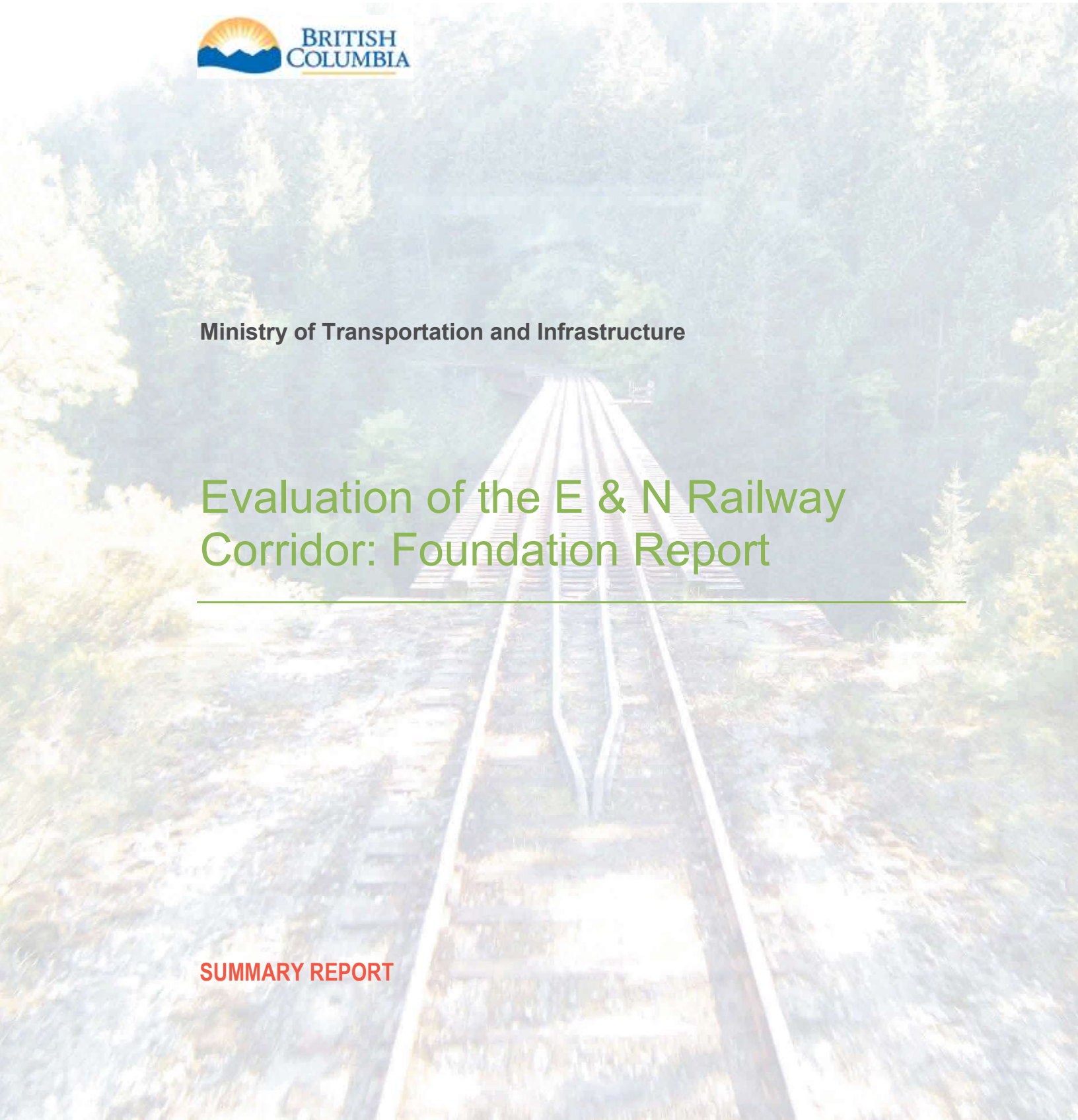

Ministry of Transportation and Infrastructure

Evaluation of the E & N Railway Corridor: Foundation Report

SUMMARY REPORT

IBI GROUP

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EXECUTIVE SUMMARY

The Province of British Columbia committed to examine the viability of the **Esquimalt & Nanaimo (E&N) Railway Corridor** on Vancouver Island. The purpose of this foundation report is to provide a summary of the technical work that includes an analysis of several business markets including freight, intercity passenger, tourist excursion and commuter rail. Concurrently an evaluation of the E&N's suitability as a high frequency rapid transit corridor was undertaken by BC Transit. The BC Transit study provided the service parameters used in the commuter rail assessment. The technical work also provides an assessment of the current asset condition of rail infrastructure on Vancouver Island. An environmental scan is also included.

Underpinning the work presented within this foundation report is the recognition that the E&N Rail Corridor has provided an important transportation asset for Vancouver Island for many years. On the other hand, this investigation documents a challenging business context for rail, particularly over the short term.

Research and Consultation

Technical studies took place from the end of April through September 2009. Stakeholder consultation was integral to the study, including interviews and workshops, conference calls, and five Public Open Houses along the corridor. Contact was established with the following groups:

- Island Corridor Foundation (ICF), the corridor owner;
- Southern Railway of Vancouver Island, the current railway operator;
- BC Transit, which is carrying out the Victoria Region Rapid Transit Project (VRTTP);
- Elected representatives and senior staff from the Regional Districts, Local Municipalities, and First Nations along the corridor;
- Island residents, including users of the railway;
- Business line stakeholders, including shipping companies, the Ministry of Forests and Range, producers of forest, mining and concrete products, VIA Rail, Tourism Victoria, Tourism Vancouver Island, Alberni Pacific Railway, and many others.

Data sources and new research to support the project included:

- Previous railway condition and value reviews carried out between 2003 and 2006; ICF technical documents including business plan concepts included in the recent 'Our Corridor' campaign, a request for Federal and Provincial funding; and technical studies and cost estimates prepared by Southern Railway;
- Population, employment and travel data and forecasts were obtained from the Capital Region, Statistics Canada (census) and BC Stats;
- New inspections by the project team in June and July 2009 and visits on the VIA intercity and Alberni Pacific tourist train operations;
- Tourist Excursion Market Research interviews with residents and visitors; and Truck Classification Counts and Surveys, all carried out in June 2009; and;
- Input was gathered on operating concepts and costs, best practices, and industry trends from other railway operations across North America.

Market Conditions

Within each business line, several opportunities were identified and evaluated, as follows:

- Freight volumes are currently about 900 rail cars per year. Market growth may be achieved as traditional markets recover and as a result of related investments such as more frequent rail barge service to the lower mainland. Additionally, a coal mine proposal by Compliance Energy, and located near Fanny Bay is in its environmental assessment process. BC Environmental Assessment Office (EAO) is expecting to make a decision in the spring of 2011. Among the options considered for transportation is rail as one mode of transporting the coal allowing shipment to Port Alberni. The mine could be in production by 2012. Market estimates indicate that 16,500 freight cars per year may be possible if this opportunity materializes.
- The foundation report also investigated opportunities for more efficient movement of forest products to North American markets as well as markets for construction aggregates where railway tracks and several older bridges are upgraded to meet current North American loading standards;
- Intercity passenger service operated for VIA currently carries 41,000 passengers per year on one daily round trip from Victoria to Courtenay. Growth in intercity passengers is possible through schedule changes and infrastructure improvements. Corridor upgrades with related supportive land use decisions by municipalities could result in passenger volumes up to 227,000 per year.
- Excursion train opportunities include potential expansion of the service from Port Alberni, and new excursions based in Victoria or Nanaimo. These could entail new rolling stock and facilities, or setting up trips using VIA rail service in combination with buses to take passengers from the rail station to events and attractions. The estimated overall market is approximately 11,000 to 30,000 trips per year (counting both corridors).
- Commuter rail service does not currently exist, and therefore a wide variety was considered, ranging from better VIA schedules through to dedicated trains operating every half hour during weekday peaks between Victoria and Langford, with optional service as far as Duncan. Providing this service requires corridor improvements, new trains, and station facilities. The potential market ranges from 150,000 to over 330,000 passengers per year.

Results of the Analysis

The challenge facing the E&N Corridor is a lack of re-investment over the past two decades. The railway currently has the lowest annual traffic (and lowest per km) of any Canadian short line. In simple terms, rail traffic needs to increase substantially to sustain the ongoing operations and maintenance of the rail corridor. On the other hand, Vancouver Island today experiences direct access to all four Class 1 rail carriers – competitive access which has never previously existed for Vancouver Island.

The business line options were grouped together geographically so that different strategies of incremental investment in the corridor could be evaluated. These ranged from a ‘no rail’ baseline where the corridor is retained for use as rail trails, then an option to preserve current service levels, then improving the different parts of the corridor (central corridor, central + northern corridor southern corridor), through to improving the entire railway.

The study has revealed options as follow:

- To preserve the rail it would cost around $70 million in infrastructure investment and anticipates a continued a $1.4 million annual VIA operating subsidy from the federal government.
- Repair and restoration of Duncan to Parksville and refurbished/new VIA rail cars, which would serve additional freight in central corridor and expanded intercity/limited commuters (using VIA) and maintain the current excursion train. This option would cost $40.5 million in infrastructure investment and the $1.4 million annual VIA subsidy.
- Repair and restoration of Duncan to Courtenay, the re-opening of Port Alberni line and the refurbished/new VIA rail cars which would serve expanded freight (forestry, mining) and expanded intercity and limited commuters (using VIA) and excursion train could expand operation. This option would cost $103 million in infrastructure investment and a $1.5 million annual VIA subsidy.
- Repair and restoration of Duncan to Victoria and refurbished/new VIA rail cars and new commuter rail cars, stations which would serve expanded freight market (aggregates if not loaded too heavily) and expanded intercity, commuter potential Victoria-based excursions. This option would $118 million in infrastructure investment, $1.5 million annual VIA subsidy and $3.4 million annual commuter rail subsidy.
- Repair and restoration (all stations), re-open of Port Alberni line, refurbished/new VIA rail cars and new commuter rail cars, stations. This option would serve expanded freight market (forestry, mining, and north-south shipments), expanded intercity, excursion and Victoria-based commuting. This option would cost $216 million in infrastructure investment, $1.8 million annual VIA subsidy, and $3.1 million commuter rail subsidy.
- An additional $120 million may be required depending on the need for potential bridge upgrades to handle heavier freight loads, and several grade separations that might be needed for safe operation of frequent commuter rail.

Freight is the most significant business development opportunity for the E&N Corridor. Market surveys indicate that demand for rail freight can be expected to increase with more frequent rail service. These improvements are already underway as a direct result of an improved rail barge connection to the Lower Mainland at Annacis Island. This change facilitates daily freight movements which are expected to form the basis of new freight shipping commitments.

The greatest potential for freight enhancements will occur along the central portion of the Victoria Subdivision (between Duncan and Nanaimo) and the Alberni Subdivision (Nanaimo to Port Alberni). Market growth in this segment of the corridor is anticipated from forestry as forest companies plan to deliver second growth timber ideally suited to the North American dimensional lumber market. Material loaded in Port Alberni could be delivered throughout the North American rail network. Significant additional traffic is anticipated to coincide with mineral explorations in the central island. Mine development plans are underway which would see up to one million tonnes/year moving to deep sea ships in Port Alberni.

Improving VIA passenger service could be implemented on an incremental basis. The infrastructure investments discussed above to facilitate freight will also help to provide safer, faster and more efficient passenger service. Passenger services are currently subsidized and it is reasonable to expect this would remain in place.

Commuter rail has certain operating requirements above basic repairs, and needs a large enough travel market to be successful. Based on the 2026 passenger estimates for the Duncan-Victoria

corridor, the average cost per passenger for a 30-minute service is higher than the North American standard. A logical approach would be to build up the market using the proposed VIA service enhancements and encourage the municipalities along the railway to adopt land use planning practices that would enhance the chances of success.

Overall, the existing railway freight and passenger markets are fairly small and the average cost of the improvements per passenger ($36 per VIA trip) or per rail car of freight ($5000 per car) would be high.

The longer term potential is better: costs per passenger could be lowered to $25 with an optimal service plan; and $450 per rail car if all the potential business materialized. Significant revenue from freight would be required to make the corridor 'break even' against the up-front capital costs. The greatest potential is in mining and forestry products, provided that shippers can be convinced to make a commitment to using rail.

Discussion

Without increasing volumes of freight and passenger service on Vancouver Island a continuing reinvestment in rail infrastructure is not sustainable. However, this study has identified several potential business lines that could expand significantly provided that the right conditions are in place.

These conditions include:

- More favourable commodity prices (this is outside the control of the stakeholders) to help recharge local resource industries and create the potential for rail to compete for shipping business;
- More frequent rail connection service to the mainland to remove one competitive edge enjoyed by trucks;
- High volumes of tourists using the planned Nanaimo cruise ship terminal (and accessing the rail corridor from there), and;
- Transit-supportive population and employment growth along the corridor, which would help support and justify increased passenger and freight services.

Of foremost importance, a much larger freight business would be necessary to sustain the corridor and provide a predictable cashflow to pay for operations, fund capital improvements, and provide an operating profit for the operator.

The Island Corridor Foundation has indicated more modest investments would allow existing rail services to continue while new markets are investigated.

Both intercity and commuter passenger rail would provide alternatives to automobile travel on Vancouver Island, as with all forms of transportation infrastructure, passenger services in North America require subsidies from various levels of government and produce social and environmental benefits, rather than directly generating extra revenues to re-invest in corridor improvements.

Excursion services are likely to be modest in scale and the access fees would not be as significant as from freight. Expanding or starting a new excursion service would rely on the rail corridor being in a state of good repair.

Recommendations

Given that there are a variety of business opportunities that could emerge in this corridor, it is recommended that a corridor strategy be developed in partnership with the Island Corridor Foundation as a next step in this study. The objective of the corridor strategy would be to determine what conditions and economic circumstances need to be in place to preserve the corridor for future use, and encourage and enhance the potential opportunities that are out there.

1. INTRODUCTION

This Foundation Report presents an evaluation of the E & N Railway[1] Corridor on Vancouver Island. This has been carried out for the BC Ministry of Transportation and Infrastructure (BC MoT) and its stakeholder partners to help guide policy and potential investment decisions related to this railway corridor.

Vancouver Island, with a population of approximately 800,000 people, continues to show economic growth within British Columbia. Transportation has played and will continue to play a key role in this growth, with all modes (marine, rail, road, and air) contributing. The E&N Railway is a short line railway operation on Vancouver Island, running parallel to the main Island Highway between Victoria and Courtenay, plus a branch line to Port Alberni operating parallel to Highway 4. The railway is owned by the Island Corridor Foundation (ICF) and is operated under contract by the Southern Railway of Vancouver Island (SRVI). The ICF issued a request to the Federal and Provincial governments for a capital investment in the corridor. As a result, BC MoT initiated this study process in November 2008, to evaluate opportunities for economic growth related to the railway corridor.

This report describes the current study area and railway corridor, and the approach taken to gather information and assess the business potential of the railway. The second part of the report consolidates the critical technical findings from a series of topic reports covering the freight, passenger, and tourism markets, the feasibility of commuter rail service, and an update to the inventory of railway conditions and potential improvement costs. The third part of the report builds on the technical investigations and input from stakeholders to define railway service options, then build these into network packages of compatible services based on improvements being made to various corridor segments. The financial costs, benefits, social, economic and environmental benefits and impacts are then evaluated for these combinations of railway services.

This **report** includes the following material:

- Study Approach;
- Background and Peer Review;
- Summary of Technical Investigations:
- Freight;
- Passenger;
- Tourism Excursions;
- Commuter Rail;
- Baseline Condition Update;
- Definition of Rail Service Options;
- Evaluation of Service Combinations.

[1] Esquimalt and Nanaimo Railway.

1.1 Study Organization and Approach

This study has been sponsored and managed by the BC Ministry of Transportation and Infrastructure (BC MoT). The project steering committee includes representatives of BC MoT and the Island Corridor Foundation (ICF), the owner of the railway corridor. BC Transit is an additional stakeholder given its interest in public transportation services, in particular the commuter and passenger movements to, from and within the Victoria Region.

To carry out the technical work and support stakeholder consultation, BC MoT engaged a consulting team led by IBI Group and supported by experts in freight economics, passenger service planning and forecasting, tourism, commuter rail, urban planning, rail operations and construction, and stakeholder outreach.

1.1.1 STAKEHOLDER CONSULTATION

Stakeholder consultation has included the following activities:

- Ongoing interviews with various existing and potential stakeholders, in support of the technical studies, including the current railway operator, Southern Railway;
- Regular conference calls of the Island Corridor Foundation, BC Transit, and BC MoT;
- Two Stakeholder Planning Workshops with representatives of the ICF Board and ICF Committees, the Regional Districts, Municipalities, and First Nations;
- One-on-one meetings of the ICF with several representatives of member First Nations;
- Three Open Houses held in June in conjunction with BC Transit events presenting findings and gathering feedback on the Victoria Region Rapid Transit Project (VRTTP), and two additional Open Houses held during July in the central and northern sections of the corridor, in Parksville and Courtenay respectively. These events were attended by several hundred agency representatives and members of the public.

Appendix A lists the stakeholders consulted over the course of the study.

1.1.2 INFORMATION SOURCES AND DATA GATHERING

This evaluation draws upon both existing and new sources of information to support the technical analyses presented here and in the detailed topic reports. In brief, the following were the key sources of data:

- Previous technical reviews had been carried out by IBI Group and a team of consultants on behalf of CP Rail and Rail America, the previous owners of the E & N Railway, to estimate the value of the railway and right of way assets before the ICF took ownership;
- ICF provided copies of technical documents related to its formation, and to various requests for funding issued to the Federal and Provincial governments, including materials from the recent ‘Our Corridor’ campaign;
- Corridor inspections were carried out in June and July 2009 by the project team, with the support and cooperation of Southern Railway, to update and expand upon the condition

documentation. Other visits were made to the corridor, including riding the VIA service (round trip) and the Alberni Pacific railway;

- Southern Railway and its consultants provided recent independent cost estimates to repair the corridor infrastructure, prepared in conjunction with the ICF campaign;
- Market research interviews were carried out in June 2009 to assess the tourist market and gauge interest in train excursions;
- Goods movement classification counts and surveys collected at weigh stations in Parksville and Duncan to determine the origins, destinations and types of goods being carried by truck; and
- Various public and private stakeholders were contacted to discuss potential business lines and their relationship with current infrastructure projects and land use plans.

2. BACKGROUND AND PEER REVIEW

This section of the report documents the background and current status of the E&N Railway corridor, the land use characteristics of the study area, and highlights several key observations from peer reviews of other railway operations.

2.1 Current Corridor Status

Built in 1886, the E & N Railway corridor extends from Victoria to Courtenay and inland from Parksville to Port Alberni. It includes 650 hectares of land and several historic rail stations. In the past, it also included several other rail subdivisions and spur lines that are now inactive.

Since 1996 when CP Rail made the decision to wind up its operations on Vancouver Island, the future of the corridor has been the subject of much debate. The rail line has sustained two ownership changes and experienced a significant decline in capital investment over the past two to three decades. In turn, freight and passenger volumes have faltered and in its current state of repair the line is operating in marginal conditions.

For the past four years, the line has been owned by the Island Corridor Foundation, a registered charity and not-for-profit organization made up of 5 Regional District governments, 14 local municipalities and 13 First Nations. The ICF has contracted with Southern Rail of Vancouver Island to operate the remaining freight and passenger services, the latter on behalf of VIA Rail. While there has been some modest recovery of freight volumes (up 30 per cent at the end of 2008) further enhancement of freight or passenger services would require various levels of repairs and/or improvements to the tracks and related infrastructure. As a non-profit charity, the ICF has very limited financial resources to revitalize the asset it inherited and has in turn looked to provincial and federal governments for funding.

