CONSULTING

Alaska Canada Rail Link

Logistics Evaluation for Regional Re-supply

Work Package: A-1 (D)

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To: Kells Boland – Project Manager - Alaska-Canada Rail Link

Subject: Work Package A1 (d) – Logistics Evaluation for Regional Re-supply

Attached is the report of QGI Consulting for the above noted work package within the market analysis phase of the ongoing feasibility study for the proposed Alaska-Canada Rail Link.

The principal objectives of this work assignment were to:

- assess the market potential for regional re-supply by rail from the contiguous lower 48 United States, southern Canada or Alaska/BC Ports;
- compare through rates for current marine container and roll-on/roll-off trailer and rail car operations to determine rail rate levels required for competitive cost positioning relative to existing transportation capability; and
- estimate rail traffic flows and revenue streams.

The analysis and forecast traffic flows and revenue streams contained in this submission have been developed using the data tables and analysis developed by Vector Research and QGI Consulting in the completion of work package A1 (a). These analyses resulted in the development of baseline traffic data for inbound regional re-supply to Yukon/Northern British Columbia and Alaska respectively. This data has been supplemented with publicly available data for North American railway rates and discussions with industry stakeholders where possible.

The specific methodologies utilized in developing the forecast volume and revenue scenarios are documented in the attached report.

Sincerely,

Milt Poirier
Partner
QGI Consulting Ltd.

Executive Summary

The movement of freight to support regional re-supply in the State of Alaska, Yukon Territory, and the Northern British Columbia region is achieved principally through the use marine transportation services supplemented by highway transportation. Marine movements consist of vessel and barge traffic for the movement of containers, highway trailers, and railcars from United States and Canadian origins. There are seven (7) principal supply chain participants serving these markets including Lynden Transport, Totem Ocean Trailer Express (TOTE), Horizon Lines, CN Rail, Alaska Railroad, and to a lesser extent the Burlington Northern Sante Fe Railroad and the Union Pacific Railroad.

There are four (4) primary transportation corridors for the movement of inbound freight for regional re-supply to Yukon and Alaska including:

- Trailer and container traffic and railcar barge traffic originating in Seattle / Tacoma moving to the Alaskan ports of Anchorage and Whittier as well as other outlying ports;
- Railcar barge traffic from the Port of Pr. Rupert, BC to Whittier, Alaska;
- Truck traffic moving between Western Canada and Yukon / Alaska; and
- Intra-regional truck movements between Yukon and Alaska.

It is estimated that potential rail traffic for Alaska and Yukon regional re-supply is in the order of 2.430 million tons per year. Of these 309,000 tons or 13% of traffic is industrial commodities moving in rail barge service with the balance accounted for truck, trailer and container traffic moving principally from the Pacific Northwest region into Alaska with only about 8% represented by truck traffic.

Our analysis of supply chain competitiveness, namely direct rail versus existing marine and highway logistics, has been limited to the comparison of direct transportation costs. It has been assumed that the service capabilities, specifically origin-destination transit time, of the ALCAN network will be equal to or better than existing logistics arrangements and no consideration has been given to the impact of service factors on indirect logistics costs.

In developing and comparing direct transportation costs for the proposed versus existing logistics chains we have relied on a number of publicly available data sources including railway financial and statistical data, direct discussions with transportation carriers, direct freight rate quotations from existing carriers, and transportation tariffs. The specific methodologies employed in

calculating estimated transportation costs for each mode and type of movement is fully documented in the body of this report.

In summary our analysis leads us to conclude that direct rail can be competitive in selected markets, specifically;

- Intermodal movements from Pacific Northwest origins fall within the competitive range of existing logistics via marine to Alaska although the competitive advantage of rail is significantly less on traffic destined to Anchorage as compared to Fairbanks;
- Intermodal movements from Western Canada easily overtake the economics of truck into the Alaska and Yukon markets; and
- Direct rail routing of industrial commodities from Western Canada are competitive with railcar barge traffic via Pr. Rupert although similar traffic from U.S. origins does not appear to be competitive with the barge service via Tacoma.

Based on our analysis we would estimate potential annual rail volumes of 2.29 million tons that can compete with existing logistics patterns if shipped on a direct rail basis. This consists primarily of intermodal freight (91%) with the key assumption being the ability to convert the existing trailer and container volumes moving over the Port of Seattle / Tacoma. It is estimated that total line haul freight revenues accruing to the Alaska Canada Rail Link from this traffic would be in the order of $ 201.7 million annually.

Key issues for consideration with respect to the estimated competitiveness of direct rail and the forecast volumes and revenues include:

- The assumed density and operational and capital costs associated with the proposed Alaska Canada Rail Link each of which will have an impact on the levels of revenue required for profitable operations and the criteria used in the development of freight rates;
- The competitive response of existing transportation carriers, principally providers of marine services, if presented with viable modal competition into these markets. Existing pricing structures likely reflect captive market positioning providing some ability to reduce rates to meet direct competition presented by rail.
- The market behaviour of Class 1 railways specifically CN, BN, and UP should they be placed in a position to be competing with themselves. These companies currently participate in the inland rail movements associated with both rail barge and potentially container movements to Alaska and may seek financially neutral positions in the pricing of rail traffic so as not to deteriorate their existing market positions.

1.0 Overview of Principal Transportation Flows

The movement of freight to support regional re-supply in the State of Alaska, Yukon Territory, and the Northern British Columbia region is achieved principally through the use marine transportation services supplemented by relatively modest volumes of land based movements using the Alaska Highway system. The term marine services is somewhat broad in nature as this transportation mode represents the final leg of various multi-modal supply chains and the service is multi-faceted including the use of vessels and barges for the movement of containers, highway trailers, and railcars from United States and Canadian origins.

Consistent with the preceding analyses completed in work package A1 (a) and the Terms of Reference freight related to regional re-supply has been defined as those volumes "*…required for routine support to ongoing public and private sector activity in the Alaska regional economy. Regional re-supply includes inbound construction materials, consumer goods, repair parts, equipment, vehicles, food and fuel*.[1]"

The following sections will briefly examine the nature of the specific logistics supply chains used in current re-supply operations including the types and volumes of commodities estimated to be moving within them and the principal market participants or providers of transportation services to these markets.

1.1 Supply Chains and Participants

While most of the freight destined to the Yukon Territory is transported inland via the highway system, Alaska bound commodities arrive primarily via marine transportation. Principal supply chains serving these markets include:

- Rail – rail barge – rail movements into Alaska using the ports of Pr. Rupert, BC and Seattle/Tacoma, WA as connectors to the North American railway network;
- Highway – vessel – highway movements into Alaska from the Port of Seattle/Tacoma moving general merchandise in containers;
- Direct highway transportation services principally destined to the Yukon originating in Western Canada; and
- Highway – barge – highway services for the movement of both highway trailers and containers from Tacoma, WA to Alaskan coastal and inland destinations.

While a number of trucking companies provide inland transportation to the Port of Seattle/Tacoma and to inland Alaska and Yukon destinations there are only seven (7) significant supply chain

[1] As published at www.alaskacanadarail.org - Stage 1 Market Analysis, Work Breakdown Structure, Work Package A1 (a).

participants serving these markets. These include Lynden Transport, Totem Ocean Trailer Express (TOTE), Horizon Lines, CN Rail, Alaska Railroad, and to a lesser extent the Burlington Northern Sante Fe Railroad and the Union Pacific Railroad.

Lynden Inc.

Lynden Inc. is the parent company of a family of transportation and logistics companies primarily serving Alaska and the Pacific Northwest. Lynden companies serving the Alaska market provide multi modal transportation services including air, railcar barge, container barge, RO/RO barge, and highway services to, from, and within the State of Alaska. Key Lynden subsidiaries include Alaska Marine Lines (AML), Lynden Transport, and Alaska Railbelt Marine.

Alaska Marine Lines (AML) services both the Central and Southeast Alaska markets with regularly scheduled barge services for the movement of containerized, refrigerated, and break bulk cargo through the ports of Anchorage, Juneau, and Ketchikan among others. Lynden Transport provides LTL and truckload services via barge from Tacoma and direct via highway from Seattle, California, Alberta, and Texas.

Alaska Railbelt Marine (ARM) operates scheduled, once per week railcar barge service between Seattle and Whittier, Alaska in partnership with the Alaska Railroad. ARM provides a direct connection between Alaska and the North American railway system to enable direct rail car movements of various industrial commodities from origins throughout the United States to Alaska.

Totem Ocean Trailer Express

Totem Ocean Trailer Express (TOTE) is an Alaska based transportation company offering marine and highway transportation services between Tacoma, WA and the state of Alaska.

TOTE operates regularly scheduled roll on/roll off (RORO) vessel service between Tacoma and Anchorage for highway trailers and automobiles. Non-marine services include overland highway and intermodal connections throughout the lower 48 states, Canada, and Alaska with its Alaskan line haul division providing direct service to various Alaskan destinations including Fairbanks, Valdez, and the Kenai Peninsula.

Horizon Lines Inc.

Horizon Lines Inc[2]. is a Charlotte, NC based container shipping and logistics company that services Alaska from the Port of Seattle, WA. Horizon Lines provides year round, twice weekly

[2] Formerly the Horizon Lines Group division of CSX Lines which was sold to the Carlyle Group in 2003.

scheduled container vessel service between Seattle and Anchorage. Truck and barge services connect these three principal destination ports with surrounding coastal and inland locations.

Canadian National Railway

Canadian National Railway (CN) Company is a Class 1 railway with a network that spans Canada and mid-America, from the Atlantic and Pacific oceans to the Gulf of Mexico, serving the ports of Vancouver, Prince Rupert, B.C., Montreal, Halifax, New Orleans, and Mobile, Ala. CN Aquatrain is an operating division of CN that provides rail car barge services between the Port of Pr. Rupert, BC and Whittier, Alaska where it connects with the Alaska Railroad. Much of the freight traffic that moves via the Aquatrain originates on CN's lines in Canada and the United States.

Alaska Railroad

The Alaska Railroad is a state owned entity that provides railway services within the State of Alaska. It facilitates the movement of inbound freight for regional re-supply through its connection with both the Alaska Railbelt Marine and CN Aquatrain systems at the Port of Whittier.

Burlington Northern / Union Pacific Railroads

The Burlington Northern and Union Pacific railroads are the two largest Class 1 railroads in North America. These two railroads both serve the Port of Tacoma, WA and are the originators and line haul carriers for much of the rail freight destined to the State of Alaska using the Alaska Railbelt Marine system from Tacoma, WA.

1.2 Principal Freight Flows

There are four (4) primary transportation corridors for the movement of inbound freight for regional re-supply to Yukon and Alaska.

Seattle / Tacoma to Alaska

The ports of Seattle and Tacoma, WA are the principal gateways for waterborne freight for movement between the continental United States and the State of Alaska. These are the ports of origin for Horizon Lines, Totem Ocean Trailer Express, Alaska Marine Lines, and Alaska Railbelt Marine. It is estimated that these carriers transport 90% of all regional re-supply freight moving to Alaska.

Trailer and Container Cargo

The Port of Anchorage receives an estimated 1.6 million tons per year (2004) of general merchandise cargo and vehicles moving in trailers and containers. This traffic is handled by Horizon Lines using container vessels, TOTE using RO/RO barge service, and Alaska Marine

Lines using container barges. Measured in terms of physical units the Port of Anchorage statistics[3] identify this volume as moving in 122,638 physical vans, flats or containers of varying configurations. This equates to slightly less than 307,000 twenty-foot equivalent units (TEUs).

