Annual Report

2023-2024 Crop

Monitoring the Canadian Grain Handling and Transportation System

Government of Canada / Gouvernement du Canada

Quorum Corporation

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Annual Report of the Grain Monitor: 2023-24 Crop Year
ISBN – 978-1-0688757-1-7

This report is available on the Quorum Corporation website.
www.grainmonitor.ca

Cover Image: In a scene mirrored on some 40,000 farms each fall, a combine is seen harvesting a new crop of Western Canadian canola. Across the prairies, nearly 100 million acres of land are devoted to the annual production of about 75 million tonnes of cereals, oilseeds, and special crops, much of which is exported. Western Canada's Grain Handling and Transportation System is a critical underpinning in the supply chains employed in getting this grain from prairie farms to domestic consumers and markets around the globe. (Image courtesy of GrainsConnect Canada)

Foreword

The following report details the performance of Canada's Grain Handling and Transportation System (GHTS) for the crop year that ended 31 July 2024, and focuses on the various events, issues and trends manifesting in the movement of Western Canadian grain during the past year. This is the twenty-fourth annual report submitted by Quorum Corporation in its capacity as the Monitor appointed under the Government of Canada's Grain Monitoring Program (GMP).

The GMP's objective is to impartially analyse and assess the performance of the GHTS through a series of complementary measures and indicators, which are reported publicly. The GMP is founded on four broad principles in meeting this objective: transparency of information, data reliability, neutrality, and stakeholder engagement. As with the Monitor's previous annual reports, these measures are grouped into six series, namely:

Series 1 – Production and Supply
Series 2 – Traffic and Movement
Series 3 – Infrastructure
Series 4 – Commercial Relations
Series 5 – System Efficiency and Performance
Series 6 – Producer Impact

As in the past, each series builds on data collected by the Monitor from the industry's various stakeholders and frames the discussion using year-over-year comparisons. To that end, activity in the 2023-24 crop year is largely gauged against that of the 2022-23 crop year. But the Grain Monitoring Program (GMP) was also intended to frame recent activity against the backdrop of a longer time series. Beginning with the 1999-2000 crop year – referred to as the GMP's "base" year – the Monitor has now assembled relatable data in a time series that extends through 25 crop years. This data constitutes the backbone of the GMP and is used widely to identify significant trends and changes in GHTS performance. Although the Data Tables presented in Appendix 4 of this report can only depict a portion of this data, the full time series can be obtained as MS Excel spreadsheets from the Monitor's website (www.grainmonitor.ca). Similarly, select data elements can also be downloaded through the website's online feature, Grain Monitor Open Data System (GMODS).

Analogous space constraints have also made it necessary to limit the graphical presentation of data in this report to the last ten crop years. This report, as well as all past reports, can also be downloaded from the Monitor's website (www.grainmonitor.ca).

QUORUM CORPORATION

Edmonton, Alberta
May 2025

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Executive Summary

With a total grain supply of 77.0 million tonnes down only modestly from the 80.3 million tonnes reported a year earlier, it was apparent that the Grain Handling and Transportation System (GHTS) would be required to handle a comparable volume in the 2023-24 crop year. From the outset, however, the amount of grain entering the country elevator system proved to be almost 50% more than what had been handled the previous August, which signaled a stronger start to the fall movement. This was followed by more consistent weekly grain deliveries throughout the remainder of the 2023-24 crop year. Ultimately, Western Canadian producers delivered an estimated 58.8 million tonnes of grain into the GHTS, 3.8% less than in the previous crop year.

It took an average of 41.7 days for grain to move from the Prairies to export positions within Western Canada during the 2023-24 crop year, a 3.3% increase from the 40.4-day average posted a year earlier. Despite the increase, this average still ranked among the lowest recorded under the GMP, and 38.8% below the 68.1-day average first benchmarked in the base year. The 1.3-day worsening stemmed from increases in all three of its constituent elements: with country-elevator storage time contributing an additional 0.2 days; the railways' loaded-transit time, 0.5 days; and terminal-elevator storage time, 0.6 days. Moreover, these elongated time elements reflected what proved to be a somewhat more problematic year for the GHTS.

The 2023-24 crop year was buffeted by a variety of externalities – from labour disputes that resulted in work stoppages at the Port of Vancouver and the St. Lawrence Seaway, to yet another year of devastating wildfires in Western Canada, and the bracing for the impact of a national rail strike – all of which obstructed the movement of rail traffic across the country at different times. This was reflected in undulating monthly time-in-the-system values, which reached from a low of 33.5 days to a high of 51.3 days. Of particular concern was a noticeably longer average car cycle on movements within Western Canada, which rose by 10.1%, to 15.4 days from 14.0 days a year earlier. This average ranked among the higher values recorded in recent years and continued to reflect the inconsistency in overall railway service.

