

Freight Rail Reinstatement Business Case Technical Memorandum (FINAL)

Client:	Alberni-Clayoquot Regional District
Project:	Rail Corridor Planning Study
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1 Introduction

The Alberni-Clayoquot Regional District (ACRD), in partnership with the Hupačasath and Tseshah First Nations, initiated the Alberni Valley Rail Corridor Planning study to explore potential opportunities for use of the Island Rail Corridor generally within the geography of the Alberni valley. One potential use of this corridor is for the transport of freight to/from Port Alberni and the BC mainland (mainly supporting the forestry sector). This report provides an assessment of the financial feasibility of reinstating slow speed (10 mph) freight rail service¹ for carloads originating/terminating between Port Alberni and the BC mainland.

2 Methodology and Assumptions

Restoring freight rail service in the Alberni Valley, from a pure financial perspective, can be assessed through a comparison of the discounted revenue against capital, operating and maintenance cost of the providing the service. For this analysis, the following assumptions are made.

- i. Freight rail demand is based upon a 2022 study conducted by HDR on behalf of the BC Ministry of Transportation and Infrastructure (BC MOTI) that estimated the volume of freight (carloads) that could be transported by rail should such as service be reinstated.
- ii. Freight rail revenue is estimated utilizing the demand estimate as per (i) above and an estimate of the equivalent trucking cost. A 10% discount is applied to the carload rate to account for lower speed service and resulting inventory cost.
- iii. Depending upon the scenarios described more fully below, capital cost requirements may include those required for:
 - o Potential line upgrades necessary to achieve Class 1 track that offers 10 mph for freight service
 - o Bridge replacements as deemed necessary due to the 2025 Cameron Lake wildfire
 - o Replacement of track through Snaw-naw-as reserve lands
 - o Extension of track to alternative barge slip locations (as required under option 2 below)
 - o Construction of barge slip infrastructure (as required under option 2 below)
- iv. Operations and maintenance costs include associated with:
 - o Train operating crew
 - o Locomotive lease
 - o Ongoing track inspection and maintenance

An assessment of the financial viability is made through a comparison of the carloads required to generate sufficient revenue to cover operating and debt service obligations with an estimate of the number of carloads that could potentially be captured should the service be re-instated.

¹ Many industrial, feeder, and branchline railway segments operate at 10 mph across North America to service industrial customers and/or be utilized by tourist and historical railways. Although not practical for high volume mainline operations, a slow speed service is often more than suitable for lighter volume railway lines that act as feeders to the greater North American rail network.

3 Corridor Reinstatement Options

Two scenarios have been provided to assess the financial feasibility of reinstating slow speed (10 mph) freight rail service between Port Alberni and a rail-served barge slip on the east side of the island. The proposed options that were evaluated are as follows:

3.1 Option 1 - Reinstatement Rail Corridor Through Snaw-naw-as' First Nation's Reserve Lands

The first option would require reinstating track infrastructure through Snaw-naw-as reserve lands (track infrastructure recently removed under a land-return agreement), replacing 4 trestles along Cameron Lake recently lost to fire, and rehabilitation of select track infrastructure between Port Alberni and Wellcox Yard in Nanaimo. The length of the segment is approximately 106 km (~66 miles) and would utilize Wellcox Yard in Nanaimo as the existing rail-marine connection to the mainland.

While HDR did a cursory assessment of alternate route alignments designed to by-pass Snaw-naw-as reserve lands, these options were eliminated for further consideration due to numerous factors such as significant construction cost, permitting and land acquisition requirements.

This option will minimize land acquisition costs, reduce environmental impacts, and speed up project delivery, while preserving historical transportation pathways and strengthening connectivity across the region for both people and goods movement. It affords operational efficiencies through utilizing existing rail and barge infrastructure connecting with the existing Southern Railway of Vancouver Island (SVI) operations at Nanaimo.

3.2 Option 2 - Install New Rail Barge Slip Near Parksville

The second option would require the installation of a new rail barge slip near Parksville (potentially adjacent to the Northwest Bay Log Sort site) should re-instatement of rail service through Snaw-naw-as reserve land not be realized. This would facilitate a rail-marine connection for rail traffic moving between Port Alberni and the Lower Mainland region (where connections can be made to the rest of the North American rail network) while avoiding Snaw-naw-as reserve lands. Essentially functioning as an independent railway north of this area, this option will facilitate the independent movement of freight rail on the northern segment of the Island Rail Corridor and would likely require dedicated locomotives (at minimum) to separate from SVI's current operations at Nanaimo.

The total corridor length would be approximately 61 km (~38 miles), with about 2.5 km of new track construction required, as well as the development of the new rail barge slip near Parksville. Option 2 offers a shorter section of trackage to be upgraded versus Option 1, but the new spur to the Parksville barge slip would likely require land acquisition and applicable permitting, in addition to a more detailed feasibility study, engineering, and new construction.

Figure 1 provides a map identifying origin and barge slip locations for the options under consideration.