No publicly available data or information is available to identify the "true origin" of containerized cargo moving to Alaska using the services described above. For the purposes of assessing rail competitiveness (Section 2.0) we have assumed that the majority of traffic originates within the Pacific Northwest region of the United States. As a case in point Horizon Lines tariffs identify U.S. inland freight transportation charges for non-Tacoma originated traffic specifically for the states of Washington, Idaho, Montana, Nevada, Utah, Oregon, and California. Recognizing that the majority of freight will consist of consumer type commodities for movement in highway trailers and containers it is reasonable to assume for the purposes of this analysis that the majority of the freight will originate within these regions.

Railcar Traffic

Railcar traffic using the Alaska Railbelt Marine system is estimated[4] to be approximately 2,100 cars representing estimated tonnage of 169,000 tons or 54% of total tonnage moving via railcar barge service. From Tacoma railcars are transported to Alaska using Alaska Railbelt Marine to the Port of Whittier for subsequent inland rail movement by the Alaska Railroad.

Table 1 – Summary of Railcar Barge Traffic

	Origin Country			
Barge Service	**Canada**	**United States**	**Total Tons**	**Share**
AK Rail Belt Marine	148	167,121	167,269	54%
CN Aquatrain	140,333	1,644	141,977	46%
Grand Total	**140,481**	**168,765**	**309,246**	

	Origin Country			
Barge Service	**Canada**	**United States**	**Total Railcars**	**Share**
AK Rail Belt Marine	2	2,071	2,073	57%
CN Aquatrain	1,520	20	1,540	43%
Grand Total	**1,522**	**2,091**	**3,613**	

[3] As published at http://www.muni.org/port/annualtonnage.pdf

[4] It is assumed that Alaska Railbelt Marine handles all traffic that can not be originated by CN Rail.

More than two thirds (67%) of U.S. originated traffic assumed to move on the Alaska Rail Belt Marine system originates from four states – Texas, Washington, Nevada, and Alabama with more than 90% of all freight originating from twelve states (Table 2).

Table 2 – U.S. Origins for ARM Railcar Barge Traffic

Origin Country	Orig State	Tonnage	Railcars	
United States	TX	46,104	560	
	WA	37,208	436	67%
	NV	15,163	168	
	AL	15,012	184	
	OR	7,779	96	
	LA	6,395	74	
	CO	6,227	77	
	WY	5,418	59	
	OH	4,402	91	
	CA	4,104	53	
	IA	3,526	40	
	OK	3,471	46	
	Balance (21)	13,956	207	
United States Total		**168,765**	**2,091**	

92%

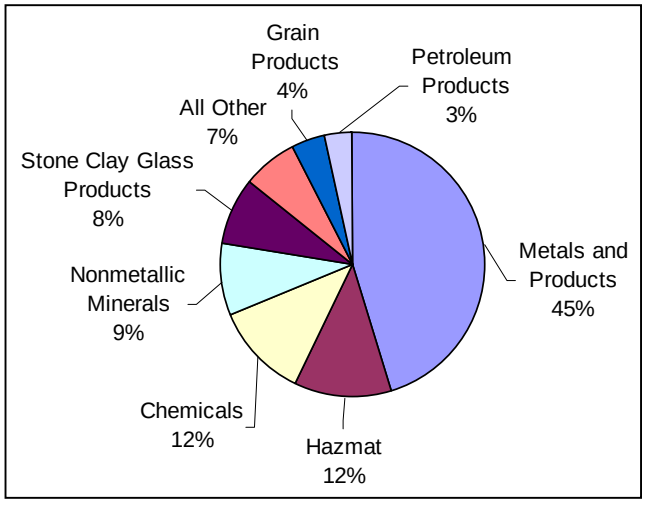
Rail freight moving on the ARM system can be characterized primarily as industrial commodities. No attempt has been made to ascertain the end use of these commodities although it is reasonable to assume they are used in support of public and private sector activities including oil and gas exploration, minerals exploration and production, general industrial manufacturing, regional construction, and construction and maintenance of public infrastructure.

Key commodities moving via the ARM system include:

- Various hazardous commodities
- Pipe and tubing
- Railway rails
- Barium sulphate
- Hydraulic cement

The commodities classified as All Other consist principally of a variety of forest products, grain, foodstuffs, and stone and gravel.

Figure 1 – Major Commodities Moving via ARM



Pr. Rupert, BC to Alaska

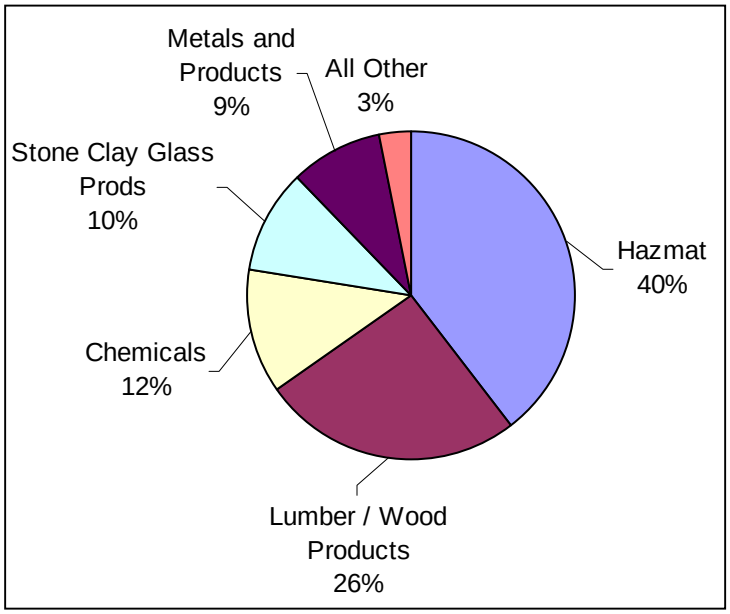
Pr. Rupert, B.C. is the port of origin for Canadian National Railways' Aquatrain service. This transportation corridor is estimated to handle approximately 1,500 railcars carrying 141,000 tons of freight annually to the Port of Whittier. This represents approximately 46% of railcar barge freight moving to the State of Alaska.

Canadian originated traffic is sourced almost exclusively from Western Canada with 50% of all such traffic originating in Alberta. Combined with British Columbia and Saskatchewan these three provinces account for 99% of Canadian traffic and nearly 45% of all rail traffic to Alaska.

Origin Country	Orig State	Tonnage	Railcars
Canada	AB	73,183	795
	BC	51,205	560
	SK	14,278	145
	ON	1,519	18
	MI	148	2
	MB	148	2
Canada Total		**140,481**	**1,522**

Table 3 – Canadian Origins for CN Railcar Barge Traffic

Figure 2 – Major Commodities Moving via ARM



Much like the traffic moving via the ARM system commodities moving via CN's Aquatrain barge are industrial in nature.

Key commodities include:

- Hazardous materials
- Potassium chloride
- Lumber and oriented strand board
- Hydraulic cement
- Grinding balls

Commodities classified as All Other consist of a wide range of commodities ranging from agricultural products to farm products and telephone poles.

Western Canada to Yukon and Alaska

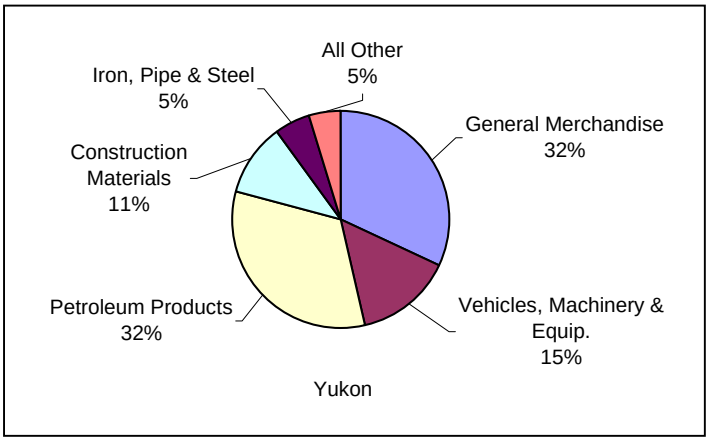
Freight movements in this corridor consist of truck traffic moving via the Alaska Highway from origins south of the 60th parallel. Given the distances involved it is assumed that the majority of this traffic originates in British Columbia and Alberta although it is known that Lynden Transport operates direct hotshot truckload services from the Pacific Northwest to Alaska.

Table 4 – Western Canadian Originated Truck Traffic to Alaska and Yukon

	Yukon		Alaska		Total	
Commodity	**Units**	**Tons**	**Units**	**Tons**	**Units**	**Tons**
Agricultural Products	11	216	108	2,103	119	2,319
Bus and Taxi Service	9	21	22	100	31	121
Construction Materials	192	5,179	237	5,016	429	10,195
General Merchandise	855	15,499	4,041	75,935	4,896	91,434
Household Goods	8	144	221	3,004	229	3,148
Iron, Pipe & Steel	132	2,673	191	3,991	323	6,664
Livestock	-	-	5	55	5	55
Mobile Homes	13	194	14	207	27	400
Mobile Homes - Residential	17	224	61	617	78	842
Not specified	85	1,408	46	592	131	2,000
Petroleum Products	350	15,942	72	2,085	422	18,027
Timber	1	28	6	119	7	146
Vehicles, Machinery & Equip.	361	7,137	1,053	17,501	1,414	24,638
	2,034	**48,664**	**6,077**	**111,324**	**8,111**	**159,988**

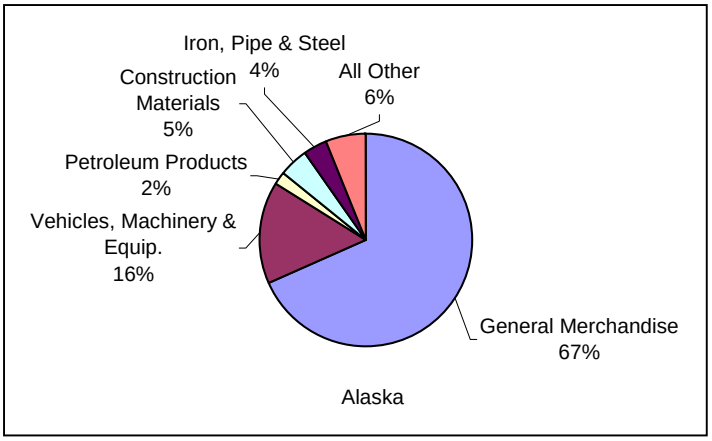
As shown in Table 4 above this traffic is estimated to be in the order of 8,100 truckloads per year carrying a total of 160,000 tons of freight. Seventy percent of traffic is destined to the State of Alaska with the remaining thirty percent to Yukon.

Figure 3 – Commodity Breakdown of Yukon Destined Traffic



Traffic destined to the Yukon consists principally of general merchandise (32%), petroleum products (32%), and vehicles, machinery, equipment, and construction materials (26%).

Figure 4 – Commodity Breakdown of Alaska Destined Traffic



Alaska traffic is similar in nature to the Yukon traffic in that it is dominated by general merchandise freight albeit to a larger extent (67% versus 32%). A key difference lies in the relative volumes of petroleum products. While significant for the Yukon they represent only 2% of Alaska traffic.

Between Alaska and Yukon

There is a limited amount of freight that moves via highway between Alaska and Yukon in each direction although the volumes are relatively insignificant. Total volumes are estimated to be in the order of slightly less than 600 truckloads and approximately 13,000 tons. Once again these movements are dominated by general merchandise and petroleum products traffic (Yukon).