The downstream effects of inconsistent railway service are measurable. The more orderly, consistent, and reliable the railways' flow of grain into the ports, the better the ability of terminals to maintain the stocks that are needed to meet the demand of arriving vessels. Moreover, the promotion of supply-chain fluidity ultimately leads to vessels spending less time in port, and the avoidance of congestion. This is consistent with the call of the National Supply Chain Task Force for urgent action in creating supply chains that are more resilient and efficient. These objectives were lauded by grain shippers at large, who continue to be concerned with the railway industry's willingness to deploy the resources required to provide for improved service.

HIGHLIGHTS FOR THE 2023-2024 CROP YEAR

(Comparisons are to the previous crop year)

Production and Supply

- Grain production decreased 8.2% to 69.2 million tonnes; still beneath the 2020-21 crop year's pre-drought output of 78.8 million tonnes.
  - Cereals comprised 59.1% of the crop; oilseeds 30.3%; and other commodities 10.6%.
  - Early growing challenges gave way to better conditions and the harvesting of a good-quality crop.
- Carry-forward stocks from the 2022-23 crop year increased 57.8% to 7.8 million tonnes.
- Carry-out stocks decreased 9.8% to 7.1 million tonnes.
- Total grain supply (production and carry-forward) decreased 4.1% to 77.0 million tonnes.

Traffic and Movement

- Primary-elevator throughput decreased by 4.4%, to 47.2 million tonnes, moderately below pre-drought volume of 53.9 million tonnes.
  - This represented 80.3% of all producer deliveries (primary and process elevators, as well as producer cars).
- Railway shipments decreased 3.3% to 53.6 million tonnes.
  - Traffic to Western Canada totaled 43.3 million tonnes, down 3.3%.
  - Traffic to Eastern Canada totaled 2.2 million tonnes, down 7.2%.
  - Traffic to the United States and Mexico totaled 8.1 million tonnes, down 2.0%.
- Terminal-elevator throughput decreased 4.6% to 38.1 million tonnes.
  - Terminal unloads totaled 393,282 cars, down 4.2%.
  - CN/CPKC traffic shares were 56.8% and 43.2% respectively.
    - Marks third consecutive year in which CN has increased its share.
- Containerized traffic increased 2.8% to 3.6 million tonnes.
  - Equipment-supply issues continued to hamper a return to pre-COVID-19 traffic levels.
- Truck traffic to the United States decreased 6.4% to 2.0 million tonnes.
  - Transborder shipments cater to a more time sensitive, short-haul market.

Infrastructure

- The number of country elevators decreased 1.2% to 400.
  - The net reduction of five facilities reflects the licensing of 24 elevators along with the closure of 29 others.
  - Five new or retrofitted loop-track elevators became operational, with 51 at crop year's end.
  - Storage capacity decreased 1.9% to slightly under 9.4 million tonnes.
- The railway network remained unchanged at 17,265.7 route-miles.
  - CN and CPKC operated 84.5% of the network; Regional and shortline carriers operated 15.5% of the network.
- The railways' hopper-car fleet decreased by 3.5% to an annualized average of 21,628 railcars.
  - Proportion of cars in active service reached a height of 98.0% in October 2023.
- Terminal elevators remained unchanged at 17 facilities.
  - Storage capacity remained unchanged at almost 2.8 million tonnes.

HIGHLIGHTS FOR THE 2023-2024 CROP YEAR (continued)

(Comparisons are to the previous crop year)

Commercial Relations

- Country elevator handling charges saw marginal changes.
  - Elevation rates decreased 0.6%; dockage rates remained unchanged; and storage rates increased 0.1%.
- Railway freight rates showed continuing cyclicality, with the following net changes as at 31 July 2024:
  - CN rates to Vancouver increased 11.7% while rates to Prince Rupert and Thunder Bay rose by 10.0% and 7.8% respectively.
  - CPKC rates to Vancouver increased 4.6% while Thunder Bay rates increased 10.7%.
    - Multiple-car block discounts were unchanged; continue to support movements in blocks of 100 or more cars.
  - Maximum Revenue Entitlements:
    - CN falls below its MRE by $34.3 million.
    - CPKC exceeds its MRE by $1.8 million.
- Terminal Country elevator handling charges moved modestly lower.
  - Elevation rates decreased 1.1% while storage rates remained unchanged.
- Commercial Developments:
  - Bunge-Viterra merger plan prompts additional review.
  - Unifor strike disrupts Seaway operations.
  - Labour strife leads to national stoppage of railway service.
  - Active Vessel Traffic Management development continues at Port of Vancouver.
  - Panama Canal restrictions tighten.
  - Red Sea chaos impacts trade.
  - Seaway's winter closing date extended.
  - G3 Canada acquires additional facility.
  - Churchill gets additional funding.
  - Wildfires disrupt rail service.
  - International Longshore and Warehouse Union issues strike notice.

