



E & N Railway Corridor: Development Strategies for the Island Corridor Foundation

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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 strategy paper is to assist the ICF in identifying potential approaches to build towards the longer-term vision for the railway, starting from the current set of actions the corridor stakeholders are undertaking in 2010.

The first phase of the Evaluation Study culminated in a Foundation Report, which provided a summary of the analysis of several business markets including freight, intercity passenger, tourist excursions and commuter rail. The Foundation Report also summarized the current asset condition of rail infrastructure on Vancouver Island, including an environmental scan. Underpinning the work presented within the Foundation Report was 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 documented a challenging business context for rail, particularly over the short term. To preserve the rail corridor from Victoria to Courtenay and retain the existing VIA service, the capital costs range from \$70 million to \$130 million depending on what extent of bridge upgrades may be required¹. If other options, including restoring the Port Alberni line, introducing an upgraded VIA service, and implementing frequent commuter rail were added to the mix, the cost range increases to \$217 to \$371 million including bridges and new grade separations². These costs would need to be justified by much higher freight and passenger traffic than carried currently. **Table E.1** summarizes costs for a broad set of options based on geography and services, and show various increments of the corridor where investments could be focused.

Table E.1 –E&N Rail Corridor – Range of Investment Options

Option	Improvements	Capital Cost Range
Preservation (Courtenay-Victoria)	Restore tracks, stations, trains	\$70-130 Million
Upgrade Duncan-Parksville	Restore segment, enhance stations and trains	\$40-54 Million
Upgrade Courtenay-Duncan and Port Alberni	Restore segment, re-open Port Alberni line, enhance stations and trains	\$103-169 Million
Full Corridor Upgrade with New Commuter Rail	Restore corridor, re-open Port Alberni line, implement frequent commuter rail in Victoria	\$217 – 371 Million
Full Corridor with Enhanced VIA Service	Restore corridor, re-open Port Alberni line, focus on expanding VIA schedule	\$132 -217 Million

Substantial investment would be required to cover the ongoing operating costs as well as paying down the entire initial capital costs to restore the corridor. If the business lines were to provide this funding, then for a start, more than double the identifiable freight business would be required. Passenger services can provide a social transportation benefit, and serve as an alternative to auto travel. However, passenger services require subsidies – in the case of VIA, the Federal government -- to cover the net operating costs not recovered from passenger revenues, and a complete subsidy of passenger service-specific capital costs such as trains and station upgrades. Tourist excursion

¹ An investment of this magnitude would not be contemplated without the expectation of serving additional passengers and freight.

² If the commuter rail service were provided by expanded VIA train schedules instead, the total corridor costs are \$131 - \$215 Million.

trains rely on other services for the track and station infrastructure, and on rolling stock being available to the tourist train operator.

Given the potentially high costs for a full restoration of the corridor, this report is to provide the ICF with assistance in identifying various incremental approaches to developing the railway business lines.

Table E.2 provides several performance measures as general guidance to the ICF for how the business lines would have to perform to meet capital and on-going operating expenses. (The tourism market is assumed to use available track and pay its own capital/operating costs, without affecting viability of the other services.)

Table E.2 –E&N Rail Corridor Performance Measures

Service	Today	Corridor Measures	As a %
Passenger & Commuter	Over 40,000 VIA passengers per year	Estimated 41,000 jobs along rail corridor (Victoria, Nanaimo, Esquimalt, Parksville, Duncan)	At a modal share of 7%, this would translate into 6,000 trips/day or approximately 200,000 trips per year
Tourism	11,000 per year in Port Alberni	Forecast of 76,000 passengers via Port of Nanaimo Cruise Ship Terminal annually.	Market of an additional 10,000 annual passengers interested in specially designed tourist services via rail = 13% market share (of cruise ship passengers)
Freight	Approx. 900 carloads per year	Estimate of 35,000 to 40,000 carloads per year to support full capital costs of upgrading rail infrastructure and maintain operations.	8000 carloads/year to cover basic operations and maintenance (excluding capital) = 9% growth per annum in freight from the current freight volume.
Land Use	Estimated 481,000 live within 5 km of rail corridor.	Transit Oriented Development (especially higher density housing near stations) is needed to support viability of the railway and produce lower average costs per rider. Percentages need to match or exceed Victoria numbers along more of the corridor.	High Density (Today): Victoria = 15% Other Communities < 5% Medium Density (Today): Victoria = 67% Esquimalt = 62% Duncan = 52% Other communities < 50%

These facts do not preclude the railway corridor from continuing on a more modest basis, with incremental improvements made and business built up in stages. The owner and operator of the railway corridor have been actively working to develop passenger improvements and trying to attract freight business to help build their own business case for some level of investment in the railway corridor.

This study provides various strategies that the ICF can pursue in preserving the corridor and working towards conditions that justify increased passenger and freight services, and eventually may support full restoration of the corridor if the market responds. These development strategies cover Passenger service, Tourism and trails, Freight business, and Land Use.

Passenger service strategies and considerations are noted in **Table E.3**. An incremental approach is provided because frequent commuter rail (train every 30 minutes) would trigger significant up-front capital costs (in addition to the corridor restoration) resulting in high average costs per rider given the nature of commuting patterns on Vancouver Island. On the other hand, VIA trains could

serve some of the commuter travel market and most of the associated costs are part of the basic requirement to restore the corridor. The table organizes the strategies by locations(s), time frame (short-medium, longer term, some that overlap both periods) and includes a 'visionary' definition of what the ultimate condition could become.

Table E.3 – Potential Passenger and Commuter Rail Strategies

Corridor Segment(s)	Short to Medium Term Steps	Longer Term Steps	Potential Ultimate Condition
Victoria to Courtenay	<p>Address train travel time and reliability through strategic repairs, including tie replacements, rock/tree fall warning system in Malahat section, and bridge assessments</p> <p>Preserve the corridor through rail-trail agreements and design reviews to ensure capacity for railway is still retained</p>	<p>Introduce additional passenger amenities at busier stations including Victoria, Nanaimo and Courtenay.</p> <p>Run additional intercity trains 3 to 4 hours apart from the original schedule, to provide a midday train travel option.</p>	<p>Three or more round trips by VIA per day.</p>
Southern and Central Corridor	<p>Modify the schedule for the intercity train. Operate southbound VIA service through Duncan and Cowichan Valley into Victoria in the early morning and a return in the early evening. (Adds a partial round trip to the southern corridor.)</p> <p>Investigate the feasibility of a dedicated commuter trip in conjunction with larger employers. Survey the markets in the CRD (Victoria, Esquimalt, Langford) and Nanaimo.</p> <p>Look for opportunities to obtain BC Transit service and covered bus stops at train stations.</p> <p>Talk to local cities and larger employers about shuttle connections from stations to nearby employment, timed to wait for the train and take passengers to work.</p>	<p>Talk to BC Transit about using station areas as transit exchanges (e.g. in addition to Langford, consider Esquimalt, Six Mile/View Royal, Duncan, Nanaimo)</p> <p>Consider Park and Ride facilities near certain stations. Focus on those near highways and near the ends of the service, since park and ride competes for land that could be used for TOD.</p> <p>Consider possible extra train trips to serve special events, to help promote the service</p>	<p>If development densities, especially employment, increased, additional VIA or hourly peak period commuter rail service could become feasible. This applies to the Victoria, CRD, and Cowichan Valley market.</p> <p>If enhanced transit services and/or passenger ferry services were implemented by other parties to points within a short walk of the stations, additional train passengers may be attracted.</p>
Port Alberni	<p>Preserve the corridor through rail-trail agreements.</p> <p>Monitor market to see if trips to/from Parksville or Nanaimo might supplement tourist train operations</p>		<p>If market emerges, passenger connection to main line from Port Alberni.</p>

Tourism strategies provide considerations to the ICF that may involve VIA services, the potential of introducing other tourist excursion trains, and the potential to use the corridor itself as a tourist attraction by enhancing the rail trail system that the ICF has been developing in increments with the Regional Districts. Some strategies that build on third-party projects, such as tourist attractions and the proposed cruise terminal in Nanaimo, will be subject to the timing of these outside developments. **Table E.4** summarizes the key strategy elements related to tourism in the corridor.

Table E.4 – Potential Tourism Strategies

Corridor Segment(s)	Short to Medium Term Steps	Longer Term Steps	Potential Ultimate Condition
Victoria to Courtenay	<p>Examine tourism potential and options for enhanced VIA Rail services, starting with a refined intercity schedule.</p> <p>Develop a comprehensive plan for rail trails with an eye to maximizing tourism impacts and linking to busier tourist areas (such as downtown Victoria, Goldstream Park, Cowichan Valley Wwineries, BC Forest Discovery Centre and City of Totems in Duncan, Chemainus murals and Theatre, Nanaimo Waterfront, Rathrevor Park, Parksville Heritage Park/Museum, Qualicum Beach village, Courtenay Museum, etc.) plus the Trans Canada Trail.</p>	<p>Tapping into new tourist markets might best be achieved with a train running at an interval 3-4 hours different from the current schedule.</p> <p>Create an excursion/ticket option related to trail developments along the length of the E & N Railway corridor. Focus on how these link (or how they might do so) to various tourist attractions and features and other national and provincial trail systems.</p>	<p>VIA intercity trains providing up to three trains per day, per direction, suitable for tourism and recreation trips by residents and visitors.</p> <p>Rail trail system parallel to entire length of the E&N Railway, with sufficient clearance to maintain safe railway operations. Trails would be alongside or near the rail corridor, except at major obstacles such as narrow bridges.</p>
Central and Port Alberni segments	<p>Consider the potential for cruise ship rail excursion alternatives based out of the Port of Nanaimo, provided they can be differentiated from excursions served by the same cruise ships in Alaska.</p> <p>Identify potential partnership and funding opportunities for tourist rail services and rail corridor trails developments.</p> <p>Implementation Strategy for specific tourist rail services should consider: service requirements (scheduling, on-board services, amenities, etc.); partnerships for on-board catering, commentary or other tourism services; and marketing and packaging requirements.</p> <p>Continue to host the Alberni Pacific Railway.</p>	<p>Expand cruise ship rail excursions to include north/south trips and the Port Alberni line.</p>	<p>If operators and equipment can be identified and separately funded, tourist excursion trains (different rolling stock from VIA) operating out of Port Alberni and Nanaimo.</p>

It is suggested that the ICF work on an incremental strategy for improving the viability of **rail freight operations** which could result in additional rail traffic being generated to help pay for renewal of the railway corridor. The ICF should consider the following potential steps being identified in **Table E.5**.

Table E.5 – Rail Freight Strategies

Market Segments	Short to Medium Term Steps	Longer Term Steps	Potential Ultimate Condition
Mining, Pulp and Paper	Continue to work with known and emerging resource industries to promote the rail shipping option. Mining would be exports and pulp/paper would be imports of raw materials and chemicals.	Monitor economic developments including resource industries, as potential emergence of new customers.	Expansion of group of customers to include forest products, industrial plants requiring bulk materials.
Concrete and Asphalt Plants	Develop a transload strategy (intermodal transfer to/from truck) to enable shippers without direct rail connections to take advantage of rail service.	Identify additional customers over time (as noted below).	Retention and expansion of existing customer base.
All industries	<p>Promote the new rail barge facilities on Annacis Island that link to the E&N Railway, including the new capacity to offer multiple weekly sailings.</p> <p>Develop and periodically review a business strategy to identify additional customers (including industrial plants that require bulk materials and producers of raw materials) and tailor service offerings to capture this additional traffic.</p> <p>Conduct market reviews of shipping rates to identify areas where rail can be competitive by tailoring the rates offered accordingly.</p> <p>Assess infrastructure requirements for extending direct rail service to additional sites. Consider rail and intermodal requirements.</p>	Targets should be set for expansion of rail traffic to help plan timing of infrastructure upgrades and associated financial commitments from shippers.	Restoration of rail corridor between Duncan and Courtenay to carry rail freight, potential re-opening of Port Alberni line depending on customer demand, and potential extension of freight service to Victoria (if capacity of rail corridor and bridges permits this.)

Land use strategies (specifically density) are an important consideration for the ICF and the EN Railway Corridor as they are linked to the passenger, tourist and rail freight business lines. Population and employment growth can increase the business potential of the corridor, more so if that growth is concentrated along the railway and around railway stations. Opportunities and challenges are noted in **Table E.6**. The ICF should work with local municipalities to endorse policies and plans for when the market is ready for development at and near the railway corridor and stations.