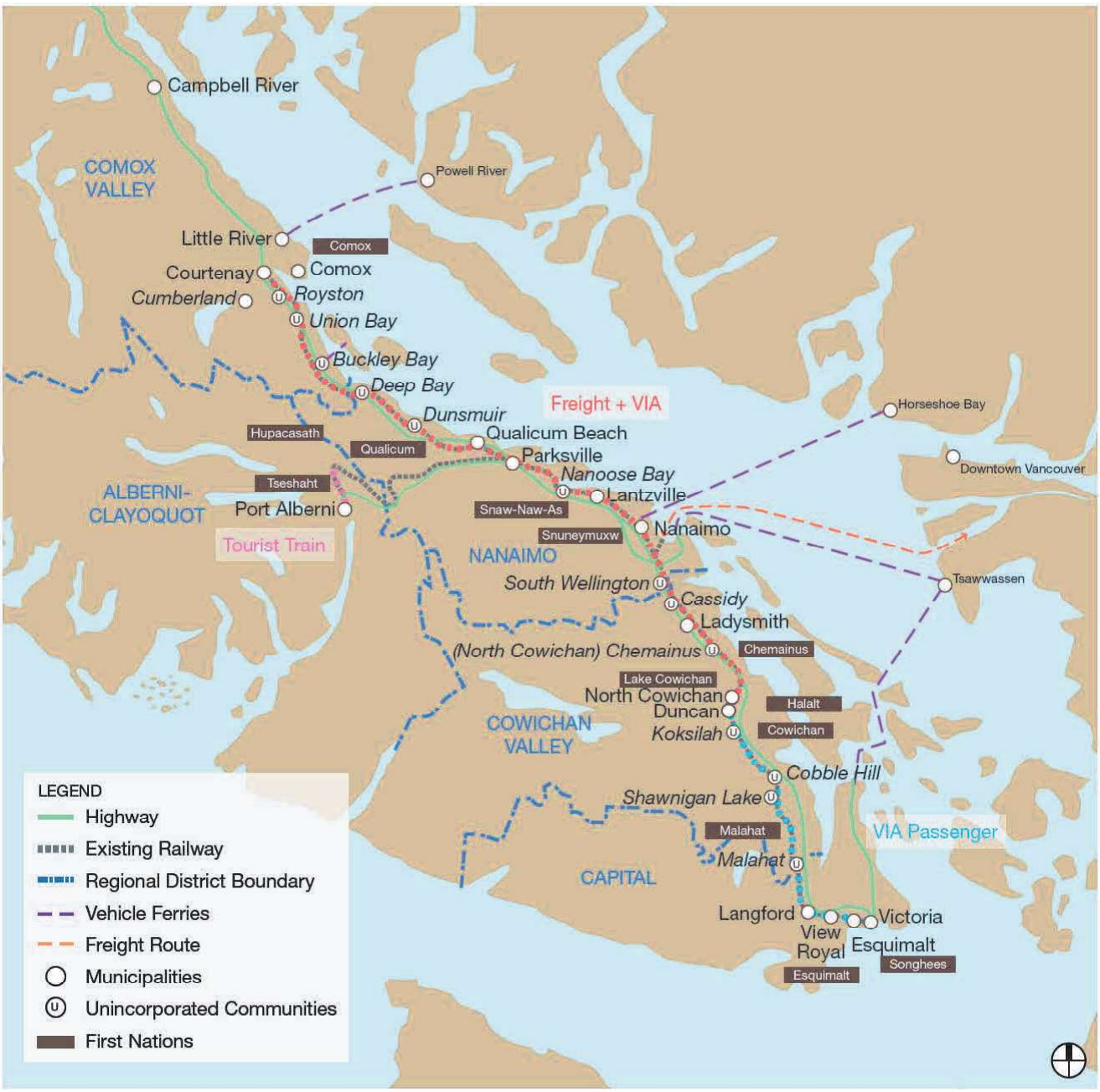
While the ICF is largely credited with developing important community and First Nations support for preserving the asset, it is a complex ownership and governance structure. Further, the ICF is dependent on the private sector for development of the freight and tourism business opportunities, and on the public sector (Federal subsidy) to continue operating the VIA passenger service.

Exhibit 2.1 is a map of the current E & N Railway. The map shows the five Regional Districts, fourteen local municipalities and thirteen First Nations participating in the Island Corridor Foundation. To provide context, the map also shows major highways, ferry connections and several unincorporated communities along the railway corridor.

Currently, the railway network includes three active segments and an abandoned line, each of which consists of a single track and occasional passing sidings, with the exception of yards:

- Victoria Subdivision: This is the 225 km railway line between Victoria and Courtenay;
- Port Alberni Subdivision: a 64 km segment between Parksville and Port Alberni;
- Wellcox Spur: 5 km spur from the main line (Victoria Subdivision) to a rail yard and barge loading facility on the Nanaimo waterfront;
- The Lake Cowichan Subdivision is an abandoned rail corridor west of Duncan that supports fibre-optic communications and is actively used as a recreational trail.

Exhibit 2.1 - E & N Railway Corridor, Vancouver Island



Services operated on the current railway include:

- Daily VIA passenger train service is operated between Victoria and Courtenay, and the vehicles are stored and maintained in an old roundhouse near the end of the line in Victoria;
- A short-run tourist train (Arrowsmith Explorer, officially the Alberni Pacific Railway) is based in Port Alberni, operating on the westernmost portion of the line; and
- Freight service operations are based in Nanaimo. This freight service is linked to the mainland by way of a Seaspan Coastal Intermodal rail barge service between the Nanaimo waterfront and Fraser River port facilities.

The VIA passenger train service and the freight service are operated by the Southern Railway of Vancouver Island (SRVI), part of the Southern Railway of British Columbia (SRY). SRVI currently has a three-year operating agreement with the Island Corridor Foundation.

2.1.1 ICF / SRY ESTIMATED INVESTMENT REQUIREMENTS

Known deficiencies in the condition of the railway, including deteriorating ballast, ties, and track, would require significant investment in order to bring the railway up to acceptable standards of operation. A technical assessment by SRY, conducted on behalf of ICF's "Our Corridor" campaign, produced a cost estimate of $104 million to improve the corridor up to current North American freight standards (based on the 286,000 pound standard for heavier bulk freight cars). A lower estimate for network improvements to sustain the infrastructure already in the corridor, prepared for the ICF in 2006, estimated the basic investment to be about $40 million. This focused on replacement of ties and ballast to maintain safe operations at reasonable speeds, but not upgraded to accommodate heavy bulk freight cars.

Earlier in 2009, SRY recently produced a discussion paper on 'shovel-ready improvements' for the near term. It was estimated that about $15 million in repairs would be needed to keep the line running properly, including 80,000 tie replacements, more thorough bridge evaluations, and restoring the fire-damaged Nanaimo passenger station.

2.1.2 RECENT RELATED DEVELOPMENTS

In order to reduce its reliance on the CP Tilbury facilities, SRY is planning to set up an intermodal facility on Annacis Island. The investment required for this facility is estimated at approximately $11 million; the federal government is contributing a portion under the Shortsea Shipping program. Construction is scheduled to be completed by December 2009. The new rail barge terminal will allow SRY to manage delivery of cars to the ferry, and the ferry operations will continue to be undertaken by Seaspan Coastal Intermodal. This would allow for more frequent delivery of rail cars which will facilitate mixed sailings (trucks and rail cars) on a daily basis if required (the current Seaspan schedule facilitates next morning delivery of trucks). The current service is only once per week. In this context it is beneficial to mention that as a short line SRY can connect with any of the major Class 1 railways operating in western North America (CN, CP, BNSF and UP). SRY has direct connections to the first three, and connects to UP on the West Coast through marketing rights for West Coast traffic imposed by the U.S. Surface Transportation Board as a condition of the Burlington Northern and Atchison, Topeka and Santa Fe merger in 1996.

Another recent development that could increase SRY's ability to service the Island Railway is a deal with Burlington Northern Santa Fe (BNSF) which gives SRY the exclusive operation of their barge ramp in the Inner Harbour, running rights on the BNSF trackage, and the False Creek rail yard. BNSF will maintain ownership of the assets and land.

2.2 Land Use

Land use plans that promote the future passenger and freight operations will be critical to sustaining viable rail service in the corridor to serve the Island. Census data, demographic projections and land use plans were reviewed to provide input to passenger projections and to determine if there were future opportunities for rail oriented development along the alignment. Additional qualitative input regarding possible development opportunities was gathered at the stakeholder planning workshops, plus a special presentation and meeting on Transit Oriented Development opportunities.

Table 2.1 gives the current population breakdown of the Regional Districts along the corridor. Approximately 70 per cent of the population of Vancouver Island lives within 5 km of the railway (the main exceptions being the northern Island and Saanich Peninsula), giving it the potential to be a transportation backbone in parallel with the Island Highway.

Table 2.1 – Population of the Study Area

Population Count/ Estimates	Census 2006	Portion in/near E&N Corridor
ICF Member Districts		
Alberni-Clayoquot	30,664	24,000
Capital Region	345,164	200,000
Comox Valley	58,637	55,000
Cowichan Valley	76,929	67,000
Nanaimo	138,631	135,000
Other Island Districts		
Mount Waddington	11,161	-
Strathcona	42,771	-
Total	703,957	481,000

From 2006 to 2026, the corridor's average population growth is projected (by the BC Ministry of Health) to be 25%, with local variations in some areas. This means the corridor would have some 600,000 residents within 5 km of the railway at that time if current projections hold.

Table 2.2 summarizes the most common types of land use adjacent to the railway in representative locations along the railway corridor. In most locations, the primary adjacent land use is residential. The residential density around the railway is typically low to medium with single family and two family (duplex) buildings. However, in some locations, particularly Victoria east of the harbour, there are higher density areas adjacent to the railway. Despite the overall dominance of residential land around the railway, commercial and (mostly light) industrial areas also neighbour the tracks. Outside of the main areas of settlement, the railway mostly traverses rural land including forests.

Some municipalities, especially Langford and Victoria, are embracing 'smart growth' and 'Transit Oriented Development' while others are not taking these steps. In some cases they are waiting to see if a mix of railway-associated industries and compatible residential/commercial development would make sense in the event that rail service continues or expands. Potential interest in industrial/commercial land use was indicated by the Nanaimo Airport and the Port Alberni Port Authority.

Table 2.2 - Land Uses Adjacent to E & N Railway Corridor

Location	Most Common Land Use	Other Typical Land Use	Notable Others
Courtenay	Residential	Industrial	Institutions
Port Alberni	Industry	Residential	
Qualicum Beach	Residential	Tourism	
Parksville	Residential	Industrial	
Nanaimo	Residential	Mixed uses	Light industrial, Regional airport
Ladysmith	Residential	Recreational	
Duncan	General commercial	Service commercial	
Cowichan (Shawnigan Lake)	Urban residential	Suburban residential	
Langford	Comprehensive residential development	Commercial	
Esquimalt	Single and two unit residential	Town houses	Industrial
View Royal	Residential	Commercial	
Victoria	Residential, single and multi-family	Industrial	Downtown heritage district

2.3 Peer Review of Railway Operations

A review of other North American rail systems was made to provide a comparative assessment of their attributes and lessons learned as may be relevant to this study. The operations and costs of over a dozen rail systems were reviewed as part of this task. These systems were divided into different groups based on the primary type of service they offer, and some of the systems most similar to the E&N were used to benchmark its current and potential performance.

2.3.1 COMMUTER RAIL

The commuter rail investigation initially included 6 rail systems, including several in Western Canada and the United States:

- West Coast Express, Vancouver BC;
- O-Train, Ottawa ON;
- River Line, Camden – Trenton, NJ;
- TriMet Westside Express Service, Portland OR;
- Sounder, Seattle WA; and
- Sprinter and Coaster; Oceanside, CA.

Some of the interesting characteristics of these systems include:

- Corridor length – the commuter rail systems investigated serve corridors ranging from a fairly short line (Ottawa O-Train is only 8km) up to a fairly lengthy system centred on Seattle (the "Sounder" is 132km long).

- Frequency of service – three of the commuter rail systems studied provide fairly high frequency service (every 15-30 minutes). However, the two other systems operate trains in one direction in the morning and in the opposite direction in the evening. For example, the West Coast Express operates all its trains towards downtown Vancouver in the morning, where it stores the trains, then in the opposite direction (outbound to Mission) in the evening. In another variation, the "Sounder" operation has four trains in the peak direction and two of these train sets return in the opposite direction during the peak period.

- Number and type of rail vehicles – Three of the systems in the group use 20-70 vehicles (including coaches and locomotives) while the other two (Ottawa O-Train and TriMet Westside Express) operate only three or four vehicles each. The systems are served by traditional diesel trains or diesel light rail vehicles (e.g. O-Train, River Line, TriMet WES, Sprinter).

As can be expected, the level of activity, ridership and costs of each commuter system exhibits are largely correlated. For instance, the Ottawa O-Line can provide a high frequency service (a train every 15 minutes) throughout the day with a small number of vehicles (3) because its track length is very short (only 8km). Other systems with longer tracks tend to provide lower frequency service, rely on a much larger number of vehicles, or both. The diesel light rail vehicles in use on several of the systems tend to be suitable for services where shorter trains are being contemplated in order to match frequency, capacity and demand for the service. Larger trains are better suited to larger commuter rail operations such as "Sounder" and "West Coast Express" where there is sufficient demand at medium frequencies to warrant multi-car trains.

Specific Commuter Rail examples provide performance benchmarks and lessons learned for the concepts developed for the E&N:

- West Coast Express – 69 km; 11,000 people daily; operating cost $6/passenger trip.

- Portland WES – 24 km; 1,250 people daily; operating cost $13/ passenger trip.

- Sounder based in Seattle – 132 km (two corridors); 11,000 daily; operates at $10.50/ passenger trip.

- Commuter rail works best with a concentration of 25,000 jobs or more in the business district (guideline suggested by TCRP study).

- Market capture occurs if work is within a few minutes walk or rapid transit connection from commuter rail station.

2.3.2 INTERCITY PASSENGER RAIL

The intercity rail analysis focused on two systems; the "Northlander" between Toronto and Cochrane (Ontario Northland Railway) and the "Cascades" corridor (Amtrak) between Eugene, OR and Vancouver, BC (through Portland and Seattle).

Intercity rail service is often provided over long-haul distances (the two corridors are 650 and 760km) with a very low frequency of service (2-4 trains per day). Overall, intercity rail services do not serve as many passengers as the commuter trains (the "Northlander" about 40,000 per year and the "Cascades" corridor services about 750,000). In both cases, intercity rail service is an overlay on top of freight service on the same tracks. The "Northlander" also overlaps a tourist service (included in Section 4.3) and the Cascades corridor overlaps the "Sounder" (see Section 4.1) in the Seattle region.

Passenger Rail examples can be compared with current VIA service in the corridor:

- Amtrak 'Cascades' – 750,000 per year; 650 km, several large cities.
- Ontario Northland – 40,000 riders per year, connects Toronto to Cochrane.
- Service in / out of Vancouver is less than daily to the rest of Canada, once / twice per day to Seattle.
- Current VIA demand on daily Island service is 44,000 riders over 230 km, serving one large city.
- All of these receive funding from fares and government subsidy.

2.3.3 TOURIST RAIL

The tourist rail analysis conducted for this section included 4 rail systems:

- Whistler Mountaineer, BC;
- Polar Bear Express, ON (45,000 passengers per year in Northern Ontario; receives Fed. and Ont. government support because it serves areas in Northern Ontario with no roads, but ridership is low);
- Algoma Central – Agawa Canyon, ON; and
- Whitepass and Yukon, YT. This carries over 400,000 passengers per year, serves a large portion of cruise ship market; operates several variations of trip and makes a profit due to scenery being a major attraction for the tour operations.

Tourist services tend to operate as scheduled excursions, and these are often designed to suit the schedules of travellers visiting popular tourist cities or stopping over on cruise ships. Many of the tourist rail systems operate a single train per day and only "in season"; however, short-turn excursions are also possible where the track allows for trains to turn back and pass each other. For instance, the Whitepass & Yukon operates 3-4 daily trips, some of which are only 3-4 hours long. The length of the service is significant because tourists (especially from cruise ships) may have to fit their activities – the rail trip plus any related activities such as cultural or historic sites along the route - within a certain time frame. In the case of each of the examples, the primary attraction of the trip was the scenery, followed by the rail experience.

2.3.4 FREIGHT SERVICES

The freight rail analysis conducted for this section included 3 rail systems:

- Okanagan Valley, BC;
- Hudson Bay, MB; and
- Alaska Railroad, AK.

These three freight rail systems exhibit large variance in their characteristics. For example, the length of the route for the investigated systems varies between 150 km and over 1,300 km. The difference in the amount of commodities hauled by each line is even larger than the difference in length; the systems reviewed shipped anywhere between 260 thousand tonnes and 5.5 million tons per year. In addition, some railway lines combine freight with passenger services while others do not. In all three cases, the goods being moved include bulk commodities such as grain, and in two of the three cases the rail services are linked to marine operations to transport bulk goods and/or carry rail cars on barges.

Freight Rail benchmarking looked at short lines railways across Canada, in comparison with current loads on the E&N Railway:

- Canadian short line railways carry 900 to 216,000 rail cars per year.
- Per-km number of railcars ranges from 4 to 2,300 per year.
- Current operation on E & N is 900 railcars, 4 per line-km.
- 80% of the railways operate well above 40 per line-km per year.
- E & N would have been closer to that level when forest products were still carried.

3. INVESTIGATION OF RAILWAY BUSINESS LINES

This chapter highlights the principal findings of the technical investigations carried out with regard to goods and people movement, including the freight analysis, passenger services, tourist excursion trains, and commuter rail implementation requirements.

3.1 Freight

Interviews with industry representatives suggest there may be opportunities to expand freight movement on Vancouver Island. While the primary driver of the Island economy had been the forest industry, emerging markets in both mining and agriculture (feed and fertilizers) may present an increased and more balanced portfolio of freight products that could be shipped to North American and possibly Asian markets via the Island railway and barge operations to the mainland, or shipped from North American suppliers to markets on the Island.

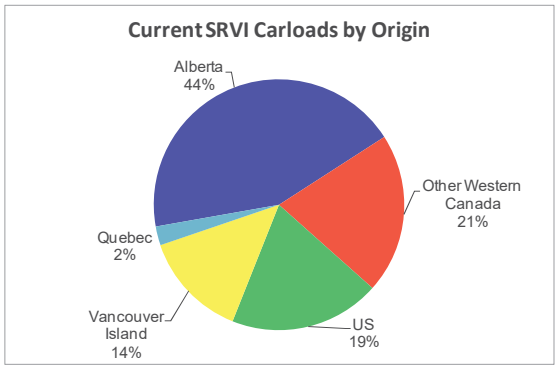
3.1.1 RECENT TRENDS AND CURRENT MARKET

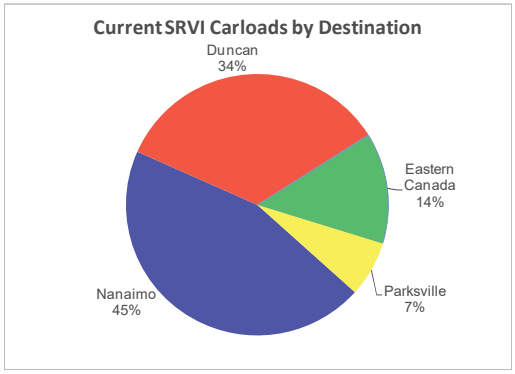
Demand for inbound freight services is linked to population growth on the Island, whereas outbound demand is related to the competitiveness of locally produced materials and goods in North American and offshore markets. Consumer goods used on the Island are mostly imported by truck using ferry and barge services from the Lower Mainland. Exports take place from vessels in Nanaimo or Port Alberni, and on trucks using the ferry and barge services.

The trucking mode has exploited its dominance in delivering inbound consumer goods, many of which require door-to-door delivery, and has started carrying outbound forest products on what had been empty trucks The forest sector is the largest on the Island but the pulp and paper industry shifted to trucks (due to lack of agreement on costs for rail service improvements) in 2002, reducing rail volumes by nearly 90% and resulting in the end of freight service on the Port Alberni line.

Rail is now a marginal player, with only 900 train car loads per year, with revenue of approximately $1.1 million. SRY estimates that a sustainable stand-alone freight operation would require approximately 20,000 carloads and revenue of approximately $15 million. Current traffic is concentrated between Duncan, Nanaimo and Parksville and includes grain, propane and fertilizer from Alberta, silicates from Quebec, and outbound poles destined for Ontario. The origins and destinations of current SRVI traffic are shown in **Exhibit 3.1**. Currently inbound traffic far exceeds outbound, at 86% of total traffic.

Exhibit 3.1 - Origins and Destinations of Current Rail Freight





Lower value bulk commodities travelling medium to long haul distances are best suited to rail because these are less sensitive to transit time and rail becomes more efficient and competitive over longer distances.

The feasibility of the E&N Railway capturing a larger share of longer-haul freight movements is largely dependent on the marine linkage to the mainland. The assumption of operating responsibility for the railway by Southern Railway of BC has enhanced the potential for close coordination with Seaspan Coastal Intermodal services through their corporate linkage as parts of the Washington Group. Until recently, delivery of products to and from the mainland using rail service was hampered by the low frequency of barge operations to the Tilbury terminal, which was purchased by Washington Group from CP. Rail freight service has been effectively limited to one sailing per week due to infrequent deliveries of railcars to Tilbury by CP from the Port Coquitlam yard. The resulting single weekly sailing substantially increases transit time for rail shipments on and off the Island. The impact has been particularly severe for shipments off the island, since empty cars must be delivered for loading one week and loads cannot be returned to the Mainland until the following week. This is expected to improve when a new barge ramp on Annacis Island opens. Construction of this facility started in mid-2009. The operator plans to have at least one mixed rail/truck barge per day.

