

Western Canadian Grain Export Costs

QUORUM CORPORATION
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Contents

1.00	Summary	2
2.00	Background	2
2.11	Route to Export Position.....	3
2.12	Country and Port Origins	3
3.00	Findings	5
3.10	Average Scenario	5
3.11	West Versus East Routing	5
3.12	Churchill.....	7
3.20	Multiple Berth Scenario (Vancouver).....	9
3.21	West Versus East Routing	10
3.22	Churchill.....	10
3.30	High Charter Rate and Fuel Scenario	10
3.31	West Versus East Routing	10
3.32	Churchill.....	11
4.00	Methodology	11
4.10	Grain Handling Costs.....	12
4.11	Country Elevator.....	12
4.12	Port Terminal Elevator.....	12
4.13	Transfer at Second Port Terminal	12
4.20	Grain Transportation Costs.....	12
4.21	Rail Freight	13
4.22	St. Lawrence Seaway.....	13
4.23	Port Fees	13
4.24	Vessel Fees.....	14
5.00	References	16

1.00 Summary

Quorum Corporation has undertaken this analysis to compare the cost of moving export grain by rail through each of the four Western Canadian ports, namely the ports of Vancouver, Prince Rupert, Thunder Bay, and Churchill.

Owing to recent developments regarding the Port of Churchill, this analysis incorporates all publicly available costs associated with that northern port. Currently, these include rail rates and port terminal elevation charges. Other costs, such as additional port fees and vessel rates, remain unknown. Rather than relying on speculative estimates, this analysis presents the known costs and identifies the remaining per-tonne cost that Churchill would need to meet to be competitive within the current market. It is unknown whether Churchill will be able to export grain year-round, which is another considerable factor affecting the port's competitiveness.

The primary objective is to estimate and compare transportation and grain handling costs through Vancouver, Prince Rupert, or Thunder Bay for grain from representative prairie origins to common export destinations. A secondary objective is to estimate the margin available for a revitalized grain terminal at the Port of Churchill to compete as a point of export alongside the other three Western Canadian ports.

The results of this analysis support the proposition that the west coast ports handle the largest volume because they strike a better balance between distance from key growing regions to port terminals, proximity to overseas buyers of Canadian grain, and port fees. Although grain movement is ultimately determined by market demand rather than transportation cost alone, the analysis indicates that the lowest cost routes also denote those handling the highest export volumes.

2.00 Background

The transportation of Canadian bulk commodities to their final export destination requires a multimodal approach beginning with trucks from farm to country elevators, rail from country elevators to port terminals, and marine vessels for the final transit to an overseas port. The per-tonne cost of that endeavor varies based on the length of haul moved in each mode and the freight rates in effect at the time. Across the same distance, trucks are more costly than rail, and rail is more costly than marine. This characteristic of bulk movement makes it so that grain transportation costs within Canada, achieved primarily via rail, are as important a consideration in the total logistics cost as ocean transportation, despite the large difference in distance covered. For this reason, the origination point of Canadian grain is a critical component when determining which port routing has the most economical offering for a given export destination.

As it is challenging to define a single “typical” scenario in order to estimate costs, this analysis presents three distinct cases to assess their impact on total transportation costs for each origin-destination pair:

1. Average scenario: Uses the mean values over a three year period from 2022-23 to 2024-25 for days in port, days on demurrage, charter rates, and fuel costs.
2. Multiple berth scenario at Vancouver: Based on data from January 2017 to April 2024, approximately 37% of grain vessels at Vancouver needed to take more than the minimum berths to finish loading. This results in additional costs related to pilotage, tug services, and extended port time.
3. High charter rate and fuel cost scenario: Both the daily charter rate for a Panamax vessel and the fuel rate have a substantial influence on the final cost per tonne. When these prices rise, the distance between the origin port and the destination becomes a more significant driver of total cost.

For the purpose of this analysis total cost was divided into two categories: grain handling costs and transportation costs. Grain handling costs include average country elevation costs for each province, average terminal elevation costs at each port, and, in the case of Thunder Bay, the cost of transferring grain from one vessel to another at an eastern port. Transportation costs cover rail, seaway, and ocean

charges, with ocean costs including fees at both origin and destination ports, along with all vessel-related charges. Grain handling costs remain constant regardless of final export destination, whereas transportation costs vary significantly depending on both the country origin and the destination port. Costs are estimated in \$CAD per tonne and are detailed in Section 4.00.

Section 3.00 evaluates the costs of transporting 54,000 tonnes of wheat¹ from seven prairie origins to six global destinations through western or eastern routings, with additional sections outlining known costs for moving grain to Churchill. The rail rates to Vancouver, Prince Rupert, and Thunder Bay used in Section 3.00 are those in effect as of March 31, 2026, and reflect the multiple-car-block incentive, which provides an \$8 per-tonne discount from the single-car rate. The rates to Churchill currently do not offer a multiple-car-block incentive rate, so grain shipped there will immediately incur a minimum of \$8 per tonne in additional rail costs compared to the other three Western Canadian ports. Since rail rates are subject to frequent changes, all cost estimates presented in this analysis are based on rates effective March 31, 2026, and would vary if calculated using a different date. Further details on rail rates and incentives are provided in Section 4.21.

2.11 Route to Export Position

Figures 1 and 2 illustrate the differences between the most common means of routing grain through Thunder Bay and the three other western ports. As shown in Figure 2, grain exported via Thunder Bay typically follows a distinct logistics chain: it is first loaded onto a Laker vessel, transported through the St. Lawrence Seaway to a secondary eastern port, and then transferred to a Panamax vessel for final export.

An additional scenario exists at Thunder Bay where the grain is loaded into a smaller “Saltie” vessel capable of transiting the St. Lawrence Seaway and navigating oceans to reach overseas destinations, eliminating the need for a transfer port. This is the less common scenario and would result in a different cost structure that has not been considered in this analysis.

Figure 1 Route Overview to Export Position for Vancouver, Prince Rupert, and Churchill

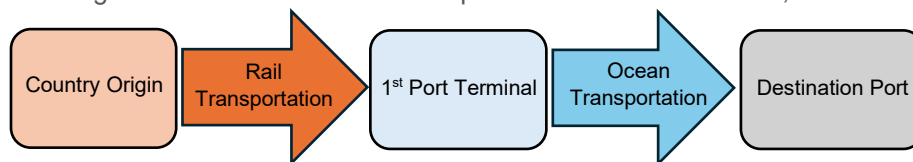
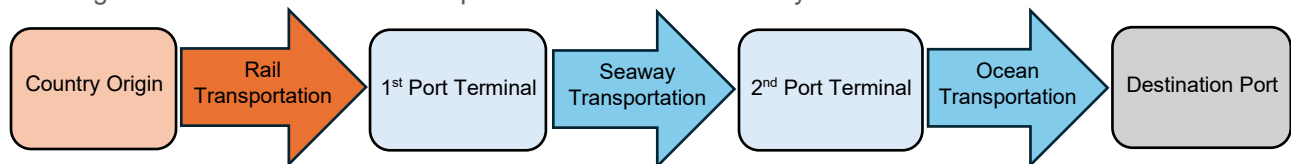