Table E.6 – Land Use Strategies for the E&N Railway Corridor

Corridor Segment(s)	Short to Medium Term Steps	Longer Term Steps	Potential Ultimate Condition
<p>Victoria to Courtenay</p>	<p>Land use planning reviews of TOD potential along the railway began in 2009. There is a potential benefit to all communities to create development hubs around the local train station and transit exchanges.</p>	<p>Consider land use linkages between train stations and nearby tourist and recreational activities. Look for opportunities to preserve traditional and historic character.</p>	<p>Stations and nearby tourist attractions could be supported by tourist amenities at the stations and compatible nearby land uses (shopping areas, etc.)</p> <p>Industrial and commercial land uses along the railway, especially those needing bulk shipments, could join the list of customers for freight service.</p>
	<p>Industrial and commercial property retention is important where having markets for freight is important, especially near the Nanaimo airport and in other larger cities and towns along the corridor where these land uses are still aligned near the railway (but possibly underused).</p>		
<p>Southern and Central Corridor</p>	<p>At the 'origin' end of commute markets being served, where appropriate, mixed used developments and higher densities (TOD supportive policies) could be built into the OCP or the zoning. Focus on Victoria, rest of CRD, Cowichan Valley, Nanaimo, Parksville.</p>	<p>Promote the significant potential along the E&N corridor (given the predominance of lower-density residential areas). The market to intensify development needs to exist, not just the supportive planning policies.</p>	<p>TOD nodes could provide a mixed use hub for the station areas in addition to being a source of railways passengers.</p> <p>Employment concentrations could be served by the railway corridor as well as the local transit system (BC Transit).</p>
	<p>Employment sites, especially office and commercial, need to be concentrated near stations. This could start right away, but in some places that are already low-density developments, it could take significant time to assemble land and implement.</p>		

1. INTRODUCTION AND PURPOSE

This Paper builds on the previous evaluation of the E & N Railway³ Corridor on Vancouver Island and has been carried out by the project team to help guide the ICF in long-term policy and potential investment decisions related to this railway corridor. This study has been sponsored and managed by the BC Ministry of Transportation and Infrastructure (MoTI) on behalf of the Island Corridor Foundation.

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 previous owners of the railway corridor donated it for tax credit, and the Island Corridor Foundation (ICF) took over ownership of the corridor in 2005. The railway has been operated under contract by the Southern Railway of Vancouver Island (SVI) since 2006. The condition of the railway had been deteriorating and it is evident that repairs would be required to sustain the railway. The ICF has issued requests to the Federal and Provincial governments for capital investment in the corridor, and, as a result, BC MoT initiated this study process in November 2008, to evaluate the long-term viability of the railway corridor.

The first phase of the study culminated in the Foundation Report, which consolidated 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 report also defined railway service options, and then built 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 were then evaluated for these combinations of railway services. The general conclusion was that there is potential in the railway corridor, but that several of the business lines would be unable under current conditions to cover operating costs plus pay back the entire capital cost of repairing the corridor.

As a result, the ICF and SVI have been actively developing and pursuing business opportunities, some of which will be short term, and others which may unfold over time. In this context, this Report includes the following:

- Background;
- Summary of the ICF Corridor Vision;
- Corridor Investment Issues; and
- Potential Corridor Development Strategies that would help support the ICF vision for the corridor, including opportunities and challenges to consider in pursuing business and building on the corridor asset.



³ Esquimalt and Nanaimo Railway.

1.1 Background

This section describes the study corridor and outlines Phase 1 of the E&N Corridor Evaluation Study, which provides a foundation for the current strategy report.

1.1.1 CORRIDOR DESCRIPTION

Built in 1886, the Esquimalt and Nanaimo (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 industrial spur lines that are now inactive.

Exhibit 1.1 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 ownership of the railway through the Island Corridor Foundation (ICF). The ICF is a non-profit charity with very limited financial resources, and it 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. Revenue sources for the ICF include lease arrangements with Telus for a fibre optic line, and tax exemptions contributed by the municipalities.

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. Services include freight and daily passenger trains, as follow:

- 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, with current shippers located between Courtenay and Duncan. The freight service is linked to the mainland by way of a Seaspam Coastal Intermodal rail barge service between the Nanaimo waterfront and Fraser River port facilities, recently relocated to Annacis Island.

Most of the corridor features either daily passenger and/or freight service. However, with the exception of the section used by the tourist excursion trains between Port Alberni and McLean's Mill, the remainder of the Port Alberni subdivision is overgrown and currently out of service.



Exhibit 1.1 - E & N Railway Corridor, Vancouver Island – Current Operations



The railway includes three branches:

- 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

1.1.2 FOUNDATION REPORT – KEY CONCLUSIONS

The first phase of the E&N Railway Corridor Evaluation was initiated in 2009 and completed in early 2010. To carry out the technical work and support stakeholder/public consultation, MoTI engaged a consulting team including experts in freight economics, passenger service planning and forecasting, tourism, commuter rail, urban planning, rail operations and construction, and environmental reviews. Activities included site visits and data collection along the corridor, technical studies, consultation with existing and potential stakeholders and the general public during an initial round of Open Houses.

A series of topic reports was prepared on peer reviews, freight business opportunities, passenger services, tourist excursions, and commuter rail based on the Victoria market. In support of these analyses, a baseline report was prepared to document the railway condition, potential environment issues, and costs to restore the railway facilities to a state of good repair. The key findings in these reports were synthesized in a Foundation Paper, which built on the individual analyses by compiling various combinations of services to determine the financial feasibility of investments in the railway.

The following preliminary observations and conclusions were 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 could increase if service were improved. This would start with the improved connection to the Lower Mainland at Annacis Island and then the railway owner and operator would have to pursue potential shippers and build the business. The best potential is in the central portion of the corridor, and possibly the Port Alberni line. Improvements would be required to the track and related infrastructure to expand freight service much beyond current volumes.
- More freight volumes would be attracted from other modes provided that service could be more frequent, faster, and cost-competitive with trucking (provided that capital was invested to make these improvements to sections of the corridor where the new traffic would be carried). This is more likely to be the case with bulk shipments of lower-cost goods and materials. If the cost of fuel were to increase for trucking without having as great an impact on the diesel freight trains, then the cost comparison could improve in favour of the train at some point in the future.
- 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 track and grade crossing improvements. Areas where the railway was also improved to carry more freight would probably allow for faster speed passenger service. Passenger services are subsidized at this time. A more frequent VIA service might be a way to initially serve north/south tourism, business travel and commuting into Victoria and Nanaimo.
- 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 could 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 capital requirements above basic repairs, and needs a large enough travel market to be successful. Future (2026) passenger estimates for the Duncan-Langford-Victoria corridor did not support a 30-minute service. A logical approach could

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 very 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 (the contribution would however be a small percentage given that over 95% of highway traffic and nearly 100% of local traffic would remain). 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.

These findings help to inform the ICF and their current initiatives as well as longer-term strategies provided to the ICF in this paper.

1.2 Purpose

The intent of this current document is to identify strategies for the ICF in developing the corridor, including challenges and opportunities to consider both in the near term and over the years to come.



2. ICF VISION FOR THE CORRIDOR

The Island Corridor Foundation took ownership of the corridor in order to preserve the alignment and keep the railway operating to support sustainable economic development on Vancouver Island.

As outlined in Section 3, the corridor requires significant infrastructure investment to renew the railway, keep it in good working order and provide the future capacity to enhance passenger and freight services. Given this reality, the ICF has indicated an intention to pursue its long term objectives incrementally, building from the existing railway as opportunities arise.

The ICF has identified several longer term objectives, including:

- Encourage tourism and local economic development in the cities, towns and First Nations along the railway. This includes tapping into the global tourism industry with local activities connected to or served by the railway corridor. Local employment could also be stimulated by railway corridor construction and repair activities on the railway itself.
- Rebuild a 'green' transportation alternative by enhancing passenger services along the corridor. This would serve the existing and growing population of the Island, particularly retirement communities. The intent of this objective is to preserve the quality of life experienced by Island residents.
- Supporting the Island's resource industries by providing an alternative mode for shipping products. Despite recent economic setbacks worldwide, there could be future opportunities to form part of the Asia-Pacific Gateway for resources originating locally.

The Vision for the railway corridor includes two aspects: railway services and the physical assets within the corridor. The following elements have been proposed by the ICF and other interested stakeholders for the future, and under the right conditions could potentially occur anytime from the near to long term:

Passenger Services

- Intercity passenger service with schedule improvements from the 2009 schedule;
- Commuter service, provided initially by intercity trains and if demand warrants, by more frequent service such as a Victoria-based service;
- Tourist excursions served both by intercity train schedules and by dedicated special trains to events and tourist attractions.

Freight Services

- Nanaimo yard as the freight hub and connection to the Lower Mainland
- Freight trains serving large resource industries and other new shippers along and near the existing railway, in addition to retaining existing customers.

Physical Assets

- Land alongside the tracks used to create a continuous recreational trail in conjunction with Regional Districts and local partners.
- Historic train stations housing local business tenants and tourist services.

3. CORRIDOR INVESTMENT ISSUES

This section summarizes the key issues affecting the current railway corridor, namely the condition of the infrastructure and the range of potential costs to repair and renew the railway.

3.1 Baseline Condition Update

To provide the basis for the Canadian Pacific Railway's donation of the railway to the ICF, appraisal studies related to the valuation of the 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 by additional corridor visits in 2009 to expand the scope of the technical investigation and confirm the current status of the corridor.

3.1.1 RAILWAY CORRIDOR CONDITION

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 currently applied to North American railways; therefore, in its present condition the E & N Railway Corridor does not meet 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 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.

SVI carries out preventive maintenance within a limited budget to address safety-related repairs. These include some vegetation control and a testing and spot repair program to address the worst sites of tie decay. However, due to longstanding deferral of capital investment by the previous corridor owners, continuation and enhancement of freight and passenger services would require significant repairs or improvements to the tracks and related infrastructure.

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 VIA passengers notice swaying of the train, which is caused by 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 (this condition results in slow speed orders to maintain safe operations, and is nearing the threshold where train service would have to cease) and the remainder of the ties can be expected to reach their service life and require replacement 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 suitable for carrying the present loads on the line, up to the current limit of 263,000 pounds. Mainland railways accommodate freight cars up to 286,000 pounds, but not all types of freight traffic would require a higher loading standard 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 (such as the Niagara Canyon) date back before the corridor and were reassembled here in the late 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 currently stored and maintained at the roundhouse in Victoria, since the current schedule is oriented around a morning departure from Victoria.

Train 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, and this is replaced by the local authorities.

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 mph to 30 or 40 mph).

3.1.2 ENVIRONMENTAL REVIEW

Environmental concerns along the corridor are typically related to former industrial activities including several known spill sites and several buildings that could potentially include asbestos, PCBs, etc, lead or ozone depleting substances. 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.

3.2 Costs of Railway Restoration and Potential Service Expansion

The cost for railway restoration and service expansion depend on the portions of the corridor that would be needed in future, and also on the types of service to be operated.

In basic terms, the approximate cost to repair the Victoria-Courtenay corridor is \$79 million and the cost of the Port Alberni line is \$26 million. These figures do not include potential restorative work to aging bridges, which could add up to \$84 million to the costs. VIA stations and trains could cost up to \$32 million.

Other potential costs included improvements associated with a frequent commuter rail service, which in Phase 1 had been investigated between Langford and Victoria. This would add up to \$79 million incrementally to the repair costs for the main corridor (in addition to \$11 million in repairs already needed on that section), plus there would be some risk of \$70 million in grade separations required near Victoria if high-frequency train service were implemented. If all of these potential

costs were added up, the total restoration and enhancement costs have an upper end of \$371 Million, including restoration of both lines, expansion of VIA service, and a new commuter rail service based in Victoria.

Other options that focus on short segments of the corridor, or that focus on the VIA rather than the commuter rail option, were also evaluated. **Table 3.1** illustrates the range of options developed during Phase 1, and adds in two variations that are relevant to Phase 2.

The original set of options (shaded green in the table) included:

- Scenario 1: Service Preservation. In this option, the whole corridor (except the Port Alberni line) is repaired over the next 20 to 25 years to keep existing services going. Current levels of rail service would be maintained, with some growth occurring due to outside influences such as development along the corridor.
- Scenarios 2 through 5 looked at the central, northern, Port Alberni and southern corridor segments respectively, with rail service based out of either Nanaimo, Victoria or both. Scenarios 2 and 3 were focused more on supporting additional freight with spinoff benefits to passenger service, whereas 4 and 5 were focused on the Victoria market. Scenarios 4 and 5 also include significant upgrades and some additional commuter rail-related infrastructure and train sets. Because of the shorter segment lengths, cost estimates for some of these options were lower than end-to-end corridor restoration.
- Scenario 6 assumed that the entire railway, both the Victoria and Port Alberni subdivisions, would be restored and that a frequent commuter rail service would be implemented based in Victoria.

The new options (shaded purple in the table) reflect restoration of the railway corridor, with (#7) and without (#8) the Port Alberni line and both exclude the costs of a frequent commuter rail system for the Victoria region, with the assumption that more frequent VIA service would address this market instead.