Rail market share for freight depends on its ability to compete with truck and barge on time and costs, and relative shipping prices may change if fuel prices climb dramatically (but rail would not be immune to price pressures on fuel). The viability of freight services for various commodities will depend on overall demand for freight services, commodity types, shippers' service requirements, size of shipments, comparative costs, and the efficiency of multimodal transfers of freight between shipment origin and destination.

Analysis of other goods movement costs between the Island and the mainland, including ferry costs, suggests up to $1000 per full rail car load might be achievable in gross revenues. Typically, 80% of the fees cover the variable costs associated with providing the freight service and 20% contributes towards the fixed costs (and potentially the profits) of the railway system.

3.1.2 GOODS MOVEMENT ALONG THE CORRIDOR

To support an investigation of current and future rail freight market potential, goods movement data collection was carried out at two truck weigh scales (Duncan and Parksville) along the Island Highway, which runs parallel to the railway. The information collected included vehicle classifications and information related to the commodities being carried, including origin and destination. Key findings and conclusions derived from the survey follow.

There were relatively few trips either originating or destined to Victoria in the survey samples. This suggests that Nanaimo plays the dominant role as the freight transportation hub for the area surrounding the Island Rail Corridor, at least as far south as Duncan. It seems probable that the freight traffic handled at the Swartz Bay terminal is primarily destined for consumption in the Capital Region District and other areas in the South of the Island. From the Parksville survey, 67% of northbound loaded truck trips originated at Nanaimo and/or Lower Mainland locations, and 68% of southbound loaded truck trips were destined for Nanaimo and/or Lower Mainland locations. The Duncan survey showed similar results, with 68% of loaded trucks destined for Nanaimo and/or Mainland destinations.

The commodity distribution among loaded truck trips is very similar in the Duncan Northbound and Parksville Southbound survey results. The high proportion of forest products is consistent with Nanaimo's role as the export point for forest products via the ferry terminals. This traffic presents the greatest potential for capture by rail because it represents the most probable long term sustainable outbound freight flow from the Island, based on the Island's current industrial structure.

Table 3.1 – Commodity Types Carried by Truck on Parallel Highway

Truck Survey Commodity Distribution			
	Duncan NB	Parksville SB	Parksville NB
Forest Products	28.9%	27.1%	11.1%
Other	33.6%	33.9%	55.7%
Empty	37.5%	39.0%	33.3%

However, the types of individual products differ considerably between the Duncan northbound survey results, which indicate that lumber is the largest commodity at 10% of loaded trucks, and Parksville southbound in which paper predominates, with a similar percentage of loaded truck trips. This is consistent with the substantial sawmilling capacity in the Duncan area, and the location of the Catalyst paper plant in Port Alberni.

Using the results of the survey, highway traffic counts and truck classification, it was estimated that some 12,000 truckloads of forest products pass through to Nanaimo for export on the ferries or barges, equivalent to approximately 5,000 rail car loads per year. From our analysis of the location of major forest products industrial clusters, and the truck survey results, the major origins for this traffic are Port Alberni and the Cowichan-Chemainus-Ladysmith area between Duncan and Nanaimo. This implies that for this freight traffic (if these locations are to be served directly by rail) the Nanaimo-Duncan and Nanaimo-Parksville-Port Alberni sections of the corridor are of most importance.

3.1.3 POTENTIAL LONG TERM FREIGHT MARKETS

In addition to continuing existing freight service, several other opportunities were identified during the technical review and by stakeholders:

- There is some potential to serve forest mills in the Duncan area if spur lines were constructed, and forest mills around Port Alberni if that line were restored to service.

- Depending on future costs and ability to provide fast service, rail could serve a role in import of containers from Vancouver with consumer goods.

- Mining-related shipments from south of Courtenay for marine export through Port Alberni have also been noted as potentially significant traffic; the company planning to open a mine is studying two transportation alternatives in support of their proposal, one being rail service. A decision is expected before the end of 2009.

- Shipments of aggregates from the North Island to Victoria have also been identified as potential future traffic once other supplies (e.g. Sechelt) accessible by barge have been depleted. This traffic would require tracks and possibly some bridges to be upgraded south of Duncan.

- Several individuals at Open Houses indicated interest in trans-Island shipping of local food products; some wondered about light freight being carried behind the VIA service.

3.2 Passenger Services

The current passenger rail service along the corridor is limited to one daily train with one or two cars running north from Victoria in the morning and returning from Courtenay in the afternoon, carrying nearly 40,000 passengers per year. This is far below the potential capacity of the rail corridor, especially since it is only a single train per direction operating against the peak travel direction.

In parallel with this study, BC Transit in Victoria examined the potential for a short-haul commuter rail type service between Langford and Victoria, in the most densely populated segment of the corridor, one that comes with its own challenges such as grade crossings and speed restrictions. Nevertheless, such a service would increase passenger use of the corridor if the right operating conditions could be provided through corridor improvements and construction of passenger stations.

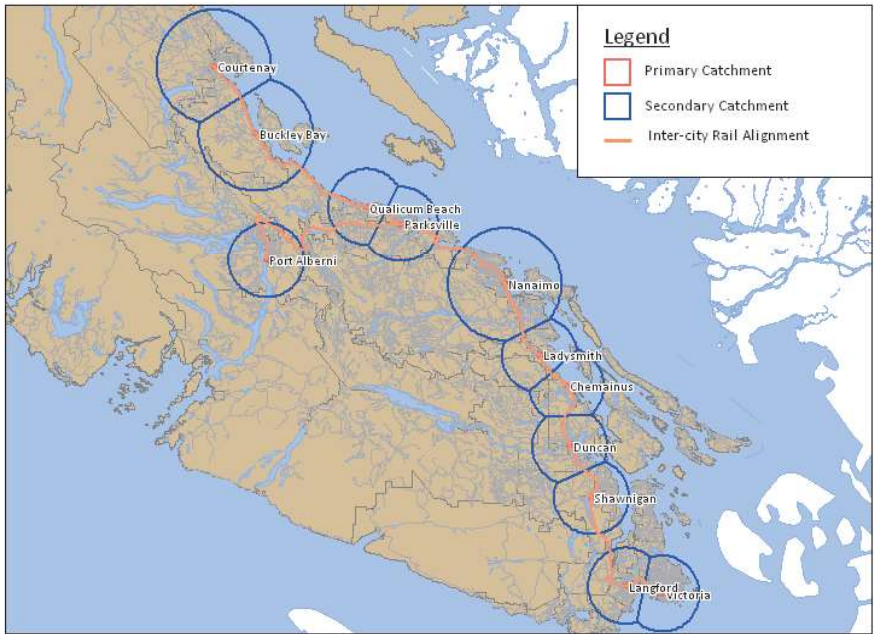
This study considered enhancements to both the intercity service and possible implementation of commuter rail, focusing first on ridership potential from several service concepts. A high-level description of results follows.

3.2.1 INTERCITY PASSENGER TRAIN SERVICE

The current VIA operation serves tourist and day-trip demands primarily originating in Victoria, as well as a limited number of residents prepared to stay overnight in Victoria. The train schedule is not suited to daytime business or appointments in Victoria, since the train leaves Victoria at approximately 8 a.m. and returns at 6 p.m. The current Budd railway cars date back over 50 years, lack wheelchair accessibility, and do not accommodate passengers with bicycles well. There are currently 40,000 annual passengers, which has increased over recent years.

Data relating to recent boarding activities on the VIA service was used as a starting point for estimating future intercity passenger ridership associated with a range of possible service levels. A model was calibrated against current ridership and then applied to potential types of service and future population estimates. Catchment areas around important stations were defined, assuming that the focus would be on locations with significant boarding activity and/or station facilities as opposed to several flag stops used by only a handful of passengers per year. **Exhibit 3.2** illustrates the stations that were included in the intercity ridership analysis. The catchment area is where the majority of passengers come from that are being served by the rail service.

Exhibit 3.2 - Intercity Passenger Service – Major Stops and Areas Served



An investigation of service options and ridership potential focused on enhancing the service to match other types of demand and accommodate the growing population. Overall population growth is approximately 25% [Stats BC, PEOPLE 33] along the corridor from 2006-26.

Table 3.2 summarizes the 2026 horizon year ridership estimates for the following service scenarios:

1. Base Scenario. The base scenario is equivalent to the existing service with one train leaving Victoria in the morning and returning from Courtenay in the evening. This is an off-peak service oriented mostly to tourists.

2. Moderate Scenario. The moderate scenario includes an additional train leaving Nanaimo in the morning inbound to Victoria, which continues on and does the full route, returning to Nanaimo in the evening. This adds an important intercity 'commute' option.

3. Aggressive Scenario. The aggressive scenario builds on the moderate scenario, and includes a third train leaving Nanaimo northbound and making a full round trip through the corridor.

4. Port Alberni Scenario. The Port Alberni scenario is similar to the moderate scenario except one train operates a round trip between Port Alberni and Victoria while the other train operates along the Courtenay-Nanaimo-Victoria axis of service.

5. TOD Scenario. The TOD scenario is based on the moderate scenario, and assumes population increases are higher than average within the primary catchment area of the stations, with less development farther away from the stations. This produces somewhat higher potential ridership than the moderate scenario.

Table 3.2 - Intercity Passenger Rail Ridership Estimates

Station	2006 Avg. Ons	2026 Base Brdgs	Moderate Brdgs	Aggressive Brdgs	Port Alberni Brdgs	TOD/Mod Brdgs
Victoria	115	130	460	585	585	545
Langford	8	10	40	50	50	45
Shawnigan	2	5	5	10	10	10
Duncan	12	15	55	70	70	70
Chemainus	9	10	40	50	50	50
Ladysmith	3	5	15	20	20	20
Nanaimo	25	30	115	150	150	130
Parksville	11	15	40	65	65	45
Qualicum Beach	18	25	60	110	85	75
Buckley Bay	2	5	5	10	10	5
Courtenay	64	85	225	395	310	270
Port Alberni	0	-	-	-	50	-
Peak Season Daily	**268**	**335**	**1,060**	**1,515**	**1,455**	**1,265**
Annual	**40,200**	**50,000**	**159,000**	**227,000**	**218,000**	**190,000**

Recent ridership amounts to 40,000 passengers a year with large concentrations near the ends due to tourists making Victoria-Courtenay round trips. If this simply grew with the population but service was not improved, a low-end ridership of 50,000 is quite achievable (Base Scenario #1). By tapping into the real travel market (personal and other business trips into Victoria and Nanaimo), the enhanced services (Scenarios #2 to #5) have potential ridership in the range of 159,000 to 227,000 per year in 2026 or more, as shown in Table 3.2.

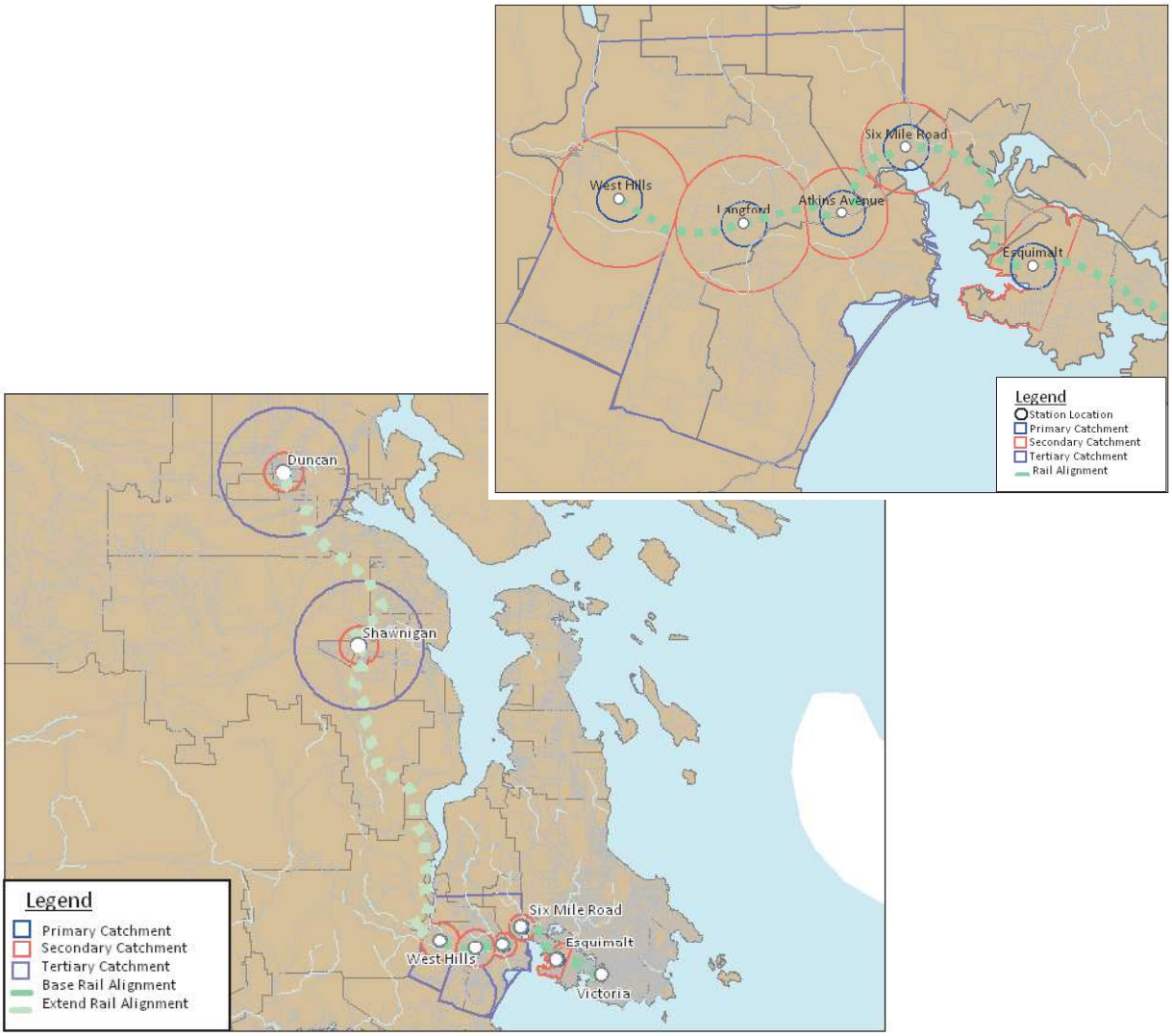
Longer term potential (e.g. 50 years) depends on the extent of linkages between cities and towns in the corridor. If rail service were maintained and expanded over several decades this could tap into rising median age and higher propensity to ride public forms of transportation. Rail volumes could be 50% - 100% higher in the long term, driven by population increases as well as higher environmental costs of private transportation.

3.2.2 COMMUTER TRAIN – POTENTIAL RIDERSHIP

The commuter service concepts studied were intended to be compatible with the BC Transit Victoria Regional Rapid Transit Project (VRRTP). In addition to using intercity services to carry commuters, other services to / from Victoria were evaluated in this study. Ridership estimates were prepared using a customised direct demand model that has been calibrated against other existing commuter rail services. The model uses the station catchment area population and employment as inputs, and accounts for comparative travel times and commuter rail service attributes. Demographic projections for 2026 were based on the CRD data sets used in the regional travel demand forecasting model.

Exhibit 3.3 illustrates the station areas that were included in the commuter rail analysis, including the six stations (Westhills-Victoria) along the base alignment, and extended service from Duncan to Victoria.

Exhibit 3.3 - Commuter Rail Passenger Service – Stations and Areas Served



Six scenarios were tested for the 2026 horizon year, and are summarized below in **Table 3.3**:

1. Base Scenario. The base scenario has trains operating on 30 minute headways, with a West Hills – Victoria travel time of 30 minutes. Off-peak service is provided in the late morning and evening time (6-11 AM and 3-8 PM span of service)

2. High Frequency Scenario. The aggressive scenario includes additional improvements to the rail infrastructure which allows trains to run on 20 minute headways. The other model parameters are identical to the base scenario.

3. Minimal Improvements Scenario. The minimal improvement scenario includes only minimal improvements made to the existing rail infrastructure resulting in a run time of 40 minutes. The other model parameters are identical to the base scenario.

4. Limited Stop Scenario. The limited stop scenario tests a 4 station alignment with stations at Victoria, Esquimalt, Six Mile Road and Langford. The other model parameters are identical to the base scenario.

5. Duncan Scenario. The Duncan scenario includes one of the peak trains from the base scenario providing service through Duncan. The other model parameters are identical to the base scenario.

6. TDM Scenario. The TDM scenario doubles the trip rate factors for each catchment area. The other model parameters are identical to the base scenario.

Table 3.3 - Commuter Rail Service Concepts and Passenger Forecasts

Commuter Rail Scenario	*Headway (min)*	*Run Time (min)*	*Stations*	*Off-Peak Service*	AM Peak Hour	AM Peak Period	2026 Daily	2026 Annual
1. Base 2026	30	30	6	Yes	295	420	1,050	262,500
2. High Frequency	20	30	6	Yes	330	475	1,190	297,500
3. Minimal Improvements	30	40	6	Yes	260	370	925	231,250
4. Limited Stop	30	26	4	Yes	150	215	535	133,750
5. Duncan	30	30	8	Yes	380	540	1,350	337,500
6. TDM	30	30	6	Yes	540	770	1,925	481,250

A ‘base’ conceptual service (Scenario 1) operating on 30-minute headways and taking 30 minutes to travel from Westhills to Victoria has an estimated annual ridership in 2026 of 260,000 passengers; this assumes track upgrades. Without track upgrades, a travel time of 40 minutes would be provided (Scenario 3) and would yield 15% fewer riders (running this many trains without improvements would likely be infeasible). Against the current travel market, ridership would be 700 per day or 175,000 annually. Other scenarios would likewise be 35% lower in riders.

In Scenario 2, increasing the frequency from 2 to 3 trains per hour per direction could result in a further ridership increase of about 40,000 annually (about 13.5%). In Scenario 4, two of the stations are dropped and one of these (Westhills) had been attracting significant ridership, thus reducing ridership by approximately 50%.

Providing a daily commuter train to and from Duncan in addition to the frequent Victoria-Westhills service (Scenario 5), will result in approximately 75,000 extra riders, compared to the base 30-minute service.

3.2.3 POTENTIAL CHANGES IN LAND USE TO SUPPORT RIDERSHIP

As shown in the TOD scenario, ridership could be higher with more employment and residential population concentrated near the stations. Land use in Victoria is consistent with a commuter rail destination. If employment could be brought closer to the station (or vice versa) ridership potential would be higher. On the other hand, the City is unsure of the terminus location, with options near the current site, challenging ones further east but more central, and less desirable but easier to construct ones outside the downtown area. Land use policies and plans in the City of Langford are mostly supportive of hosting a commuter rail/transit hub in the centre of the city. Evolution from current land uses will take time but the framework exists.

View Royal and Esquimalt is more challenging to support commuter rail. In the case of the former, the alignment runs alongside and through water bodies and regional parks, and lower density residential areas. In the case of the latter, the stop is more of an employment destination, but one with non-standard working hours. Land use in other municipalities along the corridor is largely tied to industrial uses, such that there is limited potential for more residential-based TOD developments in these areas.

3.3 Tourist Excursion Trains

There is already an existing tourist train operation based in Port Alberni that connects to MacLean's Mill and also serves a local winery. It carries some 11,000 passengers per year, and not including admission costs to the Mill, the railway operation itself earns gross passenger revenues of approximately $150,000 per year. Riders on this train either make their own way to Port Alberni or are bused in, usually from Nanaimo. The operator has a concept for service expansion to Parksville that would require additional rolling stock and facilities, and is contingent upon repairs and upgrades to the unused part of the Port Alberni line.

Surveys of tourists and residents asked about travel on Vancouver Island and interest in a train excursion concept; the sample excursion was modeled on successful practices elsewhere on the West Coast. Excursions might require a bus connection to an attraction or event (e.g. Duncan, Chemainus) where passengers are taken from the train to the ultimate destination.

One likely possibility for a new tourist train excursion would be a day trip and/or half-day trip based out of Victoria, to take advantage of the large tourism market, estimated at 3.5 million visits annually. There is some market potential for a new Victoria-based tourist train excursion on the E & N Railway line, but this potential is estimated to be low to moderate, based on surveys of visitors and residents. The percentage of people indicating they would "definitely purchase" the excursion was relatively small at about 15%. Furthermore most would be willing to pay only $60 or less for a half-day excursion and no more than $120 for a full-day excursion.

