Build the Missing Link: Alaska-North America Rail

by Hal B.H. Cooper, Jr.

With the convocation of the April 24, 2007 Moscow International Conference on Megaprojects, which called for the building of the Bering Strait Tunnel crossing, the prospects for a new era in international economic cooperation, and war avoidance, took on new life. The proposed project to link Siberia and Alaska across the Bering Strait goes back decades, but, in the present context, would represent the crowning link in what is called the Eurasian Land-Bridge Project.

The Eurasian Land-Bridge has been a leading element of the program for world economic development espoused by Lyndon LaRouche, his wife Helga Zepp-LaRouche, and the institutions associated with them, for at least 15 years. In the wake of the Moscow conference, both EIR *and the Schiller Institute have launched an international campaign to have the Bering Strait proposal, and many other links along the Land-Bridge, adopted as policy by governments, most especially, that of the United States.*

For the Bering Strait Tunnel to function, of course, both Russia and the United States would have to develop infrastructure within their nations, including rail connectors in eastern Russia, and between Alaska and the Lower 48 states. There has been recent discussion on the U.S. side for building an Alaska-Canada Rail Link (see EIR, *July 6, 2007), in effect finishing the job that was proposed by the U.S. Army Corps of Engineers in 1942, when it did a rush survey for a 2,280 kilometer direct route linking Alaska, Canada, and the United States.*

One of the leading collaborators of the LaRouche movement in promoting development corridors and rail links is Dr. Hal B.H. Cooper, Jr., a transportation engineer. Cooper has been working for years on behalf of rail corridors in the Northwest, and has now joined with LaRouche forces in lobbying Congress to put Federal attention on the Bering Strait Tunnel development initiative.

A review of the history, and of an intercontinental economy-building approach to the "Alaska link-up," is reprinted here in a paper presented by Cooper, as the keynote for a Sept. 28-30, 2004 forum in Dawson Creek, British Columbia. His speech on "The Alaska Canada Railway Corridor Project" draws upon a feasibility study sponsored by the Canadian Arctic Railway Co., to which he was a consultant.

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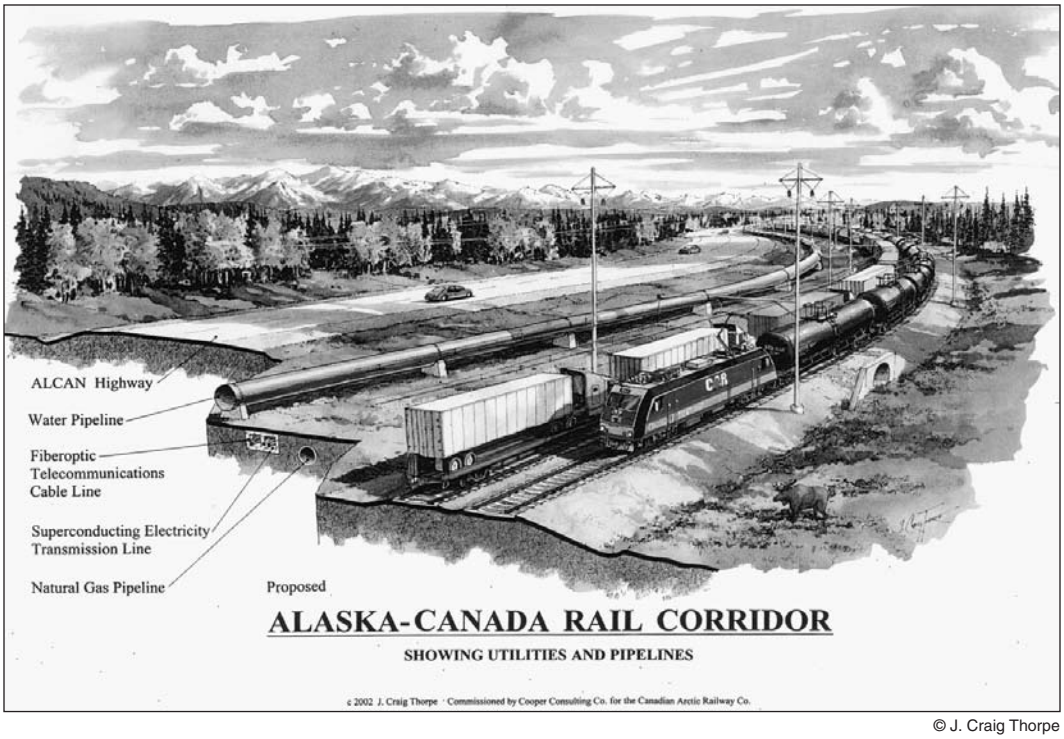
Alaska-Canada Railway Corridor Project

There is renewed and increasing interest in the completion of a railroad linkage between Alaska and the rest of the North American rail network. Five recent developments which enhance the potential for completing this railroad linkage between Alaska and Canada to the North American rail network are as follows: 1. The recently announced sale of the British Columbia Railway by the Province of British Columbia to the Canadian National Railway; 2.The legislation passed by the State of Alaska to promote the construction of a new natural gas pipeline from Alaska to Alberta and the Lower 48 States; 3. The legislation enacted by the Alaska State Legislature to create a new railroad corridor to the Yukon Territory and to authorize the issuance of revenue bonds; 4. The decision to proceed with the extension of the Alaska Railroad from Eielson Air Force Base near the North Pole to Fort Greeley near Delta Junction for the new missile defense base; 5. Recent events causing the increasing cost of crude oil and natural gas with growing concerns about their supplies.