Including stations and trains, Option 7 would cost \$130 to \$215 million, depending on the extent of bridge restoration required along the corridor. Option 8 costs range from \$104 to \$164 million, and have lower average costs per freight car and per passenger than Option 7. However, this option precludes any businesses based in Port Alberni and any business (such as the mine development near Union bay) considering the outbound shipment of materials through the port.



Table 3.1 – Cost of Restoration and Enhancement Options for E&N Rail Corridor

Service Options	1. Rail Service Preservation	2. Upgrade to Central Corridor (Duncan-parksville)	3. Central/Northern Corridor (Duncan - Courtenay) + Port Alberni Line	4. Limited Upgrades to Southern Corridor (Victoria - Duncan)	5. Extensive Upgrades to Southern Corridor (Victoria Sub)	6. Full Corridor Upgrade (both railway lines)	7. Full Corridor with Enhanced VIA providing Commuter Service	8. Restore Victoria Sub only, expand VIA services
Passenger Services	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	Three VIA trips per day	Three VIA trips per day
Commuter Service	Not Included	Limited service using VIA intercity	Limited service using VIA intercity	Victoria-Duncan Dedicated Commuter Service	Victoria-Langford - Duncan	Victoria-Langford Basic Service	Limited service using VIA intercity	Limited service using VIA intercity
Tourist Services	Existing Port Alberni	North-south tourist operation based in Nanaimo	Tourist operation based in Nanaimo, possibly to Port Alberni	North-south tourist operation based in Victoria	North-south tourist operation based in Victoria	Port Alberni - Nanaimo Tourist Excursion	Port Alberni - Nanaimo Tourist Excursion	Existing Port Alberni plus limited options based in Nanaimo
Freight Services	Current Freight Service	Increased freight, central section	Increased freight, central section; other shipments such as mining	Current Freight	Current Freight; potentially beyond Duncan to Victoria	Current traffic + expanded markets in central, southern and Port Alberni corridors	Current traffic + expanded markets in central, southern and Port Alberni corridors	Current traffic + expanded markets excluding Port Alberni corridor
Other	Expanded Rail Trails	Expanded Rail Trails	Expanded Rail Trails	Expanded Rail Trails	Expanded Rail Trails	Expanded Rail Trails	Expanded Rail Trails	Expanded Rail Trails
Corridor Affected (km)	230	94	230	64	64	294	294	230
Corridor Improvements								
main corridor outside CRD	\$ 65,000,000	\$ 28,500,000	\$ 51,370,000	\$ 17,200,000	\$ 17,200,000	\$ 68,570,000	\$ 68,570,000	\$ 68,570,000
port alberni Langford-Victoria			\$ 25,660,000	\$ 11,800,000	\$ 30,500,000	\$ 25,660,000 \$ 30,500,000	\$ 25,660,000 \$ 11,800,000	\$ 11,800,000
Facilities								
stations - VIA	\$ 2,000,000	\$ 9,000,000	\$ 17,300,000	\$ 1,000,000	\$ 2,000,000	\$ 17,300,000	\$ 17,300,000	\$ 16,000,000
mtce yard - CR				\$ 8,000,000	\$ 10,000,000	\$ 10,000,000		
stations - CR				\$ 3,000,000	\$ 17,600,000	\$ 17,600,000		
Passenger Trains								
new/renovate - VIA	\$ 3,000,000	\$ 3,000,000	\$ 9,000,000	\$ 3,000,000	\$ 9,000,000	\$ 15,000,000	\$ 9,000,000	\$ 9,000,000
trains - CR				\$ 22,000,000	\$ 32,000,000	\$ 32,000,000		
Total Capital	\$ 70,000,000	\$ 40,500,000	\$ 103,330,000	\$ 66,000,000	\$ 118,300,000	\$ 216,630,000	\$ 132,330,000	\$ 105,370,000
Other potential costs/risks								
Bridge Replacements	\$ 60,000,000	\$ 13,500,000	\$ 65,500,000	\$ 18,800,000	\$ 18,800,000	\$ 84,400,000	\$ 84,400,000	\$ 60,000,000
New Grade Separations					\$ 70,000,000	\$ 70,000,000		
Total Potential Cost	\$ 130,000,000	\$ 54,000,000	\$ 168,830,000	\$ 84,800,000	\$ 207,100,000	\$ 371,030,000	\$ 216,730,000	\$ 165,370,000

3.3 Average Costs and Performance Measures

Based on the existing freight and passenger markets, the basic capital costs for the full corridor options (plus allowances for operating costs) would average to \$5,000/rail car and \$35-40 per rail passenger.

The average capital costs would be reduced to as low as \$400 to 450 per rail car and \$25-30 per passenger if future markets materialized. Achieving this, especially on the freight side, is a significant challenge that was highlighted previously in the Freight Report (Phase 1). Of foremost importance, a much larger freight business would be necessary to sustain the corridor and provide a predictable cash flow to pay for operations, fund capital improvements, and provide an operating profit for the operator. Strategies to work on bridging this gap are outlined in Section 4.

The Island Corridor Foundation has indicated that more modest investments (essentially increments of Options 1 or 8) could allow existing rail services to continue, provided there are short-term investments in immediate repairs while new markets are investigated.

A set of performance measures was developed as general guidance to the ICF for the main railway business lines, to provide some indication how the corridor would have to perform if the operating costs and capital investments are to be justified. (The tourism market is assumed to use available track and pay its own capital/operating costs, without affecting viability of the other services.) **Table 3.2** provides an indication of how the markets might optimistically be expected to perform.

Table 3.2 –E&N Rail Corridor Performance Measures

Service	Today	Corridor Measures	As a %
Passenger & Commuter	Over 40,000 VIA passengers per year	Estimated 41,000 jobs along rail corridor (Victoria, Nanaimo, Esquimalt, Parksville, Duncan)	At a modal share of 7%, this would translate into 6,000 trips/day or approximately 200,000 trips per year
Tourism	11,000 per year in Port Alberni	Forecast of 76,000 passengers via Port of Nanaimo Cruise Ship Terminal annually.	Market of an additional 10,000 annual passengers interested in specially designed tourist services via rail = 13% market share (of cruise ship passengers)
Freight	Approx. 900 carloads per year	Estimate of 35,000 to 40,000 carloads per year to support full capital costs of upgrading rail infrastructure and maintain operations.	8000 carloads/year to cover basic operations and maintenance (excluding capital) = 9% growth per annum in freight from the current freight volume.
Land Use	Estimated 481,000 live within 5 km of rail corridor.	Transit Oriented Development (especially higher density housing near stations) is needed to support viability of the railway and produce lower average costs per rider. Percentages need to match or exceed Victoria numbers along more of the corridor.	High Density (Today): Victoria = 15% Other Communities < 5% Medium Density (Today): Victoria = 67% Esquimalt = 62% Duncan = 52% Other communities < 50%

4. ICF CORRIDOR DEVELOPMENT STRATEGIES

Given that the cost to renew the infrastructure along the entire E&N Railway Corridor is estimated to be \$100 million or more, the Island Corridor Foundation has indicated plans to pursue an incremental approach to developing the different lines of business. The long-term intentions are to increase the potential for freight business to generate a financial return and for passenger service to be a cost effective alternative to other modes for residents and tourists in the island corridor.

This chapter outlines the current and near term actions that the Island Corridor Foundation and its operating partner SVI are pursuing in 2010, followed by an outline of the strategies the ICF should consider in developing passenger rail services, tourist excursions, freight business and land use along the corridor.

There is no specific timeline for carrying out these strategies, since some of them, particularly those related to land use, will depend on the passage of time and the pressures of population and economic growth to stimulate the market for rail-supportive development. Some of the strategies should be revisited several times as conditions evolve, and the conditions to support some or all of the intended rail services may emerge through focused efforts by the corridor stakeholders.

4.1 Current and Near-Term Actions

The Island Corridor Foundation (ICF), working closely with the Southern Railway of Vancouver Island (SVI), is currently undertaking a number of initiatives to ensure the continuation of rail service on Vancouver Island. These include passenger services and tourism, freight service, and corridor preservation. A few of these initiatives would address issues raised during Phase 1 of the study, including input from stakeholders and members of the general public. Depending on the market, these actions may result in near-term business prospects while others may take longer to unfold.

Passenger Services including Tourism

- ICF is working with SVI and VIA Rail to re-orient the passenger service to be based out of Nanaimo rather than Victoria, to offer more appropriate inter-city passenger schedules.
- With VIA Rail, ICF is planning the renovation of the train station in Nanaimo, to restore it from fire damage incurred several years ago.
- ICF is working with VIA Rail to procure additional dayliner cars in order to operate a second daily train service.
- A larger employer (Shipyard in Esquimalt) has been engaged in discussions to develop and test a targeted 'custom' commuter train
- ICF and SVI are working to refurbish existing VIA Rail rolling stock to include enhanced interiors, a small galley, and more luggage space and bike racks. This would address some of the most common public comments heard during Phase 1 of the study.
- ICF and SVI are investigating potential rail excursions using the VIA Rail equipment in conjunction with the revised train schedule.
- ICF is also pursuing development of tourist train services in connection with the Nanaimo cruise ship terminal development.
- In conjunction with its member Regional Districts, ICF is facilitating development of trails along the railway corridor for recreation uses, and linking these into the provincial/national trails sought out by tourists.

Freight Rail Services

- The potential for more frequent rail car deliveries is now possible with the opening of the Southern Railway intermodal terminal on Annacis Island
- A potential bulk material customer has been engaged so that a railway transportation option is being given a serious look (Raven Coal Deposit)

Corridor Preservation:

The “Rail for Trails” program is continuing, where recreation trails are built alongside the tracks but are segregated from the running way. This has been implemented in several segments of the overall corridor. Some reconstruction of railway bridges has been paid for through the regional trails budgets to accommodate the railway and trail. In other areas, the trail diverges from the railway where re-construction of bridges would be impractical or very expensive.

4.2 Passenger Rail Services

This section describes the set of strategies the ICF could consider in developing different types of passenger rail services including intercity connections, services for commuters and briefly touches on excursions for tourists. Section 4.3 covers strategies for tourist excursions and for using the railway corridor for tourist-related activities including recreational trails.

4.2.1 POTENTIAL PASSENGER MARKETS

Intercity passenger rail, commuter rail and tourist excursions were all considered within the Foundation Report. The current intercity market is 40,000 passengers per year, most of whom are tourists. The passenger analysis estimated that over 200,000 passengers per year could potentially be carried (allowing for 20 years growth) by adding up to two more daily trains, making safety and speed improvement capital upgrades to the corridor, and reorienting the service to provide a better and more reliable schedule. An initial commuter rail analysis was carried out for a 6-station concept from Langford to downtown Victoria plus an extended service option going to the City of Duncan. Estimates indicated that a service running every half hour could carry over 300,000 passengers per year by the year 2026; however, this frequency of service would require a significant number of trains, track improvements and new stations with an upfront cost of up to \$90 million and \$3 million per year to operate the service. In addition, potential costs to grade separate two of the busier arterial crossings along the alignment could drive the \$90 million estimate upwards to \$165 million, if the BC Safety Authority mandated reviews for those two locations and grade separation was recommended. Using the intercity trains to provide regional service, strategically scheduled to capture much of the same market, would be more cost effective by leveraging the existing fleet-related costs and reducing the capital costs for alignment improvements since some of these were driven by service frequency.

4.2.2 INCREMENTAL BUILD-UP OF PASSENGER SERVICES

The ICF should consider an incremental build-up of passenger rail services for this corridor. The first step would be to start with a better scheduled train since the current one serves primarily a Victoria-based tourist market. Anyone trying to use the current train to commute or to visit either Victoria or Nanaimo on business is highly constrained by the schedule which departs Victoria in the morning and returns in the evening. It does not allow the flexibility for same day business or commuting travel. As noted in Section 4.1, the ICF has been in talks with VIA Rail to reschedule the train and base its operations (and therefore its early morning departures) out of Nanaimo, to help capture some of the inter-municipal commuting market that is already present today.

4.2.2.1 Commuting Markets in 2006

Exhibit 4.1 illustrates the commuting patterns reported in the 2006 census. The place of work was determined for all of the locales within 5 kilometres of the railway corridor, with the largest markets shaded in the table.