Interviews with tour operators indicated low to moderate potential, depending on type of operator. Major group tour operators often did not view the Victoria-based tourist train as a high-profile enough rail excursion to include in their itineraries. Price points for those interested in the tour were low at $50-$60 for half a day and $100-$150 for a full day. Interviews with cruise line officials showed that there is currently limited interest of including a Victoria-based tourist train excursion in their offerings. This is related to timing of cruise ship visits to Victoria and already established train excursions elsewhere on many of the cruises. There appears to be more enthusiasm for such a service once a planned new cruise ship terminal opens in Nanaimo.

The most effective positioning of a service would be as the "E & N Heritage Railway". The heritage theme would need to be extended to every aspect of the tourist train excursion including the look of the train, period uniforms/costumes worn by staff, and information provided in commentary and handouts. The current VIA Rail service is used and considered adequate by some tour operators, so continuation of this or a similar service would provide direct competition to any new tourist train service, making it much more difficult to achieve a viable operation. Expanded VIA service that allows faster round-trip returns to Victoria or Nanaimo might be the best way to serve train excursions. This service could be combined with the intercity service as presented in Section 3.2.

As indicated in **Table 3.4**, the upper end passenger potential of a new train is estimated at 8,000-13,200 passengers for a 100 day operating season per year (assuming there is no competing train service such as the VIA rail). This translates to revenue of $533,000 - $847,000 per year from operating mostly half day excursions along with some full day excursions, as shown in Table 3.4.

Table 3.4 - Estimated Market Potential for Victoria-Based Excursion Trains

Market Segment	No. of Passengers per Season	Average Fare Revenue per Person	Total Revenue
Individual Visitors to Vancouver Island	4,000-5,000	$75	$300,000 - $375,000
Vancouver Island Residents	1,000-1,500	$65	$65,000 - $97,500
Group Tour Operators	1,200-1,500	$55	$66,000 - $82,500
FIT Tour Programs	600-1,200	$60	$36,000 - $72,000
Cruise Ship Shore Excursions	1,200-4,000	$55	$66,000 - $220,000
Total	**8,000-13,200**	**n/a**	**$533,000 - $847,000**

Another promising prospect for a tourist train may be expansion of the Alberni Pacific Railway, because the operator is already in place and there are several supporting factors that could feed the tourist market: scenery is preferable along this route to that through the Malahat; service could tap into beach resort towns such as Parksville, and there is a significant flow of traffic between the existing ferry service in Nanaimo and Pacific Rim Park/Tofino; a cruise ship terminal is planned and has received funding in Nanaimo; and finally, there is the prospect of connections to VIA service at one or more of these locations.

3.4 Commuter Rail

The BC Ministry of Transportation has published a ***Provincial Transit Plan*** that includes goals related to sustainable development, mode shift away from the private automobile and towards public transportation, and reduction of greenhouse gas emissions. These objectives provide a link between this study and the concurrent BC Transit Victoria Regional Rapid Transit Project. The commuter rail service is not considered to be a rapid transit alternative because it would not operate 18 hours per day, 7 days per week, at a frequency of 15 minutes or less. However, it could serve as a complement for longer-distance trips within certain travel markets.

As input to this study, BC Transit defined target service parameters for commuter rail within the Capital Region, including six station locations, a 30-minute frequency, and 30-minute running time. In addition, the analysis factored in the corridor condition, rail operating requirements, and accommodating other traffic such as VIA intercity services.

Exhibit 3.4 is a map of the E & N Railway indicating the concepts for commuter rail: one with six stations; one including only four, and one with service extended beyond Langford to Duncan. **Table 3.5** summarizes the set of service parameters used in the commuter rail assessment. A target travel time of 30 minutes between Langford and Victoria was established and an assessment of the corridor was carried out to determine the track improvements required to achieve this target running time, within appropriate safety standards.

Table 3.5 - Initial Commuter Rail Service Parameters

Service Parameter	Assumed Value/Range	Comments
Hours of service (weekdays only)	6:00 am to 11:00 am	Eastbound/Inbound peak service
	3:00 pm to 8:00 pm	Westbound/Outbound peak service
Service Headway	30 minutes	Peak period headway

Due to several factors, including numerous grade crossings with limited grade crossing protection, back-to-back curves in the alignment, and a combination of the two in several places, speed limit restrictions are currently imposed on the corridor. In combination with a slow operating requirement at the Johnson Street lift bridge, this results in a 'best case' running time of 36 to 48 minutes in the peak and off-peak directions respectively if only minimal improvements are made.

Improving the corridor to achieve the targeted 30 minutes travel time would require restoration of the ballast, ties and track to return it to a sustainable condition requiring only routine maintenance. In addition, many of the existing grade crossings would require flashing lights and/or gates to allow faster train operations. This would affect up to fifteen locations, and of these, up to four could require grade separation depending on safety reviews that would be undertaken by the BC Safety Authority upon filing of an operating plan.

Due to the frequency of train service in the test concepts, trains would ideally need to pass at four new locations, requiring local double track, and storage sidings would also be needed at the terminal stations. A signal/control system would have to be installed to safely operate the commuter rail fleet due to the passing requirements and frequency of service.

Eight to twelve self-propelled rail cars operating in 2 or 3-car trains would be needed to provide the 30-minute frequency (allowing for travel time and layover), and maintain a spare train. Examples of potentially suitable vehicles have been deployed for diesel 'light rail' and commuter rail in Ottawa, Portland and north San Diego County (among others). These trains would require a light maintenance and storage facility along the alignment.

New stations would be needed including staff facilities at Westhills and a combined intercity/commuter station in Victoria. From a passenger perspective, having the Victoria station closer to the commercial core and employment (Douglas Street) would be preferable, but this would require significant changes to city streets to dedicate areas for tracks and an in-street station. A provisional stop southeast of Johnson and Wharf is assumed at this time. Extending the alignment farther east could cost in the order of $15 to $30 million, assuming an at-grade solution addressing proximity to historic buildings, foundation/geotechnical issues, potential changes to traffic patterns and operations on adjacent and parallel streets, accesses to buildings and parking garages. A grade-separated extension would be cost-prohibitive as it would likely need to become elevated west of the harbour (due to grade limitations for rail) to clear Wharf Street, and then running on viaduct over city streets would have construction challenges and likely meet with strong resistance. Running underground would require starting a railway tunnel west of the harbour with an even more prohibitive cost.

Exhibit 3.4 - E & N Commuter Rail Study Corridor

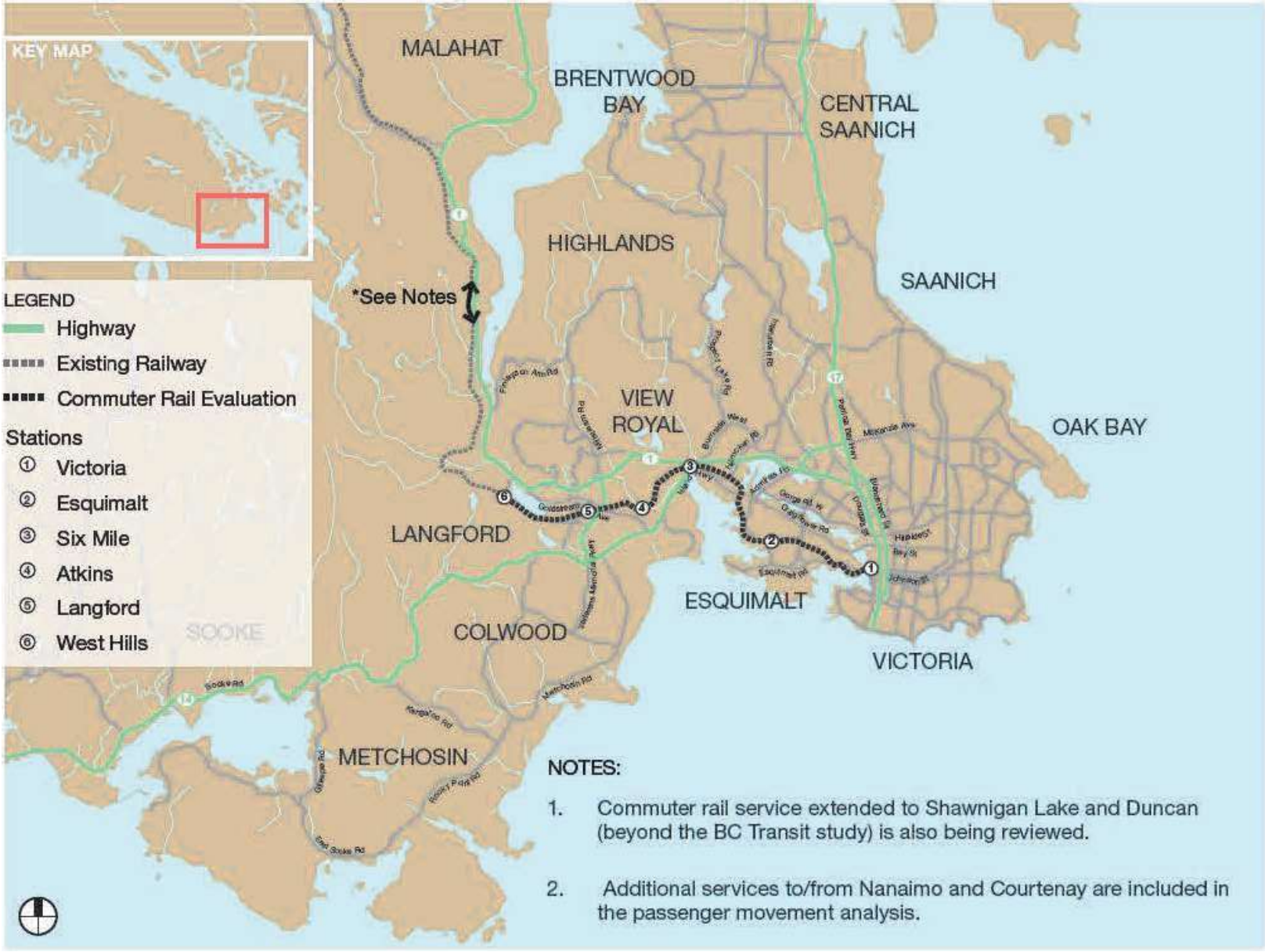


Table 3-6 summarizes the capital cost estimates for the system. This planning-level estimate has been developed in conjunction with the baseline conditions update, and includes restoration of the railway corridor from Victoria to Langford, and additional improvements and equipment related specifically to commuter rail service. Costs for transit exchanges and parking were estimated by BC Transit.

Table 3.6 - Commuter Rail System, Victoria-Langford – ROM Costs

Improvement Element	**Minimum System** (13km, shorter trains, 4 stations)		**Expanded System** (17km, longer trains, 6 stations)	
	Low	**High**	**Low**	**High**
Site Survey	$ 50,000	$ 50,000	$ 60,000	$ 60,000
Vegetation Removal	$ 110,000	$ 110,000	$ 140,000	$ 140,000
Environmental Remediation	$ 240,000	$ 260,000	$ 320,000	$ 320,000
Slope Protection	$ 140,000	$ 150,000	$ 190,000	$ 190,000
Track/Ballast Rehabilitation	$ 2,140,000	$ 2,280,000	$ 2,850,000	$ 2,850,000
Passing and Tail Tracks	$ 1,860,000	$ 1,860,000	$ 2,480,000	$ 2,480,000
Grade Crossing Upgrades	$ 2,780,000	$ 3,150,000	$ 3,700,000	$ 3,700,000
Signaling/Communications	$ 800,000	$ 850,000	$ 1,060,000	$ 1,060,000
Culverts and Drainage	$ 110,000	$ 110,000	$ 140,000	$ 140,000
Bridge Upgrades (Minor)	$ 200,000	$ 210,000	$ 260,000	$ 260,000
Fencing (Restoration)	$ 70,000	$ 70,000	$ 90,000	$ 90,000
Stations (excluding parking)	$ 1,880,000	$ 2,200,000	$ 3,140,000	$ 3,140,000
Transit Exchanges/Parking	$ 11,000,000	$ 15,500,000	$ 11,000,000	$ 15,500,000
Fare Collection	$ 420,000	$ 450,000	$ 560,000	$ 560,000
Maintenance/Storage Facility	$ 5,970,000	$ 6,370,000	$ 7,960,000	$ 7,960,000
Spare Equipment	$ 2,250,000	$ 2,400,000	$ 3,000,000	$ 3,000,000
Operations Preparation	$ 380,000	$ 400,000	$ 500,000	$ 500,000
Construction Estimate	*$ 30,400,000*	*$ 36,420,000*	*$ 37,450,000*	*$ 41,950,000*
Design, Management, Insurance	$ 7,300,000	$ 8,740,000	$ 8,990,000	$ 8,990,000
Subtotal	$ 37,700,000	$ 45,160,000	$ 46,440,000	$ 50,940,000
Contingencies	$ 9,430,000	$ 11,290,000	$ 11,610,000	$ 12,740,000
Allowance for Grade Separation	*$ -*	*$ 50,000,000*	*$ -*	*$ 70,000,000*
Vehicles (self-propelled)				
4 two-car trains	$ 22,400,000	$ 22,400,000		
4 three-car trains			$ 32,000,000	$ 32,000,000
Total	$ 69,530,000	$ 128,850,000	$ 90,050,000	$ 165,680,000
Allocation to Vehicles and Facilities (including contingency)				
Vehicles	$ 22,400,000	$ 22,400,000	$ 32,000,000	$ 32,000,000
Fixed Facilities	$ 47,130,000	$ 106,450,000	$ 58,050,000	$ 133,680,000
Fixed Facilities, per km	*$ 3,600,000*	*$ 8,200,000*	*$ 3,400,000*	*$ 7,800,000*

The minimum system corresponds to the 4-station scenario ending in Langford (Peatt Avenue), and as such, shorter trains and improvements scaled back to 13 km are included. The 'expanded' system includes 6 stations, longer trains, and addresses the full set of track improvements from earlier in this section.

The estimated costs range from $70 million to $90 million for a basic commuter rail system with 4 to 6 stations. (These costs are shown in the 'low' columns.) The range of average costs for the fixed facilities, $3.4 to $3.6 Million per kilometre, is similar to the implementation costs for the O-Train in Ottawa and the Westside Express Service near Portland. Other commuter rail systems have seen costs as high as $20 million per kilometre where significant corridor and station construction was required, and right of way drove up the average costs. Capital cost estimates for facilities and track are fairly typical for cities restoring passenger service. Cost of passenger cars varies depending on how many cars per train you select, and what is built into purchase price; smaller operations tend to include provision for parts exchange.

In addition to the basic costs shown in the 'low' cost estimates, there may be potential grade separation costs. These typically cost $15 to 20 million per location depending on the layout and associated right of way needs.

Operations for 10 hours per day, 250 days per year at a 30-minute frequency would amount to 7,500 train-hours of service per year and would cost approximately $3.5 million annually (2009 $).

Extensions to Duncan (adding two stops) might be achievable at lower average costs provided the rest of the corridor could undergo less rigorous repair and upgrading, meaning the trains would be no faster than the current VIA service. A rock fall warning system for the Malahat segment would likely be required to support such a service extension.

Ridership estimates drawn from the passenger analysis, in conjunction with the estimated costs, suggest the service concepts would have a fairly high per-passenger initial cost to implement. The annualized value of capital costs and operations would be $9.5-$11.5 million (2009 $ + inflation for future costs) over a 25-year life for the improvements and rail cars (assuming no new grade separations). The resulting average cost would be $50-60 per passenger trip, where the operating cost portion would be $20-23 per passenger trip.

Lowering this average cost would require intensifying employment and population near the corridor. One could start by building ridership, evolving the service from a lower cost start point such as the VIA service with a commuter-friendly schedule.

Proposed E&N Rail Trail

ICF has signed an occupancy agreement with the Capital Regional District to install a rail trail in phases alongside the existing tracks. This has been designed to meet Transport Canada clearance requirements.

An initial assessment of the preliminary design suggests there is one potential conflict between part of the trail and one of the sidings (MP 3.65 - 4.00) the commuter rail concept proposed to retain. Operationally, increasing train frequencies in the corridor means that trail users may have to wait at the grade crossings of the trail and tracks that are included in the design, and with higher train volumes these grade crossings might require an upgrade to the passive warnings that are planned for these locations.

4. BASELINE CONDITION UPDATE

To provide the basis for the Canadian Pacific Railway's donation of its property and improvements to the ICF, appraisal studies related to the valuation of these assets were carried out during 2003 and 2005. These studies also included assessment of the condition of track, signals and associated railway facilities such as bridges and culverts. These were supplemented for this study by additional corridor visits in May, June and July to expand the scope of the technical investigation, confirm the current status of the corridor, and probe to see what improvements might be required given the early indications of what business lines would be under consideration as options.

This technical work not only updates the inventory, it provided a basis for the capital cost estimates for commuter rail (in Section 3.4) and other business lines (in Section 5.3).

4.1 Railway Corridor Condition

Island Corridor Foundation (ICF) is the current owner of the Esquimalt and Nanaimo (E&N) Railway on Vancouver Island. The railway is currently operated and maintained by the Southern Railway of Vancouver Island (SVI) based in Nanaimo, which has done so since July 2006.

As noted, the original tracks for the E & N Railway Corridor were placed over a hundred years ago. Much of the corridor was built to older standards than the ones applied to North American rails; therefore, in its present condition the E & N Railway Corridor does not meet the ideal loading standards for larger mainland railways. Moreover, infrequent usage and deferred maintenance of the railway by the previous owners caused deterioration of the infrastructure in some of the segments/subdivisions to a point where they are subject to slow operations or unusable. Exceptions include grade crossings funded by local authorities and areas where the railway was realigned due to construction of segments of the Island Highway. The most significant result has been that tie replacements have not been at a sustaining level, leading to speed limit reductions for train operations, particularly the freight.

Current capital and maintenance resources are too constrained to continue safely maintaining the track. The current maintenance personnel do the best job possible within limited resources, including some vegetation control and use of testing equipment to identify the worst sites of tie decay. The spot repair program has resulted in some improvements since 2006, but the overall corridor continues to age and deteriorate.

Overall, the track structure is in poor to fair condition. This is manifested by clusters of decayed ties and individual decayed ties under rail joints, worn and loose rail joints and frozen (rusted in place) bolts. Some passengers on the VIA trains notice swaying of the vehicle, which is due to the condition of the rail joints and ties. Over the length of the corridor, there are some 400,000 ties of which 35% are already defective and the remainder can be expected to reach their service life within 20 years.

The operator employs a pest management plan combining herbicides and mechanical brush removal, with mixed success at vegetation control depending on the kind of weeds that are growing in the corridor. Weeds in the ballast and under the ties prevent proper drainage and accelerate tie rot. Due to a lack of railway traffic over the past several years, the Port Alberni line is overgrown with vegetation.

Particularly in the Malahat segment, there are areas where trees fall onto the corridor or loosen rock slopes, resulting in debris on the track. This is currently handled by having the trains slow down and

stop when approaching known risk sites, but would be better addressed through a rock slope hazard risk mitigation plan.

The rail is a mix of 80 and 85 pound rail (129 miles) and 11 miles of 100 pound rail. This is not suitable for carrying heavier axle loads than present on the line; the current limit is 263,000 pounds whereas mainland railways accommodate freight cars up to 286,000 pounds. Not all freight traffic would require the higher loading standard (286,000 pounds) so complete replacement with 100+ pound rail might not be warranted.

Bridges require full inspections and structural re-rating before heavier axle loads could be contemplated. Some bridges date back before the corridor and were reassembled here after being in service elsewhere in Canada in the 1800's.

The freight railway yard is at Wellcox in Nanaimo, near the barge ramp. Only part of the yard is needed for service at low speeds and that part is maintained for safety. The VIA dayliner cars are stored and maintained at the roundhouse in Victoria.

Communications are by cell phone and radio, and trains are issued permission to proceed based on scheduled traffic over the corridor during the course of the day. This is normal for railways with light traffic. The corridor does not have electrical circuits on the tracks to support a signal and control system, except where associated with the automated grade crossings.

There are over 240 grade crossings in the corridor of which 93 have signals (flashing lights and sometimes gates). Some of the equipment at these signalized crossings is nearing the end of its service life.

Operating speeds are limited by track geometry as well as the condition of grade crossings, rock fall hazards, sightline limitations, and bridge and track condition. All of these could potentially be improved within the current right of way, except for the realignment of the tracks, and some currently imposed speed limits could be increased as a result of repairs (for example, several crossings in Victoria would increase from 10 to 30 or 40 mph).

4.2 Environmental Review/Issues

Environmental concerns along the corridor are typically related to former industrial activities along the railway, including several known spill sites and several buildings that could potentially include asbestos, PCBs, etc, lead or ozone depleting substances. There is an operational concern by some parties adjacent to the corridor related to the use of herbicides to control vegetation.

Because the corridor is already an existing railway, most works within the corridor would not trigger an environmental assessment; however, some mitigation could be required when work is done on structures over watercourses or where other natural resources could be disturbed during construction activities.