Figure 2 Route Overview to Export Position for Thunder Bay to an Eastern Port

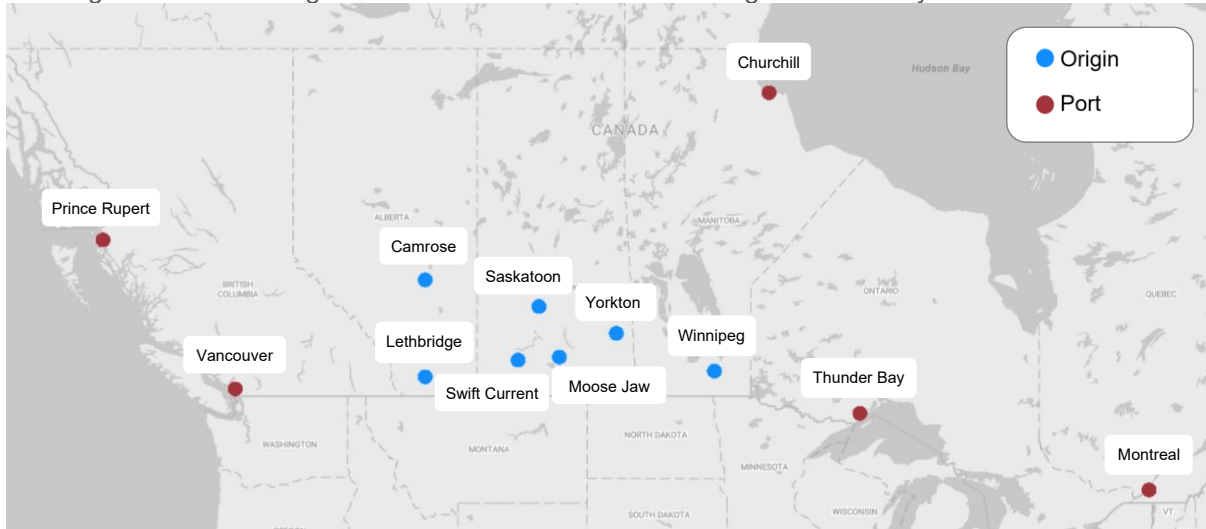


2.12 Country and Port Origins

Figure 3 maps the country origins and Canadian ports considered. The seven country origins are distributed across the prairies and represent key grain-collection areas within Western Canada. These locations include a combination of CN and CPKC-served stations. Additionally, the four Western Canadian ports are shown, along with Montreal, which is included as the representative eastern transfer port for grain exported from the Port of Thunder Bay.

¹ The 54,000-tonne assumption is based on average vessel shipments from the West Coast calculated using the last three years of port throughput and vessel movement data for Vancouver and Prince Rupert. This average reflects various vessel sizes including Handysize, Handymax, and Panamax.

Figure 3 Grain Origins and Canadian Ports Used Throughout the Analysis



As shown in Figure 4, major ports at six destinations were selected to represent key global markets for Canadian grain, based on their consistent ranking among top importers over the past three years.

Figure 4 Destination Ports Used Throughout the Analysis



Osaka (Japan) is used as a representative of the key Asia-Pacific market, while Chittagong (Bangladesh) and Shahid Rajai (Iran) are included for the broader Asian market. Significant volumes of Canadian grain are exported to North Africa and the Mediterranean from both western and eastern routes, and this region is collectively represented in this analysis by Tangier (Morocco). Rotterdam (Netherlands), which is home to Europe's largest port is included to represent Northwestern Europe. Finally, Cabello (Venezuela) is used to represent the Western Hemisphere market as its position on the east-coast of South America helps highlight cost differences between eastern and western routing options.

3.00 Findings

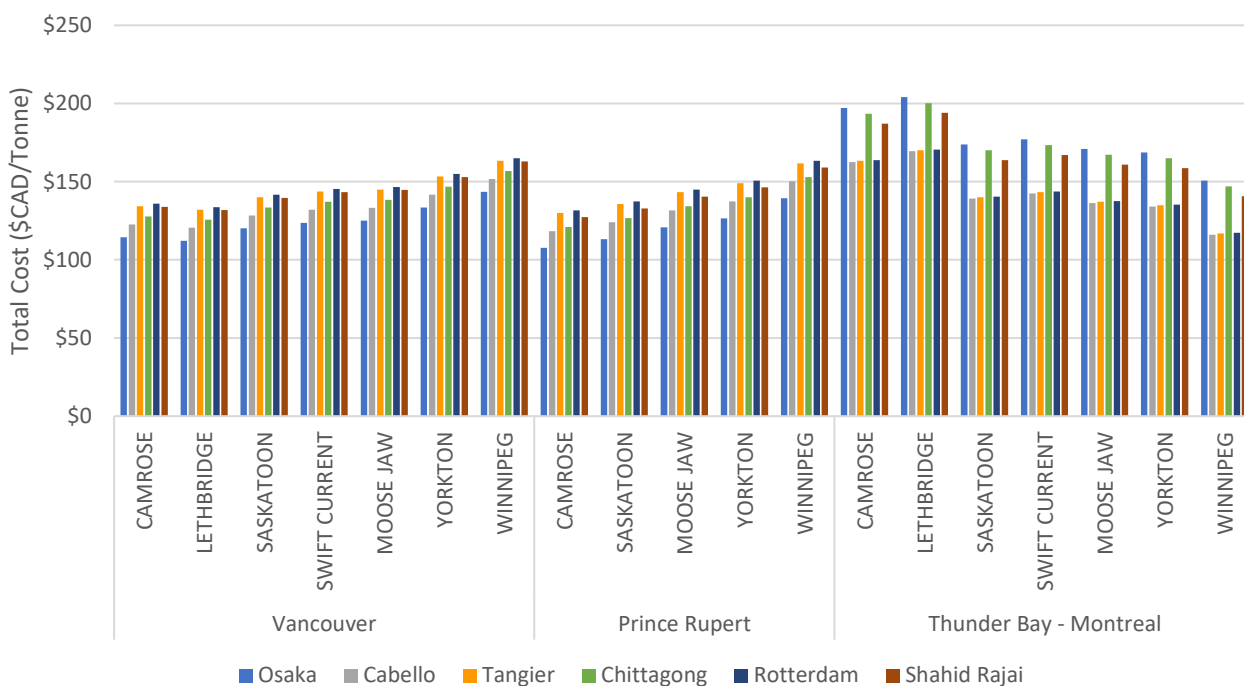
3.10 Average Scenario

The average scenario uses the three-year mean values for days in port, days on demurrage, charter rates, and fuel costs. Detail regarding these rates can be found in Section 4.24.

3.11 West Versus East Routing

In an average scenario, total costs for origin-destination sets reveal that, in most cases, western routing is more economical than eastern, this is shown in Figure 5. When read left to right for each port, this chart progresses from the closest to Vancouver to the farthest, for both origin and destination.

Figure 5 Total Logistical Cost by Origin-Destination Pair



Although total costs vary by origin and destination, grain handling costs are consistently lower when exporting west rather than east. While country origin elevation costs remain constant regardless of the export port, terminal elevation charges vary, with Vancouver and Prince Rupert being \$3.61 and \$8.16 per tonne cheaper than Thunder Bay and Montreal, respectively. For east coast shipments, handling costs include elevation at both Thunder Bay and Montreal.