Table 5 – Freight Flows Between Alaska and Yukon

	Alaska - Yukon		Yukon - Alaska	
Commodity	**Units**	**Tons**	**Units**	**Tons**
Agricultural Products	1	24	3	35
Bus and Taxi Service	37	105	50	147
Construction Materials	1	4	9	263
General Merchandise	72	1,035	163	3,259
Household Goods	2	21	2	33
Iron, Pipe & Steel	5	77	7	151
Mobile Homes	-	-	10	29
Mobile Homes - Residential	-	-	3	127
Not specified	1	23		-
Petroleum Products	118	4,961	22	897
Timber	-	-	2	37
Vehicles, Machinery & Equip.	14	278	62	1,414
	251	**6,529**	**333**	**6,391**

1.3 Summary of Freight Volumes

Prior to assessing the relative competitiveness of direct railway movements it is necessary to identify the freight that may be available for direct rail movement. Key criteria in this regard includes:

- Type of freight conducive to rail transportation;
- Freight originating within Canada or the United States; and
- Known or reasonable approximation of actual origin of traffic.

Based on these criteria we would estimate total potential rail traffic for Alaska and Yukon regional re-supply to be in the order of 2.430 million tons per year. This tonnage reflects the exclusion of petroleum products and bulk cement traffic destined to the Port of Anchorage. The petroleum traffic has been excluded as direct discussions with the Port of Anchorage indicate that the majority of this volume actually originates in Alaska and is delivered to the Port by rail. The cement has been excluded on the basis that cement currently moves via rail barge to Alaska from Washington and Alberta and but these logistics have not displaced the bulk ocean movement to Anchorage. The actual origin and current transportation cost of this bulk cement movement is not known and as such the relative competitiveness of direct rail routing cannot reasonably be assessed.

Table 6 – Summary of Freight Tonnages for Rail Competitive Assessment

	(2004) Port of Anchorage	(2003) Highway	(2005) Rail Barge	S.E. Alaska Ports	Total
Vans/Flats/Containers	1,587,719	-	-	360,000	1,947,719
Petroleum Product (Total)	1,536,898	23,884	5,426	-	1,566,208
Cement (Bulk)	122,855	-	-	-	122,855
Metals and Products	-	-	88,819	-	88,819
Hazardous Commodities (unspecified)	-	-	75,612	-	75,612
General Merchandise	-	95,729	-	-	95,729
Lumber / Logs / Wood Products	-	184	38,503		38,687
Chemicals	-	-	36,585	-	36,585
Stone Clay Glass Prods	-	-	28,284	-	28,284
Motor Vehicles & Equipment	-	26,330	267	-	26,597
Nonmetallic Minerals	-	-	15,060	-	15,060
Agricultural Products	-	2,378	9,399	-	11,777
Other Miscellaneous Goods	142	3,848	4,731	-	8,721
Construction Materials	-	10,462	-	-	10,462
Iron / Steel / Pipe	-	6,892	-	-	6,892
Crushed Stone, Sand, Gravel	-	-	2,797		2,797
Household Goods	-	3,202	-	-	3,202
Waste &Scrap	-	-	2,430	-	2,430
Pulp and Paper Products	-	-	1,331	-	1,331
Total	**3,247,613**	**172,909**	**309,246**	**360,000**	**4,089,768**
Net Tonnages For Competitive Assessment	**1,587,861**	**172,909**	**309,246**	**360,000**	**2,430,016**

Key freight flows to be examined in assessing the competitiveness of rail movements include:

- Container and trailer traffic from the Pacific Northwest region of the United States to Anchorage and Fairbanks, Alaska;
- Industrial railway traffic currently moving via rail barge from current known origins to Anchorage and Fairbanks, Alaska; and
- Truck traffic from Alberta and British Columbia origins to Whitehorse, Yukon and Anchorage and Fairbanks, Alaska.

Examination of these transportation flows while not encompassing all traffic currently moving to these regions will provide sufficient representative movements to effectively assess the potential competitiveness of direct rail routings in competition with existing logistics chains.

2.0 Railway Competitiveness

The objective of this analysis is to identify reasonable volume and revenue forecasts for the direct rail movement of freight using the proposed Alaska Canada Rail Link (ALCAN) connecting with the existing North American railway network. A prerequisite to creating these forecasts is the identification of the existing transportation corridors and flows where direct rail movements can compete with existing supply chains.

The analysis of competing supply chains would typically involve the assessment of both the price and service characteristics of a supply chain to determine overall competitiveness including indirect transportation costs such as inventory carrying costs and warehousing infrastructure costs. Given the broad range of commodities and transportation flows being examined here this analysis assumes that the service capabilities, specifically origin-destination transit time, of the ALCAN network will be equal to or better than existing logistics arrangements. No consideration has been given, at this time, to indirect logistics costs. Our assessment of rail competitiveness is thus limited to an examination of the estimated direct transportation costs.

2.1 Methodology

The assessment of the competitiveness of direct rail movements versus existing supply chains has been done by comparing the estimated direct transportation costs associated with each type of movement. In developing the estimated costs for each type of movement we have relied on a number of publicly available data sources including:

- Financial and statistical data for North American railways as published in their respective annual reports;
- Direct discussions with transportation carriers;
- Specific freight rate quotations from existing transportation carriers serving the Alaska market; and
- Publicly available transportation tariffs for the movement of freight between North American origins and Alaska for specific commodities.

The following sections will describe the specific methodologies used in the development of estimated transportation costs for both existing transportation flows and proposed direct rail routing using the ALCAN network. For consistency all transportation rates are stated in US funds. Where publicly available data has been used that is stated in Canadian dollars and exchange rate factor of $0.825 has been used.

2.1.1 Existing Transportation Rates

Estimated transportation costs have been developed for each principal supply chain currently serving the Yukon and Alaska markets. These include:

- Container movements via Horizon Lines from the Port of Tacoma and selected Pacific Northwest origins to Anchorage and Fairbanks;
- Container and trailer movements via Totem Ocean Trailer Express from the Port of Tacoma and selected Pacific Northwest origins to Anchorage and Fairbanks;
- Railcar movements from selected Canadian and United States origins via the Alaska Railbelt Marine and CN Aquatrain systems to Anchorage and Fairbanks; and
- Truckload movements to Whitehorse, Anchorage and Fairbanks from Seattle/Tacoma and British Columbia and Alberta origins.

Containers via Horizon

Estimated transportation rates for Horizon Lines container movements were developed using publicly available tariff information published on Horizons' Internet website. A total of fifteen tariffs were reviewed identifying rates for the movement of general merchandise cargo in containers between Seattle and Alaska and inland transportation rates for both origin and destination movements – i.e. Horizon Inland Arbitrary Charges.

These tariffs provide rates for a broad range of general merchandise type commodities in various container sizes and types, at differing minimum weights, for a range of services – i.e. temperature controlled versus dry service. Consistent with our objective to identify representative transportation rates for general merchandise cargo and to permit comparison against other existing carriers and direct rail routing we have developed a select number of scenarios designed to provide a reasonable range of representative rates.

The specific scenarios developed for analysis include:

- Container movements direct from Tacoma to Anchorage and Fairbanks, AK; and
- Container movements from inland origins in the Pacific Northwest to Anchorage and Fairbanks, AK.

The specific tariffs reviewed and calculations supporting rate scenarios are contained in Appendices A and B of this report.

Containers and Trailers via TOTE

Totem Ocean Trailer Express does not publish tariffs on its Internet website that would permit a broad review of rate structures as was done for Horizon Lines traffic. In lieu of this a select

number of rate requests for movement of merchandise cargo were submitted to TOTE to obtain direct price quotations.

These price quotations were used to develop estimated rates from both Tacoma and inland Pacific Northwest origins through to Anchorage and Fairbanks, AK.

Railcar Barge via ARM and Aquatrain

The development of estimated rates for railcar barge movements required the estimation of three specific rate components:

- Inland rail transportation costs from origin to port of exit whether Pr. Rupert or Tacoma;
- Rail barge transportation rates from either Tacoma or Pr. Rupert to Whittier; and
- Inland Alaska rail movement to either Anchorage or Fairbanks – the selected destinations for this analysis.

The Alaska Railroad provided base traffic data for this analysis. ARR provided a summarized 2005 freight handling file that had been edited to remove all confidential and market competitive information including specific barge service, shipper and receiver information, and rate data. Key data elements provided were number of carloads, weight, commodity type, railway origin, and originating railroad.

Inland Rail Costs – U.S., Canada, and Alaska

Railways contacted for specific rate quotations were not agreeable to providing rates for study purposes. In lieu of direct quotations from railways a railway price model was constructed incorporating logical rail routings from origin to destination, length of haul for each carrier, and average cent per ton mile revenues for each carrier by line of business as published in railway annual reports.

Logical rail routings and mileages for individual carriers were developed using ALK Technologies' PC*Miler | Rail software. These routings and mileages were subsequently applied against a select number of movements from the traffic file to calculate total revenue ton-miles per carrier for each movement. Revenue for each carrier was then derived by applying the average revenue per ton-mile for each carrier by line of business against the calculated revenue ton-miles yielding revenue per car and revenue per ton estimates for the rail movement. The Alaska Railroad does not publish revenue per ton-mile data. As a proxy for ARR data we have used BNSF cent per ton-mile data for its industrial products business line. This has been validated at a high level by

applying the average revenue per ton of $11.38 earned by the ARR in 2004 as calculated from its total freight revenues[5] and total freight tons moved[6].

As shown in Table 7 below Anchorage and Fairbanks are the actual destinations for 89% of all railcar barge traffic and both the Aquatrain and ARM services route significant traffic to both destinations.

Table 7 – Fairbanks and Anchorage Destined Traffic

A: Net Tons

	Barge Service		
Destination	**AK Rail Belt Marine**	**CN Aquatrain**	**Total**
ANCHORAGE	62,733	34,073	96,805
FAIRBANKS	98,293	81,294	179,586
Total Traffic	**167,269**	**141,977**	**309,246**

B: Percentage of Total Rail Barge Traffic

	Barge Service		
Destination	**AK Rail Belt Marine**	**CN Aquatrain**	**Total**
ANCHORAGE	38%	24%	31%
FAIRBANKS	59%	57%	58%
Percent Total Traffic	96%	81%	89%

For analytical purposes we have analyzed and compared the transportation costs for selected movements from true origin to both destinations regardless of the actual destination of the traffic. For practical purposes we have selected a subset of the traffic file focusing on origin locations that have a critical mass of traffic and provide a cross section of commodities omitting individual car and small lot movements. The subset selected represents 67% of all ARM traffic and 77% of all Aquatrain traffic. As noted earlier traffic movements have been assigned to the respective barge movements based on the principal assumption that any traffic originating within CN's network would route via the Aquatrain with the balance moving via the ARM system.

Where possible, rail rates constructed using the cent per revenue ton-mile methodology have been validated through examination of public railway tariffs and discussions with industry representatives.

Rail Barge Costs

Railcar barge traffic is typically priced as a through rate including the rail movement at origin, barge, and rail at destination. As such it is difficult to determine the specific portion of the rate attributable to the barge movement itself. CN Aquatrain and ARM personnel were contacted to obtain rates for such movements although the only information provided was on a through rate basis. CN lumber tariffs for movement to Alaska were also reviewed yielding little insight as they are also published on a through rate basis.

[5] Alaska Railroad Corporation 2004Annual Report – Page 16
[6] Alaska Railroad Fact Sheet as published at www.akrr.com/arrc29.html

For analytical purposes we have assumed barge rates of $45 per ton USD for both services. Based on our constructed through rates as compared to the tariff and quoted rates received from the carrier we believe this to be conservative – i.e. on the low end.

Direct Truck

As noted earlier direct truck movements to Alaska and Yukon represent a very small portion of the re-supply traffic destined to Alaska, albeit a more significant portion of the traffic destined to the Yukon. Truck rates have been estimated using rate quotations provided by highway transportation carriers.