Figure 1. Overview of the two scenarios

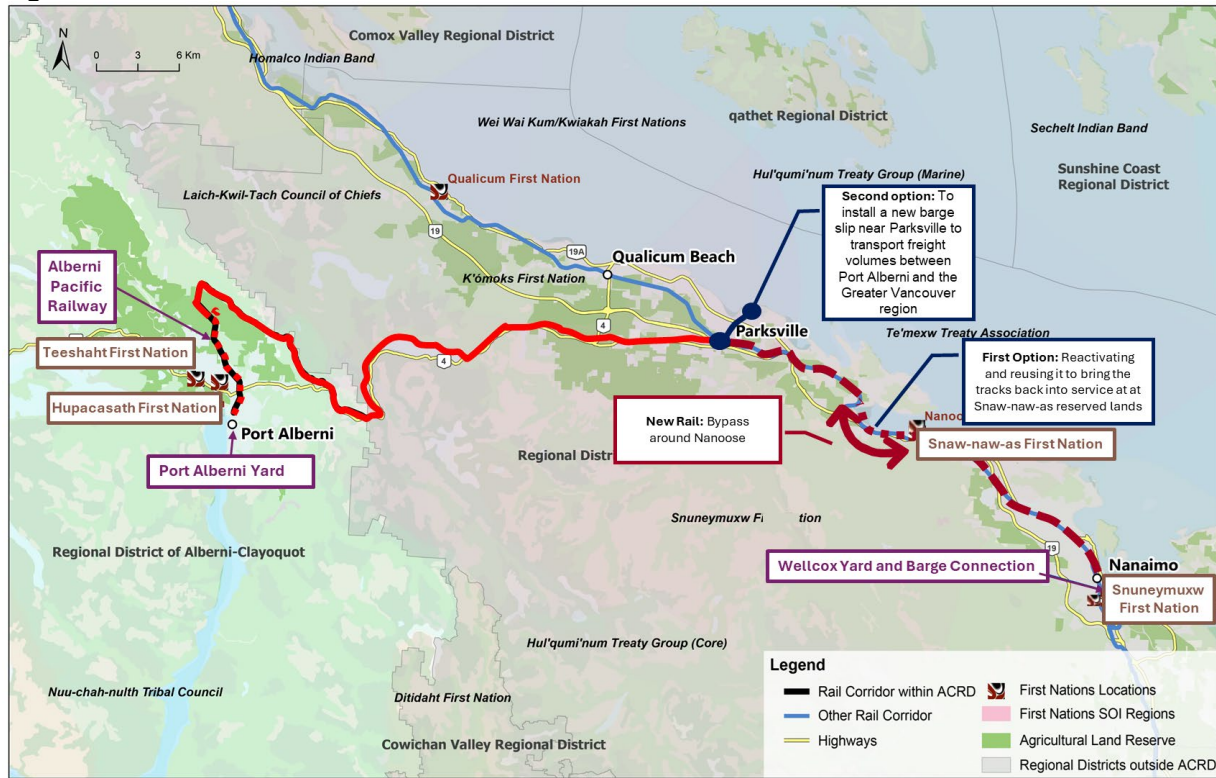


Table 1 provides a summary of the key characteristics of the options under consideration.

Table 1. Option Descriptions

Item	Option 1: Reinstatement Rail Corridor Through Snaw-Naw-As Reserve Lands	Option 2: Install New Barge Slip Near Parksville
Extents	Port Alberni - Nanaimo	Port Alberni - Parksville (Barge Slip)
Length	~ 106 km (66 miles)	~ 61 km (38 miles)
Port Terminal Location	Wellcox Yard (Nanaimo)	New barge slip near Parksville
Approval / Permitting	<ul style="list-style-type: none"> ✓ Requires reinstatement of rail trackage through Snaw-naw-as reserve lands (including consent from First Nations) ✓ Financially feasible bypass route was not identified. 	<ul style="list-style-type: none"> ✓ Requires construction of approximately 2.5 km of new trackage, and a new rail barge slip, near Parksville.

Item	Option 1: Reinstatement Rail Corridor Through Snaw-Naw-As Reserve Lands	Option 2: Install New Barge Slip Near Parksville
Notable Differences	<ul style="list-style-type: none"> ✓ Requires consent and agreement with Snaw-naw-as First Nation ✓ Longer section of trackage to be upgraded and re-instated overall ✓ Use of existing Wellcox Yard and connectivity between railways – will provide synergies and efficiencies 	<ul style="list-style-type: none"> ✓ Shorter section of trackage to be upgraded ✓ Construction of new railway trackage and barge slip, requiring land acquisition and permitting ✓ Port Alberni – Parksville (Barge Slip) segment will function as a separate railway from SVI's current operations in Nanaimo, as there will be no rail connectivity between the two lines through Snaw-naw-as reserve lands

4 Freight Rail Demand

Based on the existing condition and history report document, the Island Rail Corridor Analysis study reviewed existing freight rail activity on the island and identified potential freight rail customers and carload volumes that could be realized if freight rail service were reinstated. Through the stakeholder engagement for the project, it was noted that wood chips may also be transported to Port Alberni via rail if a service could be provided, but the carload volume potential has not been quantified for this analysis. **Table 2** shows the potential commodities that could make up this additional carload traffic volume.