There is growing interest in expansion of the North American rail network with the recently announced sale of the British Columbia Railway to the Canadian National Railway, in parallel with the extension of the Alaska Railroad. These recent announcements revive the earlier plans to extend the British Columbia Railway to Fort Nelson, which was completed in the 1960s, and the effort to complete the rail line to



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This artist's conception shows the railroad running alongside the AlCan Highway, along with utility, gas, and water lines. It was commissioned in 2002 by Cooper Consulting Co., for the Canadian Arctic Railway, which sponsored the two-year feasibility study for the Alaska-Canada Rail Corridor.

Dease Lake in the 1970s, which was not completed. There had been earlier studies of expanding the Canadian railroad network to the Yukon Territory in the 1960s and 1970s by the Canadian National and Canadian Pacific Railroads, as well as by the Province of British Columbia. However, these efforts never went beyond the study plan.

Considerable interest and expense have gone into the efforts to study the feasibility of a new natural gas pipeline from Alaska to Alberta and the Lower 48 States. The interest in and possibility of constructing a new natural gas pipeline from Alaska to the Lower 48 States has proceeded in parallel to the possibility of connecting Alaska, Canada, and the Lower 48 States by a direct railroad network.

There is a considerable benefit in the combined construction of the natural gas pipeline and the railroad between Alaska, Canada, and the Lower 48 States in terms of construction cost and maintenance access for equipment and materials. However, public sector efforts alone have been unable to bring these projects to fruition in spite of their common benefits.

It was felt that private sector participation would be necessary to bring these projects to reality, where significant efforts began to be made in the late 1990s. A feasibility study was commissioned in August of 2002 by the Canadian Arctic Railway of Surrey, British Columbia to the Cooper Consulting Company of Kirkland, Washington, which is in the process of being completed. The purpose of conducting this feasibility study was to evaluate the technical and economic viability of constructing a new railroad line between Alaska and Canada with connections to the Lower 48 States as a private sector activity. This feasibility study was based on an extrapolation of previous studies in Alaska and Canada conducted since World War II, and on other data.

This feasibility study was commissioned to determine the proposed routings, and physical characteristics of the proposed railroad corridor as well as the freight and passenger traffic generation potential and associated revenues plus the estimated capital costs of construction plus operating and maintenance costs. It was then intended to make the necessary economic cash flow projections of available income and net income after debt service as well as depreciation and taxes. The necessary financial performance of the proposed Alaska-Canada railroad connector project could then be evaluated in terms of its potential rate of return on investment as well as project payout period and other economic criteria for assessing investments based on cash flow projections.

The original geographic extent of the feasibility study was limited to the corridor between the end points of Fairbanks, Alaska, Prince George and Dawson Creek, British Columbia. This study was later expanded to include a connection through Alberta and Saskatchewan to North Dakota, and then to Texas and Coahuila over the route commonly referred to as the Central North America Trade Corridor (CNATCA). It was later recognized that the possible future construction of the proposed Bering Strait tunnel between Alaska and Chukotka would have a dramatic impact on the proposed Alaska-Canada rail connector in terms of both traffic volumes and track capacities. As a result, it was decided to incorporate consideration of future freight and passenger traffic flows between Asia and North America, by way of the railroad corridors in northeastern Russia, by way of routes parallel to the Pacific

Ocean, as well as the Arctic Ocean via a proposed tunnel under the Bering Strait.

The consultant (Hal Cooper) and the client (David Broadbent) took an extensive automobile tour in September 2002 to personally inspect the alternative Dease Lake (western) and Fort Nelson (eastern) alternative routes for the proposed Alaska-Canada rail connector between Prince George and Fairbanks via Whitehorse. The result of taking this right-of-way tour by way of the Alaska Highway and other routes was that the western Dease Lake option would be faster, easier, and cheaper to implement than the Fort Nelson route option. However, the Fort Nelson route would be more beneficial if it were decided to build the railroad line and the natural gas pipeline in parallel along a common right-of-way because it would parallel the pipeline for a longer distance.

Army Corps of Engineers Route

There have been previous studies of a proposed railroad linkage between Alaska, Canada, and the Lower 48 States. There was one major technical and economic feasibility study, which was conducted of the proposed Alaska-Canada rail connector prior to the study, plus several more limited studies in both the United States and Canada. This feasibility study was conducted by the Seattle District Office of the U.S. Army Corps of Engineers, in early 1942, of a proposed railroad line from Prince George, British Columbia to Fairbanks, Alaska, via Watson and Faro in the Yukon Territory, by way of the Rocky Mountain and Tintina Trenches, as well as through the Ladue, White, and Tanana River Valleys.