5. EVALUATION OF RAIL SERVICE OPTIONS

This section of the report builds on the technical studies and stakeholder input to define an incremental set of rail service options for each of the business lines. In order to evaluate investment strategies, compatible service options are grouped together since the output of the investments are generally increased when more than one type of service is introduced or expanded. The combined options are being evaluated for infrastructure, vehicle and operational requirements, the associated benefits, and high-level social, economic and environmental considerations.

5.1 Definition of Service and Corridor Improvement Options

Based on the technical investigations of the railway business lines and drawing upon suggestions from the Island Corridor Foundation stakeholders, the study team assembled a representative set of service options covering freight, intercity passenger, and tourist excursion and commuter rail services. A common theme heard throughout the study was that all business lines were open for consideration, and in conjunction with each other. Therefore, the evaluation combines the overlapping opportunities in different parts of the corridor.

5.1.1 BUSINESS LINE SERVICE OPTIONS

Table 5.1 presents the business line service options that have been identified for each of the business lines, namely:

- Freight, including existing loads and several potential markets identified during the study;
- Passenger (Intercity), ranging from existing to expanded service that would serve some business and commuter needs to Nanaimo and Victoria;
- Commuters, focusing on the largest employment market around Victoria;
- Tourist Excursions, including existing and future excursions;
- Other Uses, such as trails.

The table lists the individual options, then describes an example of the service, the scope of required railway infrastructure, the service requirements (e.g. trains), and the market(s) served. These have been carried into the next step, packaging compatible services together.

E and N Railway Evaluation - Foundation Paper
Table 5.1 - Service Options

Category	Options	Description/Example	Infrastructure Requirements	Service Requirements	Market(s) Served
Freight	Current traffic	900-1000 car loads per year, traffic between Nanaimo, Courtenay and Duncan	Repairs to track (to bring back to sustained maintenance)	Can be accommodated by existing	Long-haul freight market on/off island
	Forestry Products	Recapture portion of forestry product shipments to mainland via Nanaimo	Repair to track, Duncan to Parksville; for some shippers, restoration of line, Port Alberni	Depends on shipper needs	Long-haul market for forestry products
	Increased freight, central section	More shipments and heavier loads, Duncan-Parksville	Repairs to track (to bring back to sustained maintenance), some upgrades to rail e.g. at bridges; rail spurs to customers	Depends on shipper needs	Increased freight market in areas with more rail-compatible industries
	Mining	Coal shipments Union Bay to Port Alberni	Repair to track, north of Parksville; restoration of line, Port Alberni Weight needs to be limited to line capacity or cost may escalate	Depends on shipper needs	Long-haul market for mining products
	Freight beyond Duncan to Victoria	Aggregate train (after other pits are closed)	Repairs to track, possible upgrades to several bridges (would need to inspect, test and re-rate for capacity)	Depends on shipper needs	Increased freight market including Victoria

These options have been combined into packages of complementary/compatible services for evaluation

E and N Railway Evaluation - Foundation Paper
Table 5.1 - Service Options

Category	Options	Description/Example	Infrastructure Requirements	Service Requirements	Market(s) Served
Passenger	Current VIA	1 NB AM Victoria-Courtenay; same train returns in PM	Repairs to corridor (maintain safety)	Same trains	Minimal change from existing
	Enhance VIA schedule; add extra Nanaimo/Victoria run	1 SB early AM Nanaimo-Victoria, then NB to Courtenay, SB to Victoria, return to Nanaimo in evening	As above, possibly passing tracks where warranted by schedule	Longer operating hours; possibly more rail cars	Higher intercity including lon-distance commutes, more tourists
	Enhance VIA schedule both directions	Early AM trains SB Nanaimo-Victoria and NB to Courtenay; each train makes full run both ways ending in Nanaimo	As above, possibly passing tracks where warranted by schedule	More rail cars	Higher intercity ridership, more tourists
	Three VIA trips per day	Two trains make full round trip, third train serves Nanaimo-Victoria SB in AM; NB in PM	As above, possibly passing tracks where warranted by schedule	More rail cars	Higher intercity including lon-distance commutes, more tourists
Commuters	Enhanced VIA schedule	Intercity train SB in AM peak; NB in PM peak	As noted in "Passenger"	As noted in "Passenger"	As noted in "Passenger"
	Victoria-Langford Basic Service	30-minute frequency	Repairs, grade crossing improvements, stations, signals, sidings	Rail cars (8-12)	West Shore/Victoria commuters
	Victoria-Langford -Duncan	30-minute frequency to Langford; 1 train SB AM, NB PM to Duncan	Repairs, grade crossing improvements, stations, signals, sidings	Rail cars (8-12)	Cowichan Valley/West Shore/Victoria commuters
	Limited Victoria-Langford	Single train operating peak periods as shuttle	Repairs, grade crossing improvements, stations	Rail cars (2-3)	West Shore/Victoria commuters
	Limited Victoria-Duncan	Single train to Victoria (AM) and returning to Duncan (PM)	Repairs, grade crossing improvements, stations	Rail cars (3-4)	Cowichan Valley/West Shore/Victoria commuters
	Commuter Service to Nanaimo	Qualicum-Nanaimo Shuttle	Repairs, grade crossing improvements, stations	Rail cars (1-2), must be freight operations compatible	Nanaimo Regional District commuters

These options have been combined into packages of complementary/compatible services for evaluation

E and N Railway Evaluation - Foundation Paper
Table 5.1 - Service Options

Category	Options	Description/Example	Infrastructure Requirements	Service Requirements	Market(s) Served
Tourist Excursions	Existing Port Alberni	Alberni Pacific train operation, including steam engine/diesels, passenger cars	Uses existing track in/out of Port Alberni to McLean's Mill	Run by operator of AP	Port Alberni and some Nanaimo-based tourists
	Port Alberni - Parksville	Extend tourist train to main line at Parksville	Repairs and vegetation removal from Port Alberni Sub; storage track at Parksville	Depends on plans of potential operation	Port Alberni, some Nanaimo, and possible use by tourists connecting from VIA
	Port Alberni - Nanaimo	Extend tourist train through to Nanaimo	Repairs and vegetation removal from Port Alberni Sub; storage track at Nanaimo	Depends on plans of potential operation	As above, but potentially better market penetration
	Current VIA	Day trip from Victoria on current intercity train	As noted in "Passenger"	As noted in "Passenger"	As noted in "Passenger"
	Enhanced VIA schedule(s)	Day trip or half-day options using expanded set of intercity schedules	As noted in "Passenger"	As noted in "Passenger"	As noted in "Passenger"
	North-south operation based in Victoria	Could include Victoria-Duncan or Chemainus excursion	Repairs to track, Passenger facilities at ends of route, if not already available	Depends on plans of potential operation	Tourists visiting Victoria including some cruise ship-based
	North-south operation based in Nanaimo	Could include Nanaimo-Chemainus excursion	Repairs to track, Passenger facilities at ends of route, if not already available	Depends on plans of potential operation	Tourists visiting Nanaimo including some cruise ship-based (currently a smaller market)
Other	Expanded Rail Trails	ICF and Regional Districts sign occupancy agreements	Rail trail construction by Regional Districts	Safe Grade Crossings for trail users where rail service operates	Recreational - local and tourist

These options have been combined into packages of complementary/compatible services for evaluation

5.1.2 CORRIDOR IMPROVEMENT OPTIONS

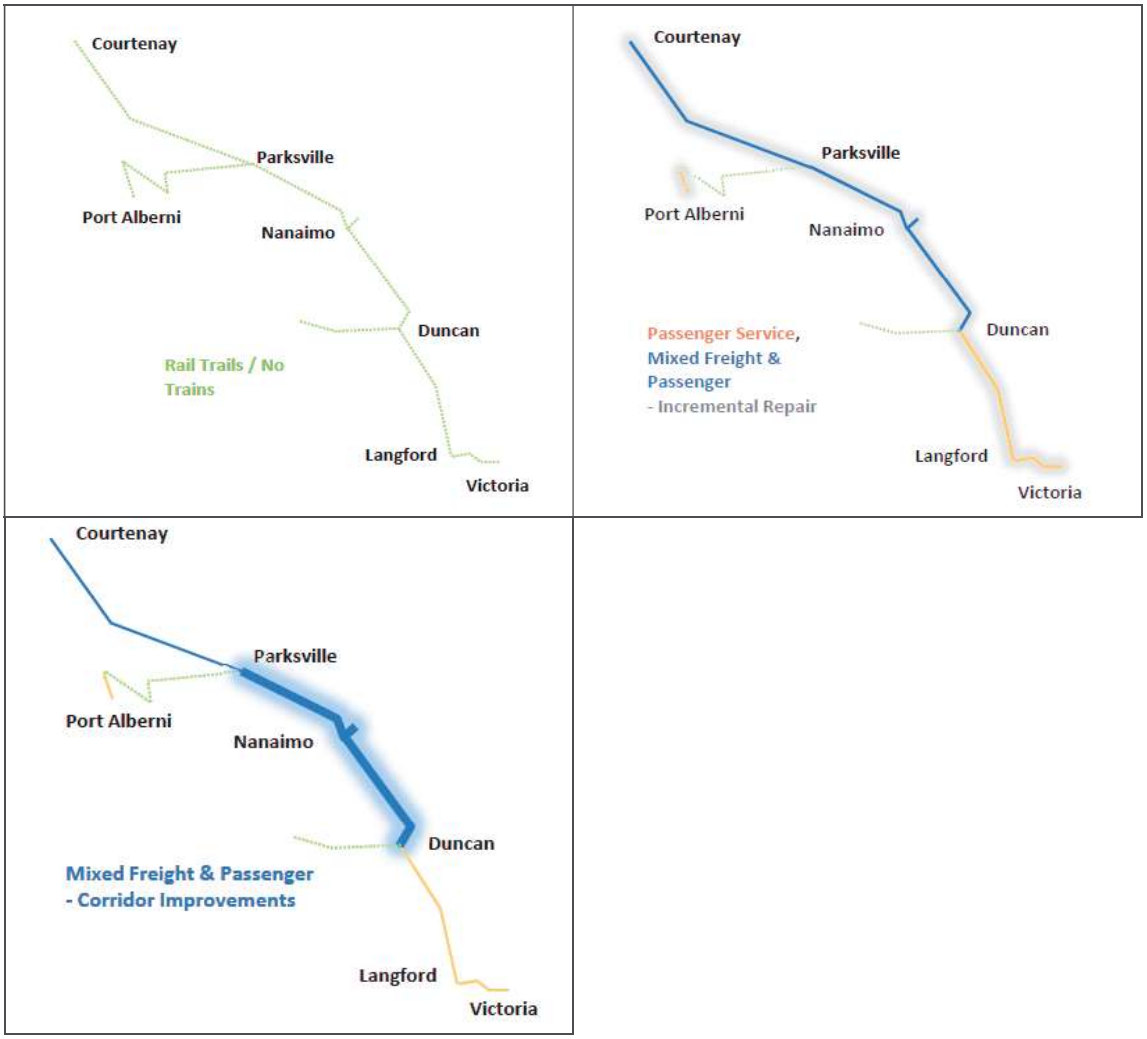
The corridor improvement options set up the evaluation of investments into corridor improvements, so they focus on different levels of activity and different portions of the corridor. **Exhibits 5.1 and 5.2** illustrate the options schematically. The seven improvement options evaluated include the following:

0. No Rail Baseline. In this option, rail service is discontinued for the time being and the corridor kept for recreational purposes. This has been indentified to provide a benchmark for the other service scenarios and identify the potential negatives of losing rail service.

1. Service Preservation. In this option, current levels of rail service are maintained, with some growth occurring due to outside influences such as development along the corridor.

2. Upgrade to Central Corridor (Victoria Sub). This scenario is built on restoring and improving the railway from Duncan to Parksville, to attract additional freight customers in the core section and allow better passenger service.

Exhibit 5.1 - E & N Corridor Options – No Rail, Service Preservation, Central Corridor



3. Central & Northern Corridor (Victoria Sub) + Port Alberni Improvement. This scenario adds the restoration of service on the Port Alberni line to improvements from Duncan to Courtenay on the main line. There is potential to attract forestry and mining-related business.

4. Limited Upgrades to Southern Corridor (Victoria Sub). This scenario addresses only the basic needs of the southern corridor, enough to improve passenger services including limited commuter service.

5. Extensive Upgrades to Southern Corridor (Victoria Sub). This scenario builds up the southern corridor to allow frequent passenger service and potentially some freight.

6. Full Corridor Upgrade. This scenario adds scenarios 3 and 5 together, effectively covering the entire corridor. This scenario has slightly less commuter service in lieu of additional intercity trains to provide the same movement for passengers.

Exhibit 5.2 - E & N Corridor Options – Central/Northern, Southern and Whole Corridor

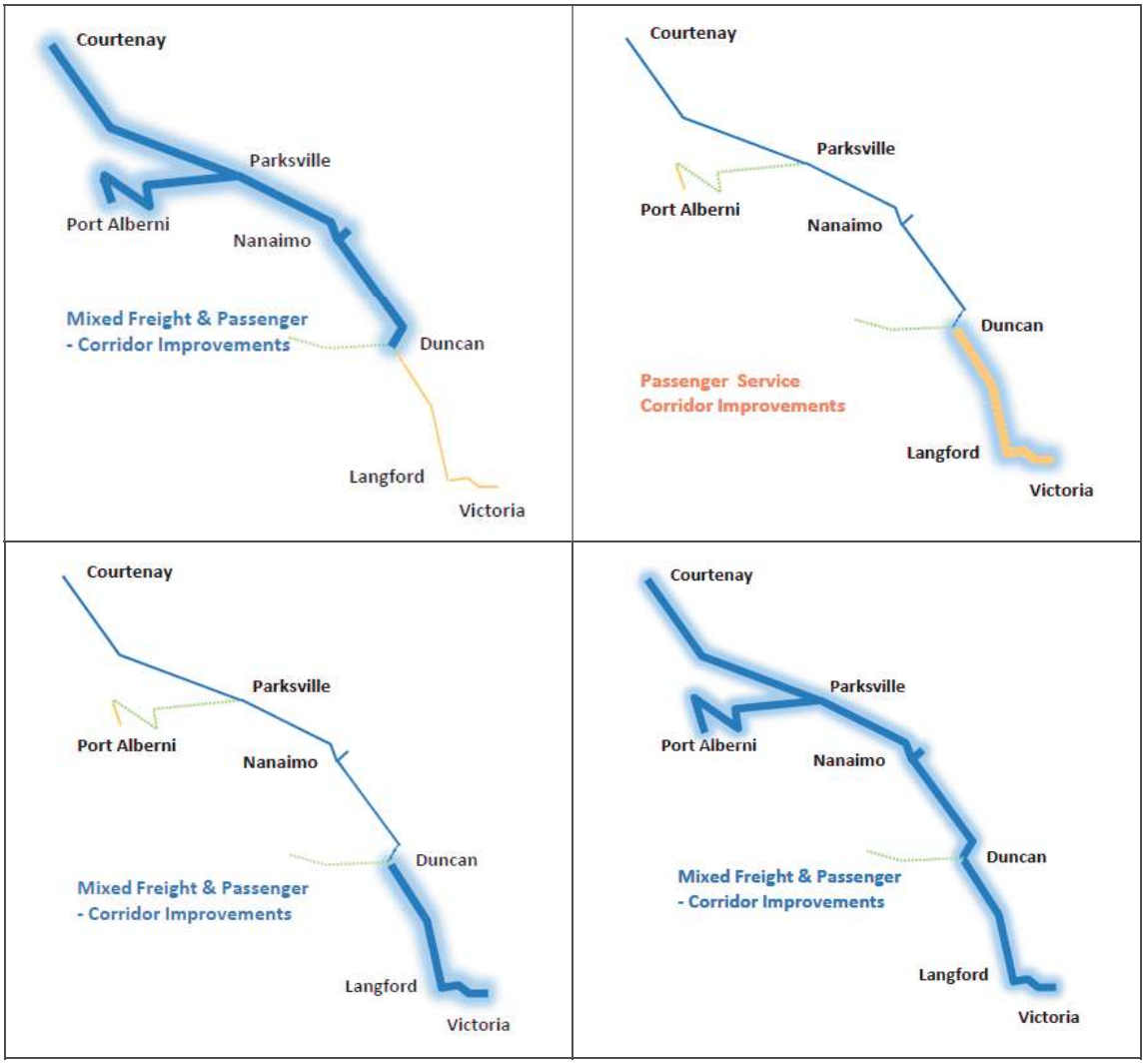


Table 5.2 presents the combined investment and service options that were evaluated.

E and N Railway Evaluation - Foundation Paper
Table 5.2 - Investment and Service Combinations

Investment	Service Combination	Description/Example	Infrastructure Requirements	Service Requirements	Market(s) Served
No Rail Baseline	Elimination of VIA Service	Intercity train discontinued	None/Other Modes	None/Other Modes	Reduced choice for intercity travel
	No Commuter Rail	VRTS operates other transit services; commuter rail not implemented	None/Other Modes	None/Other Modes	No change from existing
	No Tourist Train Excursions	Tourists currently using VIA switch to bus or do not make execursions	None/Other Modes	None/Other Modes	Reduced choice for excursions
	Phasing Out Freight	Freight shippers (by rail) switch to truck or barge	None/Other Modes	None/Other Modes	Reduced choice for freight shipping
	Expanded Rail Trails	ICF and Regional Districts sign occupancy agreements	Rail trail construction by Regional Districts	None	Recreational - local and tourist
Service Preservation	Current VIA Service	Current single train	Same repairs as noted below	At minimum, trains renovated/ repaired to address condition of vehicles	Minimal change from existing
	Existing Port Alberni	Alberni Pacific train operation, including steam engine/diesels, passenger cars	Uses existing track in/out of Port Alberni to McLean's Mill	Run by operator of AP	Port Alberni and some Nanaimo-based tourists
	Current Freight Service	Current traffic or similar levels	Increased rate of corridor repairs - to match rate at which components reach end of service life	Depends on shipper needs	Long-haul freight market on/off island (minimal change)
	Expanded Rail Trails	ICF and Regional Districts sign occupancy agreements	Rail trail construction by Regional Districts	Safe Grade Crossings for trail users where rail service operates	Recreational - local and tourist

E and N Railway Evaluation - Foundation Paper
Table 5.2 - Investment and Service Combinations

Investment	Service Combination	Description/Example	Infrastructure Requirements	Service Requirements	Market(s) Served
Upgrade to Central Corridor (Victoria Sub)	Enhanced VIA Schedule(s)	1 SB early AM Nanaimo-Victoria, then NB to Courtenay, SB to Victoria, return to Nanaimo in evening	Repairs to corridor (maintain safety), possibly passing tracks where warranted by schedule	More rail cars	Higher intercity ridership, more tourists
	North-south tourist operation based in Nanaimo	Could include Nanaimo-Chemainus excursion	Repairs to track, Passenger facilities at ends of route, if not already available	Depends on plans of potential operation	Tourists visiting Nanaimo including some cruise ship-based (currently a smaller market)
	Increased freight, central section	More shipments and heavier loads, Duncan-Parksville	Repairs to track (to bring back to sustained maintenance), some upgrades to rail e.g. at bridges; rail spurs to customers	Depends on shipper needs	Increased freight market in areas with more rail-compatible industries
Central & Northern Corridor (Victoria Sub) + Port Alberni Improvement	Enhanced VIA Schedule(s)	Early AM trains SB Nanaimo-Victoria and NB to Courtenay; each train makes full run both ways ending in Nanaimo	Repairs to corridor (maintain safety), possibly passing tracks where warranted by schedule	More rail cars	Higher intercity ridership, more tourists
	North-south tourist operation based in Nanaimo	Could include Nanaimo-Chemainus excursion	Repairs to track, Passenger facilities at ends of route, if not already available	Depends on plans of potential operation	Tourists visiting Nanaimo including some cruise ship-based (currently a smaller market)
	Port Alberni - Nanaimo Tourist Excursion	Extend tourist train through to Nanaimo	Repairs and vegetation removal from Port Alberni Sub; storage track at Nanaimo	Depends on plans of potential operation	Port Alberni, some Nanaimo, and possible use by tourists connecting from VIA
	Increased freight, central section	More shipments and heavier loads, Duncan-Parksville	Repairs to track (to bring back to sustained maintenance), some upgrades to rail e.g. at bridges; rail spurs to customers	Depends on shipper needs	Increased freight market in areas with more rail-compatible industries
	Mining	Coal shipments Union Bay to Port Alberni	Repair to track, north of Parksville; restoration of line, Port Alberni Weight needs to be limited to line capacity or cost may escalate	Depends on shipper needs	Long-haul market for mining products