Table 2. Potential Inbound and Outbound Commodities

Region	Inbound	Outbound
Port Alberni	<ul style="list-style-type: none"> • Calcium Carbonate (Slurry) • Hydrogen Peroxide • Kaolin Clay (Slurry) • Latex • Sodium Chlorate • Starch • Sulfuric Acid • Wholesale 	<ul style="list-style-type: none"> • Lumber • Paper • Veneer
Parksville	<ul style="list-style-type: none"> • Aluminum Sulfate • Asphalt • Biodiesel • Cement • Ethanol • Methanol • Petroleum • Scrap Metal 	
Entire Island	<ul style="list-style-type: none"> • Aggregate • Containers • Fruit • Grain & Feed Products • Livestock • Rip-Rap • Trailers • Vegetables • Woodchips • Wholesale • Propane 	<ul style="list-style-type: none"> • Aggregate • Containers • Fruit • Livestock • Rip-Rap • Trailers • Vegetables • Woodchips • Wholesale

There is also a list of possible freight rail customers / commodities both in Port Alberni, and on the Island in general. These possible customers are mostly related to the paper production in Port Alberni constituted most carloads on the Island. Also, lumber provides strong potential in both processed and unprocessed products. To a lesser extent, agriculture, mining, retail and wholesale products could be transported by rail. **Table 3** shows potential customers served by reinstated freight rail service.

Table 3. Potential Customers Served by Reinstated Freight Rail Service

Company	Commodity	Location
Paper Excellence	Paper Products & Papermaking inputs	Port Alberni
Western Forest Products	Lumber Products (APD sawmill – currently curtailed)	Port Alberni
San Group Global Forestry Products	Lumber Products	Port Alberni
Long Hoh Enterprises Canada Ltd	Lumber Products	Qualicum Beach
Coastland Wood Industries	Veneer Products	Nanaimo
Various Stakeholders	Unprocessed Lumber	Various
Various Stakeholders	Livestock, Fruits, Vegetables	Various
Various Stakeholders	Retail & Wholesale Imports	Various

5 Estimation of Volumes

The freight volume estimates used in this analysis are extracted from a broader study of freight rail transportation from a broader study of Island Rail Corridor Freight Analysis (2022).

This larger study prepared by HDR involved extensive stakeholder engagement with 28 organizations and individuals to assess both existing and potential future freight transportation demand. The analysis identified a variety of commodities that could potentially shift from truck to rail, provided certain conditions, such as competitive rates and adequate service are met. Specifically, for Port Alberni, the study estimates a potential freight volume range of 3,850 to 10,350 annual carloads over the near to medium term. These ranges reflect “higher likelihood” scenarios where key infrastructure or service improvements could enable viable rail use. The medium applies when rail carload service is deemed feasible from SVI’s perspective. The low likelihood reflects scenarios where Container on Flatcar (COFC) service can provide a land bridge between ports, or where Trailer on Flatcar (TOFC) service can help alleviate highway congestion. The broader study also outlines additional commodities considered to have medium likelihood for rail transport, contingent or further investment in facilities such as shipper or transload terminals. The complete analysis of carloads forecasts is provided in Appendix A.

Table 4 provides a summary of forecasted carloads.

Table 4. Forecasted Carloads

Commodity	Carloads per Year (Low)	Carloads per Year (High)	Likelihood
Calcium Carbonate (Slurry), Latex, Kaolin Clay (Slurry), Hydrogen Peroxide, Sulfuric Acid, Sodium Chlorate, Starch, Paper, Lumber	3,850	10,350	High
Aggregates (incl. riprap), Woodchips, Petroleum Products, Asphalt, Ethanol, Biodiesel, Cement, Scrap Metal, Containers, Trailers	Unknown	Unknown	Medium/Low
Total	3,850	10,350	

According to the same study, up to 46% of carloads were directly attributable to outputs from the wood product manufacturing industry, while up the majority of the remaining carloads were attributable to the pulp and paper manufacturing industry.² In total, this translates to up to 91% of the potential volumes being linked to the forestry industry. This notable tie to the forestry industry is key as there have been various reports of closures and operational reductions that would impact these industries, some of which are directly related to production on Vancouver Island. In 2024, Western Forest Products announced reductions in its operations due to market issues, which would impact all its B.C. sawmills, including those located in Ladysmith, Saltair, Cowichan Bay, Duke Point, and Chemainus.³ Another example would be that the San Group, an organization that owns two sawmills in Port Alberni, filed for creditor protection following the closure of their mill operations in October 2024, attributing their actions to a variety of events, including impacts on lumber prices.⁴

Based on the relatively high share of the identified volumes linked to the forestry industry and the overall uncertainty of the industry, there could be risk related to the relative share of volumes that would materialize and would be transported by freight rail if services were reintroduced.

6 Estimation of Revenue

Understanding the cost per truckload helps evaluate the overall value of rail by highlighting its efficiency, cost savings, and significantly lower environmental impact as rail produces roughly one-quarter of the GHG emissions per tonne-kilometre compared to trucking.