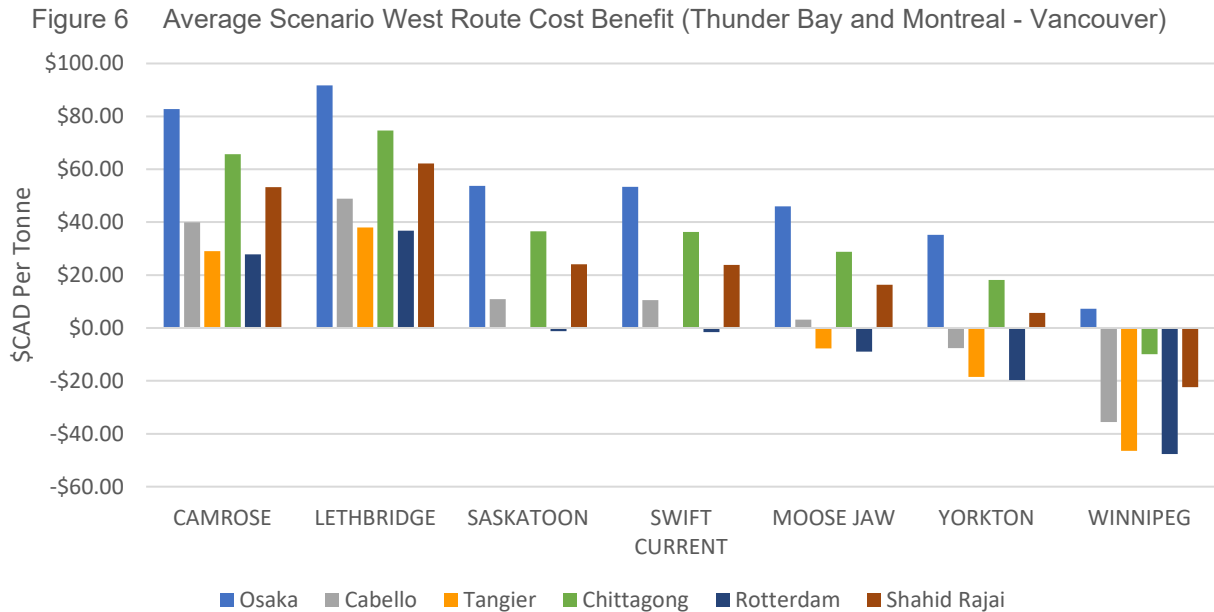
Transportation costs depend heavily on the specific origin-destination port combination, resulting in a range of possible cost combinations, but for over 75% of pairings, total transportation costs for the west remain lower than the east.

As an example, grain destined to Osaka originating in Camrose and routed through Montreal will have a total logistical cost of \$197.20 per tonne compared to the cost through Vancouver of \$114.41 per tonne. However, there are circumstances where the eastern route is more cost effective, typically when grain is sourced close to Thunder Bay; grain originating in Winnipeg and destined to Rotterdam favours the eastern route at a cost of \$117.26 per tonne versus Vancouver's \$164.93 per tonne. These differentiations for the same global destinations underscore how transportation costs within Canada and overseas combine to impact the decision making of grain shippers.

Between the two West Coast ports, Prince Rupert consistently remains the lower-cost option over Vancouver, largely due to more frequent demurrage costs at Vancouver and Prince Rupert's closer proximity to many of the destination ports. However, as Vancouver is the larger and more commonly used

port with more terminals for major grain shippers, and Prince Rupert lacks access from both Class 1 rail carriers, the remainder of this section will focus on a comparison between Vancouver and Thunder Bay.

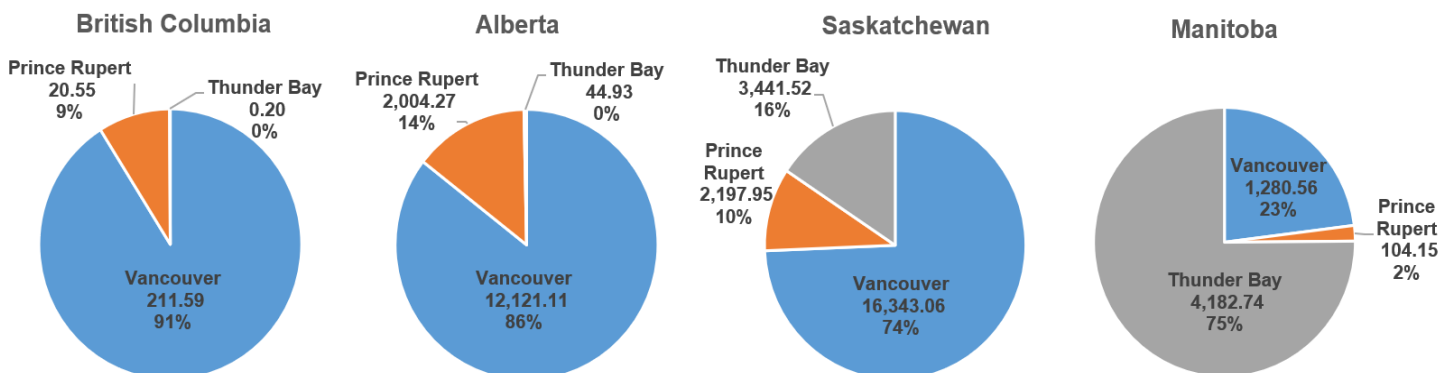
Figure 6 highlights the difference in cost to export grain via Thunder Bay and Vancouver for each origin-destination pair. Positive values favor exporting out of Vancouver, and negative values favor Thunder Bay and Montreal. Exporting from Vancouver can be over \$90 per tonne cheaper when the grain is sourced in Alberta and destined for Asia, owing to closer access to both port and destination. Even if longer marine transportation is required out of Vancouver, through the Panama Canal, to destinations in the Mediterranean, it can still be more than \$38 per tonne cheaper than using the eastern route when the grain is sourced close to Vancouver.



As the origin moves farther east, the difference in per-tonne cost lessens, and for grain originating in Winnipeg, shipping out of Thunder Bay becomes cheaper for the majority of destinations, by up to \$48 per tonne. Saskatoon and Swift Current, both located in southern Saskatchewan, approach a break-even point for destinations such as Tangier and Rotterdam, which allow for similar costs in either route.

Traffic patterns in Canada align with the expectations outlined in the cost analysis. Grain originating in Alberta and Manitoba overwhelmingly flows toward the nearest port, while grain grown in Saskatchewan is distributed more evenly between east and west. Figure 7 illustrates this trend, showing the five-year average rail tonnage shipped to port by origin province, in thousands of tonnes.

Figure 7 Five-Year Average Tonnage Shipped by Rail to Port, By Origin Province ('000s tonnes), 2020/2021 – 2024/2025 Crop Years



3.12 Churchill

The grain terminal at the Port of Churchill is not currently in operation, nor is it a part of most public announcements from the Major Projects Office, therefore rather than using estimates, this analysis excludes all unknown variables from total cost calculations.

Table 1 outlines the cost components included for each port. Anything labelled as “Unknown” has been omitted from Churchill’s cost calculations. Therefore, the per-tonne cost estimates presented for Churchill in this section reflect only grain handling fees and rail transportation costs.

Figures 8 and 9 instead depict the estimated maximum per-tonne transportation cost permissible (excluding rail) for Churchill to be competitive with shipments out of Vancouver and Thunder Bay. These estimates represent the operating cost thresholds available for Churchill’s port, ocean transportation, and destination port costs.