2.1.2 Direct Rail Rates via ALCAN

Estimated rail rates using the proposed ALCAN network have been constructed using the same methodology as described above for the development of inland rail costs for railcar barge movements. While many routing options are being developed in the technical analysis phase of the Alaska Canada Rail Link study we have selected a single route for our rate competitiveness analysis. The selected route is the Fort Nelson-Watson Lake-Carmack-Ladue routing measuring 1,242 miles from Fort Nelson to Fairbanks, AK.

For intermodal traffic specifically we have calculated estimated direct rail rates in two ways, using the cent per ton-mile (CRTM) methodology outlined earlier and using average revenue per line haul mile based on comparable distances and rates contained in publicly available tariffs for CN Rail and the Burlington Northern Sante Fe Railway. This second approach has been developed in order to validate the CRTM methodology and to provide a reasonable range of estimated rates for such intermodal movements based on comparable scenarios.

2.2 Where Rail Can Compete

Using the methodologies described earlier we have developed scenario-based analyses to assess where direct rail routings to Yukon and Alaska can compete with existing logistics movements. The following sections will review the competitiveness of such routings for the principal transportation flows including container / trailer marine movements from Seattle/Tacoma, railcar barge movements from Pr. Rupert and Tacoma, and direct highway movements.

2.2.1 Container / Trailer Marine Movements

Table 8 below provides a summary of the total re-supply freight currently estimated to be moving into the State of Alaska and the Yukon using both highway truck and various marine services originating in Seattle / Tacoma, WA. Based on current transportation mode and commodity type it is estimated that of the total 2.12 million tons of general merchandise freight that approximately 2.05 million tons or 97% is conducive to movement via direct rail intermodal from origin to destination.

Table 8 – Estimate of Total Inbound Freight to Alaska and Yukon Convertible to Rail Intermodal

Transportation Mode	Destination	Origin / Commodity	Western Canada Units	Western Canada Tons	Alaska Units	Alaska Tons	Total Units	Total Tons
Highway Truck	Whitehorse	Agricultural Products	11	216	1	24	12	240
		Bus and Taxi Service	9	21	37	105	46	125
		Construction Materials	192	5,179	1	4	193	5,183
		General Merchandise	855	15,499	72	1,035	927	16,534
		Household Goods	8	144	2	21	10	165
		Iron, Pipe & Steel	132	2,673	5	77	137	2,750
		Mobile Homes	13	194	-	-	13	194
		Mobile Homes - Residential	17	224	-	-	17	224
		Not specified	85	1,408	1	23	86	1,431
		Petroleum Products	350	15,942	118	4,961	468	20,903
		Timber	1	28	-	-	1	28
		Vehicles, Machinery & Equip.	361	7,137	14	278	375	7,415
		Other (misspecified data)	1	-	-	-	1	-
Total Truck Freight Destined to Yukon			**2,035**	**48,664**	**251**	**6,529**	**2,286**	**55,193**

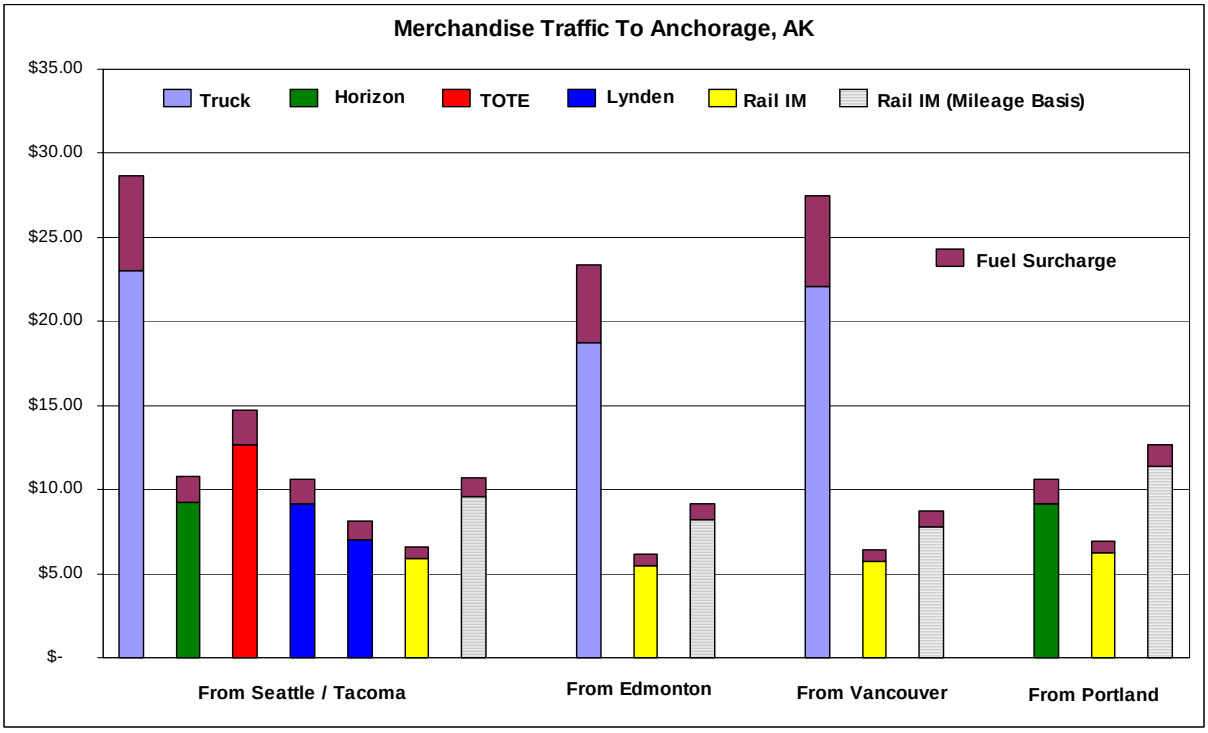
		Origin / Commodity	Western Canada Units	Western Canada Tons	Yukon Units	Yukon Tons	Total Units	Total Tons
	Alaska	Agricultural Products	108	2,103	3	35	111	2,138
		Bus and Taxi Service	22	100	50	147	72	248
		Construction Materials	237	5,016	9	263	246	5,279
		General Merchandise	4,041	75,935	163	3,259	4,204	79,195
		Household Goods	221	3,004	2	33	223	3,037
		Iron, Pipe & Steel	191	3,991	7	151	198	4,142
		Livestock	5	55	-	-	5	55
		Mine Ore	-	-	-	-	-	-
		Mobile Homes	14	207	2	29	16	235
		Mobile Homes - Residential	61	617	10	127	71	744
		Not specified	46	592	3	-	49	592
		Petroleum Products	72	2,085	22	897	94	2,981
		Timber	6	119	2	37	8	156
		Vehicles, Machinery & Equip.	1,053	17,501	62	1,414	1,115	18,915
		Other (misspecified data)	1	-	-	-	1	-
Total Truck Freight Destined to Alaska			**6,078**	**111,324**	**335**	**6,391**	**6,413**	**117,715**

		Origin / Commodity	Seattle / Tacoma Units	Seattle / Tacoma Tons			Total Units	Total Tons
Marine	Anchorage	General Merchandise (VFC)	122,638	1,587,719	-	-	122,638	1,587,719
	SE Alaska	General Merchandise (VFC)	27,807	360,000	-	-	27,807	360,000
			150,445	**1,947,719**	**-**	**-**	**150,445**	**1,947,719**
Total Estimated Re-supply Freight Inbound			**158,558**	**2,107,707**	**586**	**12,920**	**159,144**	**2,120,626**
Estimated Freight Convertible to Rail Intermodal			**155,860**	**2,046,887**	**336**	**4,720**	**156,196**	**2,051,607**

Approximately 69,000 tons of freight moving via the highway has been excluded from our intermodal assessment based on the commodity description assuming it would more likely move in flat deck or tanker type equipment and not be easily containerized in a rail scenario. Specific commodities excluded are machinery and equipment, construction materials, petroleum products, iron, pipe and steel, and mobile homes. The specific commodities and associated volumes excluded from this analysis are highlighted in Table 8 above.

To assess the potential competitiveness of direct rail intermodal movements the estimated cost of such movements, calculated using the previously described methodologies, have been compared to the estimated cost of existing marine and truck movements to Alaska and Yukon. For practical purposes we have limited our analysis to the principal destinations in Alaska and Yukon for these commodities, namely Anchorage, Fairbanks, and Whitehorse. Concurrently selected origins reflecting the principal known transportation flows have been used including Seattle / Tacoma, Edmonton, Vancouver, and Portland.

Figure 5 – Competitiveness of Rail Intermodal versus Existing Logistics Chains to Anchorage



As shown in Figure 5 above and Figures 6 and 7 below intermodal rail movements to appear to have a significant competitive advantage relative to truck movement and are within the competitive range of marine movements from the Pacific Northwest – the most significant and important trade corridor for regional re-supply commodities into these regions.

While consistent with the analysis for traffic destined to Anchorage direct rail intermodal is somewhat more competitive with marine traffic destined to Fairbanks. This is attributable to the combined effect of lower rail rates stemming from shorter rail hauls to Fairbanks as compared to Anchorage and higher trucking costs for the inland movement of trailers and containers from Anchorage to Fairbanks. A representative cost for this inland movement can be seen in the Horizon tariffs that identify the inland transportation cost from Anchorage to Fairbanks as $918 per container, prior to fuel surcharge. Our analysis of Whitehorse destined traffic confirms the distinct advantage held by rail intermodal as compared to truck.

Figure 6 – Competitiveness of Rail Intermodal versus Existing Logistics Chains to Fairbanks