E and N Railway Evaluation - Foundation Paper
Table 5.2 - Investment and Service Combinations

Investment	Service Combination	Description/Example	Infrastructure Requirements	Service Requirements	Market(s) Served
Limited Upgrades to Southern Corridor (Victoria Sub)	Enhance VIA schedule; add extra Nanaimo/Victoria run	1 SB early AM Nanaimo-Victoria, then NB to Courtenay, SB to Victoria, return to Nanaimo in evening	Repairs to corridor (maintain safety), possibly passing tracks near Victoria where warranted by schedule	More rail cars	Higher intercity ridership, more tourists
	Limited Victoria-Duncan Commuter Service	Single train to Victoria (AM) and returning to Duncan (PM)	Repairs, grade crossing improvements, stations	Rail cars (2-3)	Cowichan Valley/West Shore/Victoria commuters
	Current Freight	Status quo: no freight south of Duncan	N/A	N/A	No change
	North-south tourist operation based in Victoria	Could include Victoria-Duncan or Chemainus excursion	Repairs to track from Victoria to north of Duncan, Passenger facilities at ends of route, if not already available	Depends on plans of potential operation	Tourists visiting Victoria including some cruise ship-based (some tourists may use VIA instead)
	Expanded Rail Trails	ICF and Regional Districts sign occupancy agreements	Rail trail construction by Regional Districts	None	Recreational - local and tourist
Extensive Upgrades to Southern Corridor (Victoria Sub)	Enhance VIA schedule both directions	Early AM trains SB Nanaimo-Victoria and NB to Courtenay; each train makes full run both ways ending in Nanaimo	Repairs to corridor (maintain safety), possibly passing tracks near Victoria where warranted by schedule	More rail cars	Higher intercity ridership, more tourists
	Victoria-Langford -Duncan	30-minute frequency to Langford; 1 train SB AM, NB PM to Duncan	Repairs, grade crossing improvements, stations, signals, sidings	Rail cars (8-12)	Cowichan Valley/West Shore/Victoria commuters
	Freight beyond Duncan to Victoria	Aggregate train (after other pits are closed)	Repairs to track*, possible upgrades to several bridges (would need to inspect, test and re-rate for capacity) * Depends on condition Duncan-Nanaimo as well	Depends on shipper needs	Increased freight market including Victoria
	North-south tourist operation based in Victoria	Could include Victoria-Duncan or Chemainus excursion	Repairs to track from Victoria to north of Duncan, Passenger facilities at ends of route, if not already available	Depends on plans of potential operation	Tourists visiting Victoria including some cruise ship-based (some tourists may use VIA instead)
	Expanded Rail Trails	ICF and Regional Districts sign occupancy agreements	Rail trail construction by Regional Districts	Safe Grade Crossings for trail users where rail service operates	Recreational - local and tourist

E and N Railway Evaluation - Foundation Paper
Table 5.2 - Investment and Service Combinations

Investment	Service Combination	Description/Example	Infrastructure Requirements	Service Requirements	Market(s) Served
Full Corridor Upgrade	Three VIA trips per day	Two trains make full round trip, third train serves Nanaimo-Victoria SB in AM; NB in PM	As above, possibly passing tracks where warranted by schedule	More rail cars	Higher intercity including lon-distance commutes, more tourists
	Victoria-Langford Basic Service	30-minute frequency (service to Duncan covered by VIA schedule)	Repairs, grade crossing improvements, stations, signals, sidings	Rail cars (8-12)	West Shore/Victoria commuters
	Port Alberni - Nanaimo Tourist Excursion	Extend tourist train through to Nanaimo	Repairs and vegetation removal from Port Alberni Sub; storage track at Nanaimo	Depends on plans of potential operation	Port Alberni, some Nanaimo, and possible use by tourists connecting from VIA
	Current traffic + expanded markets in central, southern and Port Alberni corridors	900-1000 car loads per year, traffic between Nanaimo, Courtenay and Duncan + Coal shipments Union Bay to Port Alberni + More shipments and heavier loads, Duncan-Parksville + Aggregate train (after other pits are closed)	- Repairs to track (to bring back to sustained maintenance) on Victoria Subdivision; restoration of line, Port Alberni - Weight needs to be limited to line capacity or cost may escalate - Possible upgrades to several bridges (would need to inspect, test and re-rate for capacity)	Depends on shipper needs	Long-haul freight market on/off island, including mining products + expansion into Victoria/rest of Island freight market
	Expanded Rail Trails	ICF and Regional Districts sign occupancy agreements	Rail trail construction by Regional Districts	Safe Grade Crossings for trail users where rail service operates	Recreational - local and tourist

5.2 Evaluation of Corridor Improvement Options

The evaluation focuses on the corridor improvement options (freight and people movements packaged together) and is intended to help identify the tradeoffs between higher investment costs versus greater benefit to the Island economy, residents and visitors.

The evaluation is based on the standard Multiple Accounts Evaluation (MAE) practice used in other transportation investment and feasibility studies, with a mix of quantitative and qualitative measures to compare the options. The accounts include:

- Financial;
- Customer Service;
- Community/Social;
- Economic;
- Environmental.

The assumptions built into the evaluation are described in the following sections and the results presented in **Table 5.3** at the end of this section.

5.2.1 FINANCIAL ACCOUNT

The financial account includes capital and operating costs.

The capital costs are derived from review of the previous valuation studies (2004-6) and recent corridor inspections (as noted in Section 4) to determine the condition of the corridor now, versus what would be needed to provide service. The improvements are both described in text and a cost provided, in four categories (corridor upgrades, restoration and safety repairs, new service related facilities, and trains and related equipment). Costs are expressed in current dollars.

Operating costs are explicitly estimated for the passenger and commuter services only, since the tourist and freight operations would be based purely on demand and paid for by the private sector. Overall operating costs for the intercity service pivot off the current cost of approximately $2.2 million per year, of which 35% or $800,000 is recovered in passenger fares and the remainder is subsidized. The passenger service estimates are derived from the results in Section 3, and presented for a theoretical current day case, and for 2026. Gross operating costs, fare revenue from passengers (based on the average paid today – commuter rail within the CRD would match BC Transit, for example -- and adjusted for the average distances customers would travel), and net subsidies are estimated for both time horizons. Costs and fares in future years are escalated 2% per annum, and the total revenues increase with the number of passengers as well.

Present values for the operating and capital costs for a 25-year average life cycle are estimated at the 6% and 10% discount rates, which are typical of provincial and federal project evaluations.

The issue of deferred highway costs was raised by stakeholders, and this has been considered by estimating the potential traffic volume reductions if the rail freight and passenger markets were successful. At this scale, it appears there may be some small savings in maintenance but none for repaving (traffic would have to be offset by a much larger amount, say 10%, and then repaving might be delayed one year).

5.2.2 CUSTOMER SERVICE ACCOUNT

The customer service account includes a description of the markets that could be served by rail, followed by a high-level estimate of the potential passenger and freight traffic that might conceivable be captured. These are derived from the analysis results in Section 3 and from details in the Topic Reports.

Operational and travel time benefits are also described for each of the markets under each scenario, including the potential improvement if current conditions that result in slow train operations were addressed. For example, the rail condition and lack of grade crossing protection in several locations in Victoria would result in slower commuter rail; investing in this area would allow faster passenger operations.

5.2.3 COMMUNITY/SOCIAL

Community and social considerations include local access/traffic, where the number of trains per day is used as a guideline whether local traffic might experience delays. Other factors include visual, displacements and community severance, and none of these are major because the corridor already exists. Consistency with land use policies and plans depends on the objectives and philosophy of land use planning in municipalities along the corridor, as noted in the results.

5.2.4 ECONOMIC

This set of considerations is formally used to measure impacts at a regional or provincial level, and in this case looks at First Nations opportunities (employment and tourism especially), local employment, and the economic support that rail services could provide to residents, the tourism industry on the Island, and resource industries.

5.2.5 ENVIRONMENTAL

The environmental account can include qualitative measures, but with the corridor being an existing entity, most impacts and processes would relate to watercourses and natural resources that could be disturbed during restoration construction. The table shows a series of calculations based on the following:

- The freight market (rail cars) and passenger market (one-way trips) that could theoretically be served now and in 2026;

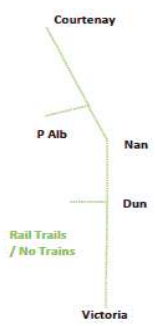
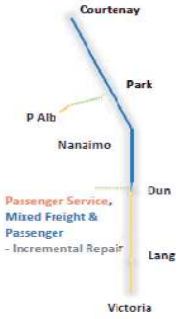
- The resulting shift in tonne-kilometres and passenger-kilometres is estimated using average distances for different components of the freight and passenger markets (e.g. accounting for intercity, tourists and commuters with an average distance for each; likewise for existing, forestry and mining freight). Scenario 1 is set to zero and all other values are net differences (so Scenario 0 shows the shift back to the highway if rail service stopped);

- The net changes in Carbon Dioxide emissions and Energy Usage are based on values from a summary study[2] published by Hydro Quebec using research from across North America. (Values used were: freight train = 24 g CO_2/340 kJ per tonne-km; freight truck = 57 g CO_2/800 kJ; passenger train = 56 g CO_2/800 kJ per pass-km; passenger vehicle = 143 g CO_2/2100 kJ).

[2] Comparing Energy Sources, Hydro Quebec, 2006.

E and N Railway Evaluation - Foundation Paper.

Table 5.3 - Evaluation of Service Combinations

Options	0. No Rail	1. Rail Service Preservation	2. Upgrade to Central Corridor (Victoria Sub)	3. Central/Northern Corridor (Victoria Sub) + Port Alberni Improvement	4. Limited Upgrades to Southern Corridor (Victoria Sub)	5. Extensive Upgrades to Southern Corridor (Victoria Sub)	6. Full Corridor Upgrade
Schematic							
Railway Service Components							
Passenger Services	Elimination of VIA Service	Current VIA Service	Enhance VIA schedule; add extra Nanaimo/Victoria run	Enhance VIA schedule both directions	Enhance VIA schedule; add extra Nanaimo/Victoria run	Enhance VIA schedule both directions	Three VIA trips per day
Commuter Service	No Commuter Rail	Not Included	Not Included	Not Included	Limited Victoria-Duncan Commuter Service	Victoria-Langford - Duncan	Victoria-Langford Basic Service
Tourist Services	No Tourist Train Excursions	Existing Port Alberni	North-south tourist operation based in Nanaimo	North-south tourist operation based in Nanaimo Port Alberni - Nanaimo Tourist Excursion	North-south tourist operation based in Victoria	North-south tourist operation based in Victoria	Port Alberni - Nanaimo Tourist Excursion
Freight Services	Phasing Out Freight	Current Freight Service	Increased freight, central section	Increased freight, central section Mining Shipments	Current Freight	Current Freight Freight beyond Duncan to Victoria	Current traffic + expanded markets in central, southern and Port Alberni corridors
Other	Expanded Rail Trails	Expanded Rail Trails	Expanded Rail Trails	Expanded Rail Trails	Expanded Rail Trails	Expanded Rail Trails	Expanded Rail Trails

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FINANCIAL ACCOUNT							
Infastructure Needs/Capital Costs							
Corridor Upgrades	Not Applicable	As needed for safety/reliability	Duncan to Parksville	Duncan to Courtenay + Port Alberni Sub; passing tracks etc, near Nanaimo	Victoria-Langford, passing sidings, critical crossings	Victoria-Duncan, multiple passing tracks, full improvements for commuter rail operation	Whole corridor, including passing tracks etc. for higher traffic near Victoria, Nanaimo
Restoration/Safety	Not Applicable	Safety Repairs - Victoria Sub	Safety Repairs - Victoria Sub	Safety Repairs - both lines	Safety Repairs - Victoria Sub to Duncan	Safety Repairs - Victoria Sub to Duncan	Safety Repairs - both lines
main corridor		$ 65,000,000	$ 28,500,000	$ 51,370,000	$ 17,200,000	$ 17,200,000	$ 68,570,000
port alberni				$ 25,660,000			$ 25,660,000
Commuter					$ 10,000,000	$ 30,500,000	$ 30,500,000
Capital - Corridor Repairs/Improvements	**$ -**	**$ 65,000,000**	**$ 28,500,000**	**$ 77,030,000**	**$ 27,200,000**	**$ 47,700,000**	**$ 124,730,000**
Service-Related Facilities	Not Applicable	Renovate Nanaimo Station	Renovate VIA stations	Renovate VIA stations	Construct new commuter stations and renovate other VIA stations	Construct new commuter stations and renovate other VIA stations	Construct new commuter stations and renovate other VIA stations
stations - VIA		$ 2,000,000	$ 9,000,000	$ 17,300,000	$ 1,000,000	$ 2,000,000	$ 17,300,000
mtce yard - CR					$ 8,000,000	$ 10,000,000	$ 10,000,000
stations - CR					$ 3,000,000	$ 17,600,000	$ 17,600,000
		$ 2,000,000	$ 9,000,000	$ 17,300,000	$ 12,000,000	$ 29,600,000	$ 44,900,000
Trains/Equipment	Not Applicable	Renovate/repair aging VIA cars Freight equipment by operator, depending on shipper needs	New and renovated VIA cars Freight equipment by operator, depending on shipper needs	New and renovated VIA cars Freight equipment by operator, depending on shipper needs	New commuter trains (8-12 cars) , new or renovated VIA cars	New commuter trains (8-12 cars) , new or renovated VIA cars Freight equipment by operator, depending on shipper needs	New commuter trains (8-12 cars) , new or renovated VIA cars Freight equipment by operator, depending on shipper needs
new/renovate - VIA		$ 3,000,000	$ 3,000,000	$ 9,000,000	$ 3,000,000	$ 9,000,000	$ 15,000,000
trains - CR					$ 22,000,000	$ 32,000,000	$ 32,000,000
		$ 3,000,000	$ 3,000,000	$ 9,000,000	$ 25,000,000	$ 41,000,000	$ 47,000,000
Subtotal-Facilities and Trains	**$ -**	**$ 5,000,000**	**$ 12,000,000**	**$ 26,300,000**	**$ 37,000,000**	**$ 70,600,000**	**$ 91,900,000**
Total Capital	**$ -**	**$ 70,000,000**	**$ 40,500,000**	**$ 103,330,000**	**$ 64,200,000**	**$ 118,300,000**	**$ 216,630,000**
Other potential costs - Not Included Above	Not Applicable	Up to $60 million - bridge replacements	$13.5 million - bridge replacements	$65.5 million - bridge replacements	$18.8 million - bridge replacements	up to $70 million for new grade separations; $18.8 million - bridge replacements	up to $70 million for new grade separations; $84.4 million - bridge replacements

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Operating Assumptions/Costs							
Passenger	Not Applicable	1 train per day per direction; Passenger Fares + Subsidy	1 train per day per direction, second trip on southern half of corridor; Passenger Fares + Subsidy	2 round trips per day: Early AM trains SB Nanaimo-Victoria and NB to Courtenay; each train starts/ends in Nanaimo	1 train per day per direction, second trip on southern half of corridor; Passenger Fares + Subsidy	2 round trips per day: Early AM trains SB Nanaimo-Victoria and NB to Courtenay; each train starts/ends in Nanaimo	2.5 Round Trips: Two trains make full round trip, third train serves Nanaimo-Victoria SB in AM; NB in PM
Current O&M		$ 2,200,000	$ 2,700,000	$ 3,500,000	$ 2,700,000	$ 3,500,000	$ 4,000,000
Current Fares		$ 800,000	$ 1,300,000	$ 2,000,000	$ 1,300,000	$ 2,000,000	$ 2,240,000
Current Subsidy		$ 1,400,000	$ 1,400,000	$ 1,500,000	$ 1,400,000	$ 1,500,000	$ 1,760,000
2026 Projected O&M		$ 3,100,000	$ 3,800,000	$ 4,900,000	$ 3,800,000	$ 4,900,000	$ 5,600,000
2026 Projected Fares		$ 1,400,000	$ 2,200,000	$ 3,300,000	$ 2,200,000	$ 3,300,000	$ 3,720,000
Projected Subsidy		$ 1,700,000	$ 1,600,000	$ 1,600,000	$ 1,600,000	$ 1,600,000	$ 1,880,000
Commuter	Not Applicable	Not applicable	Accommodated on VIA	Accommodated on VIA	3 trains per day to/from Duncan	10 hours per day Langford-Victoria, every 30 minutes, plus 1 trip each way to Duncan	10 hours per day Langford-Victoria, every 30 minutes
Commuter Rail operating $, 2009 N. American rate rev-hour					$ 1,400,000	$ 3,900,000	$ 3,500,000
Potential Current Fares					$ 320,000	$ 550,000	$ 350,000
Potential Net O&M, 2009					$ 1,080,000	$ 3,350,000	$ 3,150,000
O&M in 2026					$ 2,000,000	$ 5,500,000	$ 4,900,000
Fare Revenue, 2026					$ 690,000	$ 1,180,000	$ 740,000
Net O&M, 2026					$ 1,310,000	$ 4,320,000	$ 4,160,000
Tourist	Not Applicable	Covered by Alberni Pacific Railway (including steam engine/diesels, passenger cars)	Existing Alberni Pacific Railway; plus Potential for tourist train on Nanaimo-Duncan leg	Potential for expanded Alberni Pacific Railway; plus potential for tourist train on Nanaimo-Duncan leg	Existing Alberni Pacific Railway; plus Potential for tourist train on Victoria-Duncan leg	Existing Alberni Pacific Railway; plus Potential for tourist train on Victoria-Duncan leg	Potential for expanded Alberni Pacific Railway; other excursions likely to be linked to VIA services (assuming more trains)
Freight	Not Applicable	Fees paid by shipper to operator	Fees paid by shipper to operator	Fees paid by shipper to operator	Fees paid by shipper to operator	Fees paid by shipper to operator	Fees paid by shipper to operator
Total Net Operating (2026)		$ 1,700,000	$ 1,600,000	$ 1,600,000	$ 2,910,000	$ 5,920,000	$ 6,040,000

Table 5.3 - Evaluation of Service Combinations

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Present Value							
25 Years, 6% Discount		$ 90,600,000	$ 59,900,000	$ 122,800,000	$ 99,500,000	$ 190,200,000	$ 290,000,000
25 Years, 10% Discount		$ 84,700,000	$ 54,300,000	$ 117,100,000	$ 89,300,000	$ 169,300,000	$ 268,700,000
Deferred Costs of Other Improvements							
Highway Maintenance & Repaving	Marginal increase in future highway traffic - whole corridor	Minimal change from present (Large trucks are 4-5% of highway traffic)	Incremental change in truck freight traffic on highways in this segment (possibly 3-5% of trucks). Over whole corridor, impact would be 0.1% of traffic	Incremental change in truck freight traffic on highways in this segment (possibly 3-5% of trucks). Over whole corridor, impact would be 0.1-0.2% of traffic	Modest decrease in light vehicle traffic on Duncan-Langford segment (2-3%) with passengers shifting to train	Modest decrease in light vehicle traffic on Duncan-Langford segment (2-3%) with passengers shifting to train	With significant increases in share of freight market on rail, truck volumes might reduce 3-5% (or up to 0.3% of overall traffic), and passenger rail might capture up to 4% of intercity light vehicle traffic

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CUSTOMER SERVICE ACCOUNT							
Markets Served							
Passenger	Reduced choice for travellers	Minimal change except due to population: tourists, some residents. Current market is ~41,000 50,000 (2026)	Higher intercity ridership, more tourists 110,000 (2026)	Higher intercity ridership, more tourists 159,000 (2026)	Higher intercity ridership, more tourists 110,000 (2026)	Higher intercity ridership, more tourists 159,000 (2026)	Higher intercity including lon-distance commutes, more tourists 190,000 (2026)
Commuter	No change from status quo	No change from status quo	No change from status quo	No change from status quo	Cowichan Valley/West Shore/Victoria commuters 150,000 (2026)	Cowichan Valley/West Shore/Victoria commuters 337,000 (2026)	West Shore/Victoria commuters 262,000 (2026)
Tourist	Reduced choice (without VIA)	Port Alberni and some Nanaimo tourists; likely to increase when cruise terminal is opened. Current ridership on PA train is ~12,000 per year >12,000 (2026)	Tourists visiting Nanaimo including some cruise ship-based (currently a smaller market) >12,000 (2026)	Tourists visiting Nanaimo including some cruise ship-based (currently a smaller market) plus Port Alberni, and possible use by tourists connecting from VIA >15,000 (2026)	Tourists visiting Victoria including some cruise ship-based (some tourists may use VIA instead); Port Alberni including some cruise-ship based >12,000 (2026)	Tourists visiting Victoria including some cruise ship-based (some tourists may use VIA instead); Port Alberni including some cruise-ship based >12,000 (2026)	Port Alberni, some Nanaimo, and possible use by tourists connecting from VIA >15,000 (2026)
Freight Market potential (shipper dependent)	Reduced choice	Long-haul freight market on/off Island; may attract more business due to increased frequency of rail barge between Nanaimo and Mainland. 2008 traffic was 900 rail cars. Maintaining this amount is low estimate 900 + railcars	Increased freight market in areas with more rail-compatible industries, e.g. forestry products (annual capture could be 300 to 3000 rail cars, if one shipper changes, then say 750) 1650 + railcars	Increased freight market in areas with more rail-compatible industries (e.g. forestry, ~750 railcars) including new long-haul market for mining products. Estimates indicate potential for up to 10,000 railcars per year 11,650 + railcars	Long-haul freight market on/off Island; may attract more business due to increased frequency of rail barge between Nanaimo and Mainland. 2008 traffic was 900 rail cars. Maintaining this amount is low estimate 900 + railcars	Increased freight market including Victoria (might be some aggregate shipments- say 0.8 million tonnes - assume 50% capture or 4000 rail cars). May require bridge retrofits to carry 4900 + railcars	Long-haul freight market on/off island, including forestry and mining products + expansion into Victoria/rest of Island freight market 15,650 + rail cars