Table 1 Route to Export Cost Estimates by Port

Port Terminal	Country Origin	Rail Transportation	1 st Port Terminal	Seaway Transportation	2 nd Port Terminal	Ocean Transportation	Destination Port
Vancouver	Varies	Varies	\$1.52/tonne	N/A	N/A	Varies	Varies
Prince Rupert	Varies	Varies	\$1.70/tonne	N/A	N/A	Varies	Varies
Thunder Bay	Varies	Varies	\$0.26/tonne	\$32.61/tonne	\$1.32/tonne	Varies	Varies
Churchill	Varies	Varies	Unknown	N/A	N/A	Unknown	Unknown

When compared with exporting out of Vancouver, Figure 8 shows an estimate of the highest cost allowance available to Churchill for grain originating in Yorkton, which could reach over \$75 per tonne, depending on the destination. As the prairie origin shifts further west, this allowance narrows. For grain originating in Alberta, the remaining allowance declines to \$31.96 per tonne for exports to Rotterdam and further to \$10.46 per tonne for shipments to Japan.

Figure 8 Dollars per Tonne Allowance for Port and Vessel Costs: Churchill vs. Vancouver

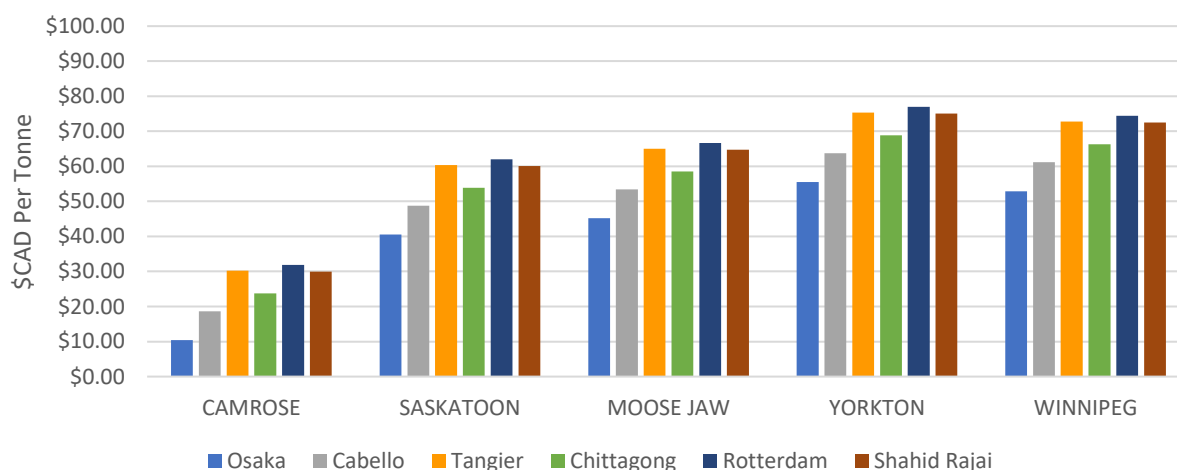
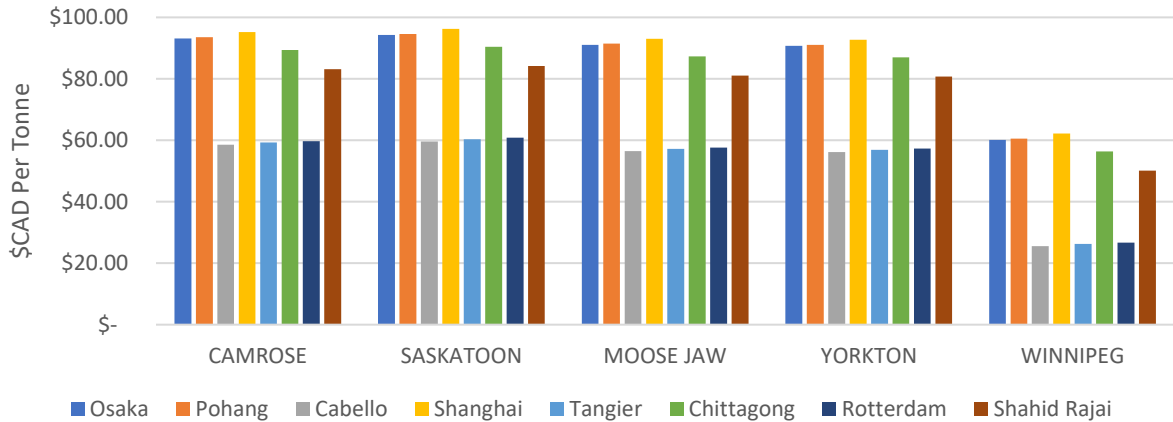


Figure 9 presents the same comparison, but for Thunder Bay rather than Vancouver. The margins for Asian markets are generally higher in this comparison, as they are more costly from Thunder Bay than from Vancouver, making it easier for Churchill to be competitive, reaching as high as \$96.22 per tonne for grain originating in Saskatoon. However, for destinations such as Cabello, Tangier, and Rotterdam, the margin is significantly lower – and for grain originating in Winnipeg, there would be less than \$30 per

tonne available for vessel and port fees at Churchill in order to compete with the costs of shipping through Thunder Bay.

The farther west the grain origin, the less likely it is that total shipping costs via Churchill would be lower than through Vancouver, largely due to higher rail transportation fees. As the origin shifts east, the allowance available to Churchill increases relative to Vancouver. However, Churchill becomes less competitive compared to Thunder Bay. Competitiveness also depends highly on the export destination: routes via Churchill are more likely to result in lower per-tonne costs when sailing distances are shorter and do not require transit through the Panama or the Suez Canal.

Figure 9 Dollars per Tonne Allowance for Port and Vessel Costs: Churchill vs. Thunder Bay



Figures 10-12 present three example cases with the corresponding costs for each broken out into sections. Figure 10 illustrates a route that is more advantageous for exports from the West Coast: grain originating in Camrose and shipped to Osaka.

For Churchill to remain competitive, all “Unknown” costs identified in Table 1 would need to fit within the “Maximum Available for Churchill Ocean and Port” allowance shown in Figures 10-12. This includes port fees, inbound and outbound vessel charges and fuel, canal fees, applicable demurrage, and destination port fees.

The “Maximum Available for Churchill Ocean and Port” is determined by the highest cost among the alternative ports, and in the case of Figure 10, that is Thunder Bay. If Churchill’s combined port and ocean costs were to exceed this threshold of \$93.19 per tonne, the route would no longer be a competitive option. For this origin-destination pair, it is likely unfeasible for Churchill to compete with Vancouver or Prince Rupert, as its grain handling and rail costs alone nearly exceed the total transportation cost through the West Coast ports. In addition, shipments exported through Churchill would require transit through the Panama Canal, resulting in additional costs.

Figure 10 Cost of Exporting Wheat from Camrose to Osaka via Western Canadian Ports