According to Vancouver Island Rail – Initial Business Case done by ICF (2022), the Island Rail Corridor handled an average of 8,000 carloads per year historically, with the majority moving to and from Port Alberni. The study noted that much of this volume is still being shipped today by

² Reported percentages based on the high estimates reported in the study. For the wood product manufacturing industry, the volumes reflect the high estimates for lumber. For the pulp and paper manufacturing industry, volumes included both commodities assumed to be inputs and outputs.

³ The Canadian Press. CBC News. Western Forest Products Temporarily Curtails Sawmill Production. October 7, 2024. Accessed: May 2025. Obtained from: <https://www.cbc.ca/news/canada/british-columbia/western-forest-products-curtailment-1.7345594>

⁴ Susie Quinn. Victoria News. Vancouver Island Sawmill Operator San Group Files for Creditor Protection. December 17, 2024. Accessed: May 2025. Obtained from: <https://www.vicnews.com/business/vancouver-island-sawmill-operator-san-group-files-for-creditor-protection-7715203>

other means and could return to rail if a competitive freight rail service and pricing were offered. In the Island Rail Corridor study, potential freight rates were estimated based on the assumption of a flat handling fee applied to each railcar originating or terminating on the Island Rail Corridor, regardless of its origin or destination along the haulage agreement with SVI. Given that these shipments are currently moving by truck, it is important to understand comparable trucking rates, as that will provide the basis for what rail rates need to be to compete against trucking.

As was mentioned earlier, it is important to highlight the benefits of freight rail over trucking; however, this analysis does not aim to compare environmental outcomes or promote modal shift but rather focuses on evaluating the cost competitiveness of rail based on truckload pricing.

6.1 Truck Rate Analysis

The purpose of this section is to estimate likely trucking rates in order to determine the pricing threshold at which rail would be competitive.

To estimate the number of truck trips that can be replaced with each railcar trip, it was estimated that each truck can accommodate up to 33 tonnes (66,000 lb of cargo), and that each railcar can accommodate up to 200,000 lb (assuming track capacity of 286,000 lb). This results in a truck to railcar ratio of 3:1, meaning that each railcar trip can replace approximately 3 truck trips.

To estimate trucking costs and assess their comparability with the rail analysis, Table 5 presents different per kilometer trucking cost rates (obtained from various resources) and the corresponding per-trip cost for an 85 km truck trip between Port Alberni and Nanaimo.

Table 5. Costs of Trucking

Source	Value from Study	Truck Rate Per Kilometer (\$/km)
Transport Canada Operating Costs of Trucking (2017) ⁵	1.78 (\$/km)	1.78
An Analysis of the Operational Costs of Trucking: 2024 Update June 2024 ⁶	2.27 (US\$/mile)	1.93
Truck Invoice Payment Calculator ⁷	2.51 (\$/km)	1.62
Van Freight Rates Industry Calculator ⁸	2.50-3.25 (\$/km)	2.02
Assumed Truck Rate		\$2.00

⁵ Final study report : operating cost of trucking : 2017 update / prepared for Transport Canada, Economic Analysis Directorate by Logistics Solution Builders Inc.: T46-14/2018E-PDF - Government of Canada Publications - Canada.ca

⁶ An Analysis of the Operational Costs of Trucking: 2024 Update

⁷ <https://invoicepayment.ca/ennew/services-trucking-industry-calculator-populated>

⁸ [Dry Van Freight Rates 2025 | RoadLINX](#)

Based on the research on trucking costs and for consistency in the analysis that follows, an average truck rate of \$2.00 per kilometer was selected as a representative reasonable assumption. Therefore, based on a truck rate for a short haul of 85 km (170 km round trip), the total cost for one truck trip is approximately \$340. Using a truck-to-rail conversion ratio of 3 (reflecting the higher capacity of a railcar), the cost to move one railcar worth of cargo is \$1,030.

As it is common industry practice to price rail service slightly below the cost of competing truck rates. Therefore, this analysis applies a 10% discount to the \$1,030 benchmark, resulting in an estimated rail rate of approximately \$927 per loaded railcar. This is the per railcar rate that is expected to be competitive against trucking for bulk commodity trips between Port Alberni and Nanaimo. This value is also consistent with other shortline railway tariffs in Canada, such as the Great Sandhills Railway⁹. **Table 6** provides assumptions used in calculating equivalent rail carload rates.

Table 6. Rate and Capacity Comparison: Truck vs. Rail

Metric	Truck	Rail
Weight Capacity (lbs)	66,000	200,000
Weight Capacity (short tons)	33	100
Truck-to-Rail Conversion Ratio	3.03 (approx.)	
One-Way Trip Distance	85 km	106 km
Round-Trip Distance	170 km	212 km
Rate per km (short haul)	\$2.00	–
Rate per Truck Trip	\$340.00	–
Rate per Equivalent Load (100 tons / 200,000 lb)	\$1,030	\$927

It is important to note that transloading costs in both Port Alberni and Nanaimo have not been considered, and it is noted that transloading and using a rail barge from Nanaimo to the Lower Mainland could potentially be more cost-effective for customers utilizing transload services (thus increase the cost-competitiveness of rail further).