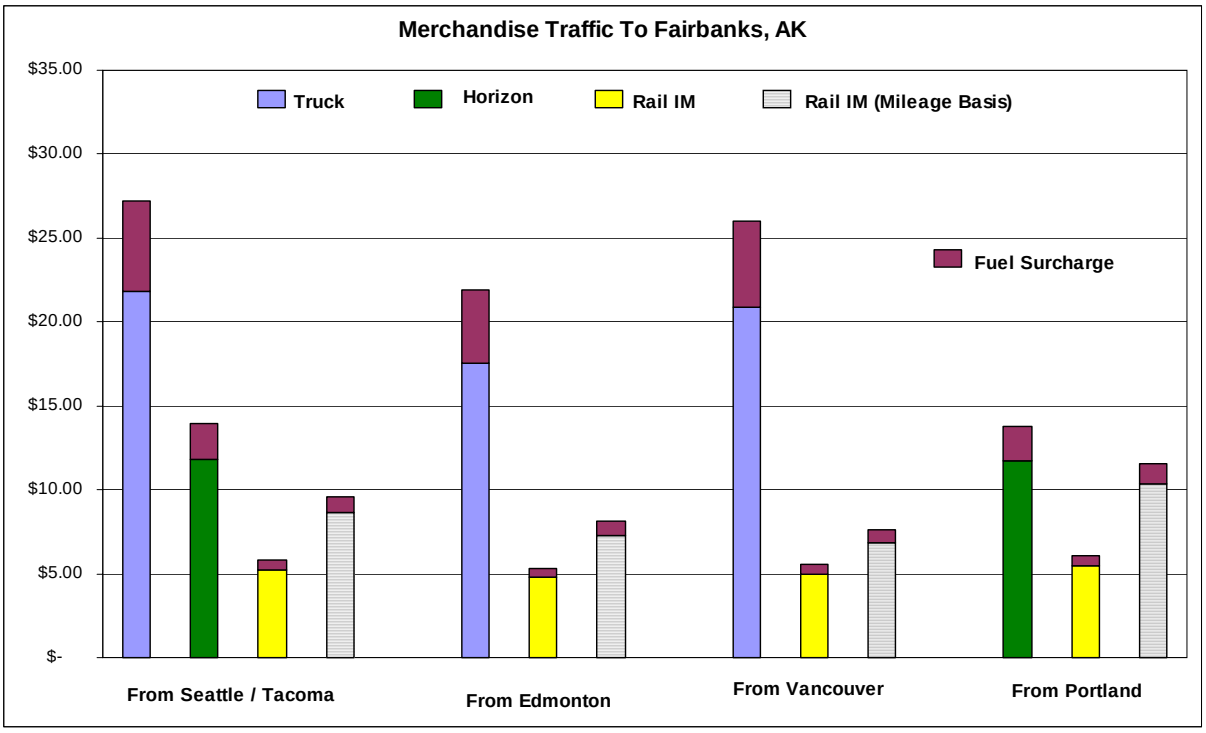
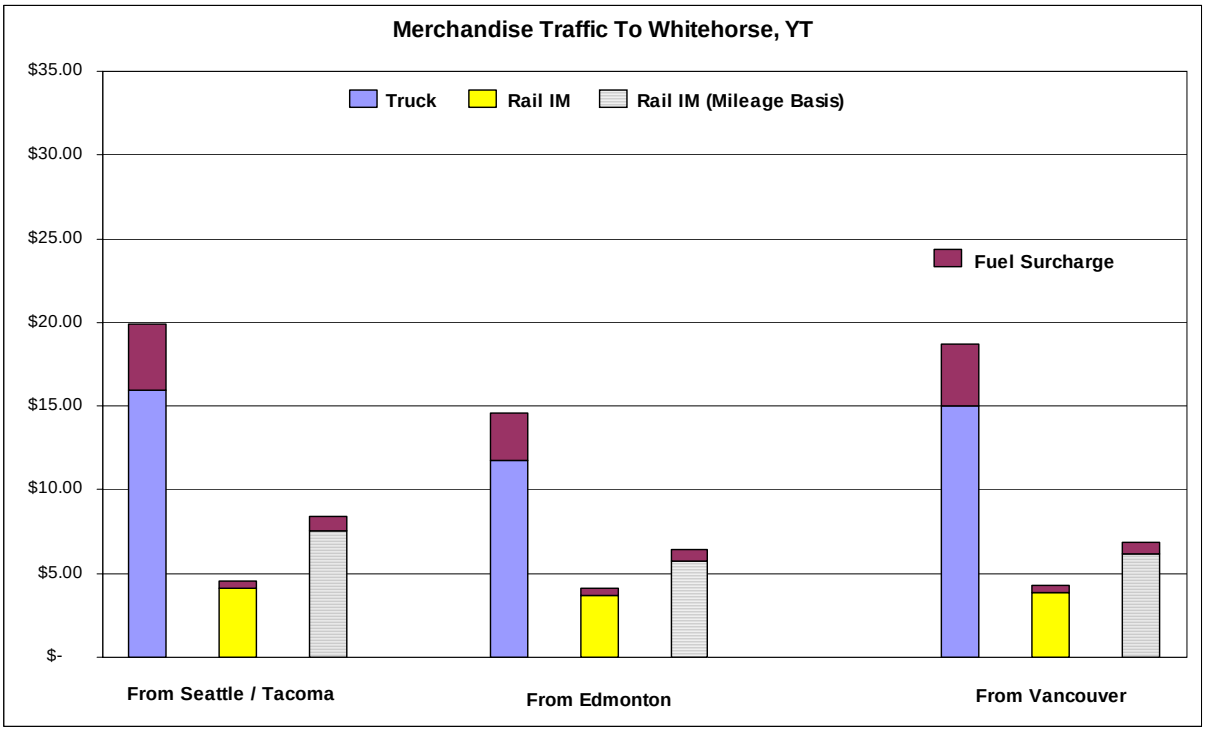


Figure 7 – Competitiveness of Rail Intermodal versus Existing Logistics Chains to Whitehorse

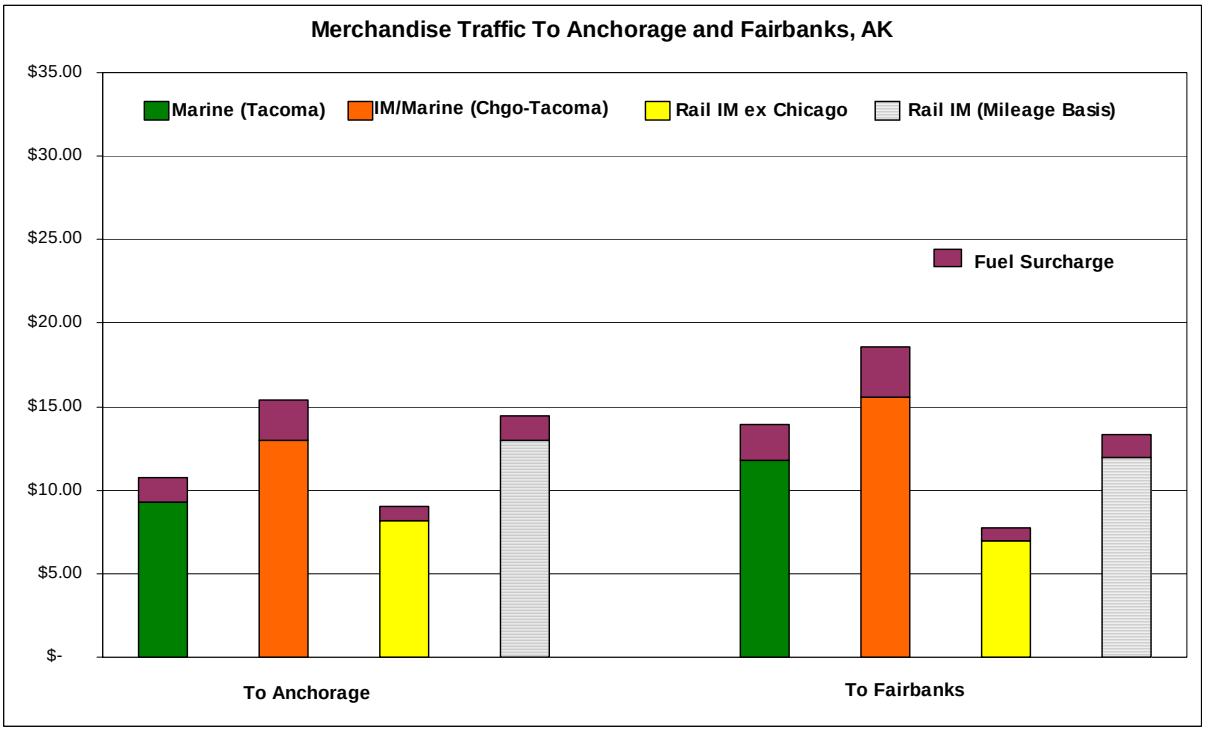


A final scenario considered is the relative competitiveness of merchandise traffic sourced from the U.S. Midwest (Chicago) destined to Anchorage and Fairbanks. Examining this option provides a view of the competitiveness of traffic that may be moving in this corridor today via container vessel or barge as compared to comparable traffic sourced directly in the PNW and the option of direct rail routing along the proposed network. The specific scenarios analyzed include:

- Tacoma originated container traffic moving via Horizon Lines to Anchorage and Fairbanks;
- Chicago originated traffic moving via rail intermodal to Tacoma for furtherance by Horizon Lines to Anchorage and Fairbanks; and
- Direct rail intermodal movement from Chicago to Anchorage and Fairbanks.

Figure 8 below provides a summary view of our findings.

Figure 8 – Sourcing Competitiveness Chicago versus Tacoma

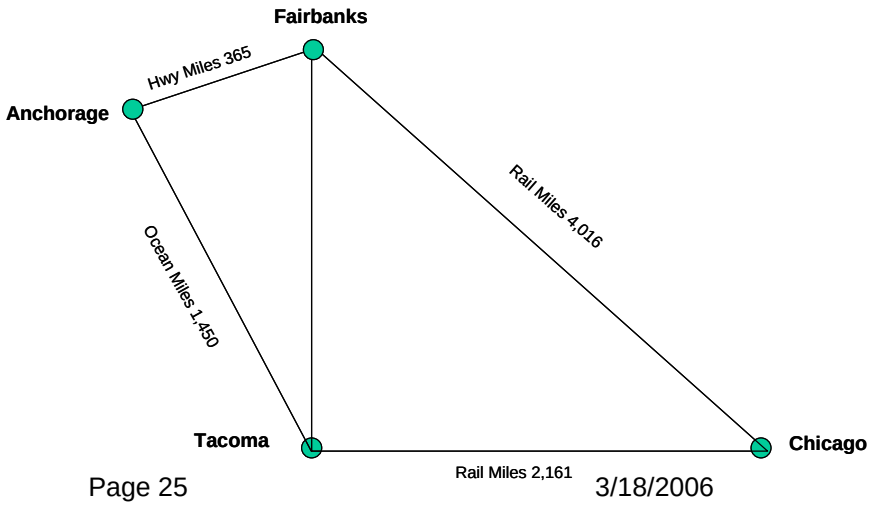


Using the same methodologies as were employed in the prior analyses we conclude that direct intermodal movement from Chicago to Fairbanks is within competitive range of the existing marine service for traffic originated in Tacoma.

Contributing to the competitive positioning of direct rail movement from Chicago is:

- Comparable length of haul (4,016 versus 3,976 miles);
- High cost of inland trucking from Anchorage to Fairbanks; and
- Ocean rates reflecting captive market levels as opposed to modally competitive levels.

Figure 9 – Mileage Comparison



Key Considerations

It is important to note that our calculation of estimated direct rail intermodal rates while reflective of intermodal rates in the North American railway industry also reflect certain inherent factors that may not be applicable to routings via the ALCAN network and may as a result overestimate the true competitiveness of direct intermodal movements using this routing.

Key considerations in this regard include:

- Intermodal rates and average revenue per ton-mile for Class I intermodal operations inherently reflect the density of the individual railway networks they operate on all of which can safely be assumed to have significantly higher density than the proposed ALCAN network;
- Intermodal rates within specific origin – destination corridors will be influenced by the level of modal competition, corridor specific density, and directional balance in the flow of containers. Rates ascribed to the movements via the ALCAN routing will likely be one-way with the majority of cube returning empty. The rate bases used in our analysis may underestimate the revenues required by the railways particularly CN and ALCAN, if there is no backhaul traffic in the southerly direction to offset operating costs.
- The operating costs of the proposed ALCAN railway are not known at this time and the rate levels proposed in our analysis, while competitive with alternative transportation modes, may not necessarily provide the required levels of profitability.

Additionally consideration must be given to the rate levels currently in place for marine services from the Seattle / Tacoma area to Alaska. The rates currently in place with the marine carriers in this region likely reflect a relatively captive market in which the carriers do not face meaningful modal competition and essentially compete with one another. Assuming they are not operating significantly below capacity it is reasonable to assume that the rates in place are closer to the ceiling than the floor.

2.2.2 Railcar Barge Movements

In assessing railcar barge movements we have examined the competitiveness of direct rail routings from known Canadian and United States origins via the ALCAN network to both Anchorage and Fairbanks.