Table 4.1 – Commuting Patterns along the E&N Corridor

Regional District	Place of Work	Orientation of Commuting Pattern			Grand Total
		Aligned to E&N	Same Community	Other	
Capital RD	Colwood (CY)	160	785	1,985	2,930
	Esquimalt (DM)	3,650	1,710	3,920	9,280
	Langford (CY)	640	2,490	3,255	6,385
	New Songhees 1A (IRI)		30	90	120
	Oak Bay (DM)	580	955	4,340	5,875
	Saanich (DM)	670	13,430	14,140	28,240
	Victoria (CY)	14,235	21,645	28,680	64,560
	View Royal (T)	875	355	2,295	3,525
Capital RD Total		20,810	41,400	58,705	120,915
Cowichan Valley RD	Chemainus 13 (IRI)		45		45
	Cowichan 1 (IRI)	880	380	170	1,430
	Cowichan Valley A (RDA)	535	230	285	1,050
	Cowichan Valley B (RDA)	90	330	70	490
	Cowichan Valley C (RDA)	560	250	75	885
	Cowichan Valley D (RDA)	240	125	45	410
	Cowichan Valley E (RDA)	140	110	620	870
	Cowichan Valley G (RDA)		30	20	50
	Cowichan Valley H (RDA)	170	50		220
Duncan (CY)	3,020	450	690	4,160	
Ladysmith (T)	465	975	310	1,750	
Cowichan Valley RD Total		6,100	2,975	2,285	11,360
Nanaimo RD	Lantzville (DM)	270	60	50	380
	Nanaimo (CY)	6,565	24,975	1,060	32,600
	Nanaimo A (RDA)	605	345		950
	Nanaimo C (RDA)		35	175	210
	Nanaimo E (RDA)	420	345		765
	Nanaimo F (RDA)	265	480	495	1,240
	Nanaimo G (RDA)	110	325	145	580
	Nanaimo H (RDA)	120	150		270
	Nanaimo Town 1 (IRI)		50		50
	Nanoose (IRI)	25	40		65
	Parksville (CY)	3,230	1,430		4,660
	Qualicum (IRI)	105		130	235
Qualicum Beach (T)	1,110	665		1,775	
Nanaimo RD Total		12,825	28,900	2,055	43,780
Comox Valley RD	Comox (T)	320	3,685	425	4,430
	Comox-Strathcona A (RDA)	380	285	145	810
	Comox-Strathcona B (RDA)	60	535	355	950
	Courtenay (CY)	830	7,325	1,590	9,745
	Cumberland (VL)	25	240	305	570
Comox Valley RD Total		1,615	12,070	2,820	16,505
Alberni-Clayoquot RD	Alberni-Clayoquot B (RDA)		25		25
	Alberni-Clayoquot E (RDA)		120		120
	Alberni-Clayoquot F (RDA)		130	40	170
	Port Alberni (CY)	395	4,960	2,010	7,365
	Tsahaheh 1 (IRI)		30		30
Alberni-Clayoquot RD Total		395	5,265	2,050	7,710
Grand Total		41,745	90,610	67,915	200,270

Note: Only includes communities within 5 km of rail corridor (and reported employment base)

In total over 200,000 jobs are in municipalities along or near the railway corridor. However, only 41,700 of these jobs are actually oriented along the railway corridor where the place of residence and the place of work would be in two different stations along the island railway. Nearly 91,000 jobs were within the same origin and destination community and therefore both ends of the trip would be at the same station (not a logical trip). The remaining 68,000 commutes were not oriented parallel to the railway and therefore would be candidates for other transportation options instead.

Out of the 41,700 commutes parallel to the railway corridor, the primary job markets are currently based in Victoria, Nanaimo, Esquimalt, Parksville and the city of Duncan. A first step is to consider whether the train schedule could serve these locations at the beginning and end of the typical working hours in order to pick up the commuter market. It may be worthwhile for the local municipalities that are members of the ICF to survey local employers to determine if there is a case for commuter rail service bringing employees into their communities.

4.2.3 POTENTIAL INITIATIVES TO DEVELOP AND BUILD PASSENGER RAIL SERVICES

The short-term plans of ICF and SIV would re-orient the trains so that a southbound leg running to Victoria would operate in the morning before starting the northbound service for tourists. This southbound train run could be the starting point of a commuter-oriented service. Upon the return of the train in the evening, the northbound train heading back to Nanaimo could then act as an early evening commuter service taking passengers from Victoria and Esquimalt to municipalities along the way (View Royal, Langford, Cowichan Valley, Nanaimo) to the north. Further details on potential schedules are referenced in Section 4.3.1.

A first step is to tie intercity passenger service to starter commuter markets such as employees that live in Duncan, Cowichan and Shawnigan Lake that commute to locations in Langford, Esquimalt and possibly in Victoria. This is similar to what the ICF is currently investigating with the shipyard in Esquimalt. In developing this type of service, one should consider the concentration of employees, the hours that they work and the likelihood that a commuter rail service can capture the market. For example, the employees at the shipyard in Esquimalt have an unusual (early start and finish) shift time that would require the trains to be scheduled specifically to meet their travel needs. In addition, the onboard amenities (washrooms are important especially for longer commutes) and the ability of the passengers to bring work-related equipment on board may have to be considered for specialized type of employers such as the shipyard.

The critical consideration in building a commuter market is to identify the work places that would be well served by the trains with the time from the train station to the place of work being as minimal as possible. One way of increasing the catchment area of an employment destination station is to have convenient shuttle connections from the train station to the nearby employment centres. The shuttles would be timed to wait for the train and then take the passengers to their workplace. These might be shuttles that are provided by the employer if there were a large enough base of employees using the train or they might be provided by BC Transit or by the local municipality.

One of the current challenges is that some commuters from the Cowichan Valley Regional District, living in Duncan, Cobble Hill, and Shawnigan Lake, are served by BC Transit highway coaches that stop along Highway 1 at the edge of Langford, and provide service to employment destinations along Douglas Street. This service captures a portion of the market that the train could be serving. The current adult fares for this service range from \$6 to \$8 one-way, which provides some guidance for what commuter fares would be palatable to train passengers. One way of using this to the trains' advantage would be to develop a fare integration agreement with the bus service so that passengers using the train would also have additional travel time options beyond the train schedule. While this does compete to some extent with the train, it may act as a complementary service and

attract more passengers in the long run. (The West Coast Express in Vancouver uses express buses to supplement its train schedules.)

An additional way for the ICF to enhance the train station areas is to talk to BC Transit about using these as transit exchanges if not done so already, and at a minimum, providing adjacent bus stops with shelters. The first place to consider this would be the West Shore communities outside Victoria followed by Cowichan, Duncan and possibly Nanaimo. The advantage of doing this would be to provide better local transit connections for passengers wishing to connect to the intercity passenger rail service, including the commuter-based portion of the schedule. It also provides a convenient location for non-train-related transit connections to be made at an established transit facility in the centre of the community. One could also consider Park and Ride facilities near certain stations, focusing on those near highways (e.g. the proposed Six Miles stop) and near the ends of the passenger service, since parking facilities often compete for land that could be used for Transit-Oriented Development (TOD).

If after an initial level of service was established, and there were potential passengers that would be interested but were not being conveniently served by the initial train service, then a case could be built for the next increment where another train starting 30 to 60 minutes apart from the first could be contemplated. The feasibility of this will depend on the future population, employment and commute patterns.

In addition to reorganizing the passenger train schedule to serve commuters and better serve intercity rail passengers, it will be important to address the issues of travel time (and speed) and travel time reliability. Currently, the condition of the rails requires relatively slow running of the VIA train in several sections of the corridor. In addition, there are several places along the corridor, particularly the Malahat segment, where tree and rock falls can result in unpredictable train stoppages while the tracks are being cleared of debris. This type of interruption to trains, especially to people using the train as their commute service, would act as a deterrent to retaining a long term passenger base. Therefore, replacement of track ties in critical areas and installation of a rock fall warning system would both help to improve the travel time and the travel time reliability for passenger services.

Another infrastructure-related strategy is for the corridor to be preserved, especially in the Victoria area, through application of the rail-trail agreement and timely design reviews to ensure that capacity for railway service is still retained. (During the commuter rail analysis in 2009, one proposed trail segment was shifted slightly to preserve the option for passing tracks in Esquimalt, which would be needed if more than one train were to be present in the Victoria area at one time).

As already noted, the current intercity passenger service is already used by tourists either to ride up and down the corridor from Victoria to Courtenay and return, or to go to intermediate tourist locations and then make their way back either by train or by bus to Victoria. In the future, with the train operating more frequently during the day, it is likely that the intercity passenger service would also attract additional passengers on "do-it-yourself" trips to tourist destinations along the corridor. Building on this, there may be special events that could be served by running special train excursions at the commuter fares. For example, these could include cultural events, festivals and sporting events in the larger towns and cities along the corridor. This would be accommodated by adding to the regular train service on the line or by making slight adjustments to the regular train schedule in order to serve the event. The benefits of doing this include: managing traffic demand at special events; and promoting the train service beyond the usual passenger base. Further details on potential tourism-based strategies are described in the next section.

4.3 Tourism Strategies

The Foundation Report included analysis of the potential of tourist excursions based in Victoria. The findings of a survey of potential passengers (tourists and Island residents) indicated that upwards of 10,000 passengers per year would be interested in riding in a specially designed tourist train to visit tourist attractions along the E&N Railway. Stakeholder input has suggested that the cruise ship terminal being developed in Nanaimo may offer greater potential for tourist excursions than the existing facility in Victoria (which is only a stopover point) and this will therefore be a focus of the tourist strategy in this paper.

The following sections of this report provides the ICF with potential tourism opportunities associated with enhanced VIA Rail passenger service, along with opportunities for dedicated tourist train excursions and tapping into the Nanaimo-based cruise ship business.

4.3.1 OPPORTUNITIES IN CONNECTION WITH ENHANCED VIA RAIL PASSENGER SERVICE

The ICF has been advised that VIA Rail Canada is refurbishing a number of the Budd cars in its fleet for use on the E & N Railway service. It is hoped that in the near term three of these refurbished cars will be available in order to run the two-car train set on a daily basis and have a spare that can be substituted when one of the other cars needs repairs. The current spare is apparently unserviceable, so one car has to be taken out of service whenever repairs are required. ICF understands that the refurbished equipment will have the following amenities and upgrades:

- Fully refurbished interiors (new upholstery, new finishings, modernized washrooms, etc.)
- The addition of bicycle racks, which would be ideal for cycling tourists or commuters who cycle to and from the train station at either end
- The addition of a small galley which would enable coffee, tea and light snacks to be served
- Additional on-board storage for luggage, which would be helpful for inter-city tourist travel.

Just doing these upgrades – even without any schedule improvements – could enhance the tourism potential of the E & N passenger rail service because of the increased comfort levels and capabilities for luggage and bicycles.

In addition to this equipment upgrading initiative, SVI and VIA Rail have been examining how the scheduling could be improved in the short term to enhance ridership and increase the potential for commuter use of the service between Nanaimo and Victoria. Two stages of improvement to this passenger schedule have been proposed, both of which require the train to be based out of Nanaimo rather than Victoria.

4.3.1.1 Stage 1 – Nanaimo Based Service with Extra Commuter Run to/from Victoria

Currently the train leaves from Victoria at 8:00 am and travels north to Courtenay arriving there by 12:45 pm, then leaves Courtenay at 1:15 pm to arrive back in Victoria for 6:00 pm. It has been assumed that some immediately planned improvements to the railbed will result in faster operating times which would enable the train to depart from Victoria at 8:30 am and return from Courtenay by approximately 4:30 pm.

- If this was the case, then the Nanaimo-based train could initially depart at 6:00 am southbound for Victoria, arriving there by 8:10 am, which would be ideal for transporting commuters to Victoria for an 8:30 am work start time.

- The majority of these commuters would likely embark in the Cowichan Valley, so that their travel time would be a little over one hour into Victoria.
- Conversely, at the end of the day after the 4:30 pm arrival in Victoria, the train would make a last commuter run departing Victoria before 5:00 pm to arrive back in Nanaimo a little after 7:00 pm.

No additional equipment would be required for this operating scenario, although there would be additional direct operating costs. This enhanced schedule offers the following advantages to tourists:

- It enables day trips from Nanaimo and the Cowichan Valley to Victoria
- Schedule frequency between Nanaimo and Victoria is doubled with two trains daily each direction, enabling greater itinerary flexibility for tourists. Trains from Nanaimo to Victoria will depart at 6:00 am and 2:20 pm and trains from Victoria to Nanaimo will depart at 8:30 am and 4:52 pm.
- The schedule will still allow enough time in either Duncan or Chemainus should Victoria originating passengers wish to disembark from the morning train there and take the afternoon train back into Victoria.

4.3.1.2 Stage 2 – Nanaimo Based Service with Extra Commuter Run plus a Second Train Set

Under this scenario a second set of two additional Budd cars would be procured and assigned to the E & N Rail Corridor run. The availability of the second train would enable a number of enhanced scheduling possibilities.

- In addition to an extra commuter run in the morning and late afternoon, it would be possible to do an extra run during the day between Victoria and Parksville return, which may be better suited to tourist travel as it could depart after morning rush-hour (e.g. 9:30 am and arrive back in Victoria by 4:00 pm).
- This extra train set could be used on a Monday to Friday basis to increase schedule frequency and could be available for special excursions and other tourism/leisure uses on weekends

It should be noted that this stage 2 option requires capital investment in additional cars⁴, and the enhanced schedule capabilities will likely benefit commuters more than tourists in that the additional scheduled departure/arrival times possible are fairly close to the existing scheduled times (not really offering much of a time of day alternative), unless it was decided to operate the second train northbound from Nanaimo in the morning to Parksville or Courtenay, returning via Victoria to Nanaimo in the late afternoon.