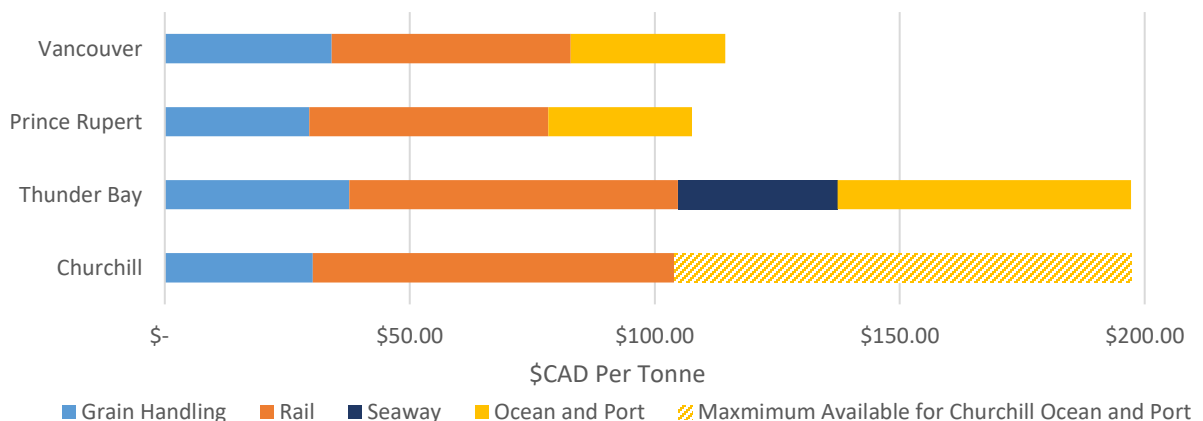
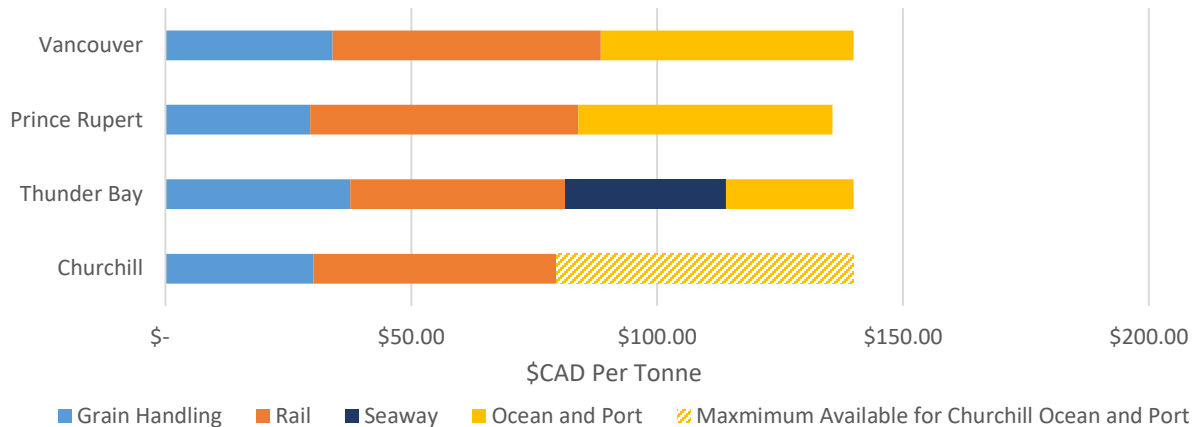


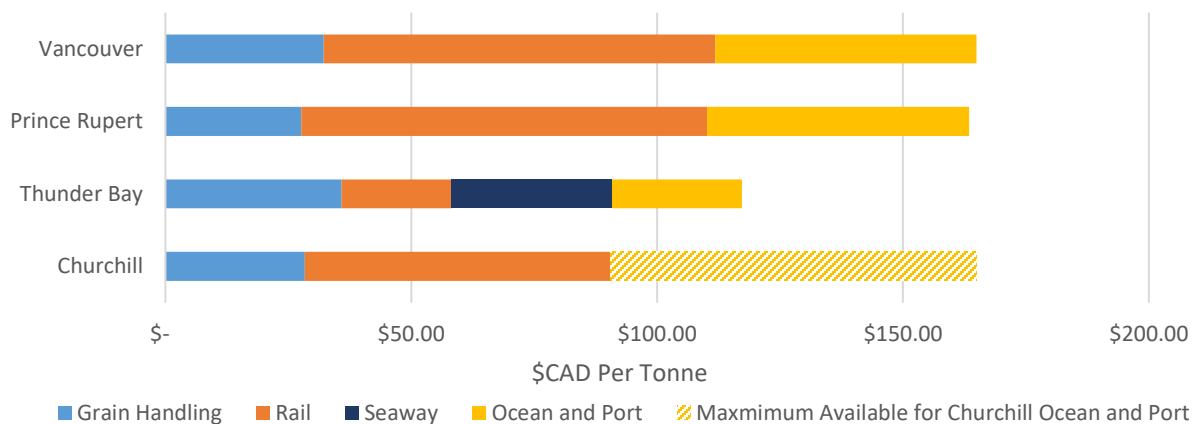
Figure 11 presents the same comparison but for wheat shipped from Saskatoon to Tangier. This case represents a midpoint scenario where the cost of exporting west versus east are similar. In this example, the Vancouver route is the most expensive at \$139.97 per tonne. As a result, if Churchill's combined vessel and port charges were to exceed \$60.40 per tonne, the route would no longer be competitive with any of the three alternative Western Canadian ports. This scenario suggests that Churchill has competitive potential, as Tangier is relatively close in sailing distance and requires no canal crossing.

Figure 11 Cost of Exporting Wheat from Saskatoon to Tangier via Western Canadian Ports



Lastly, Figure 12 represents a scenario in which exporting east is less expensive than exporting west. For wheat grown in Winnipeg and exported to Rotterdam, the cheapest route is through Thunder Bay and the most expensive is through Vancouver. In this case, the estimated margin available for Churchill's combined vessel and port fees is \$74.42 per tonne, a cost above this threshold would make Churchill uncompetitive relative to the other three ports. Although matching Thunder Bay's pricing could be difficult, Churchill may still be able to compete with the two West Coast ports on this export route.

Figure 12 Cost of Exporting Wheat from Winnipeg to Rotterdam via Western Canadian Ports



3.20 Multiple Berth Scenario (Vancouver)

At the port of Vancouver, it is common for a vessel to require more than the minimum berths when the grain required to load is not fully available at the first berth. In these cases, the vessel will partially load with the grain that is available, then return to anchor until the remaining cargo arrives at the terminal. On average, shipments that require additional berthing spend an average of seven additional days in port than those that don't. This does not apply to vessels that call to multiple terminals, which accounted for approximately 31% of trips between January 2017 and April 2024, as these movements are planned and would be accounted for in initial contracts.

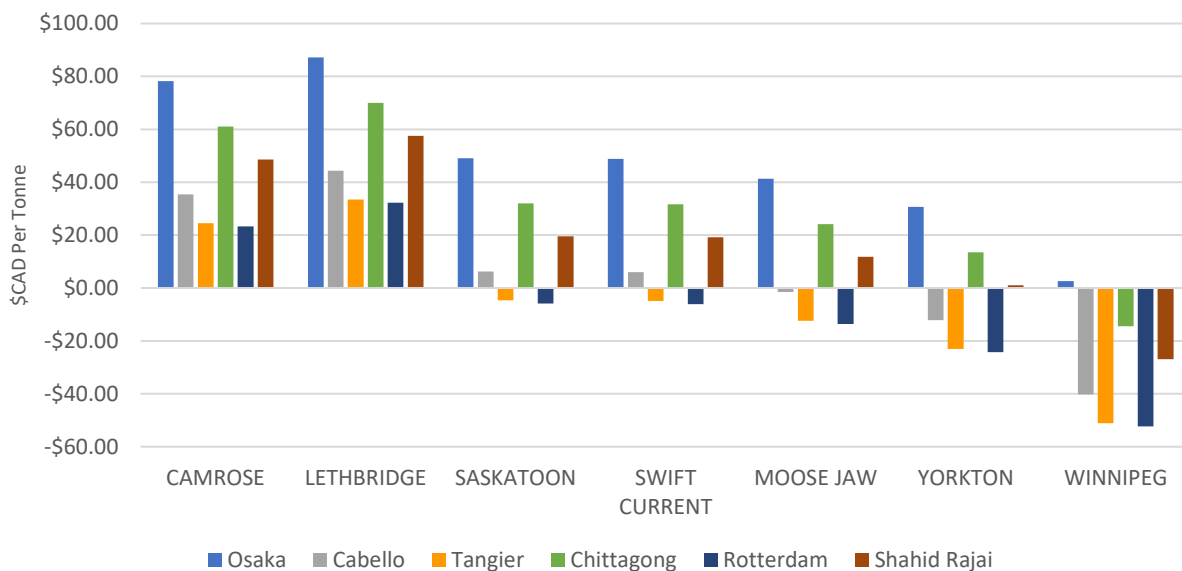
Extended time in port due to unexpected additional berths can lead to added demurrage, fuel, and pilotage costs. Based on a sample quote from a shipping agent, each additional berth adds approximately \$37,000 CAD in pilotage and tug fees. These additional costs are incorporated into the Port of Vancouver fees used throughout this section.