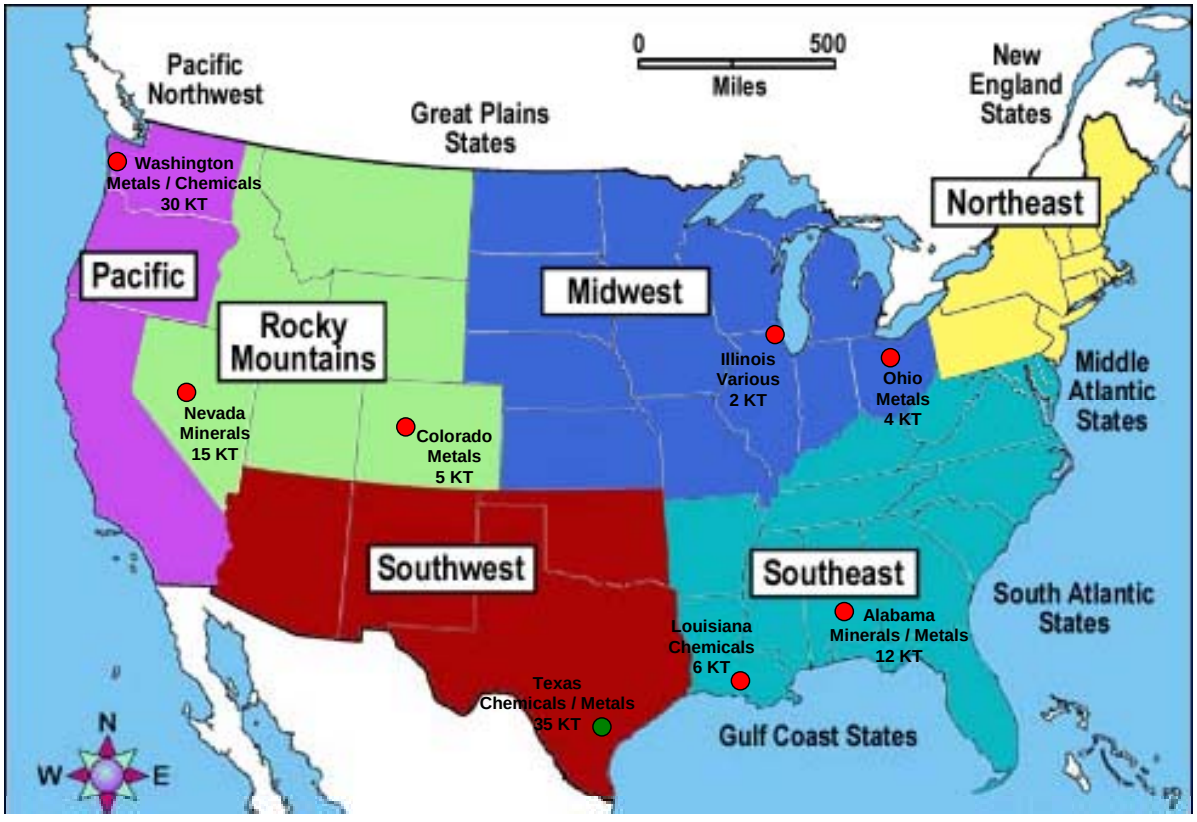
The traffic data supplied by the Alaska Railroad provided true origin and destination for individual movements via both the ARM and Aquatrain systems. As noted earlier the traffic file did not identify which barge service handled which traffic so our analysis is based on the core assumption that any traffic able to be originated by CN Rail moves via the Aquatrain service with the balance of the traffic routing via the ARM system.

In order to gain a broader view of competitive sourcing into the Alaska market we have compared the competitiveness of all selected movements to both Anchorage and Alaska regardless of their actual destination. In other words where the source data identified movements from a given origin as being destined to Fairbanks we have estimated the direct rail cost of this traffic to both Fairbanks and Alaska.

Alaska Railbelt Marine

It is assumed that the majority of the U.S. originated traffic moves via the Alaska Railbelt Marine system through Tacoma. Our analysis sought to capture a majority of the traffic moving through this system accounting for as broad a geographical distribution as possible. Figure 10 below shows the principal originating U.S. regions and the types and volumes of commodities originating in each.

Figure 10 – Originating Locations for Principal ARM Movements Through Seattle



The U.S. Southeast and Southwest regions originate the largest portion of the traffic approximately 53,000 tons or 32% of total estimated traffic. Principal origins include Alabama (minerals and metals), Texas (chemicals and metals) and Louisiana (chemicals). The Rocky Mountain States specifically Nevada and Colorado follow with about 20% of total traffic consisting

primarily of minerals and metals traffic and finally the U.S. Midwest with nominal volumes. The traffic data provided by the ARR indicates substantial volumes (30,000 tons) of various commodities originating in Tacoma and Seattle. While our analysis assumes these are the true origins, this traffic may in fact originate elsewhere and show these locations as the origin due to railroad re-bill practices.

As Figures 11 and 12 below indicate rail barge from these origins to either Anchorage or Fairbanks has a cost advantage as compared to direct rail service via the ALCAN network. The advantage is more pronounced on Anchorage destined traffic as a result of the shorter rail haul.

Figure 11 – Relative Competitiveness of Direct Rail To Anchorage

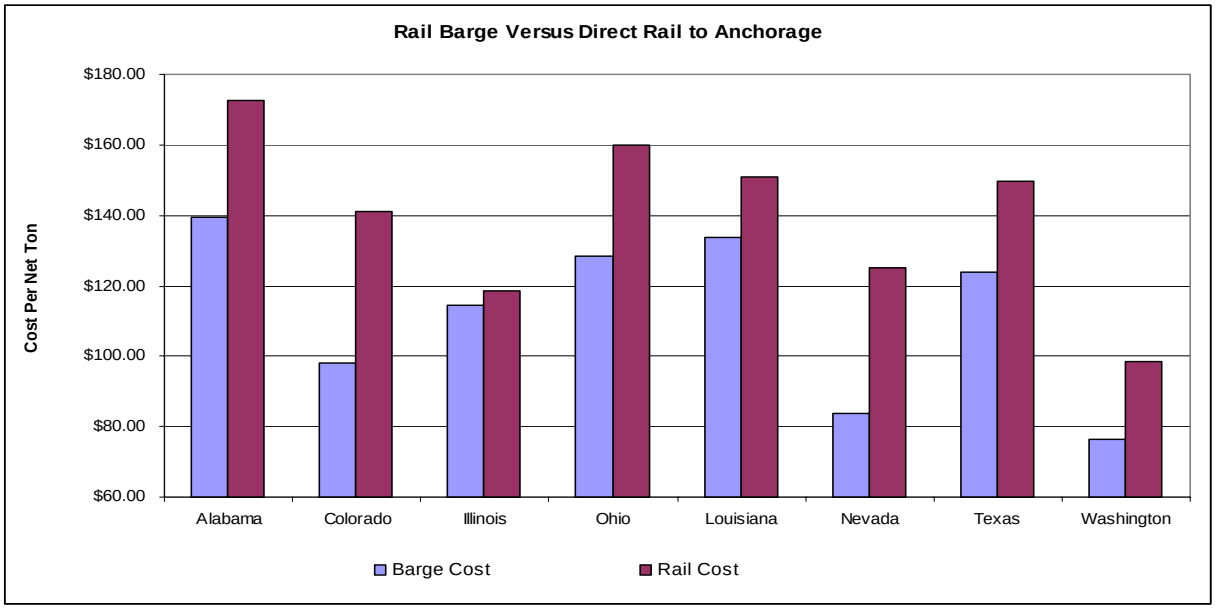
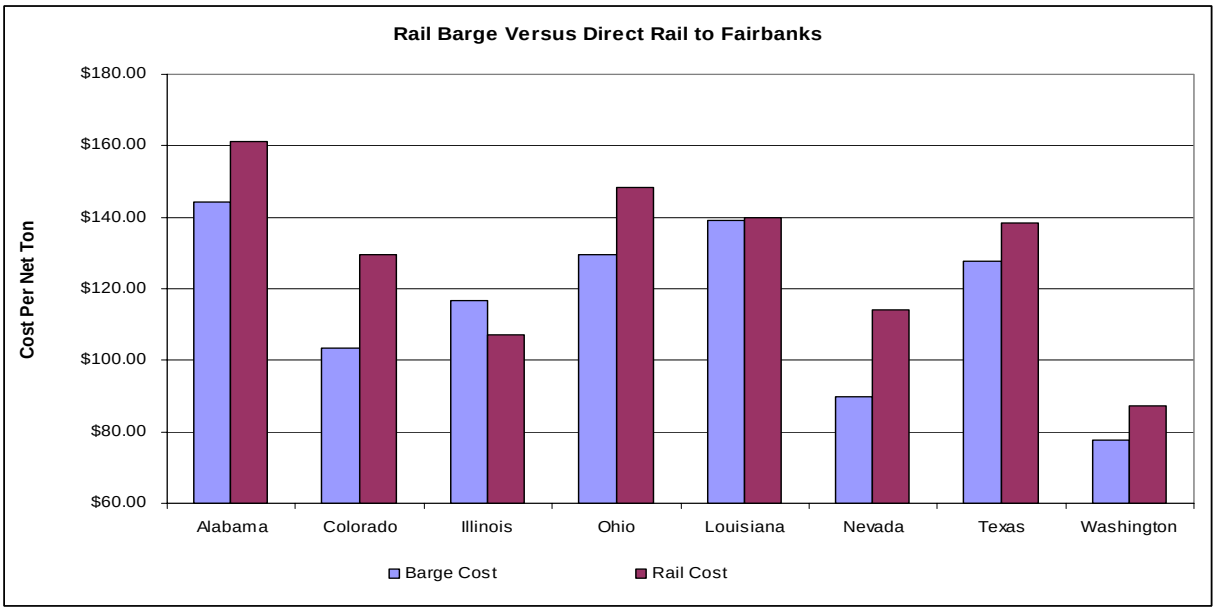
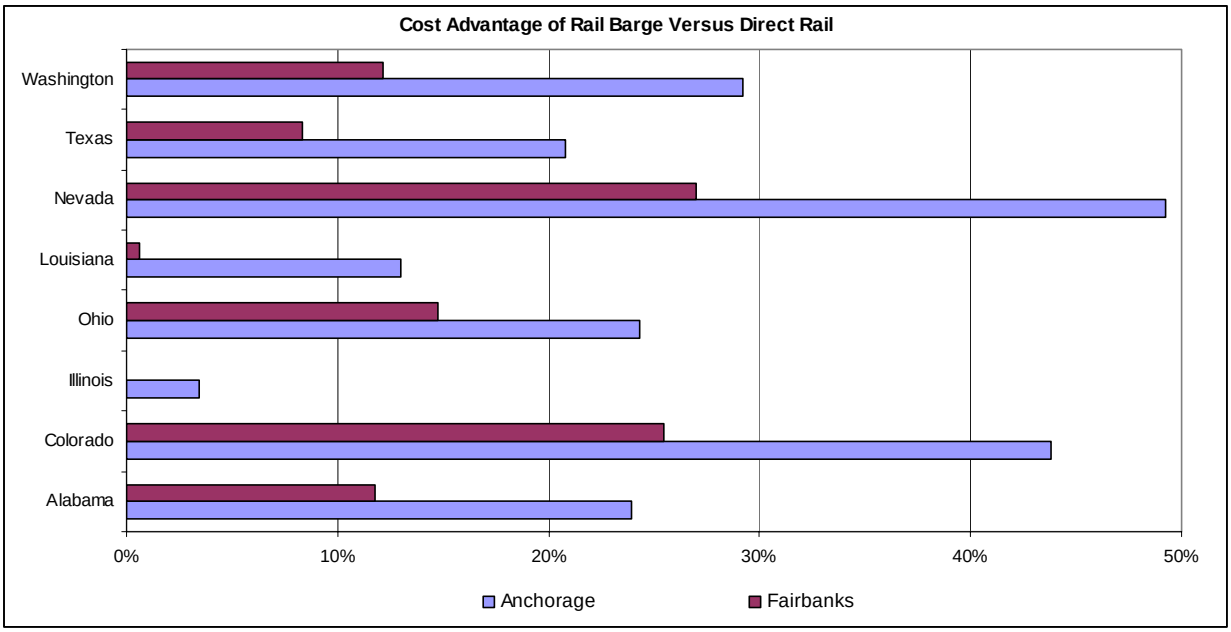


Figure 12 – Relative Competitiveness of Direct Rail To Fairbanks



With few exceptions the estimated cost advantage of rail barge movements from U.S. origins ranges between 12% and 25% as compared to direct rail routings. A sensitivity analysis was done to determine the sensitivity of overall movement costs to increases in the barge costs excluding the rail portion of these movements. Our analysis indicates that barge costs can be increased by 30% to Fairbanks and 40% to Anchorage and still provide this routing with a cost advantage over direct rail.