- Operating the second train northbound departing from Nanaimo about 8:00 am would be the preferred option for maximizing the tourism use of the scheduled VIA Rail train service as it would result in two trains daily for much of the corridor with the scheduled times being staggered by at least a few hours, enabling a much more extensive range of scheduling and itinerary possibilities for tourists and other leisure travellers.

4.3.2 OPPORTUNITIES WITH SVI USING ADDITIONAL PASSENGER EQUIPMENT

SVI has also been exploring the potential of a dedicated tourist train service and has worked with the West Coast Railway Association, operators of the Royal Hudson rail excursion, to cost out some options and alternatives. They have also contemplated the concept of bringing over the Royal Hudson itself to offer a steam train excursion. These are all clearly possibilities that would need to

⁴ VIA may be providing these cars. An order of magnitude cost is \$2-3 million per car, including delivery.

be analyzed by an excursion operation proponent to assess their market potential and financial and operational viability.

For any dedicated tourist rail excursion to be successful, based out of Nanaimo or Victoria, there must be interest by tour operators in marketing them (see 4.3.4 for how this relates to cruise ships), and the following conditions must be met:

- Signature destination attractions must be included in the itinerary and our recommendations are one or more of the following for each itinerary:
 - Chemainus, because of its famous murals, heritage downtown, shopping and theatre
 - Duncan, famed for its totem poles, the Quw'utsun' Cultural Centre and the BC Forest Discovery Centre
 - Coombs, Cameron Lake and Cathedral Grove are the main attractions within a reasonable travel time on the Alberni subdivision of the E & N Rail line.
- Given that any and all of the above attractions can be visited by car or bus, there needs to be a clear rationale for the use of rail travel which may relate to the railroad's heritage and/or the ability to access unique sites, viewpoints and scenic wilderness landscapes not available by road.

Therefore, any dedicated tourist rail service is as much about packaging and theming as it is about rail travel. Dedicated tourist trains are likely to be more successful if the train appears to be a normal train set with a locomotive and two or more cars, rather than just one or two self propelled Budd cars. Being able to offer a dining car and/or a domed observation lounge are favourite amenities on tourist rail services and could be offered as optional add-ons to a more budget-oriented tourist rail service.

The following potential tourist rail services are recommended for further investigation:

- Victoria or Nanaimo to Duncan and/or Chemainus
- Victoria or Nanaimo to Coombs, Cathedral Grove and Cameron Lake
- Wineries in the Cowichan Valley and Alberni Valley
- Victoria or Nanaimo to McLean Mill and Port Alberni.

The last alternative noted above, is a potential for the longer term when this rail line has been fully refurbished enabling reasonable operating times. Also, it may be necessary to operate the excursion with rail one-way and bus one-way, in order to improve travel times and take in various sightseeing stops. It should be noted that the Cameron Lake/Cathedral Grove portion of any proposed excursions will require some investment in infrastructure.

- If the train terminates near Cathedral Grove, it will be necessary to build a small terminal point, ideally one that can be accessed by road from Highway 4, which passes through Cathedral Grove.
- Our review of maps indicates that the rail line comes fairly close to a secondary road or logging road on the north side of Cameron Lake near the entrance to McMillan Provincial Park.
- The infrastructure investment for this scenario may be significant in that major road building/upgrading costs may be incurred in addition to having a suitable disembarkation platform and shelter built.

The advantage of including the run along Cameron Lake is to add a significant component of scenery to the rail trip, which is always a highlight for passengers, as well as a signature point of interest (Cathedral Grove).

4.3.3 PARTNERSHIPS REQUIRED TO PURSUE TOURIST RAIL OPTIONS

If VIA Rail and SVI operate a second train set on the E & N Corridor, there is considerable potential to partner for special events, special dinner theatre excursions to Chemainus and various event based rail excursions that could be marketed for different seasons of the year (e.g. Christmas Train, Halloween, etc.), as has been done by tourist trains currently operating in other parts of the province.

The addition of dedicated tourist train equipment could either be arranged through partnerships with the West Coast Railway Association for the Royal Hudson and some of its rail cars, or an additional used train set could be purchased and refurbished to suit the requirements of the proposed tourist rail services.

- There is a considerable inventory of used passenger rail equipment sitting idle and rail equipment brokers such as Ozark Mountain Railcar actively sell this on an ongoing basis.
- A recent review of their website suggests that a 2-car train set (locomotive plus 2 cars) could be purchased for \$360,000 to \$550,000 U.S.
- These two train sets are fitted-out as dinner trains but could easily be converted, or the dining cars could be used as part of the service along with additional coaches to be purchased.

Clearly, upgrading costs would likely be significant for train sets available at these low price levels. Criteria for assessing any such equipment should include the following:

- Technical suitability for use on the E & N Railway;
- Current operational condition of all equipment and financial feasibility of refurbishing to suitable technical and safety standards, as well as modern comfort levels;
- Size and spacing of windows as tourist train travel is all about enjoying the passing scenery and views, so every seat in the coaches and any dining cars should have clear picture window views and not be in a “blind spot”; and
- Fit with any proposed heritage theming (e.g. - for a turn-of-the century heritage theme, this would require coaches built in the late 1800s or early 1900s and then upgraded to meet current standards of comfort and safety).

Clearly the most important partnerships for any tourist rail service would be with the destinations and attractions that are being included as part of the package, which would include the following:

- Attractions such as Quw’utsun’ Cultural Centre, Chemainus Festival Theatre and the McLean Mill
- Restaurants and wineries where these are included in package itineraries
- Charter bus companies, as portions of most or all of the itineraries would need to be handled by bus
- Tour operators who may be engaged to market some of the tourist rail programs. There are a number of established operators that specialize in tourist rail packages such as West Coast Railtours and John Steel Rail Tours, as well as major tour wholesalers that like to feature rail itineraries such as Collette Vacations, Brewster Vacations, and Cartan Tours, among others.

4.3.4 PURSUING NANAIMO CRUISE SHIP TOURIST TRAIN SHORE EXCURSIONS BUSINESS

The Port of Nanaimo has been planning the development of a \$22 million cruise ship terminal, capable of handling the largest cruise ships afloat. This project has recently been given the go ahead in time to make use of currently available infrastructure funding, which requires the project to be completed in 2011. The reality is that some cruise lines will not commit their scheduling until they see that the facility is completed or nearing completion, so the real impact, in terms of attracting incremental large cruise ship visits, will likely commence in 2012. The cruise lines are already at the stage of putting together their 2011 schedules. However, during 2011 the port will continue to receive some cruise ship visits from large ships that will be able to dock at the port, rather than anchoring offshore and tendering passengers to and from the ship. This means a much higher proportion of passengers will disembark, resulting in much greater economic impacts from these visits.

- For 2010, three large cruise ships are scheduled to make a port of call at Nanaimo, along with several smaller ones.
- During recent years the Port of Nanaimo has attracted in the range of 8-15 cruise ship visits annually, although the larger ships have to anchor off-shore and tender passengers ashore. This tendering is a laborious logistical process and results in a smaller percentage of passengers disembarking at the port.
- With a new cruise ship terminal in place, it is hoped that the Port will ultimately be able to attract 30 to 40 visits per season from large cruise ships. For this success to be achieved, it will be important that a great program of shore excursions can be offered, which provides a good opportunity for developing a number of unique tourist rail excursion products. .

ICF envisages that rail excursions could be a highlight of this port visit, similar to the White Pass and Yukon Railroad excursions conducted from Skagway. At Nanaimo it may be possible for the tourist train to depart directly from the cruise ship pier, similar to Skagway.

To attract cruise ship business, the design of any tourist train excursion, along with the equipment used, is of critical importance. Since it is not possible to offer the spectacular scenery featured on the White Pass and Yukon Railroad, other attractions and features must be highlighted and scenic vistas offered where possible.

In order to understand the potential for tourist train excursions and what features should be included, we have reviewed the shore excursions currently being offered at Nanaimo for the three large cruise ships that will be arriving during 2010:

- Norwegian Cruise Lines – *Norwegian Pearl* (capacity of 2,380 passengers)
- Royal Caribbean Line – *Radiance of the Seas* (capacity of 2,112 passengers)
- Celebrity Cruises – *Millennium* (capacity of 2,034 passengers)

The shore excursions offered by these three cruise ships are summarized in Table 4.2, below.

Table 4.2 - Shore Excursions Offered by Cruise Lines Visiting Nanaimo in 2010

Name of Excursion	Adult Price (\$ U.S.)	Duration	Principal Itinerary Features
Alberni Valley Steam-Powered Adventure	\$122.50	5 hours	<ul style="list-style-type: none"> ▪ Visit to Cathedral Grove ▪ Ride on Alberni Pacific Stream Train ▪ Tour of McLean Mill ▪ Refreshments included at the Mill
City Heritage Walking Tour	\$30.00	2 hours	<ul style="list-style-type: none"> ▪ Guided walk through downtown Nanaimo ▪ Visit to new Museum ▪ Bastion Fort
Coombs Country Market & Cathedral Grove	\$81.50	4 1/4 hours	<ul style="list-style-type: none"> ▪ Visit to Cathedral Grove ▪ Coombs Country Market ▪ Includes a box lunch
Waterfalls & Wildlife Discovery	\$102.00	5 1/4 hours	<ul style="list-style-type: none"> ▪ Visit to Wildlife Recovery Centre ▪ Visit two Provincial Parks ▪ Flora and fauna ▪ Snack included
Cowichan Valley Grand Wine Tour	\$118.50	6 hours	<ul style="list-style-type: none"> ▪ Visit the Island's 2 oldest Estate vineyards ▪ Visit to Estate Cidery ▪ Guided tour through orchard & vineyard ▪ Includes wine tasting and snack
Coombs Country Market, Fruit Wine & Cheese Farm	\$91.75	4.5 hours	<ul style="list-style-type: none"> ▪ Visits to a cheese farm and Fruit Winery ▪ Guided tour of farm and cheese-making ▪ Sample cheeses and wines ▪ Coombs Country Market
Cranberries & Hops	\$102.00	3 hours	<ul style="list-style-type: none"> ▪ Historic downtown Nanaimo ▪ Visit cranberry farm and sample cranberry cider ▪ Sip traditional beer at BC's first neighbourhood pub ▪ Hot luncheon included at the pub
Nanaimo Highlights & Garden Gallery	\$59.00	3 hours	<ul style="list-style-type: none"> ▪ Historic downtown Nanaimo ▪ Visit to cranberry farm ▪ Visit the Garden Gallery

Source: Based on information from Norwegian Cruise Lines, Royal Caribbean Line and Celebrity Cruises

It is helpful to review the excursion durations, which range from 2 to 6 hours, and the retail prices charged to the cruise ship passengers, which range from a low of \$30 for a 2-hour walking tour to a high of \$122 for the excursion to the Alberni Valley including visits to the McLean Mill and a ride on the Alberni Pacific steam train. These prices typically include a significant 40-50% or more mark-up by the cruise lines over what they purchase the excursions for from the local shore excursion operators.

- It is important to note that the features offered on the existing non-rail excursions are virtually identical to those that were identified as having best potential for tourist train excursions out of Nanaimo, although do not include Duncan and Chemainus.

- It is difficult for the cruise lines to include a matinee or evening theatre performance in Chemainus as these timings frequently do not line up with their hours in port.
- Special performances at other times are a possibility, although the cruise ships typically would not sell enough passengers on this one excursion to fill the theatre.

A tourist rail excursion with the potential for cruise ships would be an excursion to Coombs Country Market, Cameron Lake and Cathedral Grove, likely one-way by rail and one-way by bus, in order to include some additional sightseeing stops and features.

- The excursion could be themed to the railway’s forestry heritage, the natural wonders of the west coast rain forest, and the heyday of passenger rail travel in the 1940s and 1950s.
- The advantage of using this time period is that train sets are available and it would be possible to use an old diesel locomotive rather than having to use a steam engine that would be characteristic of earlier time periods.

A steam train, while a unique attraction, is more expensive to operate and is more prone to breakdowns. Also, our consumer survey conducted earlier in this project demonstrated that, while a steam engine would enhance the appeal somewhat, it is not a key deciding factor in choosing a rail excursion. If the train is equipped with a lounge car, it may be possible to offer entertainment and some food and beverage services.