The initial feasibility study conducted by the U.S. Army Corps of Engineers in early 1942 showed a capital cost of $87 million for the line alone, and another $24 million for the rolling stock. The line was a single track route with siding spaced at 10-mile intervals over a 1,417-mile route between Prince George and Fairbanks, whose construction could be completed in three years through the creation of 16,000 jobs. It was also planned to build an extension from Fairbanks to Teller at the Bering Strait [which] would cost another $60 million, plus another $35 million for port facilities at Teller and on the Yukon River, and install a fuel oil pipeline and water pipelines as well. It was decided not to build this railroad line because of the critical steel shortage, which existed during the early part of Word War II. The Alaska-Canada railroad project did not have a sufficiently high priority as compared to the production of tanks, trucks, and artillery in 1942 when it came to the critical allocation of steel for the war effort.

What is not generally understood is what precipitated this early feasibility study by the U.S. Army Corps of Engineers in early 1942. The actual course of events is that immediately after the attack on Pearl Harbor in December of 1941, Joseph Stalin called Franklin Roosevelt to urgently request American help to resist the German invasion of the Soviet Union through supplying war material. Harry Hopkins was immediately dispatched by U.S. Secretary of State Cordell Hull to go to Moscow to meet with Soviet Foreign Minister V.A. Molotov and Stalin. Hopkins was then presented with a whole series of options for supplying the Soviet Armed Forces from the United States under the Lend Lease program. One of the options presented was to build a railroad from Prince George to Teller, Alaska, and then to temporarily ferry the supplies across the Bering Strait to Uelen, Chukotka, until a railway tunnel was built. Another railroad would then be built from Uelen to Egvekinot, to a junction point, to one or both of two rail corridors. One of these two corridors would go for nearly 3,500 miles along the south shore of the Arctic Ocean, to the west to Vorkuta, to join the newly completed 1,100-mile-long rail line to Moscow. The other rail route would go to the southwest over a series of mountains to Yakutsk, capital of the Yakutian Autonomous Republic (now the Sakha Republic), and then to join the Trans-Siberian Railway at Skovorodino over an estimated 2,500-mile route. There would then be an approximately 4,000-mile rail haul over the heavily traveled and vital military artery of the Trans-Siberian railway to Moscow, which had been planned to connect the various concentration camps of the Soviet NKVD Gulag network.

FDR Rail Promotion

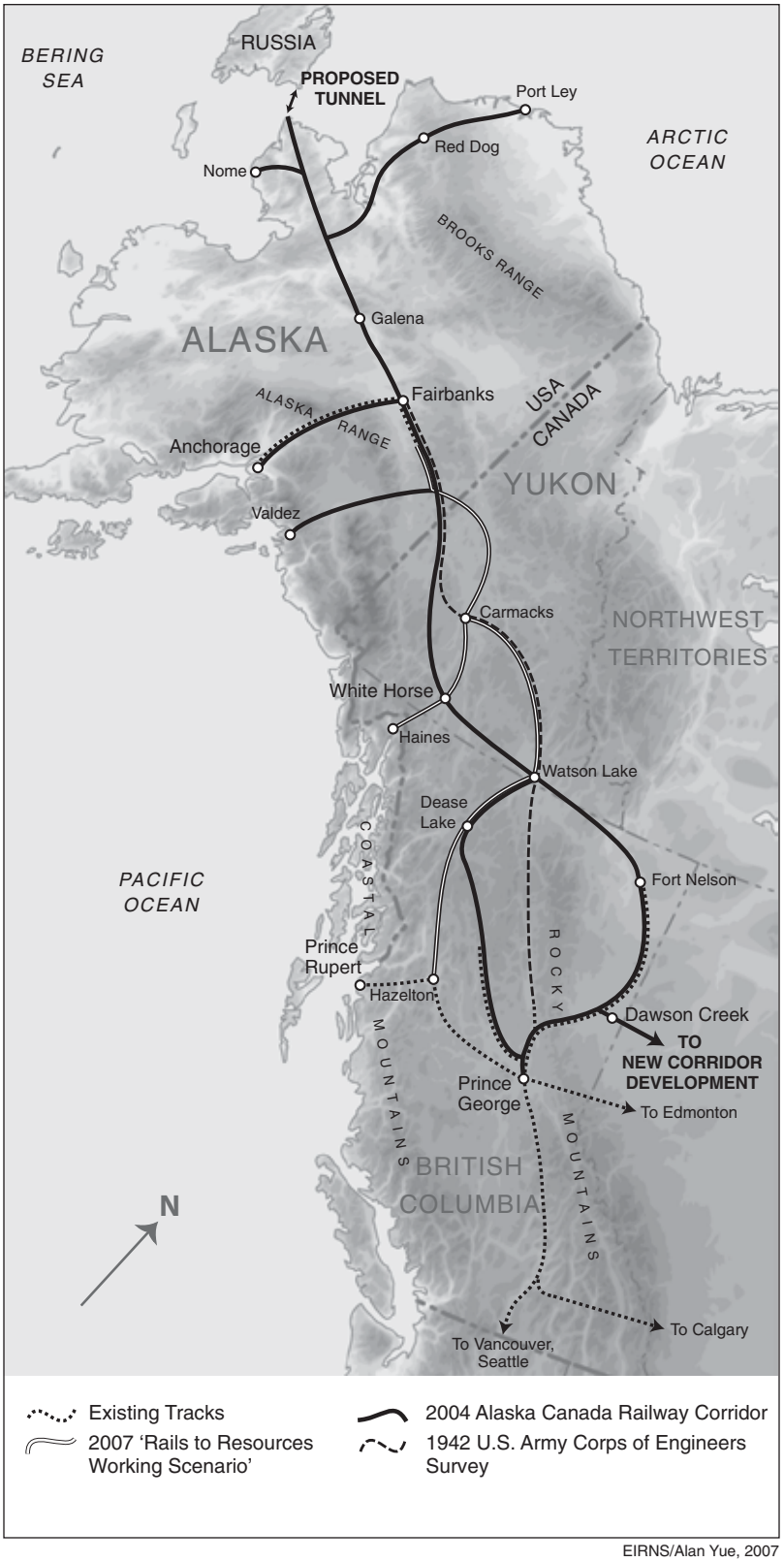
Franklin Roosevelt's uncle Frederic Delano was a former railroad president and a real rail advocate. When Hopkins returned from Moscow to Washington, he briefed Hull, Roosevelt, and Delano. Delano then convinced his nephew, the President, to authorize a study of the proposed railroad line from Prince George to Fairbanks to join the Alaska Railroad and then build the extension to Nome and Teller in western Alaska. The need for this railroad line became strategically heightened when Japanese troops occupied the islands of Atta and Kiska at the western end of the Aleutian Islands in March of 1942, which was actually a diversion from their main military attack against Midway Island.