3.21 West Versus East Routing

These additional costs for Vancouver, when spread out over 54,000 tonnes, do not result in a significant per-tonne increase compared to the average scenario. Comparing Figure 13 to Figure 6, the per-tonne costs at Vancouver are \$4.60 higher than in the average case. The following costs reflect the added \$37,000 pilotage and tug costs, along with ten days on demurrage: seven more than the three days assumed in the average scenario. The charges for taking additional berths at Vancouver will only increase transportation costs, grain handling costs will remain unchanged.

With these additional costs at Vancouver, shipping via Thunder Bay can become more favourable for certain routes, and several origin-destination pairs near the break-even point identified in Section 3.10 shift in favour of Thunder Bay as the lower-cost option. Destinations such as Tangier and Cabello, for example, become less expensive through Thunder Bay when the grain originates in Saskatchewan.

Figure 13 West Route Cost Benefit (Multiple Berths at Vancouver)



3.22 Churchill

When costs rise at Vancouver, or any other port, the competitive margin for Churchill expands by the equivalent amount. In this case, Churchill would gain an additional \$4.60 per tonne to allocate toward vessel and port fees across all routes when compared with Vancouver. The comparison with Thunder Bay, however, would remain unchanged.

3.30 High Charter Rate and Fuel Scenario

With all else held constant, the prevailing market conditions in bulk shipping can shift the west versus east balance in any given week, especially for origin-destination pairs near \$0/tonne difference. Bulk shipping rates and fuel rates change daily in response to supply and demand, much more frequently than rail rates do, and these shifts will affect the determination of the cheapest routing. Increasing vessel and fuel rates will not have any effect on grain handling costs, and all changes in price come solely from transportation costs, specifically, increases to ocean costs which include both vessel and port charges.

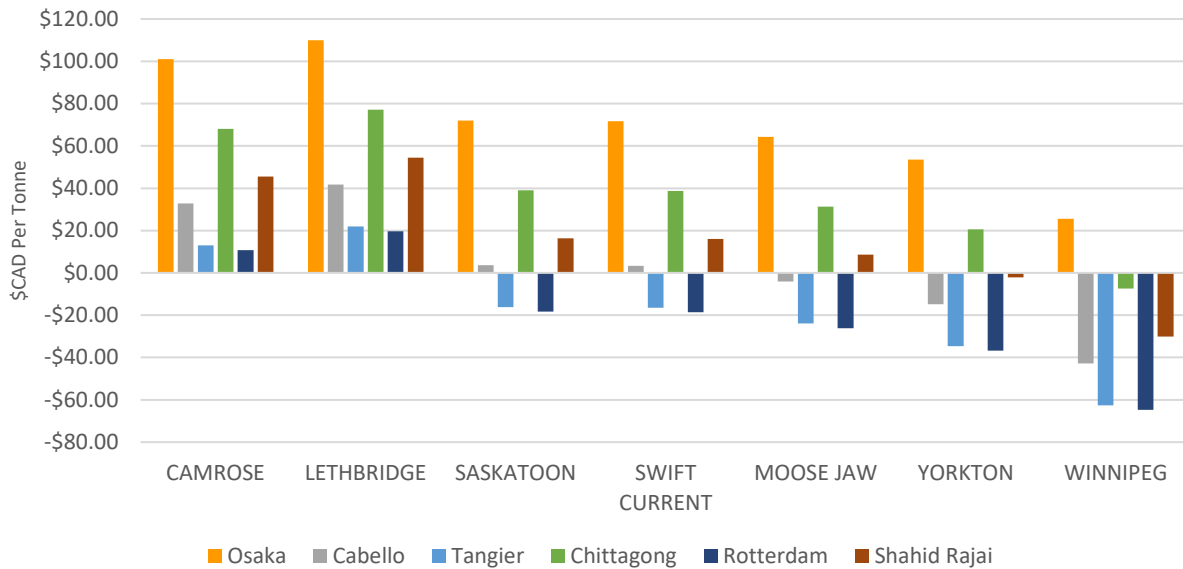
3.31 West Versus East Routing

When vessel and fuel rates increase, the cost advantage shifts towards exporting from the Canadian coast that is closest to the final destination. However, this shift is constrained by rail freight costs, as

longer rail hauls may outweigh savings in marine transit, therefore, outcomes are highly dependant on the grain's origin.

Figure 14 can be compared to Figure 6, both illustrate the difference in costs between routing grain through Vancouver and through Thunder Bay. As expected, higher charter and fuel rates increase total cost across all routes. In the cases shown in Figure 6 where the cost difference between the two ports was close to zero, namely Saskatoon and Swift Current to Tangier and Rotterdam, the advantage shifts toward Thunder Bay due to its significantly shorter sailing distance to these destinations.

Figure 14 High Charter and Fuel Rate Scenario West Route Cost Benefit (Thunder Bay/Montreal - Vancouver)



As an example, grain originating in Swift Current and exported to Tangier has a total per-tonne cost of \$169.09 via Vancouver and \$152.64 via Thunder Bay. In the average scenario presented in Section 3.10, the corresponding costs are \$143.61 and \$143.28, respectively.

For a destination such as Cabello, where the sailing distance between each port origin is similar, canal transit becomes a key cost factor when vessel and fuel rates increase. Shipments from Vancouver must transit through the Panama Canal, adding transit time and increasing both vessel charter and fuel costs. In contrast, the route from Thunder Bay and Montreal to Cabello is direct, avoiding these additional costs. As a result, shipping via Thunder Bay becomes more cost-effective for origins as far west as Moose Jaw, whereas in the average scenario the cost advantage does not shift until further east, at Yorkton.

3.32 Churchill

If vessel and fuel costs were to increase, Churchill would also be affected in the same manner as any other port. The narrative, therefore, remains consistent with Section 3.12. As noted, canal usage, particularly the Panama Canal, which has historically experienced longer wait times than the Suez Canal, has a greater impact on total cost when vessel charter and fuel rates are elevated. Accordingly, shipping through the Port of Churchill is more likely to be viable for destinations that do not require canal transit.

4.00 Methodology

Total cost was divided into two components for the purpose of this analysis: grain handling costs and transportation costs. Grain handling costs include average country elevation costs for each province, average terminal elevation costs at each port, and, in the case of Thunder Bay, the cost of transferring grain from one vessel to another at the Port of Montreal. Transportation costs include rail, seaway, and ocean freight, with ocean costs encompassing both port terminal fees and vessel-related charges.