The estimated competitive railcar price of \$927 is used for the subsequent business case analysis.

⁹ <https://gsrail.net/wp-content/uploads/2024/11/GSR-2000-11-Grain-Tariff.pdf>

7 Estimation of Capital and Infrastructure Upgrades

The capital costs used in this analysis include rail corridor rehabilitation, bridge replacements as necessary, new rail installation in some locations, and reinstated rail through Snaw-naw-as reserve lands.

Capital cost estimates are based on the Island Rail Corridor Condition Assessment (IRCCA) (BC MoTI, 2020). This study outlines a three-phase improvement plan (Initial, Intermediate, and Ultimate) each supporting progressively higher freight and passenger service levels.

It is critical to note that while the previous study assumed Class 2 track suitable for 25 mph freight service, this analysis assumes only Class 1 track (10 mph freight), resulting in a 50% reduction in estimated capital upgrade costs.

For the purpose of this business case, the costs of initial phase have been included in this study, covering the costs to upgrade infrastructure required to reinstate basic freight and passenger rail service along the corridor. **Table 7** shows the details of this phase:

Table 7. Initial Phase Details; Reference: Island Rail Corridor Condition Assessment (BC MoTI, 2020)

Category	Details
Use Case	<ul style="list-style-type: none"> • 2–4 passenger trains per day • 2–4 freight trains (10–20 car trains) per day
Track Characteristics	Class 2 Track Standard (25 mph Freight, 30 mph Passenger)
Load Case	Not suitable for sustained 286k lb car loading
Remediation Includes	<ul style="list-style-type: none"> • Track upgrades, including: <ul style="list-style-type: none"> – Vegetation removal – Defective tie replacement – Shoulder plate and anchor replacements – Additional ballast • Turnout upgrades • Bridge replacement and rehabilitation • Grade crossing upgrades • Rockfall remediation

The construction cost estimate was developed based on the anticipated rail upgrade and includes allowances for construction, construction supervision, engineering, project management and administration, First Nations consultation and accommodation, and contingency.

The cost estimate for IRCCA was developed for this corridor based on site investigation and were inspected by hi-rail and walking. In May 2025, HDR provided a corridor inspection overview, which the details have been provided in Track and Bridge Condition Assessment study as a separate deliverable.

Segment specific cost to re-establish minimum freight and passenger rail service are provided in **Table 8** below.

Table 8. Rehabilitation Cost Estimate - Island Rail Corridor Condition Assessment (BC MoTI, 2020)

Segment	To/From	Initial phase: Re-establishes minimum freight and passenger service
Segment 4	Nanaimo to Parksville	\$32,611,106
Segment 6	Parksville to Port Alberni	\$99,139,001
Total cost		\$131,750,107

Othe capital cost components include terminal track improvements at a rate of \$1,000 per foot, purchase / lease of locomotives.

Finally, the Wesley Ridge wildfire in July 2025 caused significant damage along the Port Alberni Subdivision of the Island Rail Corridor. Significant damage to 4 trestles has occurred. For the purpose of this analysis, HDR assumes all four trestle bridges near mileposts 13 and 14 will require full replacement.

The replacement cost estimates are based on an updated unit cost of approximately \$37,800 per linear foot for the supply and installation of a steel bridge with a ballasted deck¹⁰. **Table 9** provides the replacement cost for bridges destroyed in the Westley ridge wildfire.

Table 9. Port Alberni Subdivision Bridge Replacement Cost

Mile	Featured Crossed	Total Length (ft)	Substructure	Current Status After Wildfire	Steel Bridges Replacement Cost
13.7	Dry	209.5	Timber Frame Trestle	Completely burned	\$ 7.9 M
13.8	Dry	105	Timber Frame Trestle	Completely burned	\$ 3.9 M
14	Dry	225	Timber Frame Trestle	Significantly damaged beyond repair	\$ 8.5 M
14.6	Dry	441	Timber Frame Trestle	Significantly damaged beyond repair	\$ 16.6 M
Total cost					\$ 37 M
Contingency (50%)					\$ 18.6 M
Total Bridges Replacement Cost					\$ 55.6 M

¹⁰ According to HDR's previous work, the 2016 unit cost for the supply and installation of a steel bridge with a ballasted deck was USD 20,000 per track foot. This cost included materials and installation for both the superstructure and substructure. For this analysis, the 2016 rate is escalated using Statistics Canada's Building Construction Price Index, with an escalation factor of 1.38. It is then converted to Canadian dollars using a 1.37 exchange rate (September 2025).

The adjusted value is applied per linear foot of each bridge to determine the replacement cost. A contingency allowance of 50% (based on IRCCA assumption) was applied to the bridge replacement cost estimates. This contingency is intended to cover potential additional expenditures, particularly for structures that may require substantial substructure work due to their height.

7.1 Breakdown of the Capital Cost for Each Option

The estimates of capital cost for both options are described.