However, when the main Japanese carrier attack force was sunk during the Battle of Midway Island in early June of 1942, the strategic importance of building the railroad to Alaska was greatly reduced. This Alaska railroad feasibility study was completed at the same time, but the strategic decision was made to build the Alcan Highway as a military supply route from Dawson Creek, British Columbia to Delta Junction, Alaska. The Alcan Highway was completed in less than 12 months by American and Canadian Army Engineers, and became the basis for the present Alaska Highway whose primary focus today is tourism. The reason for building the original Alcan Highway was to connect the various airfields used to supply material being flown from the United States to the Soviet Union by way of Canada and Alaska.

In spite of Frederic Delano's persuasive skills with his nephew Franklin Roosevelt, the project to complete the railroad between Alaska, Canada, and the Lower 48 States, was deferred in 1942. However, in Russia, these two alternative railroad routes had both already been surveyed and designed

FIGURE 1

Route Options for First-Ever Rail Link-Up—Alaska, Canada, Lower 48



EIRNS/Alan Yue, 2007

over their entire distances by the U.S.S.R Ministry of Internal Affairs (alias NKVD or Secret Police) between 1938 and 1940 at the direction of Stalin. There were a large number of settlements along these two routes, most of which were nothing more than concentration camps. In one section between Salekhard and Igarka, over a 500-mile route in northern Siberia, a single-track railroad line was completed by the labor of 120,000 people over a three-year period where 60,000 men died immediately prior to the onset of World War II.

Eventually, because of cost and time, it was decided to ferry all the supplies by airplane from North Dakota to Nome, Alaska and then fly the planes to Chukotka or Anadyr or Provideniya or Egvekinot by American pilots. The Americans would then turn over the planes and supplies to Russian pilots, who would then fly them to their final destinations. The American pilots would then be flown by shuttle aircraft back to the United States to get another load and return to Russia via the Alcan Highway airfields. This massive airlift of war material from America to Russia via Canada and Alaska under Lend Lease greatly assisted the Soviet Army in its struggle against the German Army, which they eventually won under the leadership of Soviet Field Marshall George Zhukov acting at the instructions of Stalin.

The rail lines shown as "existing track" (short dashes) were in place before mid-20th Century, located within Alaska, and up to northern British Columbia, but with no connection between, despite decades of plans. In 1942, the U.S. Army Corps of Engineers did a rush survey for a 2,280-km rail link-up for potential defense materiél shipments, running directly northward from Prince George, B. C. This Army Corps line (long dashes) was never built. In June, the 2,000-km "Rails to Resources to Ports Working Scenario" route (parallel lines), was proposed (See Figure 2). It would connect Alaskan rail through the Yukon via Watson Lake, to Dease Lake, B.C., and southward to the Canadian rail grid. The focus is on hauling out minerals and fuels to Asian markets, through three Pacific ports. In 2004, a broader regional economic development-based design was proposed, whose 4,006-km network (dark lines) not only runs via Dease Lake to the Canadian railhead below, but arcs a route eastward, via Fort Nelson and Dawson Creek, to connect with new development corridors inland. The westward link runs across Alaska to the proposed Bering Strait Tunnel. This is the "Alaska Canada Railway Corridor Project," sponsored by the Canadian Arctic Railway Co.

After the end of World War II, Stalin contacted President Harry S Truman to restart the discussions over connecting the Russian and American railway systems via a tunnel under the Bering Strait. Truman rebuffed Stalin, as it was the start of the Cold War period. The idea of connecting the Russian and American railway systems then died until the early 1990s when it was reborn by the transplanted Czech engineer George Koumal, who promoted the Bering Strait tunnel.