Figure 13 – Percent Advantage of Rail Barge Movements by U.S. Origin



CN Aquatrain

As with the analysis of the ARM movements we have attempted to capture a reasonable representation of the Aquatrain traffic factoring in both volume concentrations and geographic origin. Unlike the ARM traffic ninety-nine (99%) percent of freight moving via the CN Aquatrain service originates in a relatively concentrated geographic area, namely Western Canada, and primarily in Alberta and British Columbia.

As shown in Figure 14 below 77% of all Aquatrain traffic originates from five principal areas within Western Canada: Saskatchewan (minerals), Central Alberta (chemicals and petroleum), southern Alberta (chemicals / minerals), northern British Columbia (forest products), and southern British Columbia (metals).

Figure 14 – Originating Commodities and Volumes Via CN Aquatrain

As Figures 15 and 16 below indicate direct rail routing to Alaska via the ALCAN network has a distinct advantage as compared to the existing barge service. Consistent with our findings on the ARM traffic rail routing to Fairbanks enjoys a more pronounced advantage than does the movement to Anchorage, driven essentially by the shorter length of haul to Fairbanks.

Figure 15 – Relative Competitiveness of Direct Rail to Fairbanks

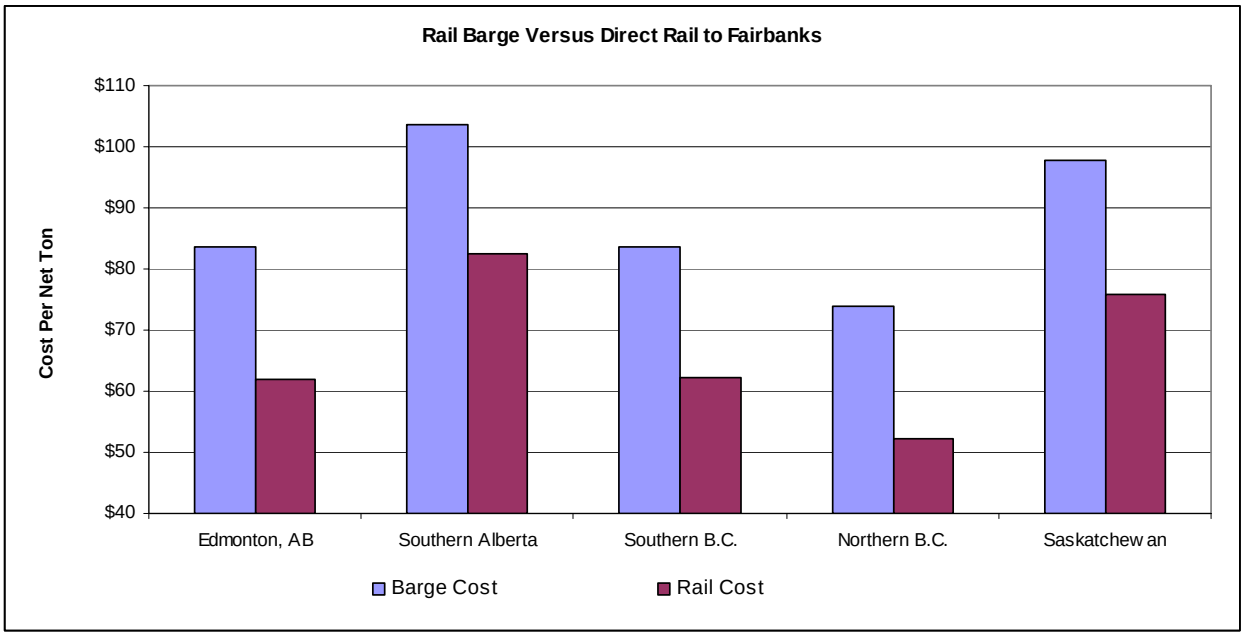
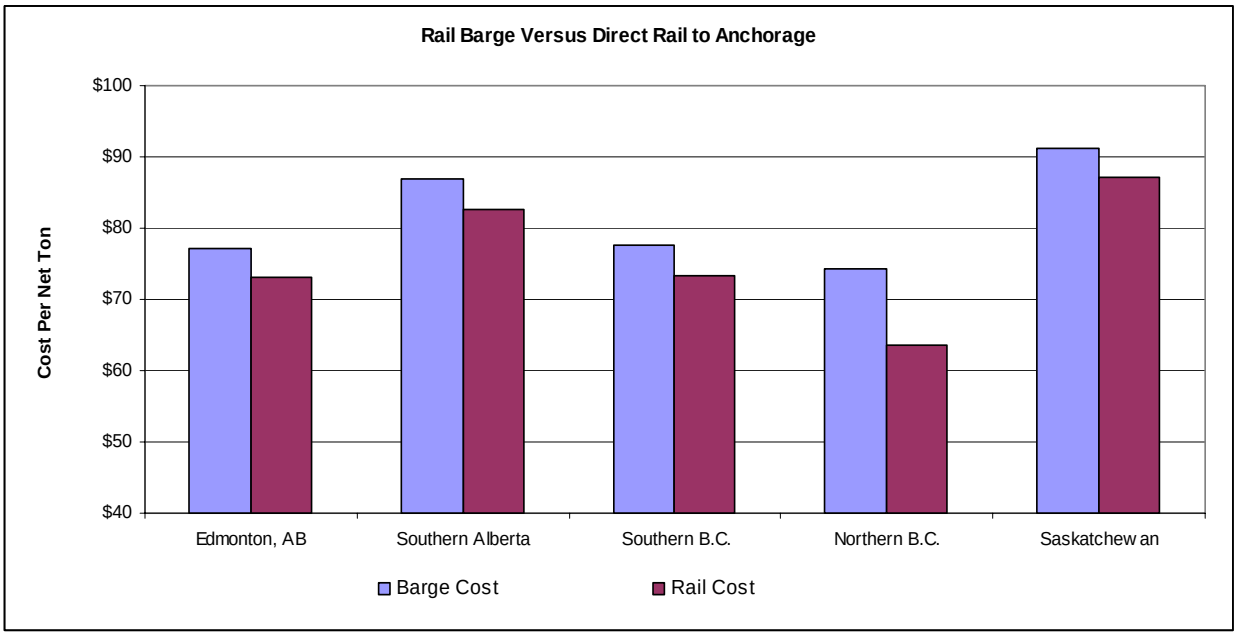


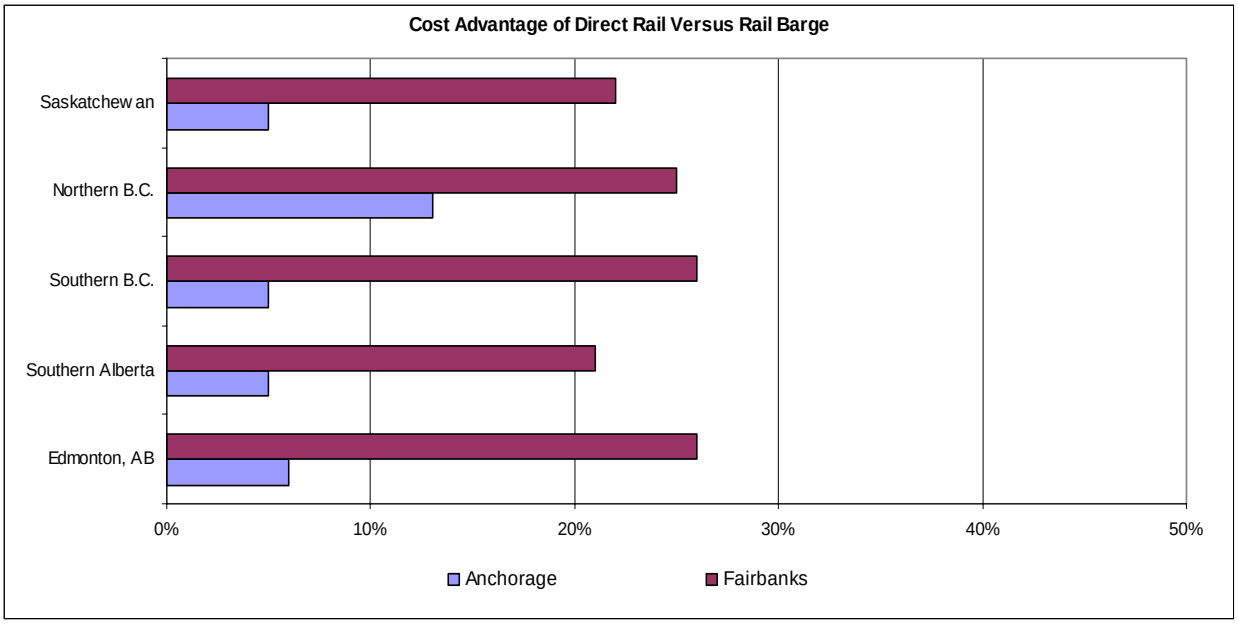
Figure 16 – Relative Competitiveness of Direct Rail to Anchorage



With few exceptions the estimated cost advantage of direct rail movements from Western Canadian origins ranges between 5% and 25% as compared to rail barge movement. The

Anchorage advantage is at the lower end of the scale and would be more sensitive to price movement by barge operators were a viable modal competitive option to exist.

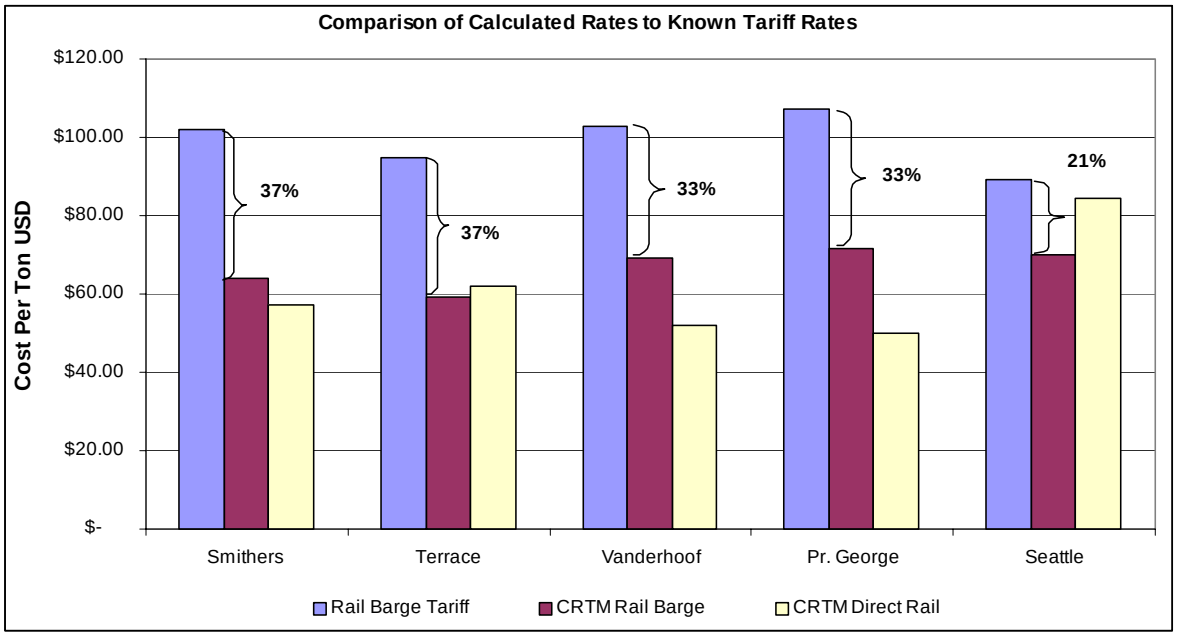
Figure 17 – Percent Advantage of Rail Movements From Western Canada Origins



To validate our estimated rate calculations we have compared our calculated rates against publicly available tariff information for selected movements via the two barge services. CN publishes tariff rates for the movement of forest products from British Columbia to Alaska via the CN Aquatrain and a high-level rate quotation was obtained from TOTE marketing personnel for the movement of forest products from the State of Washington to Alaska via the ARM system.

