estimate the potential rail volume opportunity. Low, mid, and high case assumptions have been generated at a very basic level using conservative rates of market capture. These market capture rates are based on an analysis of the different types of visitors to the region and assumptions about the percent of the market that might be "captured" or

"converted" to take the train. For the low case 0.5% overall market capture was estimated, the mid case 1.0% and the high case 1.5%. The size of the potential volume of travelers using a passenger rail service is estimated at 14,200 in the low case, 28,400 in the mid case and 56,300 in the high case.

Table 6.1
Alaska Canada Rail Travel Volume Estimates - 2015

	Estimated Volume 2015	Low Case	Mid Case	High Case
Alaska/Yukon Tourists/Visitors	1,973,205	9,866	19,732	39,464
Alaska/Yukon Population	766,247	3,831	7,662	15,325
Stimulated Demand		500	1,000	1,500
TOTAL	2,739,452	14,197	28,395	56,289

Potential volume estimates are further analyzed by seasonality. Seasonal volumes are reflected in Table 62, using the assumption that 90% of travel will occur during the summer months, based on visitor travel patterns.

Table 6.2
Alaska Canada Rail Travel Volume Seasonal Estimates - 2015

	Seasonality	Low	Mid	High
Summer	90%	12,778	25,555	38,333
Winter	10%	1,420	2,839	4,259

It should be noted that these estimates are very rough and serve to provide an indication of the market size for the Alaska Canada Rail. These volume estimates provide a basis for designing the passenger rail product. More detailed primary market research, which should include surveys of the potential markets, is needed in the next phases of the project to refine these estimates.

6.1.2 Service Assumptions

The market estimates in the previous section provide guidance for the service assumptions. Service assumptions include:

- Type of service
- Train routing
- Dates of passenger rail operations
- Frequency of service
- Route mileage
- Total running time
- Train capacity
- Occupancy and parent/child ratios
- Passenger capacity distribution and classes of service
- Motorrail service
- Private Rail

Type of Service
The type of service assumed in the model is scheduled service in summer and winter, and private rail operations to be operated by a cruise/tour company in summer only. The summer service operates between Vancouver and Fairbanks. The winter service operates between Prince George and Fairbanks.

Train Routing
The Alaska Canada Rail Link feasibility project examined several routing options for the rail service. The routing assumption provided in this analysis is the routing assumption selected for financial analysis. This routing included Prince George, Hazelton, Watson Lake, Carmacks, Alaska Border (at either Ladue River or Beaver Creek), Delta Junction and Fairbanks. During the summer months the service is targeted to the tourist/visitor market, therefore the train would need to be accessible in a major transportation center. Therefore, the service is assumed to begin in Vancouver, adding approximately 500 miles to the journey. During the winter months, the service is targeted to a regional and migration markets, therefore it would be based in Prince George.

Dates of Passenger Rail Operations
The rail service examined in this study is assumed to operate year-round, with summer seasonal service operating May 15 to September 15, and winter service operating September 16 to May 14.

Frequency of Service
Three cases are presented in the analysis, a low, mid, and high case for service levels. Assumptions are made regarding how many times the train operates per week in each direction. For scheduled service, the low case shows the rail operating once a week in both the summer and winter. The mid case shows the rail operating once a week in the summer and winter, plus a second train would operate during the peak summer period of June through August. The high case shows rail operating twice a week during the summer months and once a week during the winter months.

Route Mileage
The route included two options between Carmacks and the Alaska border with slight mileage differences. The average mileage of the two routes was used in the analysis.

Total Running Time
The total running time for the route is based on the average speeds for each segment of the route. There are three management strategies that vary by the track speed. Management Strategy 1 is a slower track, Management Strategy 2 is a slightly faster track, and Management Strategy 3 is an even faster track. The revenue analysis has been developed for each management strategy.

Train Capacity
The train capacity for the summer is 317 passengers and for the winter 109 passengers. The size of the train can vary depending on the number of passengers booked, but for the purposes of this analysis, the train size was kept constant in each season.

Occupancy and Parent/Child Ratios
Various occupancy levels were assumed for the low, mid and high cases by season. The ratio of adults to children was assumed to be 90% to 10%.

Passenger Capacity Distribution and Classes of Passenger Service
The train is designed with three classes of service to serve the different markets that may be interested in the trip. Passengers are distributed in three classes of service; 38% in Class 1, 42% in Class 2, and 21% in Class 3. The table below outlines the proposed classes of service.