For option 1, the following components are considered:

- As it was mentioned in section 7, the 50% of IRCCA capital costs to reinstate 10 mph freight service from Port Alberni to Parksville and from Parksville to Nanaimo which was escalated from 2020 to 2025.
- Considering approximately 2km for reinstatement of rail trackage through Snaw-naw-as reserve lands Includes track and civil construction for basic site.
- Purchasing Locomotives
- Replacing the damaged bridges affected by Wesley Ridge Wildfire in July 2025.

For option 2, the capital cost components are as follows:

- As it was mentioned in section 7, the 50% of IRCCA capital costs to reinstate 10 mph freight service from Port Alberni to Parksville which was escalated from 2020 to 2025.
- From Parksville to barge considering approximately 2.5 km for Rail Terminal Trackage (New) Includes track and civil construction for basic site.
- New rail barge slip
- Purchasing Locomotives
- Replacing the damaged bridges affected by Wesley Ridge Wildfire in July 2025.

Regarding land acquisition costs, some of the land close to the corridor are subject to a Statutory Right of Way (SRW) in favor of E&N Railway, which may permit the placement of rail infrastructure without the need for new land purchases. This suggests that at least part of the approach to a potential Parksville barge slip might not require additional acquisitions. However, it is unclear whether those rights apply in this specific case and asserting them could be controversial.

8 Estimation of Operation and Maintenance Costs

Operation and maintenance costs vary between options.

Operation and maintenance (O&M) costs for the first scenario are estimated to be \$750,000 annually. This would include locomotives, covering fuel, repairs, and routine servicing, as well as staffing requirements such as maintenance personnel, and administrative support for the service. It would also include maintenance of the track and corridor infrastructure. This cost reflects the efficiencies of using existing infrastructure and shared maintenance resources.

O&M costs are expected to be higher for Option 2, and were assumed at \$1 million annually, as the rail service would operate independently from SVI's existing operations at Wellcox Yard. This is due to the need for dedicated locomotives as this option would be an independent railway operation north of Snaw-naw-as reserve lands. This means the option would have expanded maintenance facilities, additional personnel, and logistical coordination. These additional requirements contribute to a more resource-intensive and costly operational model.

9 Business Case Results

Table 10 below provides details of the data used for each scenario, based on various estimation criteria that will be used for this business case. As mentioned earlier, the capital cost estimates are based on several sources and assumptions described briefly as follows:

- 1- As both options are assumed to have 10 mph track (Class 1), 50% of the capital costs are drawn from the IRCCA report (which assumed Class 2), with an escalation factor of 1.34 applied to adjust costs from 2020 to 2025.
- 2- The estimate for the new rail trackage is based on HDR industry experience, estimated at \$1,000 per foot. Option one will require approximately 2km for re-instatement of rail trackage through Snaw-naw-as reserve lands and option 2 from Parksville to barge will require to consider approximately 2.5 km for new rail terminal trackage.
- 3- The cost of locomotives is estimated based on HDR’s industry experience.
- 4- For land acquisition for the second option, the estimation is a total of 20–40 acres required, with an approximate cost of \$10 million.
- 5- For the costs regarding the installation of a new barge slip for the second option, references a similar rail barge slip built by SRY in the Lower Mainland in 2008, with costs escalated to 2025.
- 6- The bridge replacement, including the contingency is added after the 2025 Wesley Ridge Wildfire based on HDR industry experience.
- 7- For operations and maintenance (O&M), costs for Option 2 are expected to be higher, as rail service will operate independently from SVI’s existing Nanaimo area service, requiring additional infrastructure and staffing compared to Option 1, where a physical rail connection is assumed.
- 8- Finally, the assumed revenue carload rate for both options is based on an equivalent truck rate, identifying the rate at which truck transport becomes competitive with freight rail service.

Table 10. Business Case Result

Components	Option 1: Reinstate Rail Corridor Through Snaw-naw-as’ First Nation’s Land	Option 2: Install New Barge Slip Near Parksville
Capital Cost by Component (\$ 2025 Millions)		
Port Alberni to Parksville ¹	\$66.4 M	\$66.4 M
Parksville to Nanaimo	\$21.8 M	NA
New Rail Trackage ²	\$6.6 M	\$8.2 M
Locomotives ³	\$1 M	\$1 M
Land Acquisition ⁴	NA	\$10 M
New Rail Barge Slip ⁵	NA	\$20 M
Bridge Replacement ⁶	\$55.6 M	\$55.6 M
Total Estimated Capital Cost (\$ 2025 Millions)	\$151.4 M	\$161.2 M
Other Business Case Costs Assumptions		
Annual O&M Costs ⁷	\$750,000	\$ 1 M
Assumed Revenue Carload Rate ⁸	\$927	\$927



The business case assesses the minimum carloads required such that the freight rail operations recover their initial capital costs and on-going O&M costs for each option over a 30-year period. This was estimated based on the various inputs related to the initial capital costs, the assumed average annual O&M costs for the respective options and estimated carload revenue rates. Moreover, as this is a high-level business case, some simplifying assumptions were used to estimate the minimum carloads. In particular, the business case considers:

- Initial capital costs to be incurred in year 0, while revenue and O&M costs accrued from years 1 through 30.
- No potential growth in volumes; and,
- Future cashflows are discounted at a real rate of 5%.