1800s Alaska Rail Link Proposals

In actuality, there had been several previous attempts to build railroad lines from Canada and the Lower 48 States to Alaska and Russia, going back more than 100 years. Colorado Territorial Governor William Gilpin was the first known person to propose a railroad line from Denver to Alaska in 1845. Union Pacific Railroad President Edward H. Harriman proposed in 1899 to extend his railroad from Wyoming to Alaska and then build a dam at the Bering Strait over which his railroad would run through Russia to connect with the Trans-Siberian Railway: Neither of these ideas, nor a whole series of other proposals, got very far.

However, one idea did move forward: the proposal of the Trans-Alaska Siberian Company to build a railroad from the North Dakota connection through Canada to Nome, Alaska. There would then be a railroad from Chukotka to the southwest to connect with the Trans-Siberian Railway in the Amur region. This company was incorporated with American, French, and Russian investors, with $6 million of actual initial capital. These funds allowed the initial feasibility studies to be completed for the 5,650-mile-long railroad system from the United States to Russia and France, between New York, Moscow, and Paris.

New York, Moscow, and Paris could all be joined in a common railroad system to promote world peace and development as the goal of the company's investors. The company was actually well on the way to raising the required $300 million in 1907, to complete both the Russian and North American railway land components. These fundraising efforts suddenly were halted by the intervention of somewhat obscure financial interests, who supposedly represented the British Empire maritime and minerals cartels who wished to perpetuate their monopolies, and who had opposed the completion of construction of the Trans-Siberian Railway. There have even been accusations made by some researchers that World War I was actually started to prevent this railroad from being built between North America and Eurasia.

Parallel Russian Rail Grid Expansion

There is today a parallel project being developed on the Eurasian Continent which would become a companion to the proposed Alaska-Canada railroad connector which will link China with Kazakstan, Uzbekistan, Turkmenistan, Iran, and Turkey by a single standard-gauge railroad line. The planned high-speed freight rail project will go from Urumchi in western China to Istanbul, Turkey, on the western side of the Bosporus Strait, so that the Chinese and European standard-gauge railroad networks can be directly linked over a 4,700-mile route distance. This line will require 2,450 miles of new railroad lines. A new 8.7-mile-long tunnel, to be completed in 2010, for $5-7 billion, will be built under the Bosporus Strait between Asiatic and European Turkey, by the Taisei Construction Company to be completed in 2009, at a cost of $930 million.

This proposed new railway being developed under the leadership of Kazakstan Temir Zholy (KTZ) or Kazakstan State Railways is intended to carry oil from Kazakstan to China, plus intermodal containers between Europe and Asia, as well as other cargoes. The expected transit time for containers is expected to be reduced from 50 days by sea, to 15 days by rail over land. The project is to be financed by both public and private investment, with $3.5 billion in equity investment already secured from private sector Asian investors.

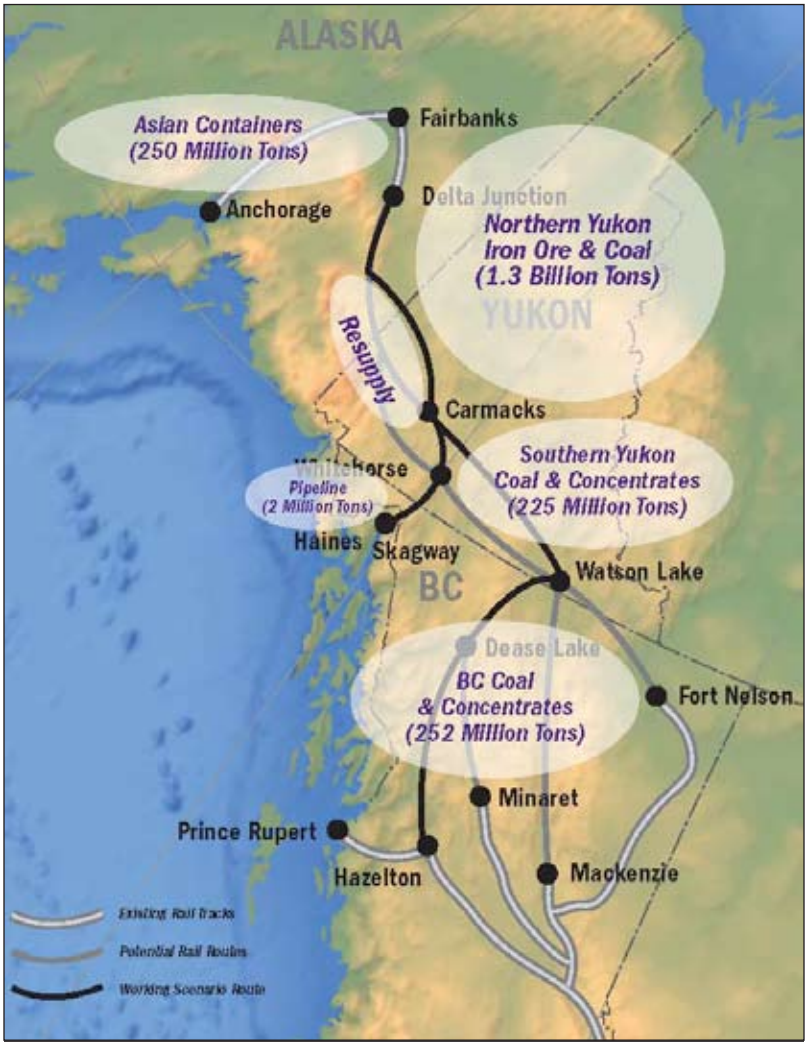
This proposed Pan-Eurasian railroad connector between Urumchi and Istanbul would serve as a parallel development model for the planned Alaska-Canada railroad connector, as there is a parallel to the proposed Bering Strait railroad tunnel project. This project could be built over an estimated 4,800-mile route between Dawson Creek and Prince George, British Columbia in Canada, to Ust Kut along the Baikal Arnur Magistral (BAM) railroad line in the Irkutskaya region of Russia, as well as to Zhangling in Heilongjiang Province of northern China. This entire railroad network would be built for an estimated cost of $25 to $40 billion, of which $15 to 25 billion would be for the Bering Strait railroad tunnel.