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Operational/Travel Time Benefits							
Passenger	Negative: passengers forced to shift to driving, intercity bus, or no travel	No change on individual basis, but potential for market to grow due to steady population growth and increasing % of seniors	Speed and reliability improvement, Duncan to Parksville; Increased frequency Victoria-Nanaimo up to 5 minutes	Speed and reliability improvement, Duncan to Courtenay; Doubled frequency whole corridor up to 20 minutes	Speed and reliability improvement, Victoria to Duncan; Increased frequency Victoria-Nanaimo up to 10 minutes	Speed and reliability improvement, Victoria to Duncan; Doubled frequency whole corridor up to 20 minutes	Speed and reliability improvement, frequency increases, throughout corridor approx. 40 minutes
Commuter	No change from status quo	No change from status quo	AM trips into Victoria and returning PM possible with VIA	AM trips into Victoria and returning PM possible with VIA	Peak period service, Duncan-Victoria up to 10 minutes (Victoria-Langford)	Frequent peak period service, Duncan-Victoria up to 20 minutes (Victoria-Duncan)	Frequent peak period service, Langford-Victoria, plus service on VIA
Tourist	Negative: passengers forced to shift to car rental, intercity bus, or no trip	No change on individual basis, but potential for market to grow due to planned cruise ship terminal in Nanaimo	Greater selection of train times on Victoria-Nanaimo segment (VIA + possible excursions); status quo in Port Alberni	Greater selection of train times on Victoria-Nanaimo segment; potentially significant improvement in Port Alberni-Nanaimo corridor	Greater selection of train times on Victoria-Nanaimo segment (VIA + possible excursions); status quo in Port Alberni	Greater selection of train times on Victoria-Nanaimo segment (VIA + possible excursions); status quo in Port Alberni	Greater selection of VIA train times on Victoria-Courtenay segment; potentially significant improvement in Port Alberni-Nanaimo corridor
Freight	Negative: shippers forced to shift to truck, at least for Island segment of trip	Improved reliability and travel time due to related off-Island factors	Speed and reliability improvement, Duncan to Parksville; Heavier loads possible	Speed and reliability improvement, Duncan to Courtenay; Heavier Loads possible	Speed and reliability improvement, Victoria to Duncan; heavier loads subject to bridge rating	Speed and reliability improvement, Victoria to Duncan; heavier loads subject to bridge rating	Speed and reliability improvement throughout corridor; heavier loads subject to bridge rating

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SOCIAL AND COMMUNITY ACCOUNT							
Local Access/Traffic	Small increment in vehicle traffic if rail service ceased	No change from status quo	Increase from 2 to 4 trains per day, Nanaimo-Victoria	Increase from 2 to 4 trains per day, Courtenay-Victoria PLUS reintroduction of trains to Port Alberni line between McLean's Mill and Parksville	Increase from 2 to 4 trains per day, Nanaimo-Duncan; 2 to 8 trains per day, Duncan-Victoria	Increase from 2 to 4 trains per day, Courtenay-Duncan; 2 to 6 trains per day, Duncan-Langford; 2 to 46 trains per day east of Langford	Increase from 2 to 4 trains per day, Courtenay-Nanaimo; 2 to 6 trains per day, Nanaimo-Langford; 2 to 46 trains per day east of Langford PLUS reintroduction of trains to Port Alberni line between McLean's Mill and Parksville
Noise/Vibrations	Small increment in vehicle traffic	No change from status quo	Related to increases in freight/passenger trains, daily volumes still low	Related to increases in freight/passenger trains, daily volumes still low	Related to increases in freight/passenger trains, daily volumes still low	Related to increases in freight/passenger trains, daily volumes still low except on commuter segment east of Langford	Related to increases in freight/passenger trains, daily volumes still low except on commuter segment east of Langford
Visual	Not applicable	No change from status quo	Limited changes since corridor exists; potential improvements to stations	Limited changes since corridor exists; potential improvements to stations	Limited changes since corridor exists; potential improvements to stations	Limited changes since corridor exists; potential improvements to stations	Limited changes since corridor exists; potential improvements to stations
Displacements	Not applicable	No change from status quo*	Minimal change from status quo* except if new rail/station facilities are needed outside ROW in specific locations	Minimal change from status quo* except if new rail/station facilities are needed outside ROW in specific locations	Minimal change from status quo* except if new rail/station facilities are needed outside ROW in specific locations	Minimal change from status quo*; New rail yard and station facilities assumed for commuter rail service	Minimal change from status quo*; New rail yard and station facilities assumed for commuter rail service

* Potential displacements related to Johnson Street Bridge Replacement - new station to be provided by City

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Community Severance	Railway can become trail	Limited change from status quo; trails can help separate rail traffic from recreational.	Limited change from status quo; trails can help separate rail traffic from recreational	Limited change from status quo; trails can help separate rail traffic from recreational	Limited change from status quo; trails can help separate rail traffic from recreational	Limited change from status quo; trails can help separate rail traffic from recreational. Higher train volume will result in frequent grade crossings of trail and local streets	Limited change from status quo; trails can help separate rail traffic from recreational. Higher train volume will result in frequent grade crossings of trail and local streets
Consistency with Plans, Policies and Land Use	Supports recreational plans, does not support industrial/commercial	Supports existing recreational plans; supports existing industrial/commercial	Nanaimo Airport interested in industrial/ intermodal development; Other communities interested but waiting to see what happens	Nanaimo Airport interested in industrial/ intermodal development; Port Alberni interested in revitalizing harbour/industrial as well as tourim	Consistent with Langford OCP, consistent with principles and policies in Victoria	Consistent with Langford OCP, consistent with principles and policies in Victoria	Consistent with Langford OCP, consistent with principles and policies in Victoria and Nanaimo Airport interested in industrial/ intermodal development; Port Alberni interested in revitalizing harbour/industrial as well as tourim

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ECONOMIC POTENTIAL							
First Nations Opportunities	Eco-tourism, visits related to trail users	Eco-tourism (e.g. Port Alberni), visits by VIA passengers to landmark sites (e.g. Chemainus), railway employment related to maintenance (esp. rail ties)	Expanded railway-related employment; increased volume of visitors to Chemainus	Expanded railway-related employment; increased volume of visitors to Port Alberni, Chemainus (from Nanaimo), Comox	Expanded railway-related employment; increased volume of visitors to Cowichan, Chemainus (from Victoria)	Expanded railway-related employment; increased volume of visitors to Cowichan, Chemainus (from Victoria)	Expanded railway-related employment; increased volume of visitors to Cowichan, Chemainus, Port Alberni, Comox
Local Employment	Minimal, only related to recreation trails, etc.	Some increase in employment - more railway maintenance work	Potential employment in railway construction, maintenance, expanded operations	Potential employment in railway construction, maintenance, expanded operations	Potential employment in railway construction, maintenance, expanded operations	Potential employment in railway construction, maintenance, expanded operations	Greatest potential for added employment in railway construction, maintenance, expanded operations
Economic Support							
Residents	Fewer benefits than currently	Maintain status quo	Moderate imporvement in accessibility to Nanaimo, Victoria for business	Greater accessibility to Nanaimo, Victoria for business	Greater accessibility to Victoria job market	Greater accessibility to Victoria job market	Improvements in accessibility to Nanaimo, Victoria for business trips and regular job market
Tourism	Potential reduction in number of excursions and related tourist spending, esp. in Port Alberni	Cruise terminal in Nanaimo (separate from railway) may create some additional tourist traffic	Potential increase in tourism to Port Alberni, Chemainus	Potential increase in tourism to Port Alberni, Chemainus	Limited	Potential increase in tourism to Cowichan/Duncan, Chemainus	Potential increases in tourist activity and spending along whole corridor
Resource Industries	Fewer benefits than currently	Maintain status quo	Potential alternative for forestry products, other local shippers	Potential alternative for forestry products, mining, other local shippers	Maintain status quo	Potential alternative for aggregates, depending on load restrictions on bridges	Potential alternative for forestry products, mining, other local shippers

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ENVIRONMENTAL ACCOUNT							
Assumptions - Freight and Passenger Markets							
Freight Market Capture (rail cars)		900	1,650	11,650	900	4,900	15,650
Freight in 2026		1,000	1,800	12,800	1,000	5,400	17,200
Passenger Market Capture	0	53,000	102,000	145,000	199,500	361,050	345,300
Passengers in 2026	0	62,000	122,000	174,000	272,000	508,000	467,000
Estimated Shift From Highway/Streets to Rail							
Tonne-km of Freight, Current	(4,500,000)	-	3,750,000	88,700,000	-	44,500,000	136,350,000
Tonne-km of Freight, 2026	(5,000,000)	-	4,000,000	97,400,000	-	49,000,000	149,800,000
Passenger-km, Current	(6,342,000)	-	2,850,000	7,108,000	5,275,000	12,326,250	14,365,500
Passenger-km, 2026	(7,692,000)	-	3,500,000	8,658,000	6,250,000	16,825,000	15,208,000
Net Greenhouse Gas Reductions (kg of CO_2)							
From Freight, Current	(148,500)	-	123,750	2,927,100	-	1,468,500	4,499,550
From Freight, 2026	(165,000)	-	132,000	3,214,200	-	1,617,000	4,943,400
From Passengers, Current	(551,754)	-	247,950	618,396	458,925	1,072,384	1,249,799
From Passengers, 2026	(669,204)	-	304,500	753,246	543,750	1,463,775	1,323,096
Net Energy Consumption (kJ)							
From Freight, Current	(2,070,000,000)	-	1,725,000,000	40,802,000,000	-	20,470,000,000	62,721,000,000
From Freight, 2026	(2,300,000,000)	-	1,840,000,000	44,804,000,000	-	22,540,000,000	68,908,000,000
From Passengers, Current	(8,244,600,000)	-	3,705,000,000	9,240,400,000	6,857,500,000	16,024,125,000	18,675,150,000
From Passengers, 2026	(9,999,600,000)	-	4,550,000,000	11,255,400,000	8,125,000,000	21,872,500,000	19,770,400,000

6. CONCLUSIONS

The following preliminary observations and conclusions may be drawn from the results of the evaluation, understanding that review of the findings and further discussion of the implications is required and will no doubt result in additional direction.

- Freight demand would increase if service could be improved. This would start with the improved connection to the Lower Mainland that is already under construction and then the railway owner and operator would have to build the business. The best potential is in the central portion of the corridor, and possibly the Port Alberni line.

- The upper threshold for the identifiable freight markets is in the order of 15,000 rail cars per year. The capital investment in rail infrastructure for freight (excluding the specific VIA and commuter rail costs) would be $94 million provided no bridge upgrades were needed. In that event, the average capital investment per railcar shipped would be $400 to $500. Assuming that rail shipping rates need to compete against trucks, the fees per railcar would be $600 to $1000 per railcar. Of this 80% would cover Operating and Maintenance costs and the remaining 20% would optimistically be the return for the operator, corridor owner, and investors in the corridor. This 20% amounts to $120 to $200 per rail, implying that a break-even point on the capital investment is over 30,000 railcars of freight moved per year.

- Improving VIA passenger service could be done incrementally, by refurbishing or replacing a small number of rail cars and addressing critical safety and operations-related improvements. Areas where the railway was also improved to carry more freight would probably allow for faster speed passenger service. Passenger services are subsidized and it is reasonable to expect this would remain the case. A more frequent VIA service might be a highly practical way to initially serve north/south tourism, business travel and commuting into Victoria and Nanaimo.

- Under the intercity rail options, the broadest level of service indicated in the packages of options involves 2.5 round trips being provided. Under the passenger analysis (see Section 3.2), another option was a third round trip per day – feasible to operate if there wasn't a commuter rail based in Victoria – and this option would result in 2026 revenues of $4.4 M, O&M of $7.4 M, and a net subsidy of $3.0 Million. (This option does not appear in the tables because they all include some form of the commuter rail that was studied). The net capital cost would be the sum of Options 3 and 5, with the intercity rail being allocated its rolling stock capital costs and the total cost of improvements in Option 3.

- Tourist services are challenging to implement, and if competing directly with VIA might not capture a large enough market to pay down the start-up capital. The existing Alberni Pacific Railway would be well-positioned to expand to Nanaimo and provide tourist and some intercity passenger service if the cost of repairing the Port Alberni line were shared with or covered by others.

- Commuter rail has certain requirements above basic repairs, and needs a large enough travel market to be successful. The 2026 passenger estimates for the Duncan-Langford-Victoria corridor do not support a 30-minute service, but the cost per passenger is much lower if service is provided one to three times daily instead. A logical approach would be to build up the market using well-marketed commuter bus service and encourage the municipalities along the railway to adopt land use planning practices that would enhance the chances of success. Interim rail service could be provided by re-scheduling some of the VIA train trips to serve commuters.

- The existing railway freight and passenger markets are fairly small and the average cost of the improvements per person or per tonne of freight would be very high. The longer term potential is better but significant revenue from freight would be required to make the corridor 'break even' against the up-front capital costs. The greatest potential is in mining and forestry products, provided that shippers can be convinced to make a commitment to using rail.

- Notwithstanding the costs to achieve it, enhancing the freight and passenger rail services would reduce transportation-related greenhouse gas emissions and improve energy efficiency on Vancouver Island. Because the corridor and the railway already exist, impacts would only be related to increased train frequencies: some train noise and vibrations, some traffic delays at grade crossings, and potentially safety impacts where trains conflict with trespassing people or vehicles.

APPENDICES

APPENDIX A – LIST OF CONSULTED STAKEHOLDERS

The stakeholders consulted during the study included Island Corridor Foundation representatives, Southern Railway, other transportation providers, industry representatives, and regional, municipal and First Nations contacts.

Name	Agency/Organization	Subject(s)	Initial Date
Frank Butzelaar	Southern Railway	General	6-May
Ken Doiron	Southern Railway	General	6-May
Don Macgregor	Southern Railway	General	6-May
Doug Backhouse	Island Corridor Foundation	General	7-May
Erinn Pinkerton	BC Transit	Commuter	13-May
Santino Pirillo	BC Transit/McElhanney	Commuter	22-May
Peter Gibson	Mount Washington	Tourism	5-Jun
Deborah Marshall	BC Ferries	Tourism	June
Teresa Watts	Consultant to SRY	Railway Condition	June
Lecia Stewart	Consultant to SRY	Railway Condition	June
Mike Lai	City of Victoria	Railway Condition	12-Jun
Mark Hornell	City of Victoria	Commuter	May
Amar Johal	BC Ferries	Freight	June
Doug Jesson	Van Isle Barge	Freight	May
Adrian Samuel	Seaspan Coastal Intermodal	Freight	May
Dick Hampton	Interfor	Freight	June
Ian Jones	Stella Jones	Freight	June
Reg Mattu	Marpole Trucking	Freight	June
Lyle Flagg	Ocean	Freight	June
Mike McCollough	Northern Pressure Treated Wood	Freight	June
Rick Jeffery	Coast Forest Products Association	Freight	June
Chris Calverley	Western Forest Products	Freight	June
Keith Manifold	West Fraser Timber	Freight	June
Wayne Poole	Seaspan International	Freight	June
Rebecca Ewing	BC Ministry of Forests and Range	Freight	June
Adrian Hickin	BC Ministry of Energy, Mines and Petroleum Resources	Freight	June
Mike Carter	Alberni Valley Chamber of Commerce	General	13-May
Brad Madelung	Port Alberni Port Authority	Freight	19-May
Mark Braithwaite	Port Alberni Port Authority	Freight	19-May
David McCormick	Port Alberni Community Futures	General	19-May
Wes Boyd	BC Ferries	Freight	20-May
Doug Peterson	Nanaimo Port Authority	Freight	21-May
Ryan Burles	Blackball Transportation Inc.	General	3-Jun
Jane McIvor	Cruise British Columbia Assocation	Tourism	4-Jun
Customer Relations	BC Ferries	Freight	10-Jun
Gary Gale, Managing Director	CVS Cruise Victoria	Tourism	3-Jun
Helen Welch, VP Marketing	Tourism Victoria	Tourism	4-Jun
Doug Treleaven, Sales Mgr. Travel Trade	Tourism Victoria	Tourism	4-Jun

Name	Agency/Organization	Subject(s)	Initial Date
Marge Veys	Chemainus Valley Historical Society	Tourism	4-Jun
Dave Petryk, President & CEO	Tourism Vancouver Island	Tourism	5-Jun
Neil Malbon, General Manager	Alberni Heritage Railway & McLean Mill	Tourism	5-Jun
Ken Rutherford, Director	Alberni Heritage Railway	Tourism	5-Jun
Rick Lord, Director	Alberni Heritage Railway	Tourism	5-Jun
Graham Bruce	Island Corridor Foundation	General	June
John Tapics	Raven Coal Project	Freight	August
Jeff Ward	CRD (E&N Rail Trail)	General	July
Felicity Adams	Manager of Development Services, Town of Ladysmith	General	June
Tom Anderson	General Manager, Planning and Development, Cowichan Valley RD	General	June
Mary Brouilette	Councillor, Town of Qualicum Beach	General	June
Robert Davison	President, Top Shelf Feeds	General	June
Paul Drummond	Chair of Oceanside Tourism, General Manager of Tigh-Na-Mara	General	June
Robert Duncan	CEO, Hupacasath First Nations	General	June
Brian Farquhar	Cowichan Valley Regional District	General	June
Bruce Joliffe	Area A Director, Comox Valley Regional District	General	June
Phil Kent	Mayor, City of Duncan	General	June
Marc Lefebvre	Councillor, City of Parksville	General	June
Ken McRae	Mayor, City of Port Alberni	General	June
Geoff Millar	Manager Economic Development, Cowichan Valley Regional District	General	June
Randy Orr	Land Administrator, Island Timberlands	General	June
Jack Peake	Director, Island Corridor Foundation/ Cowichan Valley RD representative	General	June
Blaine Russel	Manager of Current Planning, City of Parksville	General	June
Terry Sampson	ICF First Nations Liaison/Advisor	General	June
Judith Sayers	Hupacasath First Nations	General	June
Lanny Seaton	Councillor, City of Langford	General	June
Wayne Stewart	ICF Rail Operators Liaison Advisory Committee	General	June
Jim Sturgill	ICF Rail Operators Liaison Advisory Committee	General	June
Ross Tennant	Three Point Properties	General	June
Paul Thompson	Manager of Long Range Planning, Regional District of Nanaimo	General	June
Gillian Trumper	Island Corridor Coalition	General	June
Bill Holdom	Councillor, City of Nanaimo	General	July
Irwin Henderson	ICF Member	General	July
Tom Ireland	Chief Administrative Officer, City of Duncan	General	July

Name	Agency/Organization	Subject(s)	Initial Date
Cori Lynn Germiquet	Vancouver Island Economic Association	General	July
John Ruttan	Mayor, City of Nanaimo	General	July
Randall Garrison	Corporate Secretary / Transit Manager, Township of Esquimalt	General	July
Mike Hunter	Nanaimo Port Authority	General	July
Sharma Gorav	ESVI	General	July
Chris Hall	Director of Planning, North Cowichan	General	July
Tom Duncan	City of Duncan	General	July
Russ Burke	Nanaimo Airport	General	July
John Luton	Councillor, City of Victoria	General	July
Lindsay Chase	Director of Development Services, Town of View Royal	Land Use	July
Jason Parks	Parks Manager, Parks and Recreation , Langford	Land Use	August
Robert Batallas	Senior Planner, Planning and Development , Victoria	Land Use	August
Tim Galavan	Manager Transportation Section , Engineering Department , Victoria	Land Use	August
Barbara Snyder	Director, Development Services , Esquimalt	Land Use	August
Trevor Parkes	Senior Planner, Esquimalt	Land Use	August
Tracy Corbett	Senior Manager, Regional Planning , CRD	Land Use	August
Emmet McCusker	Superintendent , Transportation and Utilities , View Royal	Land Use	August

APPENDIX B – SOURCES

This is a listing of the published sources provided to the study containing information specific to the corridor, in addition to the individual sources of data related to the peer reviews and technical investigations (these are identified where used to provide inputs and support assumptions).