4.10 Grain Handling Costs

4.11 Country Elevator

Each country elevator charges a fee for the elevation of grain. As these fees vary by elevator, they have been aggregated into provincial averages for the purposes of this analysis. The tariffs published by the Canadian Grain Commission represent the maximum allowable charges, and therefore, actual fees may be lower than the averages used in this report. Table 2 presents the values applied in this analysis, based on the 2024-25 crop year average wheat elevation costs¹.

Table 2 Country Elevation Costs

<i>Province</i>	<i>Rate (\$CAD)</i>
British Columbia	\$18.18/tonne
Alberta	\$18.18/tonne
Saskatchewan	\$18.11/tonne
Manitoba	\$16.32/tonne

4.12 Port Terminal Elevator

As with country elevators, port terminals charge a fee for the elevation of grain. As these fees vary by terminal, they have been grouped into an average value by port for the purpose of this analysis. The tariffs published by the Canadian Grain Commission represent the maximum allowable charges; actual fees may be lower than the averages used throughout the report. Table 3 details the values used in this analysis, based on the 2024-25 crop year average wheat elevation costs².

Table 3 Port Elevation Costs

<i>Port Terminal</i>	<i>Rate (\$CAD)</i>
Vancouver	\$15.88/tonne
Prince Rupert	\$11.33/tonne
Thunder Bay	\$12.00/tonne
Churchill	\$10.35/tonne
Montreal	\$9.14/tonne

4.13 Transfer at Second Port Terminal

The majority of grain shipped from the Port of Thunder Bay travels through the St. Lawrence Seaway to an eastern terminal, where it is transferred onto an ocean-going vessel for export. At Thunder Bay, it is first loaded onto a Laker; a vessel designed to navigate the seaway, which carries less cargo than a Panamax ship. Once reaching an eastern terminal, the cargo is elevated until it is able to re-load onto a Panamax vessel. The elevation cost of \$9.14 per tonne is being used throughout the analysis for vessels originating from Thunder Bay.

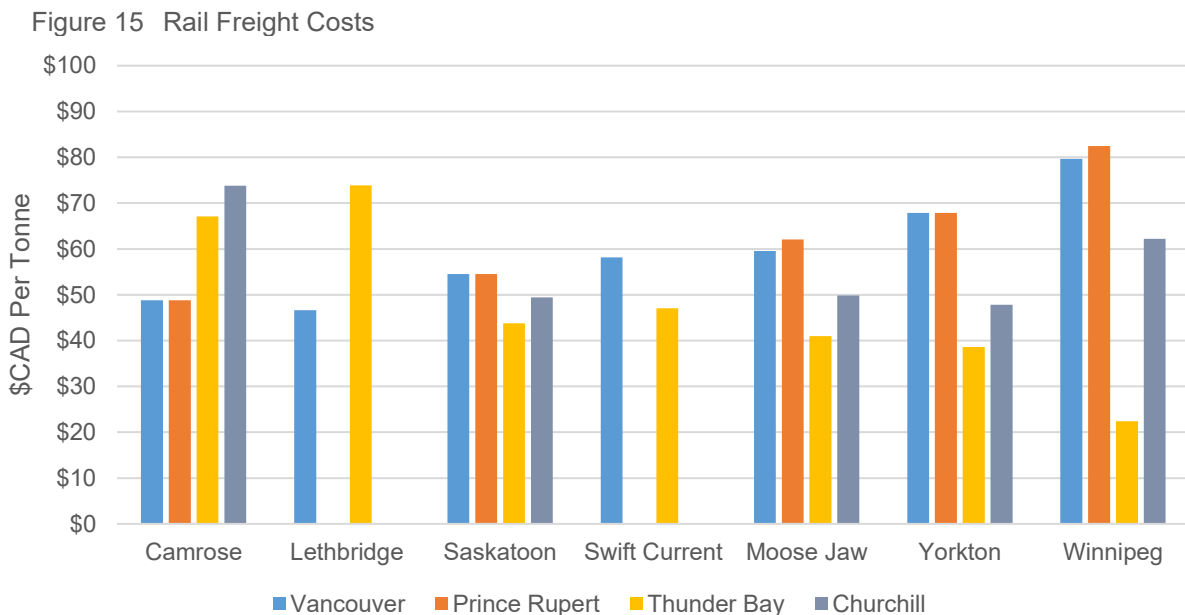
4.20 Grain Transportation Costs

Grain transportation costs comprise rail freight, St. Lawrence Seaway charges, and ocean expenses. For the purpose of this analysis, ocean expenses include both port fees and all associated vessel related costs.

4.21 Rail Freight

Both CN and CPKC publish tariffs for transporting grain from a country origin to a port destination, differentiated by commodity, car supplier, car capacity, and number of cars spotted³. This analysis uses wheat tariffs effective on March 31, 2026, for carrier supplied railcars with a capacity of 99 tonnes. For Vancouver, Prince Rupert, and Thunder Bay, rates for unit train movements were used which provide for a discount of \$8.00 per tonne over the single-car rates. As of the 2024-25 crop year, 86% of movements to these ports qualified for a block size discount. Churchill did not have multiple car block incentive rates in effect in March 2026 and, therefore, the single-car rates are used in all calculations. The rates used are summarized in Figure 15, noting that Lethbridge and Swift Current are only served by CPKC and have no rates for local routing to either Prince Rupert or Churchill.

Origins in Western Canada generally have lower transportation costs to Pacific Coast ports than to Thunder Bay or Churchill. Beginning in Saskatoon and moving further east, rail tariffs to the West Coast ports become increasingly expensive.



4.22 St. Lawrence Seaway

As noted previously, grain loaded onto Laker vessels at Thunder Bay must then transit the St. Lawrence Seaway to an eastern port, where it is transferred to an ocean-going vessel for export. The estimated cost of loading grain at Thunder Bay and transporting it through the seaway to a secondary port is \$32.61 per tonne, based on information provided by grain companies operating out of Thunder Bay and the 2026 Great Lakes and Seaway Schedule of Tolls⁴. This cost includes vessel fees, fuel cost, and transit through the canals and locks, assuming a five-day trip from Thunder Bay to Montreal.

4.23 Port Fees

Information on fees and tariffs for port facility usage is primarily sourced from the published fee guides of each port. The ports of Vancouver, Prince Rupert, Thunder Bay, and Montreal provide detailed documentation, which Quorum Corporation used to estimate typical costs based on rates in effect at the onset of 2026⁵. These fee documents include charges such as harbour dues, anchorage, berthage, and in the case of the Port of Vancouver, Gateway Infrastructure Fees 1 and 2; these values are summarized in Table 4. The Port of Churchill does not currently have posted information on port fees and therefore, these costs are considered unknown throughout the analysis.