For Option 1, the business case estimates that the freight rail operations would need to transport a minimum of approximately 11,433 carloads per year, or about 953 carloads per month. This translates to \$10.6 million in revenue required per year. For Option 2, the business case estimates that the freight rail operations would need to transport a minimum of approximately 12,390 carloads per year, or about 1,032 carloads per month. This translates to \$11.5 million in revenue required per year.

Due to the high-level nature of this business case and the uncertainty of some of the key assumptions such as capital costs and carload revenues, a sensitivity analysis was conducted to show the relationship between the minimum carloads and the other assumptions for each option.

Figure 2 Sensitivity Analysis Results – Option 1

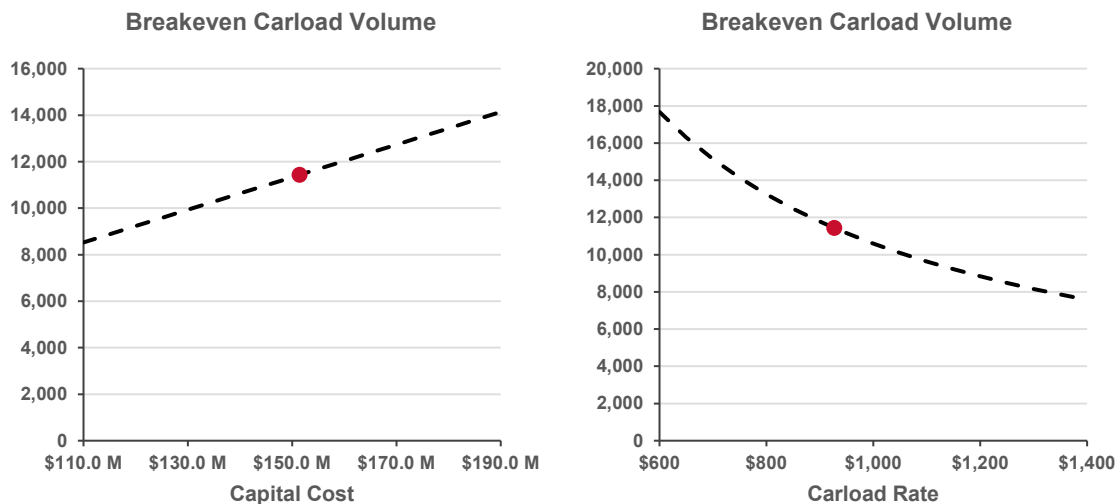


Figure 2 above highlights the sensitivity results for Option 1, with the graphic on the left indicates how the breakeven volumes would vary based on capital cost, while the graphic on the right indicates how the volumes would vary based on the carload rate.

While varying the capital cost could result in the breakeven volumes varying from over 8,500 to over 14,100, the graphic also highlights key breakeven volumes based on varying the cost reduction assumption. Meanwhile, varying the carload rate could result in the minimum required volumes varying from almost 7,600 to around 17,670.

Figure 3 Sensitivity Analysis Results – Option 2

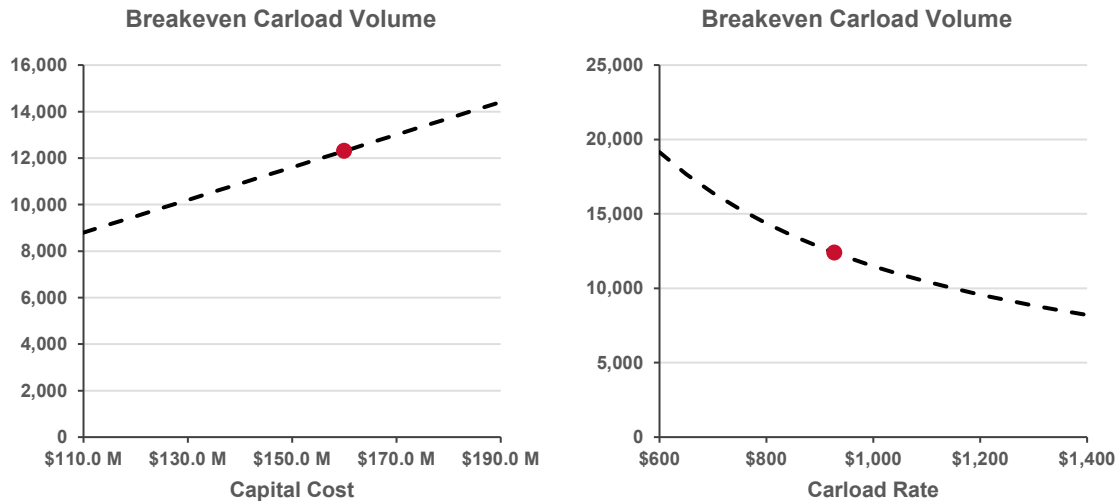


Figure 3 above highlights the sensitivity results for Option 2, with the graphic on the left indicates how the breakeven volumes would vary based on capital cost, while the graphic on the right indicates how the volumes would vary based on the carload rate.