This railroad line would be expected to transport large quantities of oil plus intermodal containers and other commodities. The container transit times between China and the United States would be reduced from 30 days by ship to 10 days by rail over land in a manner similar to that between China and Europe via the Pan-Eurasian railroad connector. It is even conceivable that these two projects could be connected by means of the existing railroad networks between Ust Kut in Russia and Aktogay in Kazakstan. However, it would be necessary to regauge those sections of the Russian railroad network from the 5.0-foot-wide Russian gauge to the 4-foot, 8.5-inch standard gauge to assure smooth and seamless freight traffic flows such as is now being done by Kazakstan.

This brings us to the situation we face today, where we still do not have a railway connection from Alaska to the rest of North America, following the completion of the Alaska Railroad in 1923, let alone, across the Bering Strait to Russia, China, and Kazakstan to Europe via the Pan-Eurasian Connector. The British Columbia Railway expanded its routes to the north from Prince George to both Dease Lake in the west and Fort Nelson in the east in the 1970s under then British Columbia Premier W.A.C. Bennett. Unfortunately, these lines were never connected to Alaska, and as a result, never achieved their development potential; all construction stopped after the Dease Lake line problems in 1981.

FIGURE 2

The 'Rails to Resources to Ports'/Alaska Canada Rail Link Project: Long Range Markets and Route Options



Source: Prepared for the governments of The Yukon and Alaska, by ALCAN RailLink Inc., Whitehorse, Yukon, for "The Alaska Canada Rail Link Project; Phase 1 Feasibility Study," June 2007.

The "Rails to Resources to Ports" plan calls for a 2,000-km rail line, of new and existing routes, to connect the Alaska Railroad at Delta Junction, to Skagway/Haines port in southeast Alaska, and to the Canadian National Railway in northern British Columbia. The project design is oriented to shipping out bulk commodities—minerals, concentrates, fuels—by the shortest distances to Pacific ports, to supply Japan, China, and Korea and other Asian markets. The estimated cost of the new rail system is $10.5 billion, and a 50-year cycle of operation was analyzed.

Proposed Priority Routes Today

The present feasibility study presents the following findings from its research. An initial single-track line of 1,355 miles in length, would be built between Prince George, British Columbia and Fairbanks, Alaska, via the western Dease Lake route, in four years. at an estimated total capital cost of $3.715 billion. The construction of this railroad line would employ 3,000 to 5,000 workers during the planned four-year construction, with an operating staff of 1,000 to start increasing to 1,500, within 10 years after starting operation. The comparable capital cost of the alternative eastern route via Fort Nelson between Fairbanks and Prince George would be approximately $4.22 billion for the 1,435-mile route which would require five years to complete if built completely separately.

The recommendation is to build the Dease Lake line first as a single-track route, with sidings spaced at 20-mile intervals, and centralized traffic contract signaling and diesel locomotive traction. It is expected that there would be a two-year evaluation and design period followed by a four-year construction period, with operation to begin in 2010. The siding spacing would be reduced to 10 miles by 2015 and 5 miles by 2020, as traffic increases and the line progressively converts to double-track operation by 2030, as the full line capacity is reached. The railroad line connection from Whitehorse to the east, to Watson Lake in the Yukon Territory and to Coal River, British Columbia would be built along the Fort Nelson route for the gas pipeline.

It would be planned to add a single-track line to connect near Jake's Corner in the Yukon Territory, to the east to Watson Lake by 2012, and Fort Nelson, British Columbia, and then to the east to High Level, Alberta by 2015. Construction on this line would begin at the same time as for the Dease Lake line and be completed in one year, and be completed by 2020 with an additional connection between Dawson Creek and Fort St. John. At the same time, the eastern extension of the Dease Lake line to the east via Tumbler Ridge to Grand Prairie, Alberta would begin construction in 2010, and be completed by 2015 from the east side of the existing tunnel to the west of Tumbler Ridge on the existing rail line.