Table 4 Estimated Port Costs

Port Terminal	Rate (\$CAD)
Vancouver	\$1.52/tonne
Prince Rupert	\$1.70/tonne
Thunder Bay	\$0.26/tonne
Montreal	\$1.32/tonne

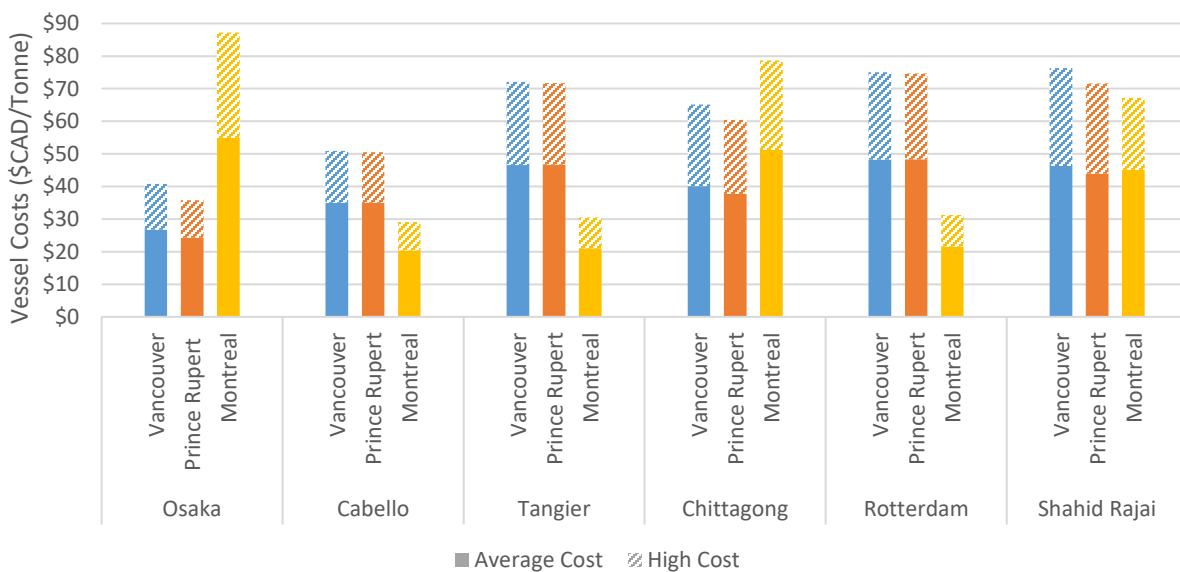
Additional cost components were estimated as follows:

- **Pilotage:** Pilotage services are required at Vancouver, Prince Rupert, and Montreal. While pilots are also required for Saltie vessels at Thunder Bay and during transit through the St. Lawrence Seaway, they are not required for Laker vessels and therefore excluded from the Thunder Bay fees in this analysis. Fees are estimated based on the BC Pilotage authority rates, with Montreal pilotage costs assumed to be the same as those at Vancouver.
- **Destination Port Fees:** These are based on a sample voyage provided by a vessel chartering company. A constant value of \$3.31 CAD is applied across all origins to better approximate total cost of marine freight, but the destination port fees are not expected to be a factor in routing decisions as they must be paid regardless of which Canadian port the grain is exported from.

4.24 Vessel Fees

For this analysis, vessel rates are calculated using the sailing distance from each port to determine base costs and fuel consumption, with additional charges applied for canal transit where required. These vessel-related fees also account for inbound vessel charges and demurrage costs. Figure 16 illustrates all vessel-associated fees by port for the six selected destinations. The solid bars indicate the costs used in the average scenario, while the striped sections above represent the additional costs incurred under the high vessel charter and fuel rate scenario.

Figure 16 All Vessel Associated Fees for Average and High Cost Scenario



- **Outbound Vessel Charter Rate:** Vessel costs are based on daily Panamax rates with the average scenario using a daily estimate of \$19,625.20 CAD and the high charter rate scenario using \$41,825.00 CAD⁶. The daily rate is then multiplied by the number of days at sea, assuming a sailing speed of 11.5 knots. Table 5 illustrates the marine sailing distances for each origin-

destination pair. Distances from Churchill are included for reference although no vessel costs are used throughout the analysis.

Table 5 Marine Sailing Distances⁷

<i>Destination</i>	<i>Distance from Vancouver</i>	<i>Distance from Prince Rupert</i>	<i>Distance from Montreal</i>	<i>Distance from Churchill</i>
Osaka, Japan	4,554	4,106	11,200*	12,569*
Cabello, Venezuela	4,853*	5,164*	2,937	4,200
Tangier, Morocco	8,366*	8,677*	3,161	3,637
Chittagong, Bangladesh	8,595	8,184	9,832^	10,309^
Rotterdam, Netherlands	8,861*	9,172*	3,290	3,653
Shahid Rajai, Iran	10,459	10,048	7,935^	8,412^

*Route requires use of the Panama Canal

^Route requires use of the Suez Canal

- **Inbound Vessel Charge:** The rate for the ballast leg of each vessel’s journey is based on an estimate from a sample voyage calculation provided by a vessel chartering company of \$450,000 CAD. This rate is applied uniformly across all origins, as no assumptions can be made regarding the vessel’s point of origin.
- **Demurrage:** Demurrage reflects the typical number of days vessels remain in port beyond the average loading time specified in a standard charter party agreement. For Vancouver, average demurrage is estimated at three days based on the past three years of port statistics: days spent in port over and above an estimated “typical contract” of 11 days. Montreal is estimated at one day based on conversations with grain shippers indicating that demurrage there is less than half that of Vancouver. No demurrage costs are being added to either Prince Rupert or Thunder Bay port fees. Demurrage is calculated using the daily vessel rate and fuel rate – either the average or the increased rate based on the scenarios presented in the analysis.
- **Fuel Surcharge:** Fuel costs are calculated using the VLSFO Global Average Bunker Rate. These rates are then multiplied by the corresponding daily metric tonnage of fuel consumed both in port and during outbound transit⁸. The average scenario is estimated at \$873.60 CAD and the high charter rate scenario at \$1,410.50 CAD.
- **Canal Fees:** An online calculator for the Panama and Suez Canals was used to estimate the per-tonne transit cost for a Panamax vessel carrying grain⁹. For routes requiring a Panama Canal crossing, an additional 2.5 days are added to the sailing time to account for expected waiting times. No additional days are added for the Suez Canal, as waiting times are generally minimal and extend hours rather than days. The Panama Canal fee is estimated at \$336,000 CAD and then Suez Canal at \$432,646.20 CAD.

5.00 References

¹ Grain Monitoring Program – GMP Measure Table 4B-1 Primary Elevator Handling Charges and Indexes – Elevation <https://grainmonitor.ca/GMODS/>

² Western Canadian Port Terminals: Grain Monitoring Program – GMP Measure Table 4D-1 Terminal Elevator Handling Charges and Indexes – Elevation <https://grainmonitor.ca/GMODS/>

Montreal: Canadian Grain Commission Elevator Charge Summaries
<https://www.grainscanada.gc.ca/en/grain-research/statistics/elevator-charge-summaries/>

³ Grain Monitoring Program – GMP Measure Table 4C-1 Railway Freight Rates and Indexes
<https://grainmonitor.ca/GMODS/>

⁴ 2026 Great Lakes St. Lawrence Seaway System Schedule of Tolls: <https://greatlakes-seaway.com/en/commercial-shipping/tolls-schedule/>

⁵ 2026 Vancouver Port Fee Guide : <https://www.portvancouver.com/media/documents/2026-01-01-fee-document-port-vancouver-2026>

2026 Prince Rupert Port Fee Guide: <https://www.rupertport.com/port-tariff/>

2026 Thunder Bay Port Fee Guide: <https://www.portthunderbay.ca/administration/tariffs/>

2026 Montreal Port Fee Guide: <https://www.port-montreal.com/en/goods/operations/services-and-fees>

⁶ Capital Link Shipping Stifel Report: <https://capitallink.com>

⁷ Sailing Distances: <https://sea-distances.org/>

⁸ VLSFO Global Average Bunker Price: <https://shipandbunker.com/prices>

⁹ Panama Canal: <https://www.wilhelmsen.com/tollcalculators/panama-toll-calculator/>

Suez Canal: <https://lethagencies.com/suez-calculator>