While varying the capital cost could result in the breakeven volumes varying from almost 8,800 to over 14,400, the graphic also highlights key breakeven volumes based on varying the cost reduction assumption. Meanwhile, varying the carload rate could result in the minimum required volumes varying from over 8,200 to over 19,100.

Beyond the sensitivity analysis, the business case also compared the estimated breakeven carload volumes with the estimated potential freight rail volumes identified in Section 5. In particular, the study indicates that along the Island Rail Corridor, potential freight volumes could range from 3,850 to 10,350 carloads per year. However, based on the estimated breakeven carload volumes for both options exceed the upper range, with the breakeven carload volumes for Option 1 requiring over 1,000 more carloads per year greater than the upper estimate of the potential freight volumes. Additionally, as indicated in Section 5, due to the high share of the identified volumes aligned with the forestry industry and the overall uncertainty tied to the forestry sector, it might be the case that the potential freight volumes may be more optimistic, indicating additional potential volumes would need to be identified, proposed operational scope would need to be revisited, alternative revenue sources need to be considered, or all of the above.

Appendix A. Freight Rail Volume Opportunities (Source: Island Rail Corridor Freight Analysis – 2022)

Commodity	Origin/Destination Station	Direction	Carloads per Year (Low)	Carloads per Year (High)	Likelihood	Why Rail	Additional Considerations
Calcium Carbonate (Slurry)	Port Alberni	Inbound	250	350	High	Currently transloaded at Wellcox Yard. Receiver has direct rail access.	Intra-plant trackage would need to be rehabilitated and some fixtures within the facility would need to be reconfigured to ship/receive by rail.
Latex	Port Alberni	Inbound	150	250	High	Currently transloaded at Wellcox Yard. Receiver has direct rail access.	
Kaolin Clay (Slurry)	Port Alberni	Inbound	100	200	High	Receiver has direct rail access. Currently trucked from Duke Point.	
Hydrogen Peroxide	Port Alberni	Inbound	100	200	High	Receiver has direct rail access.	
Sulfuric Acid	Port Alberni	Inbound	100	200	High	Receiver has direct rail access.	
Sodium Chlorate	Port Alberni	Inbound	100	200	High	Receiver has direct rail access.	
Starch	Port Alberni	Inbound	50	150	High	Receiver has direct rail access	
Paper	Port Alberni	Outbound	3,000	4,000	High	Shipper has direct rail access. A significant amount of paper produced on Vancouver Island is currently trucked or shipped by covered barge to distribution centres in the Lower Mainland where it is then transloaded to rail for shipment throughout North America. Paper could be shipped by rail directly from mills to customers or shipped by rail from the mills to the existing distribution centres in the Lower Mainland.	Intra-plant trackage would need to be rehabilitated and some fixtures within the facility would need to be reconfigured to ship/receive by rail.
Lumber	Various	Outbound	0	4,800	High	Is feasible from SRY's perspective. Lumber is occasionally transloaded onto rail at Wellcox Yard.	Will require new transload/reload facilities nearer to lumber mills or direct rail access to lumber mills.
Aggregates (incl. riprap)	Various	Intra-Island	Unknown	Unknown	Medium	Is feasible from SRY's perspective. Aggregates and riprap were transported by rail on the Island Rail Corridor in the past.	May require third-party transload facilities.
Woodchips	Various	Intra-Island	Unknown	Unknown	Medium	Currently trucked from sawmills to pulp and paper mills.	Will require new direct rail access to lumber mills and pulp and paper mills.
Petroleum Products	Various	Inbound	Unknown	Unknown	Medium	Currently trucked from rail transloads in the Lower Mainland.	Will require new shipper facilities.
Asphalt	Various	Inbound	Unknown	Unknown	Medium	Currently trucked from rail transloads in the Lower Mainland.	Will require new shipper facilities.
Ethanol	Various	Inbound	Unknown	Unknown	Medium	Is feasible from SRY's perspective.	Will require new shipper facilities.
Biodiesel	Various	Inbound	Unknown	Unknown	Medium	Is feasible from SRY's perspective.	Will require new shipper facilities.
Cement	Various	Inbound	Unknown	Unknown	Medium	Is feasible from SRY's perspective.	May require third-party transload facilities or new shipper facilities.
Scrap Metal	Various	Inbound	Unknown	Unknown	Medium	Is feasible from SRY's perspective.	May require new shipper facilities.
Containers	Duke Point – Port Alberni	Intra-Island	Unknown	Unknown	Low	Container on flatcar service can provide a land bridge between ports.	Will require new intermodal facilities.
Trailers	Duke Point – Victoria	Intra-Island	Unknown	Unknown	Low	Trailer on flatcar service can help to alleviate highway congestion.	Will require new intermodal facilities.
TOTAL QUANTIFIED	-	-	3,850	10,350	-	-	-