The following steps need to be undertaken to develop tourist train business from the cruise lines:

1. Develop several alternative possible tourist train concepts that would be unique relative to what is currently being offered to the cruise lines in the way of shore excursions.
2. Cost out these options and ensure that the cruise line, once their mark-up is included, can offer them for price points that are reasonable – certainly no more than the price points being charged for the White Pass and Yukon railroad shore excursions, which range from \$108 for a 3-hour trip to \$170 for an 8 hour excursion.
3. Liaise directly with cruise line shore excursion planning staff for their advice on what is likely to be of interest.
4. Prepare formal proposals to the cruise lines – they each have their own template and questionnaire for this.
5. Refine proposals based on feedback from cruise lines.
6. If a tourist train excursion proposal is ultimately accepted and included by the cruise lines, put together an effective marketing package (including video material) that will enable them to promote the excursion effectively to their passengers.
7. Do a trial run of the full excursion prior to the first cruise ship to ensure that there are no operational glitches and that product quality is first rate. This trial run could be used as a promotional tour for media, partners and supporters.

4.3.5 RAIL WITH TRAILS TOURISM POTENTIAL AND DEVELOPMENT STRATEGY

In addition to revitalizing the passenger and freight rail services along the E&N Railway Corridor, work is also being done on using portions of the right of way to develop trails that would run alongside the rail tracks – hence the term “rails with trails” rather than “rails to trails”. For most of the railway corridor the right of way is 100 feet wide, which is plenty of room to accommodate an adjacent trail, along with single or twin rail tracks.

The extent to which trails are viable along different sections of the rail corridor has been studied in a number of rails with trails feasibility studies done by the Regional Districts located along the E & N

Railway Corridor. These detailed studies have demonstrated that there is potential to develop trails alongside the rail tracks in various locations throughout the Corridor. Where it is not possible to build trails alongside the rail tracks, alternate routes could be identified. Ultimately it might be possible to develop a linked trail system along the full length of the E & N Railway Corridor from Victoria to Courtenay and west along the Alberni rail subdivision to Port Alberni.

4.3.5.1 Rail with Trail Design Guidelines Already Developed

To aid in the development of the rails with trails along the E & N Railway Corridor, the ICF commissioned the following study: *Vancouver Island Rail Corridor Rail with Trail Design Guidelines*, which was completed in March of 2009. Funding and support was provided by the five regional districts along the E & N Railway Corridor – Alberni Clayoquot Regional District, Capital Regional District, Comox Valley Regional District, Cowichan Valley Regional District, Regional District of Nanaimo – and the Southern Railway of Vancouver Island. These guidelines are comprehensive and cover the following topics and sub-topics:

- Trail planning: Tenure; Vegetation management; Rail sidings; Trail naming; User groups; Trail accessibility; and Community links.
- Trail design: Trail set-back and separation; Grading and drainage; Environment; Crossings and intersections; Bridges and creek crossings, stairways; Fencing, bollards, and signage; Trailheads, rest areas, and seating; Lighting; and Retaining walls.

The document also includes a set of recommended design guidelines for three types of trails – urban, suburban and rural, each of which has distinctly different characteristics (e.g.- urban and suburban trails may be paved whereas rural trails would not be).

At present four of the five regional districts have completed feasibility studies including the Capital Regional District, Cowichan Valley Regional District, the Regional District of Nanaimo and Comox Valley Regional District.

- In the Capital Regional District the study concluded that a trail could be developed along 85-90% of the existing rail right of way
- In the Cowichan Valley Regional District, approximately 80% of the route was considered to be difficult or not practical.
- The Rail with Trail Feasibility Study done for Regional District of Nanaimo, District of Lantzville, City of Parksville and Town of Qualicum Beach generally showed that the trail was viable throughout most of the 98.6 km of E & N Rail Corridor assessed in this region. There were several short lengths (generally less than 1 km) where a trail would not be viable next to the railway, so bypass routes would need to be developed. The City of Nanaimo was not included in this study, although it has already developed about 3.4 km of multi-use trail along the E & N Corridor and has been assessing completion of the southern portion of that trail.
- The Rail Trail Feasibility Study conducted for Comox Valley Regional District and City of Courtenay assessed 20.4 km of the E & N right of way also found that there were several sections of approximately 1.5 km or less where it would not be possible to build the trail and alternate routes would need to be specified.

4.3.5.2 Trans Canada Trail

Some significant portions of the Trans Canada Trail route follow the E & N Rail Corridor between Victoria and Nanaimo. This is evident from **Exhibit 4.1**, where segments of the Trans Canada Trail run close to or along the E & N Rail Corridor in the Capital Regional District, north of Duncan and in the Ladysmith area (the E & N Rail Corridor fairly closely follows Highway 1, particularly between Cobble Hill and Nanaimo).

As the Trans Canada Trail has a lot of momentum, some segments of the Trail along the E & N Rail Corridor have already been developed and others are likely to proceed in the near term. It will be important on both trails to have signage identifying where the trails are concurrent and at the key points where they link-up.

Exhibit 4.1 - Route of Trans Canada Trail on Vancouver Island



Source: Trans Canada Trail

4.3.5.3 Vancouver Island Spine Trail

This proposed trail will extend for 700 km from Victoria to Cape Scott at the northern tip of Vancouver Island. It is primarily intended to be a backcountry trail that will traverse the mountains or “spine” of Vancouver Island. There are already 190 km of trails that have already been built or planned, so the intention is to link these existing trails and further develop existing backcountry trails that already exist along this proposed corridor. A map of the route is shown in **Exhibit 4.2**.

Exhibit 4.2 - Route of Vancouver Island Spine Trail



Source: Vancouver Island Spine Trail Association

The Vancouver Island Spine Trail Association (VISTA) is part of Hike BC and is being incorporated as a charitable society. It has held discussions with the various regional districts along the route. Meetings with the Capital Regional District and Cowichan Valley Regional District to expedite the southern portion of the Spine Trail (which follows the Trans Canada Trail route) have been helpful. VISTA will participate in the detailed design of the Trans Canada Trail section from Langford to Shawnigan Lake, and this segment will likely commence construction during 2010.

VISTA is also liaising with the City of Port Alberni, the Tseshaht First Nation and Alberni Clayoquot Regional District regarding their trail development project between the Alberni Canal and Francis Lake. This would eventually link to the Cowichan Lake section of the Spine Trail and VISTA's trail plan follows the 1913 historic Canadian Northern Pacific Railway route from Victoria to Port Alberni, a right-of-way that is still quite visible along the Alberni Canal south of Port Alberni.

4.3.5.4 Existing Trails on Vancouver Island

Currently Vancouver Island has a huge inventory of trail systems throughout the Island. Many of the principal and better known trails and trail systems are listed in Table 4.3.

Table 4.3 - Trails and Trail Systems by Region on Vancouver Island

Region	Name of Trail or Trail System	
North Island	<ul style="list-style-type: none"> ▪ Cape Scott Lighthouse Trail ▪ Cape Scott Park Trails ▪ Grant Bay Trail ▪ Lowrie Bay Trail ▪ Marble River Trail 	<ul style="list-style-type: none"> ▪ Nootka Island Trail ▪ North Coast Trail ▪ Raft Cove Trail ▪ Schoen Lake Park Trails ▪ Songhees Lake Trail
Central Island	<ul style="list-style-type: none"> ▪ Bedwell Lake Trail ▪ Cathedral Grove Trail ▪ Della Falls Trail ▪ Elk Falls Canyon ▪ Elk River Trail ▪ Englishman River Falls Trail ▪ Kwai Lake Loop ▪ Labour Day Lake Trail ▪ Landslide Lake Trail 	<ul style="list-style-type: none"> ▪ Little Qualicum River Falls ▪ Lupin Falls Nature Walk ▪ Morte Lake Trail ▪ Mount Albert Edward Trail ▪ Newton Lake Trail ▪ Paradise Meadows Loop ▪ Ripple Rock Trail ▪ Sawdust Trail ▪ Strathcona Provincial Park Trails
South Island	<ul style="list-style-type: none"> ▪ China Beach Trail ▪ Coast Trail - East Sooke Park ▪ Cowichan River Footpath ▪ Elk & Beaver Lake Trail ▪ Francis/King Regional Park Trails 	<ul style="list-style-type: none"> ▪ Galloping Goose Trail ▪ Juan De Fuca Marine Trail ▪ Lone Tree Hill Trail ▪ Thetis Lake Trail ▪ Witty's Lagoon Regional Park Trails
Pacific Rim	<ul style="list-style-type: none"> ▪ Mount Arrowsmith Trails ▪ Pacific Rim National Park Trails ▪ Port Alberni Trails 	<ul style="list-style-type: none"> ▪ Stamp River Provincial Park Trails ▪ West Coast Trail ▪ Wild Pacific Trail

Source: Vancouver Island Trails Information Society and VancouverIsland.com

Like the Spine Trail and the Trans Canada Trail, there are many trails here that could be linked-in with the proposed E & N Rails with Trails initiative. Over the long term, comprehensive trails maps and directional signage on the trails themselves could help to cross-promote and link these numerous different trail systems with the E & N Rail Corridor Trail.

4.3.5.5 E & N Rail Corridor Trails Development Strategy

The Island Corridor Foundation is already engaged in trails development and has been working with the Regional Districts, municipalities and First Nations in connection with various trails development initiatives that make use of portions of the E & N Rail Corridor. Work has progressed far enough on the various segments that it should now be possible to produce some type of overall E & N Rail Corridor Trail Master Plan that would map out the full route comprised of existing, proposed and planned trail segments, as well as the linkages to other existing major trail systems on the Island. The ICF may choose to pursue the following strategic steps in implementing an overall trails development strategy:

1. **Prepare an overall E & N Trail System Master Plan.** ICF should retain a qualified trails development consultant to liaise with all of ICF's regional districts, First Nations and community partners along the rail corridor to determine the status of trails development proposals and plans along the corridor. Any gaps should be identified and routes proposed

to fill the gaps. An overall E & N Corridor Trails Map should be prepared that shows existing, planned and proposed trail linkages in each of the partner jurisdictions. While the feasibility studies that have already been completed have prepared preliminary capital cost estimates for various trail segments, the Master Plan Study should prepare cost estimates for trail linkages that are identified as being gaps in the current planning process.

2. **Identify project proponents and funding sources for trail segments identified as gaps.** These gaps are likely in areas where a trail along the rail corridor is completely impractical or prohibitively expensive. Based on the routes identified in the preceding task, it will be clear in which regional district, municipality or First Nation the route segments lie, so potential proponents for the proposed trail segments could be identified – these would include ICF’s Regional District, municipal and First Nations partners, as well as local hiking and recreation clubs and other possible sponsors. The ICF and other proponents could partner in funding applications, where appropriate.
3. **Ensure that the trails route links with major tourist attractions along corridor.** In order to maximize the tourism potential of the E & N Rail Corridor Trail System, it should link to the principal tourism attractions and features located along the Corridor. We have prepared a summary of them in Table 4.4, which follows. As shown, many of Vancouver Island’s signature attractions are located directly along the corridor or close to it and could easily be linked-in and appropriately signed and annotated on trail maps.
4. **Ensure strong partnerships with Trans Canada Trail and Vancouver Island Spine Trail.** As both initiatives make use of portions of the E & N Rail Corridor, these are obvious partners for developing some segments of the Corridor, as well as for marketing and cross-promotional opportunities.

Table 4.4 - Principal Tourism Attractions to link with E & N Rail Trail

Community	E & N Kilometre	Principal Tourism Attractions / Features
Victoria	0	<ul style="list-style-type: none"> ▪ Downtown Victoria/Inner Harbour ▪ Extensive shopping & numerous attractions
Esquimalt	6	<ul style="list-style-type: none"> ▪ Home of the Pacific Fleet ▪ Naval museum & historic military parks, scenic walking paths
Goldstream Provincial Park		<ul style="list-style-type: none"> ▪ Arbutus Ridge, Prospector’s and Mount Finlayson Trail ▪ 168 campsites ▪ Visitor Centre
Malahat	32	<ul style="list-style-type: none"> ▪ Viewpoints of Finlayson Arm, Saanich Inlet and the Gulf Islands
Cowichan Valley	58	<ul style="list-style-type: none"> ▪ Maritime Centre ▪ Blue Grouse Estate Winery ▪ Rocky Creek Winery ▪ _Venturi-Schulze Vineyards ▪ Glenterra Vineyards ▪ Silverside Farm & Winery ▪ Merridale Ciderworks

Community	E & N Kilometre	Principal Tourism Attractions / Features
Duncan	64	<ul style="list-style-type: none"> ▪ City of Totems (80 totem poles) ▪ Quw'utsun' Cultural Centre & Riverwalk Cafe ▪ First Nations Galleries ▪ BC Forest Discovery Centre ▪ Cowichan Valley Museum
Chemainus	82	<ul style="list-style-type: none"> ▪ 38 professional murals ▪ Chemainus Theatre Festival ▪ Chemainus Valley Museum ▪ Numerous tourist oriented shops and boutiques
Nanaimo	117	<ul style="list-style-type: none"> ▪ Arts & Culture, festivals & events ▪ District Museum ▪ Galleries along Waterfront Walkway ▪ Nanaimo Int. Children's Festival in May
Rathrevor Beach Provincial Park		<ul style="list-style-type: none"> ▪ 175 campsites + 25 wilderness campsites ▪ Beach and waterfront
Parksville	153	<ul style="list-style-type: none"> ▪ Beachfront walks ▪ Shopping and restaurants ▪ Craig Heritage Park & Museum ▪ Gallery at the Train Station
Qualicum Beach	164	<ul style="list-style-type: none"> ▪ Qualicum Beach Village – Boutiques, shops, cafes, ▪ Beachside promenade, beachcombing ▪ Milner Gardens & Woodland ▪ Vancouver Island Paleontology Museum ▪ Big Qualicum Fish Hatchery ▪ Old Schoolhouse Art Centre
Courtenay	225	<ul style="list-style-type: none"> ▪ Muir Gallery ▪ I-Hos Native Gallery ▪ Sid William's Civic Theatre ▪ Courtenay & District Museum and Palaeontology Centre ▪ Pentledge Fish Hatchery ▪ Kitty Coleman Woodland Gardens (24 acres)

Source: Compiled by Economic Growth Solutions Inc. from various travel guides, brochures and maps

5. **Publicly release and promote the E & N Rail Corridor Trail System Master Plan.** Generating media publicity for the overall Trail Master Plan will be helpful for garnering partnerships and funding support for the various trail segments that need to be planned, developed and constructed. Media events could be planned at various locations along the trail corridor to showcase segments that have already been built or can easily be accessed and visualized. Perhaps it would be possible to do a rail tour of the corridor during which the various trail segments that will be located alongside the rail tracks could be pointed out in detail.