Provincial and Regional Data

Provincial Transit Plan

Capital Regional District Travel Choices Strategy

CRD Regional Growth Strategy

2006 CRD Origin Destination Household Travel Survey

ICF Briefing Book (2006)

Summary of Current Status

Foundation Bylaws and Application for Incorporation

The Benefits and Challenges of A Partnership for Greater Community Control of the E&N Transportation Corridor

Meyers Norris Penny - Consulting Report for Vancouver Island Railroad

Vancouver Island Railway Development Initiative: Summary of Round Table Discussions

Background Policy Papers

Establishing a Charitable Foundation for the Purpose of Owning and Operating the E&N Railway Corridor

Taxation Issues Affecting the Vancouver Island Railway

The Management of Infrastructure on the Vancouver Island Railway

Construction and Maintenance of Railway Crossings on Vancouver Island

Railway Stations and Historic Structures on the Vancouver Island Railway

Regulations on Discontinuance Affecting the Vancouver Island Railway

Urban Transportation Showcase Program – Expression of Interest

Due Diligence Asset Donation Agreements

Due Diligence Summary, March 2004

BUSINESS PLAN 2005-2009

E&N Railway Valuation Study, 2004

- Land and Improvements Valuation – IBI Group
- Songhees Approach Valuation
- Track and Geotechnical Assessment Report – Earth Tech (Canada) Inc.
- Rail and Track Replacement Cost Assessment Report – A&B Rail Contractors

Grade Crossing Signals Valuation Report – Quality Signal Construction, Inc.

Bridges and Culverts Valuation Report – McLeman Bridge and Structures

E&N RAILWAY VALUATION STUDY, RailAmerica Corridor (2006)

Land and Improvements Valuation – IBI Group

Track and Geotechnical Assessment Report – UMA Engineering Ltd.

Rail and Track Replacement Cost Assessment Report – A&B Rail Contractors

Grade Crossing Signals Valuation Report – Quality Signal Construction, Inc.

Bridges and Culverts Valuation Report – AMEC Earth and Environmental

ICF Property Listing / Property Tax Database, Excel document

Environmental Assessments

Limited Phase 1 Environmental Site Assessment, Jacques Whitford

Vegetation Management

Review of Alternative Vegetation Techniques for the E&N Railway, Streamline Environmental Consulting Ltd.

Ecological Vegetation Management Plan, Polster Environmental Consulting Ltd.

Sustainable Development Technology Canada Application Documents, Steam Weed Treatment for ICF rail corridor

Design Considerations and Cost Estimates of a Steam Weeding Machine for the E&N Railway, Bill Woldnik.

Related Reports

Capital Plan, prepared by SVI January 2008

Vancouver Island Rail Corridor Socio-Economic Assessment, prepared by Colledge

Transportation Consulting, 2007

West Shore Tram Line Assessment, prepared by Colledge Transportation Consulting

Re-Interpreting Nanaimo's E&N Railway – University of Calgary Urban Design, Masters Degree Project

Arrowsmith Explorer

Arrowsmith Explorer Business Plan, Western Vancouver Island Industrial Heritage Society

Full Steam Ahead: Long Term Economic Impact of the Arrowsmith Explorer, Recreation and Tourism Research Institute, Vancouver Island University

OUR CORRIDOR COALITION: RAIL REDEFINED

Our Island, Our Corridor, Our Future, Casebook for Rail Renewal

Factsheets: (Basic, Costs, Economic Development, Environmental, Port Alberni, The Operator,The Owner, Top 10 Reason to Support Rail)

Freight Environmental Brief

Rails-With Trails

Regional District of Nanaimo Rail-with-Trail Feasibility Study (complete Feb 2009

Vancouver Island Rail Trail Design Guidelines (complete Mar 2009)

GHG Benefits

Strategies for Collateralizing Environmental Benefits Arising from Commercial Freight Modal Switch from Road to Rail – WDA Consulting Inc.

The Role of the Railway in a Carbon-constrained Future – WDA Consulting Inc.

Pacific Carbon Trust Submission, 2008

APPENDIX C – SUMMARY OF PUBLIC RESPONSES TO COMMENT FORMS

Questions about areas of interest and priorities for railway investment were distributed to the public by way of comment forms provided at the Public Open Houses and the Study Webpage. These were used to gauge interest in different types and locations of rail service and where investments might be most welcome among Island residents. A copy of the Comment Form is attached (**Exhibit C.1**).

The rankings of the answers provided to the public have been summarized by counting up the scoring at each open house location, and then producing average scores so that overall rankings of the answers to each question can be identified. The results of this process are attached as **Exhibit C.2**.

Highlights of the responses include the following:

- Question 1: The public was asked to prioritize different types of rail activity, and commuter rail received more than half of the first place votes, followed by VIA Rail and freight rail. Excursion/tourist rail was ranked the least important by far. This pattern was consistent in all cities except for Courtenay and Parksville, where VIA Rail was given higher priority than commuter rail.

- Question 2: People were asked to rank various freight improvement options, and railway improvement between Duncan and Victoria was chosen first, followed by improvements from Nanaimo to Duncan and improvements between Courtenay and Nanaimo. Answers predictably varied by geography, with Victoria, Colwood and Saanich preferring rail improvements between Duncan and Victoria, Courtenay favouring improvements between Courtenay and Nanaimo, and Parksville preferring to restore service to Port Alberni.

- Question 3: The public was asked to rank options for intercity service. Adding a daily VIA train was the most popular option, followed closely by the addition of commuter rail from Langford to Victoria. Speed improvements for the current train ranked third followed by adding 2-3 daily trains between Victoria and Cowichan Valley. All cities but Parksville ranked service to Port Alberni as least important; Parksville chose commuter rail as least important and the addition of a daily train as most important.

- Question 4: The public was asked to rank a number of optional features for commuter rail, and indicated a strong preference for good bus connections to home stations, followed by an off-peak alternative for return trips; the other service amenities received similar scores. While all cities ranked good bus connections first, Saanich ranked bike lockers second and Courtenay respondents picked higher fares in exchange for faster service as their second choice.

Comment Sheet

Your comments are important to us and will be carefully considered as we move forward with our planning process. Please fill out this Comment Sheet and feel free to ask any questions you might have!

What is your feedback regarding …

CONTACT INFORMATION (OPTIONAL)

Name _____

Organization/Role _____

_____

City _____

Email _____

Thank you.
We appreciate your feedback!

1 If investments are made to improve rail service along the Corridor, what type of rail activity would you prioritize? Rank the options from 1 (most important) to 5 (least) in order of preference.

- ☐ Freight movement
- ☐ Intercity passenger service (VIA)
- ☐ Excursion/tourist trains
- ☐ Commuter rail
- ☐ Other _____

2 Several options are being explored to improve freight capacity. How would you rank these options in terms of importance? Rank 1 to 5 in order of preference.

- ☐ Restore service to Port Alberni
- ☐ Improve railway between Courtenay/Nanaimo
- ☐ Improve railway between Nanaimo/Duncan
- ☐ Improve railway between Duncan/Victoria
- ☐ More barge/ferry connections to railways in the Lower Mainland

3 This study is investigating different ways to serve passengers travelling between cities. Please rank 1 to 6 according to your preferences.

- ☐ Improve the speed and reliability of the current train
- ☐ Provide service to Port Alberni
- ☐ Add a daily VIA Train going south in the morning, north in the evening
- ☐ Run two or three trains per day between Cowichan Valley/Victoria
- ☐ Operate commuter rail between Langford/Victoria
- ☐ Other _____

4 BC Transit is investigating rapid transit options and we are studying commuter rail from Victoria, at least as far as Langford. Rank the following optional features from 1 to 8 in order of preference.

- ☐ Having an off-peak alternative to make the return trip
- ☐ Bicycle lockers at the station
- ☐ Good bus connections to the home station
- ☐ Free parking spaces at home station
- ☐ Pay the same fare as buses for 30 minute service
- ☐ Pay a higher fare than buses in return for a faster trip
- ☐ Weather protection on the station platform
- ☐ Indoor waiting area with a washroom

Please provide any additional comments that you have regarding the E&N Railway Corridor.

Exhibit C.2.1 - Comment Form Responses

Summary Table (totals of 5 locations)

	Average	Answer Rank	Ranking							
Question: 1			1	2	3	4	5			
options:			*number of people assigning ranking*							
Freight Movement	2.83	3	21	44	65	49	3			
VIA Rail Service	2.10	2	50	84	43	13	0			
Excursion/tourist	3.38	4	12	17	50	95	7			
Commuter Rail	1.76	1	105	40	24	14	3			
			Ranking							
Question: 2			1	2	3	4	5			
option:			*number of people assigning ranking*							
Service to Port Alberni	3.23	4	37	23	12	52	42			
Improvments from Courtenay to Nanaimo	2.80	3	27	35	64	28	14			
Improvments from Nanaimo/Duncan	2.63	2	19	72	43	16	16			
Improve railway between Duncan/Victoria	2.39	1	66	29	31	31	13			
More barge/ferry connections to railways	3.53	5	27	18	19	28	63			
			Ranking							
Question: 3			1	2	3	4	5	6		
option:			*number of people assigning ranking*							
Improve speed of current train	2.92	4	26	34	46	41	23	5		
Service to Port Alberni	3.72	5	7	22	22	33	79	10		
Add a daily train	2.17	1	68	43	45	22	4	1		
Run 2-3 trains/day to Cow. Valley	3.01	3	12	58	37	45	22	2		
Commuter rail from Langford to Victoria	2.26	2	79	25	25	18	23	3		
			Ranking							
Question : 4			1	2	3	4	5	6	7	8
option:			*number of people assigning ranking*							
Off-peak alternative to make return trip	3.76	2	31	30	16	13	20	13	13	12
Bike lockers at station	4.39	4	18	20	18	21	28	26	15	12
Good bus connections at home station	2.68	1	62	29	26	17	7	10	4	5
Free parking spaces at home station	4.77	6	12	17	24	18	17	19	14	28
Same fare as buses for 30 min. Service	4.51	5	12	26	20	16	15	16	22	17
Pay higher fare than bus for faster trip	4.93	7	17	17	15	14	10	10	25	31
Weather protection on station platform	4.38	3	9	16	21	40	26	24	14	6
Indoor waiting area with a washroom	5.01	8	10	13	18	17	27	25	20	23

Exhibit C.2.2 - Comment Form Responses

Victoria

Question: 1	Average	Rank	1	2	3	4	5
			number of people assigning ranking				
Freight Movement	2.98	3	6	6	23	15	1
VIA Rail Service	2.11	2	8	33	10	2	0
Excursion/tourist	3.58	4	2	3	12	34	2
Commuter Rail	1.36	1	38	11	4	0	0

Question: 2			1	2	3	4	5
			number of people assigning ranking				
Service to Port Alberni	3.65	5	6	5	5	17	16
Improvments from Courtenay to Nanaimo	2.92	3	9	6	18	14	3
Improvments from Nanaimo/Duncan	2.48	2	5	26	10	3	4
Improve railway between Duncan/Victoria	2.06	1	24	8	9	6	2
More barge/ferry connections to railways	3.52	4	8	6	5	8	19

Question: 3			1	2	3	4	5	6
			number of people assigning ranking					
Improve speed of current train	3.29	4	8	8	9	17	8	2
Service to Port Alberni	4.59	5	1	2	4	8	31	5
Add a daily train	2.63	2	9	15	16	9	1	1
Run 2-3 trains/day to Cow. Valley	2.88	3	5	15	18	9	5	0
Commuter rail from Langford to Victoria	1.65	1	31	11	5	4	0	0

Question : 4			1	2	3	4	5	6	7	8
			number of people assigning ranking							
Off-peak alternative to make return trip	3.71	2	9	10	5	4	6	5	1	5
Bike lockers at station	4.47	5	4	4	7	8	9	7	6	2
Good bus connections at home station	2.11	1	21	13	5	4	1	1	0	1
Free parking spaces at home station	4.95	6	3	3	10	4	5	6	2	11
Same far as buses for 30 min. Service	4.35	3	4	7	7	4	5	8	5	3
Pay higher fare than bus for faster trip	5.69	8	4	2	1	6	4	2	12	11
Weather protection on station platform	4.46	4	1	5	8	12	7	5	7	1
Indoor waiting area with a washroom	5.46	7	3	4	2	5	8	7	4	13

Exhibit C.2.3 - Comment Form Responses

Colwood

Question: 1	Average	Rank	1	2	3	4	5
			number of people assigning ranking				
Freight Movement	2.66	3	3	13	12	7	0
VIA Rail Service	2.38	2	5	15	15	2	0
Excursion/tourist	3.59	4	0	4	7	22	0
Commuter Rail	1.42	1	29	6	1	0	0

Question: 2			1	2	3	4	5
			number of people assigning ranking				
Service to Port Alberni	3.65	4	6	1	0	15	9
Improvments from Courtenay to Nanaimo	2.97	3	1	4	20	3	1
Improvments from Nanaimo/Duncan	2.10	2	5	19	5	0	1
Improve railway between Duncan/Victoria	1.48	1	21	7	2	0	1
More barge/ferry connections to railways	3.70	5	2	4	3	9	9

Question: 3			1	2	3	4	5	6
			number of people assigning ranking					
Improve speed of current train	3.35	4	3	3	9	13	2	1
Service to Port Alberni	4.45	5	0	1	5	6	17	2
Add a daily train	2.69	3	8	6	13	5	3	0
Run 2-3 trains/day to Cow. Valley	2.62	2	3	21	4	6	2	1
Commuter rail from Langford to Victoria	1.61	1	27	4	2	0	1	2

Question : 4			1	2	3	4	5	6	7	8
			number of people assigning ranking							
Off-peak alternative to make return trip	3.13	2	7	11	4	1	4	1	3	1
Bike lockers at station	4.97	7	2	5	1	3	7	7	4	4
Good bus connections at home station	2.71	1	15	6	4	3	1	1	2	2
Free parking spaces at home station	3.97	3	6	5	6	5	2	3	3	4
Same far as buses for 30 min. Service	4.03	4	1	9	5	4	5	1	4	2
Pay higher fare than bus for faster trip	4.57	6	4	3	6	4	1	3	2	7
Weather protection on station platform	4.46	5	3	0	4	12	6	8	1	1
Indoor waiting area with a washroom	5.10	8	1	3	5	2	4	5	7	3

Exhibit C.2.4 - Comment Form Responses

Saanich Totals

Question: 1	Average	Rank	1	2	3	4	5
			number of people assigning ranking				
Freight Movement	3.06	3	1	3	7	6	0
VIA Rail Service	2.06	2	2	12	3	0	0
Excursion/tourist	3.50	4	0	0	8	8	0
Commuter Rail	1.82	1	13	0	0	2	2

Question: 2			1	2	3	4	5
			number of people assigning ranking				
Service to Port Alberni	4.38	5	1	1	0	3	11
Improvments from Courtenay to Nanaimo	3.50	4	0	2	6	6	2
Improvments from Nanaimo/Duncan	2.81	2	2	6	4	1	3
Improve railway between Duncan/Victoria	2.25	1	7	3	3	1	2
More barge/ferry connections to railways	2.93	3	4	2	3	3	3

Question: 3			1	2	3	4	5	6
			number of people assigning ranking					
Improve speed of current train	3.47	4	1	2	7	2	5	0
Service to Port Alberni	4.11	5	2	1	1	3	11	0
Add a daily train	2.94	3	1	5	5	6	0	0
Run 2-3 trains/day to Cow. Valley	2.88	2	1	8	1	6	1	0
Commuter rail from Langford to Victoria	1.71	1	12	2	1	0	2	0

Question : 4			1	2	3	4	5	6	7	8
			number of people assigning ranking							
Off-peak alternative to make return trip	4.50	5	1	2	1	2	7	0	3	0
Bike lockers at station	3.94	2	3	4	1	1	1	6	0	1
Good bus connections at home station	3.17	1	6	0	6	3	0	1	1	1
Free parking spaces at home station	5.07	8	1	1	1	3	3	2	1	3
Same far as buses for 30 min. Service	4.64	6	1	3	2	1	0	2	4	1
Pay higher fare than bus for faster trip	4.81	7	3	2	1	1	1	2	2	4
Weather protection on station platform	4.25	3	2	2	1	6	1	0	2	2
Indoor waiting area with a washroom	4.47	4	1	3	3	0	5	2	1	2

Exhibit C.2.5 - Comment Form Responses

Parksville

Question: 1	Average	Rank	1	2	3	4	5
			number of people assigning ranking				
Freight Movement	2.88	3	8	14	16	19	2
VIA Rail Service	1.95	1	26	19	11	6	0
Excursion/tourist	3.00	4	10	7	18	21	3
Commuter Rail	2.32	2	16	19	16	8	1

Question: 2			1	2	3	4	5
			number of people assigning ranking				
Service to Port Alberni	2.35	1	21	11	4	13	3
Improvments from Courtenay to Nanaimo	2.56	2	10	18	18	4	5
Improvments from Nanaimo/Duncan	2.78	3	7	18	15	8	6
Improve railway between Duncan/Victoria	3.16	4	9	6	14	19	7
More barge/ferry connections to railways	3.67	5	8	5	6	5	24

Question: 3			1	2	3	4	5	6
			number of people assigning ranking					
Improve speed of current train	2.76	2	10	14	17	8	5	1
Service to Port Alberni	3.37	3	4	16	8	11	12	3
Add a daily train	1.52	1	38	13	9	0	0	0
Run 2-3 trains/day to Cow. Valley	3.46	4	3	10	9	21	8	1
Commuter rail from Langford to Victoria	3.71	5	5	5	12	8	20	1

Question : 4			1	2	3	4	5	6	7	8
			number of people assigning ranking							
Off-peak alternative to make return trip	3.97	2	9	5	5	4	3	5	4	4
Bike lockers at station	3.98	3	8	4	8	8	4	5	3	4
Good bus connections at home station	2.89	1	15	6	9	4	4	5	1	0
Free parking spaces at home station	5.18	8	0	6	4	6	4	6	6	7
Same far as buses for 30 min. Service	4.49	5	5	7	4	4	4	3	6	6
Pay higher fare than bus for faster trip	4.86	7	4	6	5	1	4	0	8	8
Weather protection on station platform	4.19	4	2	8	5	8	9	6	2	2
Indoor waiting area with a washroom	4.67	6	4	3	5	6	8	8	5	3

Exhibit C.2.6 - Comment Form Responses

Courtenay

Question: 1	Average	Rank	1	2	3	4	5
			number of people assigning ranking				
Freight Movement	2.40	3	3	8	7	2	0
VIA Rail Service	2.05	1	9	5	4	3	0
Excursion/tourist	3.55	4	0	3	5	10	2
Commuter Rail	2.10	2	9	4	3	4	0

Question: 2			1	2	3	4	5
			number of people assigning ranking				
Service to Port Alberni	2.94	3	3	5	3	4	3
Improvments from Courtenay to Nanaimo	2.33	1	7	5	2	1	3
Improvments from Nanaimo/Duncan	3.28	4	0	3	9	4	2
Improve railway between Duncan/Victoria	2.58	2	5	5	3	5	1
More barge/ferry connections to railways	3.42	5	5	1	2	3	8

Question: 3			1	2	3	4	5	6
			number of people assigning ranking					
Improve speed of current train	2.75	3	4	7	4	1	3	1
Service to Port Alberni	4.00	5	0	2	4	5	8	0
Add a daily train	1.70	1	12	4	2	2	0	0
Run 2-3 trains/day to Cow. Valley	3.61	4	0	4	5	3	6	0
Commuter rail from Langford to Victoria	2.72	2	4	3	5	6	0	0

Question : 4			1	2	3	4	5	6	7	8
			number of people assigning ranking							
Off-peak alternative to make return trip	3.88	3	5	2	1	2	0	2	2	2
Bike lockers at station	4.53	4	1	3	1	1	7	1	2	1
Good bus connections at home station	3.11	1	5	4	2	3	1	2	0	1
Free parking spaces at home station	4.71	6	2	2	3	0	3	2	2	3
Same far as buses for 30 min. Service	5.71	8	1	0	2	3	1	2	3	5
Pay higher fare than bus for faster trip	3.80	2	2	4	2	2	0	3	1	1
Weather protection on station platform	4.65	5	1	1	3	2	3	5	2	0
Indoor waiting area with a washroom	5.06	7	1	0	3	4	2	3	3	2