Table 6.3
Proposed Classes of Passenger Service – Alaska Canada Rail Link

On-Board Services	Facilities	Food & Beverage
Class 1 Twin sleeper berth - 2 lower	Toilet, shower in cabin Wash basin in cabin Class 1 Lounge Car Class 1 Restaurant Car	Meals included in fare, restaurant car dining Beverages available for purchase Tea & coffee complimentary
Class 2 Twin sleeper - upper/lower	Toilet, shower at end of car Wash basin in cabin Lounge car shared with Class 3 Restaurant car shared with Class 3	Meals for purchase Beverage for purchase
Class 3 Upright seat (reclines for sleeping)	Toilet, shower at end of car Lounge car shared with Class 2 Restaurant car shared with Class 2	Snacks/meals for purchase Beverages for purchase

Motorrail Service
Motorrail service is included in the assumptions. Motorrail involves rail cars that are able to accommodate automobiles, camper vans, SUVs, and pick-up trucks.

Private Rail
Private rail service assumptions include the train capacity, number of trains per week in each direction, seasonality, and trip length. Private rail service is assumed to operate between Whitehorse and Fairbanks.

6.1.3 Tariff Assumptions

Passenger and Motorrail Fares
Passenger and motorrail fares are based on an analysis of similar services and are calculated on a per diem. Tariff assumptions are the same for low, mid, and high cases. The tariff rates in the revenue model can be adjusted to test other tariff assumptions.

Track Fees – Private Rail
Track fees in the revenue analysis are calculated on a per mile basis. Track fees can be manipulated to test other fee assumptions.

6.1.4 Ramp Up and Growth Scenarios

The ramp up period is the time frame for the service to fully penetrate the market to reach the levels projected in the base year. Year 1 is assumed to be 2015. In the low case, the ramp up is five years. In the mid and high cases the ramp up is three years.

Growth scenarios are based on increases in passenger and vehicle volume and fare changes. The low case shows an average increase of 1% annually, the mid case shows a 2% increase annually, and the high case shows a 3% increase annually.

6.2 Gross Revenue Projections Base Year

The base year of operation for the gross revenue projections is the first year when the rail service is fully realizing these projections. There may be a ramp up period before these projections may be realized. Three management strategies were examined for the gross revenue projections. The difference in the management strategies is the type of track that would be built and maintained by the railroad. These strategies are as follows:

- Management Strategy 1 – Slower track with maximum track speed at 60mph.
- Management Strategy 2 – Faster track with maximum track speed of 80 mph.
- Management Strategy 3 – Fastest track with maximum track speed of 90 mph.

The different management strategies result in different revenue projections, primarily because the passenger fares are based on per day rates. A slower train results in more time on the train and higher passenger revenues. A faster train results in less time on the train and less passenger revenue. Vehicle fares and private rail track use fees are based on mileage and therefore remain constant across all management strategies. Three scenarios were developed for each management strategy, a low, mid, and high case. Table 6.4 presents a summary of revenues for each management strategy, using the mid-case scenario.

Using the assumptions in the base model, the total projected revenues range from $28 million to $34 million, with most (93%) of the revenue generated during the summer months by passenger, vehicle and private rail service.

Sensitivity analysis can be conducted by manipulating the parameters in the model, such as frequency of train service, train size and configuration, operating dates, occupancy rates, and tariff rates, to assess the effect on the overall projected revenue opportunity.

Table 6.4
Passenger and Motorrail Gross Revenue Projections
Mid-Case Scenarios – Base Year

	Management Strategy 1	Management Strategy 2	Management Strategy 3
Summer			
Passenger Revenue	$26,924,670	$22,535,840	$21,019,576
Vehicle Revenue	$ 3,437,980	$ 3,437,980	$ 3,437,980
Total Summer Revenue	***$30,362,650***	***$25,973,820***	***$24,457,555***
Winter			
Passenger Revenue	$2,040,862	$1,628,756	$1,486,380
Vehicle Revenue	$560,235	$560,235	$560,235
Total Winter Revenue	***$2,601,097***	***$2,188,991***	***$2,046,615***
Private Rail – Track Revenue			
Shoulder Season	$499,200	$499,200	$499,200
Peak Season	$1,297,920	$1,297,920	$1,297,920
Total Track Revenue	***$1,797,120***	***$1,797,120***	***$1,797,120***
ALL REVENUE			
Summer Revenue	$30,362,650	$25,973,820	$24,457,555
Winter Revenue	$2,601,097	$2,188,991	$2,046,615
Private Rail	$1,797,120	$1,797,120	$1,797,120
TOTAL ALL REVENUE	***$34,760,867***	***$29,959,931***	***$28,301,291***