6. **Help to coordinate and oversee development of the various E & N Rails with Trails segments.** This will be largely a liaison process to help ensure that the various partners are working together effectively on each of the trail development segments.

7. **Ensure that signage along the trail system will direct users to nearby tourist attractions, features and services.** This is important as it will help to maximize the tourism potential of the trail. As the trail approaches each major community a small rest area with an information board could point out what attractions, services and facilities are available nearby.
8. **Stage special events to mark the completion of major segments.** Hiking and/or cycling events could be staged to draw attention to the various major trails sections as they are completed. This will be helpful for further fund-raising and drawing users to the new trail segments.
9. **Prepare a branding and marketing plan for the overall trail corridor.** The trail needs to be effectively branded and promoted in order to realize the potential tourism economic impacts from its development. It will be a signature trail system that can eventually be promoted alongside the Trans Canada Trail and Vancouver Island Spine Trail.

4.4 Freight Business Development

The Foundation Paper provides an estimate of 35,000 to 40,000 carloads per year as the level of traffic which would be required to bear the full capital cost of upgrading the rail infrastructure and maintain operations on a sustainable basis. If the capital costs of upgrading the infrastructure were excluded, a traffic level of approximately 8,000 carloads per year would be required to cover basic operating and maintenance costs and sustain the rail operation.

This section explores potential opportunities for the ICF to increase traffic in resource extraction and in smaller local industries located along the corridor that are currently using other modes.

4.4.1 IMPACT OF ANNACIS ISLAND AND WELLCOX YARD IMPROVEMENTS

The most significant potential source of increased rail traffic is the Raven coal mine which could contribute up to 10,000 carloads per year. The project proponent, Compliance Energy Company, is currently assessing overall feasibility and transportation options for the mine.

However, achieving an adequate level of traffic will require the railway to expand the existing traffic base to other shippers on the Island who are currently using other modes. SVI's ability to compete for this traffic has been hampered by the low service frequency which was feasible under the limitations of CP's weekly service to the Tilbury barge terminal. The low frequency increased shippers' costs due to increased car cycle times and inventory costs.

The recent opening of the new Annacis barge terminal will enable SVI to offer increased frequency. Additional improvements completed in April 2010 have enabled the Annacis terminal to handle trucks as well as rail cars. As a result, Seaspans Coastal Intermodal will be able to load a mix of rail cars and trucks; the initial target is to provide service 5 days per week. This expanded schedule of service will make rail a more viable option for shippers to and from Vancouver Island.

The expansion of transloading activity at Wellcox Yard in Nanaimo could enable the railway to access customers not served by direct rail. This facility is well suited for transloading, with a total area of 19 acres (including rail yard) and recent transloading activity has included both dry and liquid bulk products (fly ash and biodiesel respectively).

4.4.2 FREIGHT MARKET OPPORTUNITIES - INDUSTRIAL SHIPPERS

The prime market for rail service is industrial shippers. A comprehensive list of industrial enterprises was developed for the purposes of estimating industrial air emissions in 2005.⁵ The inventory for Vancouver Island lists approximately 180 industrial enterprises holding air emissions permits. Forestry mills account for largest share; market prospects for these were detailed in Phase 1. Among the remaining industrial plants, the largest categories are ready mix concrete plants and asphalt plants. A list of these plants is shown below in Table 4.5.

Table 4.5 – Industrial Plants on Vancouver Island

READY MIX CONCRETE PLANTS	
COMPANY	LOCATION
Arrowsmith Concrete Ltd.	Qualicum Beach
Bedrock Redi-Mix Ltd.	Cassidy
Butler Brothers Supplies Ltd.	Saanichton
Courtenay Concrete Products Ltd.	Courtenay
Cumberland Ready-Mix Ltd	Cumberland
Dolan's Concrete Ltd.	Port Alberni
Evans Redi-Mix Ltd	Duncan
Hyland Precast Inc.	Courtenay
Independent Concrete Ltd	Victoria
Lafarge Concrete	Nanaimo
Mayco Mix Ltd.	Nanaimo
Nanaimo Concrete Ltd	Nanaimo
Osborne Contracting Limited	Duncan
Surespan Ready Mix Ltd Duncan 35	Duncan
Upland Ready Mix Ltd.	Campbell River
ASPHALT PLANTS	
COMPANY	LOCATION
Haylock Bros. Paving Ltd.	Qualicum Beach
Duncan Paving Ltd.	Victoria
Island Asphalt Ltd.	Victoria
Island Asphalt Ltd.	Victoria
Island Asphalt Ltd. Victoria	Victoria
O.K. Paving Company	Port Hardy
Tayco Paving Co. Ltd.	Victoria
Tayco Paving Co. Ltd.	Victoria
Arc Asphalt Recycling Corp.	Victoria
Capital City Paving Ltd.	Saanichton
Hub City Paving Ltd. (Lafarge)	Nanaimo
R And E Paving Ltd.	Port Alberni
The Corporation Of The City Of Victoria	Victoria
Webb, Kyle	Victoria

⁵ 2005 British Columbia Emissions Inventory of Criteria Air Contaminants British Columbia Ministry of Healthy Living and Sport Population and Public Health Victoria, B.C. July 2009.

The raw materials for these operations consist of bulk materials including cement, aggregate, and liquid asphalt (asphalt cement). Many of these facilities are located on or adjacent to existing gravel pits.

Cement is transported in bulk by barge from plants in the Lower Mainland to Island terminals by the two major producers, LaFarge and LeHigh, and trucked to ready mix plants. Aggregate is either sourced locally or shipped by barge to coastal terminals, where it is trucked to destination. Liquid asphalt is shipped by truck from the Lower Mainland.

The Foundation (Phase 1) Report noted the market potential for sourcing of aggregates for the Victoria market from alternative reserves up-Island. However, it was noted that this market would be extremely competitive due to the availability of shipments of aggregate by barge from Lehigh's facility in Sechelt. Due to the high cost of local trucking relative to product value it may be possible for the railway to be competitive in aggregate shipments to some of the ready mix and asphalt plants if suitable reserves adjacent to the rail line can be located, and if suitable transshipment facilities can also be developed on the rail line. Development of this intra-Island traffic is also promising because it would not require investment in additional barge capacity.

Liquid asphalt (used in paving) is produced as a by-product of refinery operations. Liquid asphalt in BC comes primarily from three refineries – Husky Energy in Lloydminster, Sask.; Imperial Oil in Strathcona County (Edmonton), Alberta; and Chevron in Burnaby. The current CN rail tariff for liquid asphalt is \$5,496 per carload from Edmonton AB to Burnaby, BC. On top of the regular tariff is the fuel surcharge at \$0.1078 per mile or approximately \$78, totalling to \$5,574 per carload (March, 2010). The railways also do not provide tanker cars for the transport of liquid asphalt, so the shipper would either have lease these cars or provide private cars. Each carload can carry approximately 91 tonnes, which is equivalent to \$61.25 per tonne for the transportation from Edmonton.

Theoretically, direct rail shipment to Vancouver Island could be competitive at a rate at which the rack price in Edmonton plus rail rate and car lease plus transloading in Nanaimo and short haul trucking to destination is less than the rack price⁶ plus trucking cost from Burnaby to final destination. However, asphalt requires special handling, including specialized rail cars and storage tanks because it must be maintained at a high temperature. Asphalt is typically railed in at a temperature of between 300 and 325°F, and is stored at delivery temperature. The rail cars have coils at the bottom of the railcar to heat the asphalt prior to pumping the asphalt from the cars into the tank. Asphalt storage tanks are expensive and permitting of storage facilities can be a challenge due to environmental and fire safety issues. After storage, the asphalt is typically transferred from the tank to a tank truck and shipped to the customer at a temperature of 325°F. Tank trucks are not heated.

Other non-forestry related industrial plants are shown in **Table 4.6**. In general, these provide limited additional opportunities for rail traffic.

⁶ Rack price is price loaded onto a truck (truckload quantity) at the refinery or terminal (the “truck rack”). These prices are published by refineries as a benchmark although actual prices paid by customers may reflect individual discounts.

Table 4.6 – Non-Forestry Industries along the E & N Railway Corridor

Company	Location	Industry Sector	Current Service
Quinsam Coal Corporation	Campbell River	Mining	Truck To Barge
Breakwater Resources Limited	Campbell River	Mining	Truck To Barge
Top Shelf Feeds Inc	Duncan	Food Industries	Rail
West Coast Reduction Ltd.	Nanaimo	Food Industries	
Alberni Foundry Ltd.	Port Alberni	Primary Metal Industries	
Duncan Electric Motor Ltd.	Campbell River	Fabricated Metal Products	
G.L. Harper Scrap Metal and Demo. Ltd.	Duncan	Fabricated Metal Products	
Canexus Chemicals	Nanaimo	Chemicals	Rail Barge
National Silicates Limited	Parksville	Chemicals	Rail
Seastar Chemicals Inc.	Saanich	Chemicals	

4.4.3 FORESTRY AND CONDITIONS TO ATTRACT BUSINESS

In the Foundation Report, 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. Based on the location of major forest products industrial clusters and confirmed by observed trucking flows, the major origins for this traffic are Port Alberni and the Cowichan-Chemainus-Ladysmith area between Duncan and Nanaimo.

Freight demand from the forest sector might be partially recaptured if rail service were faster and more frequent. This would start with the improved rail barge connection to the Lower Mainland and then the railway owner and operator would have to build the business by working with forestry shippers to get a commitment. The best potential is in the central portion of the corridor, and possibly the Port Alberni line. **Table 4-7** lists sawmills and pulp/paper mills near the railway corridor that could be approached as potential shippers.

Table 4.7 – Forestry Industries along the E & N Railway Corridor

Company	Location	Industry Sector
Alberni Pacific	Port Alberni	Sawmill
Somass	Port Alberni	Sawmill
Chemainus	Chemainus	Sawmill
Cowichan Bay	Cowichan Bay	Sawmill
Ladysmith	Ladysmith	Sawmill
Catalyst Paper	Crofton	Pulp/Paper
Catalyst Paper	Port Alberni	Pulp/Paper
Nanaimo Forest Products	Cedar	Pulp/Paper
Campbell River Fibre Ltd.	Campbell River	Wood Chip Mill
DCT Chambers Trucking Ltd.	Chemainus	Wood Chip Mill
Western Forest Products Ltd.	Nanaimo	Wood Chip Mill

4.4.4 ADDITIONAL SECTORS (SVI MARKET DEVELOPMENT PLAN)

SVI is in the process of developing a plan to incrementally increase freight traffic volumes. Preliminary SVI estimates of the potential railcar freight volume to and from Vancouver Island via their Annacis Rail Marine Terminal (ARMT) are in excess of 7,000 carloads and could increase to over 20,000 carloads if the Raven Coal project comes to fruition with coal being exported via rail through Port Alberni. SVI's current 2010 budget is for 876 carloads to be delivered. They estimate that active opportunities represent an additional 900 carloads (a short term potential of nearly 1800 car loads including existing traffic) and future potential opportunities represent 5200 carloads (bringing the long term speculative total to 7,000).

There are three main components to SVI's strategy to incrementally grow freight volume. Those components are to provide a lower price than a trucking option, improve service levels to and from the Island which reduces transit times on railcars, and simplify the pricing structure by bundling the cost of rail transportation and transloading. Because most industries do not have active rail sidings, or the potential to build rail sidings, many opportunities involve a transloading activity from railcar to truck at or near Nanaimo. SVI has started a new transload business and now have the capabilities to transload numerous products.