The entire combination route for the Alaska-Canada railroad connector would then be completed for both the Dease Lake and Fort Nelson routes as a single-track route by 2015. A second track would be added for the common route segment between Fairbanks and Whitehorse to Jake's Corner by 2020. In addition, it would be planned to electrify the entire railroad route of the Alaska-Canada railroad connector between 2015 and 2020 as both diesel fuel prices and freight traffic volumes pro-

gressively increased into the future. It would also be planned to build a series of power plants burning coal and/or other fuels to serve the electrification needs of the railroad, estimated as increasing from 500 megawatts in 2020, to 3,000 megawatts in 2050. Additional electricity growth would be needed to facilitate regional economic development for the native reserves, mines, factories, and communities along the route of the Alaska-Canada railroad connector.

The entire eastern line from Dawson Creek and Tumbler Ridge to Grande Prairie, east to Edmonton, Alberta would then begin and be completed by 2020. In parallel, the existing Canadian National Railways branch line from Edmonton, Alberta to Lloydminster and Saskatoon in Saskatchewan would be upgraded for full-scale freight traffic by 2015. This line would then be extended to Regina, Saskatchewan and ultimately to Lampman, Saskatchewan to Minot and Max, North Dakota as a new railroad line by 2020, to connect with the Central North America Trade Corridor being built between Minot and Del Rio, Texas between 2010 and 2020. In parallel, the new railroad line from Melville to Lampman, Saskatchewan would be built to allow a direct connection to the Hudson Bay Railroad line at Churchill, Manitoba.

Scenarios: Trains, Costs, Savings

The expected freight train traffic on the Alaska-Canada railroad line via the Dease Lake route would be expected to increase from six trains per day in 2010, to 30 trains per day in 2030. The average total freight tonnage moved would be expected to increase from 10 million tons per year in 2010, to 50 million tons per year in 2030, assuming food, lumber, coal, oil machinery, and other commodities would be moved for the minimum traffic growth scenario. The construction of the proposed natural gas pipeline would require as much as 110 million tons of all materials to be moved, including earthworks, which would largely be on the Fort Nelson line.

The proposed plan for the construction of the railroad line connected with or in advance of the natural gas pipeline proposed to be built, could be reduced by between $2.4 and 2.7 billion from a $20 billion estimated total capital cost for transport alone, plus another $1.2 to 1.5 billion for reduced welding needs. This capital cost savings in the proposed pipeline construction cost is equivalent to the direct construction cost of $1.25 billion for the Dease Lake option of the Alaska-Canada rail connector. The capital cost savings for the natural gas pipeline primarily, based on building the Fort Nelson railroad line would be greater at $2.65 billion, as there is a greater haul distance for construction materials and equipment.

The initial financial analysis of the proposed Alaska-Canada railroad line is based upon the basis of an initial capital investment of $3.7 billion. This project will have an estimated rate of return on investment of over 15% per year, with a project payout period of five to eight years from the end of construction for the minimum freight traffic growth scenario with the Fort Nelson route. For the higher traffic growth scenarios, the expected rates of return on investment will be greater, and the project payout periods will be shorter, than for the minimum traffic growth case. The advantage of the proposed Alaska-Canada rail connector, from a financial standpoint, is that the freight traffic hauled, will go over a long distance of 1,100 to 1,300 miles as a high unit-revenue-generation source, with a consummately high-income level.

The Fort Nelson railroad line will have a higher capital cost than the Dease Lake line, as it is longer, with a greater distance of new line to be constructed. There is more difficult terrain to encounter, especially through the Liard Canyon to the east of Watson Lake. However, it is expected that the freight traffic volumes on the Fort Nelson line will be greater in the early years than on the Dease Lake line because the hauling of materials for the natural gas pipeline will occur over its entire route as compared to only a part of the route with the Dease Lake to provide for a shorter payout period and a higher unit debt service coverage ratio. The total capital cost of the Alaska-Canada railroad connector, with both the Dease Lake line and Fort Nelson routes included, is expected to be $6 billion for the diesel power and $10 billion with electric power.

As a result, the expected rate of return on investment for the Fort Nelson line is expected to be equivalent to, or slightly greater than, for the Dease Lake line if only one is built to start. The capital cost will be greater for the Fort Nelson line, but its traffic base, during the early years of operation, will be greater because of the pipeline. However, over the longer period, there is expected to be more freight traffic flowing over the Dease Lake line because of its shorter distance and more gentle terrain. In conclusion, both lines need to be built, in spite of the greater expense whose payoff will really result when the railroad through the Bering Strait is completed and in operation, where major freight traffic increases are expected to occur.

Expanding Freight, Passenger Volume

The expected freight traffic volumes on the other connecting railroad lines in North America will generally increase from the range of 5 to 10 million tons per year in the first three to five years, to between 40 and 50 million tons per year over a 20 to 30 years period. In addition, it is expected that the proportion of the freight traffic hauled over the Alaska-Canada rail connector will be between Alaska and the Upper Midwest and Eastern States with an expected 65-75% of the total. A relatively small proportion of 25-35% of the expected freight traffic will originate or terminate in the Pacific Northwest as at present. In fact, it is likely that there may be substantial political opposition to the proposed Alaska-Canada rail connector project from the maritime interests in the Puget Sound area whose businesses would be adversely affected as Alaska's trade center shifts to the east, from Seattle to Minneapolis, in the future.