Figure 18 below provides a comparison of the published tariff rates versus comparable rates calculated using the cent per ton-mile methodology. We can see that the tariff rates for rail barge movements published by CN suggest that rail barge rates are 33-37% higher than what we have calculated using the cent per ton-mile methodology while the gap on the TOTE movement is somewhat lower at 21%.

Figure 18 – Comparison of Tariff and Calculated Rates



Issues to be considered in order to place these rates in context include:

- Tariff rates typically reflect higher rate levels than would be applicable to large railway customers whose freight rates were governed by confidential contracts. Based on our experience confidential contract rates can be anywhere from 10-30% lower than published rates; and
- Tariff rates and contract rates in place today will reflect captive market versus modally competitive rates. In the case of forest products from Northern B.C. shippers have no direct rail alternative, truck will be significantly more expensive, and the alternative of routing to Washington for barge movement is not economically feasible.

2.2.3 Summary

Having thoroughly analyzed the existing traffic flows currently serving the Alaska and Yukon markets and having completed an analysis of the potential competitiveness of direct rail routings relative to the existing supply chains we conclude the following:

- Direct truck while being the primary transportation mode to the Yukon market due principally to lack of competing infrastructure is the most expensive transportation mode and could, in our opinion, easily be overtaken by direct rail routings were the appropriate mainline and supporting terminal infrastructure in place.
- Direct intermodal rail movement from Pacific Northwest origins would appear to fall within competitive range of general merchandise traffic currently moving in trailers and containers from Seattle / Tacoma. The competitiveness of rail differs slightly depending on whether traffic is destined to Anchorage or Fairbanks with Anchorage destined traffic being less competitive for direct rail due to the increased length of rail haul and the absence in inland transportation costs on the marine movement.

- Intermodal rail to Anchorage and Fairbanks would appear to be competitive with container traffic from Western Canada. This comparison suggests that there may be opportunity, in a direct rail scenario, for displacement of existing suppliers in the Pacific Northwest with Canadian originated products.
- Intermodal rail to Whitehorse from Alberta and British Columbia origins would appear to have a significant cost advantage as compared to the existing highway logistics currently in place.
- Direct rail movements of industrial commodities to Alaska appear to fall within the competitive range of existing rail barge movements for product originated in Canada but not in the United States. As with Intermodal movements the competitive advantage of rail to Fairbanks is more pronounced than to Anchorage stemming directly from length of haul and inland transportation issues.

As has been noted throughout this report it is important to recognize that this analysis is limited in scope and although comprehensive in nature is based on publicly available information that by definition will not address the specific transportation and commercial issues that are considered by transportation companies in the development of transportation rates in specific markets.

The traffic forecast contained in this report has been developed on the basis of our understanding of existing traffic flows, including that information developed and provided by other consultants, and our assessment of the relative competitiveness of the various supply chains based on the methodologies documented in this report. Key issues to be considered when examining the forecast traffic and revenues include:

1. ALCAN Network Density and Operational Costs

   The assessment of direct rail competitiveness has been conducted with no knowledge of the potential traffic density of the ALCAN railway or the capital and operating costs that will heavily influence the railway's cost structure and in turn its rate making criteria. Competitiveness has been assessed using reasonable rate assumptions that reflect Class 1 North American railway operations that can reasonably be expected to be at the lower end of any potential pricing structure for ALCAN routings. Recognizing that the ALCAN network represents 30 - 60% of direct rail miles its eventual cost structure has the potential to significantly impact overall rate levels in both directions.

2. Competitive Response of Existing Transportation Providers

   Our assessment of competitiveness does not quantify the potential downward movement of existing transportation rates should a viable modal alternative be present. As we have noted it is reasonable to assume that existing pricing structures reflect captive markets and are maximized to what the market will bear. It is also reasonable to assume that, barring

significant available capacity within the marine services, that they likely have significant room available to lower freight rates to meet direct rail competition in the future.

3. Market Behaviour of Railways Currently Serving Alaska

It is also important to be aware of the potential behaviour of the railways, principally CN, BNSF, and UPRR, were direct rail service to become an option. These companies currently participate in the inland rail movements associated with both rail barge and potentially container movements to Alaska. In examining a direct rail option in lieu of existing channels they will assess the contribution they receive from existing movements in determining their contribution requirements from a direct rail option. In other words they would be competing with themselves and in cases where there is overlap will seek to be contribution neutral as opposed to approaching this as potentially new traffic.

3.0 Forecast Volumes and Revenues

This section provides a high level summary of the forecast volumes and revenues for movement of regional re-supply commodities to the Yukon and Alaska. Detailed forecasts are contained in Appendix C of this report.

3.1 Volumes

The initial assessment of base traffic moving into the Alaska and Yukon for regional re-supply identified a total of 2.43 million tons that could reasonably be available for direct rail movement into these markets. The results of the rail competitiveness assessment reduced this volume by approximately 180,000 tons representing existing industrial products traffic originating in the United States moving via the ARM system that was deemed not to be competitive on a direct rail routing basis as compared to the estimated existing logistics costs.

It is estimated that there are potentially 2.249 million tons of freight that can compete with existing logistics patterns if shipped on a direct rail basis. This consists primarily of intermodal freight (91%) based on the assumed conversion of the trailer and container volumes moving over the Port of Seattle / Tacoma and a limited amount of truck traffic moving primarily between Western Canada and Yukon. The balance of the freight consists of existing industrial products traffic moving via rail barge principally from Western Canadian origins.

3.2 Revenues

The base year revenue forecast has been developed based on the volume forecast. Average revenue per car / unit revenues have been applied against estimated volumes by commodity type and corridor reflecting the portion of the haul to be handled by the proposed Alaska – Canada Rail Link.

It is estimated that total annual revenues would be in the order of $ 201.7 million. As with volumes the intermodal traffic is estimated to account for the lion's share of the revenue estimated at $194.9 million or 96% of total revenues.

Table 9 below provides a high level summary of the forecast volumes and revenues for regional re-supply movements.

Table 9 – Summary of Forecast Freight Volumes

Freight Type	Transportation Corridor	Origin	Destination	Current Units	Tons	Equivalent Rail Units	Tons		ALCAN Revenue
Industrial Products	W. Cda to Alaska	Alberta	Alaska	656	62,669	656	62,669	$	2,435,329
		British Columbia	Alaska	382	34,661	382	34,661	$	1,346,923
		Saskatchewan	Alaska	145	14,278	145	14,278	$	554,846
		Western Canada	Alaska	1,655	29,571	733	29,571	$	1,149,141
		Subtotal Western Canada to Alaska		**2,838**	**141,180**	**1,916**	**141,180**	**$**	**5,486,240**
	U.S.A. to Alaska	U.S. Midwest	Alaska	27	1,781	27	1,781	$	69,201
		U.S. Southeast	Alaska	177	15,543	177	15,543	$	603,994
		Subtotal United States to Alaska		**204**	**17,324**	**204**	**17,324**	**$**	**673,194**
	Yukon to Alaska	Yukon	Alaska	162	3,026	48	3,026	$	58,797
	Total Industrial Products - All Origins to Alaska			**3,204**	**161,529**	**2,168**	**161,529**	**$**	**6,218,231**
	W. Canada to Yukon	Western Canada	Whitehorse	1,074	31,370	309	31,370	$	609,515
	Alaska to Yukon	Alaska	Whitehorse	175	5,425	234	5,425	$	105,412
	Total Industrial Products - All Origins to Yukon			**1,249**	**36,795**	**543**	**36,795**	**$**	**714,927**
	Total Industrial Products to Alaska and Yukon All Origins			**4,453**	**198,324**	**2,711**	**198,324**	**$**	**6,933,158**
Intermodal	Yukon to Alaska	Yukon	Alaska	170	3,365	170	3,365	$	113,730
	W. Canada to Alaska	W. Canada	Alaska	4,422	81,753	4,422	81,753	$	5,540,766
	U.S.A. to Alaska	Pacific Northwest	Alaska	150,445	1,947,719	150,445	1,947,719	$	188,507,585
	Total Intermodal - All Origins to Alaska			**155,037**	**2,032,837**	**155,037**	**2,032,837**	**$**	**194,162,081**
	W. Canada to Yukon	W. Canada	Yukon	960	17,294	960	17,294	$	642,240
	Alaska to Yukon	Alaska	Yukon	76	1,103	76	1,103	$	50,844
	Total Intermodal - All Origins to Yukon			**1,036**	**18,398**	**1,036**	**18,398**	**$**	**693,084**
	Total Intermodal to Alaska and Yukon - All Origins			**156,073**	**2,051,235**	**156,073**	**2,051,235**	**$**	**194,855,165**
Total Potential Rail Freight to Alaska and Yukon - All Commodities/All Origins				**160,526**	**2,249,559**	**158,784**	**2,249,559**	**$**	**201,788,323**

APPENDIX A – PUBLIC TARIFFS

Railway Tariffs

Carrier	Type	Tariff Reference
Burlington Northern Sante Fe	Intermodal	BNSF 90038 ITEM: 1013
	Intermodal	BNSF 90053 Item 1013
	Intermodal	BNSFQ 111351 ITEM: 14
	Intermodal	BNSFQ 100805 ITEM: 46
	Intermodal	BNSFQ 100805 ITEM: 56
	Intermodal	BNSF 90015 ITEM: 1053
	Intermodal	BNSFQ 111270 ITEM: 37
	Intermodal	BNSF 90058 ITEM: 1026
	Intermodal	BNSFQ 111270 ITEM: 37
Union Pacific Railroad	Intermodal	UP 1428 (10043-A)
Canadian National Railway	Lumber	CN 831254-AH
	Intermodal	CN T 007290 - AT
	Intermodal	CN T 007350 - AO
	Intermodal	CN T 007589 - BA
	Intermodal	CN T 008157 - AT
	Intermodal	CN T 008175 - AP
	Intermodal	CN T 008383 - A1
	Intermodal	CN T 008439 - AN
	Intermodal	CN T 008770 - AU
	Intermodal	CN T 610042 - AL
	Intermodal	CN T 610490 - AR
	Intermodal	CN T 611548 - AV
	Intermodal	CN T 612678 - AO
	Intermodal	CN T 613039 - AM
	Intermodal	CN T 890080 - AU
	Intermodal	CN T 890083 - AK
	Intermodal	CN T 890085 - AL

Marine Tariffs

Horizon Lines	Container	HRZK 301

APPENDIX B – RATE CALCULATIONS

See MS Excel Spreadsheet – WP1dTrafficAnalysis.xls worksheets:

1. Est. Horizon Container Costs
2. Est. Direct Rail intermodal
3. RR IM Tariff Rates
4. TOTE Costs
5. Rail Direct (Anchorage)
6. Rail Direct (Fairbanks)
7. Rail Barge (Anchorage)
8. Rail Barge (Fairbanks)

APPENDIX C – DETAILED FORECASTS

See MS Excel Spreadsheet – WP1dTrafficAnalysis.xls worksheet Volume Revenue Fcasts