The major industries on Vancouver Island that utilize rail are pulp and paper, agricultural, chemical/energy, solid woods and aggregates. Opportunities currently being pursued are divided fairly evenly across all these industries. An active opportunity is defined as an opportunity that is currently being negotiated in terms of price, being analyzed for cost savings on the part of the shipper, or being investigated in terms of feasibility. Potential opportunities are those that have been discussed with the shipper and there is interest to continue discussions. SVI believes that development of local intra-Island traffic will be critical to success. Local traffic identified so far includes aggregates moving to the Victoria construction market from Northern sources and Compliance Energy's coal that would be moved by rail and exported through the Port of Port Alberni. Both of these business segments will require upgrading of the line before heavy volumes can be handled.

In terms of the pulp and paper industry currently most of the inbound chemicals or raw materials are delivered by railcar to the mill. All mills except Catalyst Paper at Port Alberni have railcar barge access and chemicals are received via this mode. SVI is exploring inbound clay and resin opportunities for Catalyst paper which would involve transloading at the SVI Transload in Nanaimo. Outbound products move via covered barge or truck. Again the only opportunity outbound is product ex Port Alberni but rail infrastructure would need to be rebuilt to re-establish rail movement. Multiple opportunities exist in the solid wood sector. Veneer and utility poles can be shipped directly from origin. Lumber needs to be transloaded as there are no industry sidings to the various mills, with the exception of some potential out of Port Alberni. Today lumber is trucked directly off the Island or is shipped via bulk barge. A lumber transload option on the Island is cost prohibitive at this point but it is still being investigated for niche opportunities like untreated ties.

Vancouver Island has a number of dairy and poultry farms that produce milk, eggs and broiler chicken. These farms receive dairy, layer and broiler feeds. Top Shelf Feeds in Duncan is the primary supplier of these feeds. Clearbrook Grain & Milling also competes in this market and has several large layer accounts that they serve from their Abbotsford feed mill. The estimated total volume of this finished feed is 23,500MT per year, equivalent to 275 carloads per year.

Potential steel volumes are less than 250 cars a year but initial analysis indicates little or no real opportunity on moving steel. Volumes move in LTL quantities and receivers are not on rail. Transloading opportunities exist for fly ash and aggregates as the economies of scale in using a railcar are greater than a truck trailer arrangement. Service and ease of doing business are seen as major factors in deciding if rail is a viable option.

4.5 Corridor Land Use

Creating the conditions to sustain future passenger operations, and to some extent future freight business, will depend on good land use planning practices being carried out within and adjacent to the railway corridor. There are four areas where the ICF can promote effective land uses that protect and promote the Railway corridor, in support of both near-term and long-term opportunities. In some cases, these would add value to the community even before additional railway services directly linked to the land use are implemented:

- Transit oriented development (TOD) helps build a community hub at the train station and provides a source of additional potential rail passengers;
- Employment sites built near the railway, and particularly near existing stations, can act as destinations for passengers on intercity and/or commuter rail services;
- Linking tourist sites to nearby train stations by creating compatible nearby land uses such as tourist amenities and shopping districts near the train station; and
- Industrial and commercial property retention would support potential freight customers with direct access to the railway.

4.5.1 CURRENT LAND USE INVENTORY

Table 4.7 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.

Table 4.8 - 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	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

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.

4.5.2 TRANSIT ORIENTED DEVELOPMENT – OPPORTUNITIES AND CHALLENGES

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 4.9** gives the current population breakdown of the Regional Districts along the corridor.

Table 4.9 – Population of the Study Area

Population Count/ Estimates	Census 2006	Portion in/near E&N Corridor
<i>ICF Member Districts</i>		
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
<i>Other Island Districts</i>		
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.

4.5.2.1 Application of Transit Oriented Development to the E&N Corridor

Transit Oriented Developments are urban villages where all residents are within a 5 to 10 minute walk of public transit, and can live, work, play, shop and learn in a pedestrian friendly environment – without the need of a car. **Table 4.10** list 16 principles, and TOD typically includes most or all of these elements.

Table 4.10 – Principles of Transit-Oriented Development

1. Multi-Modal Transit Station	9. Streetscape Design
2. Interconnected Streets (The Grid)	10. Bicycle Friendly Streets/Bicycle Parking
3. Mixed-Use Development	11. Urban Parks & Plazas
4. Walkability	12. Architectural Variety
5. Compact Development/Higher Densities	13. Narrow and Calmed Streets
6. Street-Facing Buildings	14. Relaxed Parking Standards
7. Urban Place making	15. Safe and Secure
8. Neighbourhood High Street	16. Market Acceptance

Other than being good practice in sustainable urban planning, TOD could contribute to concentrating the anticipated growth in population on Vancouver Island to areas that are more directly served by the public transportation system, including passenger rail on the E&N Railway. – At the ‘origin’ end of travel (commute) markets proposed to be served, mixed used developments and higher densities could be built into the Official Community Plan and/or zoning regulations, where compatible with the local land use vision. If these developments were encouraged and the market took hold, the TOD node would provide a hub for the area in addition to possibly being a source of riders.

4.5.2.2 Challenges and Opportunities

A significant issue for Island municipalities is that many are currently dominated by lower density residential areas, and this is both an opportunity and a challenge. The opportunity lies in the potential to redevelop and renew areas around train stations that have been the centre of town when the railway first opened but are no longer the municipal focal point anymore. The challenge is that changes do not happen overnight – there needs to be local appetite for development and a market to support the investment. **Exhibit 4.3** is a map of these communities.

Exhibit 4.3 – E&N Railway Corridor – Larger Municipalities with Train Stations



Exhibit 4.4 shows the current state of residential densities in selected Island municipalities and compares these to City of Vancouver, which is able to support a commuter rail service and rapid transit system.

Exhibit 4.4 – E&N Railway Corridor – Housing Densities



Victoria, the suburban municipalities nearby, and the City of Duncan all have a mix of medium and low density housing, with Victoria also including a substantial percentage of higher density housing. If these densities were increased in the future, the potential ridership on intercity and commuter-oriented trains would be higher and the feasibility of implementing additional services would increase.

Most other municipalities are lower density in nature and currently better suited as markets for intercity travel, including some commutes between towns and cities where these match well to the train service schedule. Nevertheless, any new TOD initiatives, especially in larger communities such as Nanaimo, would help support the viability of the railway. Many Island communities have certain TOD-supportive policies (e.g. downtown plans, revitalization strategies, character preservation) in place already.

Specific Challenges and Considerations – Capital Regional District

In conjunction with the investigation of commuter rail feasibility, a TOD planning meeting was held with the municipalities along the E&N Railway Corridor in the Capital Regional District, namely Langford, View Royal, Esquimalt and Victoria. The purpose was to explore land use conditions, challenges and opportunities as they relate to the railway corridor. (ICF has since been holding similar workshops with other municipalities and interested stakeholder on the same subject).

The station areas included two existing ones: in the case of Langford, the station is adjacent to the new Langford Exchange; in Victoria it was assumed to be east of the bridge near the current terminus. It also considered three new stops in Langford, View Royal and Esquimalt near the West

Hills development, the Six Mile/Island Highway area, and the Coleville/Admirals Road intersection respectively.

It was noted that the areas surrounding these potential commuter rail stations in these municipalities did not always coincide with the designated CRD town centres. It was determined that three areas require consideration with respect to the rail/TOD planning process:

- Candidate locations for intercity/commuter rail station;
- Surrounding Precinct (800m radius) for potential TOD; and
- CRD Town Centres.

It was suggested that one way to link these three areas of consideration could be to ensure that the pedestrian and cycling connections between the candidate stations and the CRD town centers be appropriated designated and designed.

The following characteristics were noted in the four municipalities:

- *Victoria:* For the most part, the City of Victoria's land use policy conforms to best practices with respect to TOD. There is one drawback, that the station is adjacent rather than within the downtown core and therefore requires a longer walk to much of the employment along Douglas and Blanshard Streets. This is not easily solved given that between these there is an historic district. A more immediate issue for the City is whether to build in rail capacity within the planned upgrade of the Johnson Street Bridge. If it were decided not to allow for rail service, then the commuter rail corridor would be truncated, negating service to the City's downtown core.
- *Esquimalt:* The candidate station location is probably the best of all possible options, but will be seen as a "work place station" in light of current and anticipated employment at the DND docks. It will not likely see extensive residential or mixed-use development nearby the station at any point in the future. Employment numbers at this station/stop are expected to quadruple within the next few years; however, as noted previously in the discussion of commuter markets, the working hours and travel requirements of the employees may be considerably different from traditional commutes.
- *View Royal:* Local Planners admitted that the suggested station location adjacent the highway relegated it to a commuter park-and-ride and/or transit exchange site rather than a stimulus for complete community TOD development. The areas near the station are dominated by Highway 1 and by protected recreational areas. The two recreational trails crossing through the area may potentially act as commuter routes for passengers wishing to take the train.
- *Langford:* Like Victoria, Langford is doing everything right with respect to encouraging TOD-type development within its downtown core. Areas immediately adjacent to the railway include commercial and industrial lands which could be preserved as employment sites as well as lower density residential area that might be more suitable for conversion to TOD – there is a balance to be aimed for. Discussion turned to the prospect of building a pedestrian bridge at the station/stop beyond east of Langford's downtown core to link to residential development, existing and anticipated, in Colwood. In addition, a proposed western station/stop at Westhills is based, among other things, on the notion of a commuter rail station as the "heart" of the new community.

Other Municipalities

- *City of Duncan* has been working on revitalization of its downtown area, which is adjacent to and immediately southwest of the historic railway station. The “Downtown New Look” is compatible with the precepts of TOD and includes extensive restoration of the sidewalks, the installation of new street lights, benches and the addition of landscaping features. At the centre of the public realm upgrade, there is a brand new public space, the City Square.
- *City of Nanaimo* has been focusing on development of the harbour area (in conjunction with the plans described earlier related to a cruise terminal), which is east of the downtown and the railway station in Central Nanaimo. This may support ongoing revitalization of the downtown area, which includes a new convention centre/museum and shopping precinct. Much of the development around the City of Nanaimo had recently been along Highway 17 away from the city centre, (not well connected to the railway corridor), but real estate development has shown signs of refocusing on the Old Cit, which has some of the elements of TOD but lacks some of the development intensity one might normally associate with a train station. (The train station is also being renovated which could dovetail with other redevelopment).

Proposed Recommendations

- Pursue integrated transportation and land use strategies based upon Transit-Oriented Development (TOD) principles.
- Encourage and support employment density near the Corridor terminal train station in Victoria.
- Integrate train stations and plazas to become the “heart” of the community.
- Build mixed-use and residential density near rail stations.
- Provide park-and-ride / kiss-and-ride facilities at rail stations.
- Provide proper pedestrian, cycling and transit connections to rail stations.

4.5.3 EMPLOYMENT LOCATIONS

To build a passenger market, employment sites need to be concentrated near a station or almost-direct shuttles need to carry the passenger to the door of the workplace. Most North American commuter rail services (e.g. West Coast Express in Vancouver, Sounder in Seattle) terminate at a central business district with employment of 25,000 jobs or more within a 5-10 minute or 1-2 stop transit connection (similar to the 800 metre radius for TOD).

Since only Victoria and Nanaimo currently exceed 25,000 local jobs (of cities with railway stations), they would be the first cities that might become suitable for a higher frequency commuter rail service. However, the number of jobs would have to approach this threshold within the short walk or transit ride indicated above. Jobs spread throughout the municipality are less easily accessed except by private automobile, or by longer transit rides, and in both these cases it is much less common (in North America) for journeys to work to use passenger rail and then transfer to a longer distance auto/transit trip at the end.

What could be more practical, as noted in Section 4.2, would be one or two intercity trains targeted to serve the commuter markets initially, with improvements being made over time to the railway infrastructure and rolling stock, and the economic market being monitored to see if larger concentrations of employment have been developed near the ‘hub’ railway stations.

4.5.4 LAND USE IMPLICATIONS OF TOURISM

Tourist Sites are not necessarily suited to location right on the railway, but connections to logical nearby passenger stops should be promoted. If there is a possible market for an excursion train, one could consider having a siding and passenger platform for special events or special trains at non-VIA locations. Potential locations, in addition to the existing siding to McLean's Mill, could be at Cameron Lake (if the rest of the Port Alberni line were restored), Chemainus, Duncan, and at the proposed cruise ship terminal in Nanaimo (adjacent to the Wellcox spur line).

4.5.5 INDUSTRIAL AND COMMERCIAL LANDS

Industrial and commercial property retention is important in retaining site for economic development along the railway corridor, and supporting the possibility for freight shippers to re-enter the railway market. There are existing examples along the corridor where these land uses are still aligned near the railway, but may possibly be underused.