6.3 Ramp Up Period and Growth Factors

The Alaska Canada Rail Link passenger service would take a few years to fully realize its base year potential projections. The ramp-up period for the low case scenarios is 5 years for summer and winter service and projected to be three years for private rail. For the mid and high case scenarios, the ramp up period is projected to be three years for all types of service.

Table 6.5
Projected Ramp-Up Period

	Low Case	Mid Case	High Case
Ramp Up Period			
Summer Service	5 years	3 years	3 years
Winter Service	5 years	3 years	3 years
Private Rail	3 years	3 years	3 years

Growth factors are projected for the years following the ramp-up period and base year, when the service is projected to be fully realized. For summer and winter service growth factors are based on a combination of increases in passenger/vehicle volumes and fares. For the private rail service, growth factors are based on increases in track fees. The overall projected growth in annual revenue for years one to ten is 2% in the low case, 3% in the mid case, and 3.9% in the high case. Growth in revenue in years 11 and beyond is projected to be less in all scenarios.

Table 6.6

Projected Annual Growth Factors – Years 1 - 10

	Low Case	Mid Case	High Case
Overall Growth Factors			
Years 1 to 10	2.0%	3.0%	3.9%
Years 11 and beyond	1.0%	2.0%	3.0%

7.0 Appendix

7.1 References

Alaska Department of Labor & Workforce Development, Research & Analysis, *Population of Alaska by Labor Market Area, Borough and Census area, 1900 – 2005*.

Alaska Department of Labor & Workforce Development, Research & Analysis, *Migration*, Alaska Economic Trends, July 2004.

BC Stats, Population Data, www.bcstats.gov.bc.ca

GMA Research Corporation, *Alaska Highway Travel 2003*, Alaska Travel Industry Association, March 2004.

Government of Yukon, *Yukon Visitor Exit Survey 2004*, Yukon Department of Tourism & Culture, Yukon Bureau of Statistics, April 2005.

Northern Economics, *Alaska Visitor Arrivals: Fall/Winter 2003-2004*, Alaska Department of Commerce, Community and Economic Development, November 2004.

Northern Economics, *Alaska Visitor Arrivals: Summer 2004*, Alaska Department of Commerce, Community and Economic Development, December 2004.

Northern Economics, *Alaska Visitor Arrivals and Profile: Fall/Winter 2000-20001*, Alaska Department of Commerce, Community and Economic Development, November 2002.

Northern Economics, *Alaska Visitor Arrivals and Profile: Summer 2001*, Alaska Department of Commerce, Community and Economic Development, November 2002.

Northern Economics, *Alaska Visitor Expenditures and Opinions: Fall/Winter 2000-2001*, Alaska Department of Commerce, Community and Economic Development, November 2002.

Northern Economics, *Alaska Visitor Expenditures and Opinions: Summer 2001*, Alaska Department of Commerce, Community and Economic Development, November 2002.

Tourism British Columbia, *Northern Rockies – Alaska Highway Visitor Research Project*, January 2005.

US Customs and Border Protection, Alaska Border Crossing Data, 1996 to 2005.

Yukon Bureau of Statistics, *Border Crossings into Canada through Yukon Border Crossings, 1996 to 2005*.

Yukon Bureau of Statistics, *Population Projections to 2015*.

Yukon Department of Tourism & Culture, *Yukon Visitor Statistics Year-End Report 2004*.

Yukon Government, *Yukon Facts*, www.gov.yk.ca/facts/index/htm.

Executive Interviews:

Alaska Railroad
Colorado Railcar
Fairbanks Convention and Visitors Bureau
Holland America Line
Northern British Columbia Tourism Association
Princess Cruises & Tours
Royal Celebrity Tours
Rocky Mountaineer Vacations/Armstrong Hospitality Group
Tourism Yukon
Westours
White Pass & Yukon Railroad