It is planned to have a continuing construction program to progressively expand the railroad network for the Alaska-

Canada rail connector and affiliated lines including both Dease Lake and Fort Nelson. There will be a construction program to add siding and yards on a continuing basis as well as to start new lines as single-track routes with sidings gradually added until the lines are fully double tracked as traffic progressively increases. A parallel program of electrification of the railroad lines is expected to be implemented in order to reduce unit energy and maintenance costs as well as to support regional economic development for the native reserves and other communities.

In addition, it is expected that passenger traffic is expected to add 5-10% to the railroad revenue base for tourist and cruise trains, plus online passenger services for business and pleasure.

The three commodities most likely to add to the freight traffic base for the Alaska-Canada rail connector are crude oil and petroleum products as one category, intermodal trailers and containers as a second category, and products of a third category of these three commodities, plus others which will be significant for the Alaska-Canada rail connector. The proposed Alaska-Canada railroad connector can then serve as the engine for the overall economic development of the entire northwestern North America, especially for the native reserves and communities along the route where new energy facilities, mines, forestry operations, and industrial facilities would be located.

The expected freight traffic volumes to be generated will be significant from the Alaska-Canada railroad connector alone. However, they will become much larger in magnitude and importance once the proposed Bering Strait rail tunnel becomes a consideration. The completion of the proposed Bering Strait railroad tunnel would increase the maximum freight traffic levels along the Alaska-Canada rail connector from 50 to 70 million tons per year, to between 270 and 300 million tons per year, after a 20-to-30 year period.

It will then be necessary to greatly expand the capacity of the Alaska-Canada railroad connector as well as to plan for increased economic activity in communities along the entire route to double or even triple track operation.

Bering Strait Tunnel: 'Northern Strategy for Development'

The completion of the proposed Bering Strait railroad tunnel between Alaska and Chukotka would dramatically increase the expected freight traffic levels all along the Alaska-Canada rail connector and on other rail lines as well. As a result, there would be a need to double-track all connecting main railroad lines on both continents once the Bering Strait tunnel is completed plus to have a triple-track route between Whitehorse, Yukon Territory in Canada and Egvekinot, Chukotka in Russia. Also, the proposed Bering Strait railroad tunnel will need to be built with three tubes instead of two because of the very large freight (and passenger) traffic volumes which will be expected in the future between North America, Europe, and Asia.

The proposed Alaska-Canada railroad connector will make it possible to haul large quantities of crude oil at low transport rates from Alaska and northwestern Canada to refineries located in southern Canada (if allowed) as well as existing or new refineries located in the Northern Tier of the United States. In addition, the proposed Bering Strait tunnel will make it possible to haul crude oil from fields in northeastern Russia to petroleum refineries in the United States directly by rail to North Dakota, Montana, and elsewhere. It will be very desirable to expand crude oil production in Alaska with oil transported by rail to refineries located in North Dakota and elsewhere in the Upper Midwest. It is also possible that petrochemical production could take place using natural gas, ethanol, or crude oil as feedstocks in Saskatchewan, Alberta, Montana, and North Dakota. The major development of heavy oil deposits in Alaska could significantly increase the Alaska-Canada rail connector's freight, and should be greatly encouraged, as well as from the Athabasca tar sands deposits in northeastern Alberta.

In summary, the proposed Alaska-Canada rail connector project is expected to be very feasible, with a sufficiently high rate of return-on-investment of 10-20% per year, a suitable debt service coverage ratio of 2.0 to 3.5, and a sufficiently short repayment time of 5-to-15 years so as to justify some type of long-term, low-interest-rate private financing mechanisms. In addition, the construction of the Alaska-Canada railroad is expected to require a capital investment which would progressively increase from $3.7 billion to 9.5 billion over a 25-year period in a series of steps for a system which would reach 2,400-miles by 2020. The total expected capital investment for all of the associated rail lines in North America would be expected to progressively increase from $16.7 billion to $33.0 billion, over a 30-year period, from 2010 to 2040, as traffic increases. The total maximum capital investment in all of the connecting railroad lines in North America and Asia is expected to be 120 to 175 over a 30-year period, or less than that of the present Iraq War, estimated as $200 billion to date.

It is recommended that for the Alaska-Canada rail connector, that private-sector financing be utilized. It is suggested that Governors Murkowski of Alaska, Hoeven of North Dakota, and other governors, plus the premiers of the Canadian Provinces jointly support the creation and implementation of the Alaska-Canada rail connector. In addition, it is suggested that Prime Minister Paul Martin of Canada and U.S. President George Bush meet, to jointly support the Alaska-Canada rail project proposed to develop the Bering Strait railroad tunnel that connects Asian and North American railroad lines. It would benefit from a meeting among Prime Minister Martin, President Bush, and Russian President Vladimir Putin, to establish a cooperative support basis for implementing these projects to the mutual benefit of all in terms of worldwide job creation by means of the Northern Strategy for energy and economic development.