System Efficiency and Performance

- Country elevator operations reflect decreased activity.
  - Capacity turnover ratio decreased 5.1% to 5.6 turns; includes impact of 220,600-tonne decrease in storage capacity.
  - Average weekly stocks decreased 3.6% to 3.3 million tonnes.
  - Average days-in-store increased 0.8% to 24.4 days.
  - Stock-to-shipment ratio remained unchanged at 3.4; reflected continuing tight movement.
- Railway operations reflect smaller movement along with some deterioration in service.
  - Average car-cycle to Western Canada increased 10.1% to 15.4 days; average loaded transit time increased 9.6% to 6.2 days.
  - Average car-cycle to Eastern Canada decreased 10.7% to 21.7 days; average loaded transit time decreased 7.5% to 10.1 days.
  - Average car-cycle to United States increased 3.1% to 26.9 days; average loaded transit time increased 0.3% to 10.4 days.
  - Multiple-car block movement share in Western Canada increased to 84.2% from 83.5%.
    - Annual freight savings decreased 3.3% to an estimated $283.7 million.

HIGHLIGHTS FOR THE 2023-2024 CROP YEAR (continued)

(Comparisons are to the previous crop year)

System Efficiency and Performance (continued)

- Terminal Elevator operations
  - Capacity turnover ratio decreased 1.3% to 15.5 turns.
  - Average weekly stocks increased 1.1% to 1.2 million tonnes.
  - Average days-in-store increased 5.7% to 11.1 days; reflected effects of slower movement.
  - Out-of-car time increased to 14.3% from 13.3%, continued to show a high degree of variability.
- Port operations
  - Vessels calls decreased 1.8% to 906 ships.
  - Average vessel time in port decreased 3.1% to 9.5 days in the face of lighter grain deliveries.
  - Demurrage costs again exceeded dispatch earnings, to produce a net cash outflow of $16.6 million.
    - Demurrage costs increased 15.5% to $36.4 million; dispatch earnings increased 19.6% to $19.8 million.
- System performance
  - Average time spent in the system increased 3.3% to 41.7 days.
    - Reflected railway service issues in the face of comparable workload and more disruptions.

Producer Impact

- Producer Netback
  - 1CWRS wheat: Average price decreased 12.6%; export basis increased 30.3%; netback decreased 21.0% to $319.29 per tonne.
  - 1CWA durum: Average price increased 7.2%; export basis increased 41.2%; netback decreased 2.1% to $432.09 per tonne.
  - 1 Canada canola: Average price decreased 12.4%; export basis increased 0.7%; netback decreased 13.4% to $689.07 per tonne.
  - Large yellow peas: Average price decreased 17.3%; export basis decreased 61.7%; netback decreased 10.6% to $410.81 per tonne.
- Producer cars
  - Producer-car loading sites decreased 0.4% to 271; first reduction since the 2017-18 crop year.
  - Scheduled producer-car shipments decreased 11.3% to 1,734 carloads.
    - Second lowest volume recorded under the GMP.

Section 1: Production and Supply

Indicator Description	Table	1999-00	2021-22	2022-23	2023-24 Q1	Q2	Q3	Q4	YTD	% VAR
Western Canada Production and Supply										
Crop Production (000 tonnes)	1A-1	55,141.7	49,812.6	75,354.4	69,163.7				69,163.7	-8.2%
Carry Forward Stock (000 tonnes)	1A-2	7,418.2	7,542.1	4,970.8	7,846.4				7,846.4	57.8%
Grain Supply (000 tonnes)		62,559.9	57,354.7	80,325.2	77,010.1				77,010.1	-4.1%
Crop Production (000 tonnes) – Special Crops	1A-3	3,936.7	4,441.7	6,539.7	5,233.5				5,233.5	-20.0%

DISCUSSION AND ANALYSIS

PRODUCTION AND SUPPLY
[See TABLES 1A-1 through 1A-3]

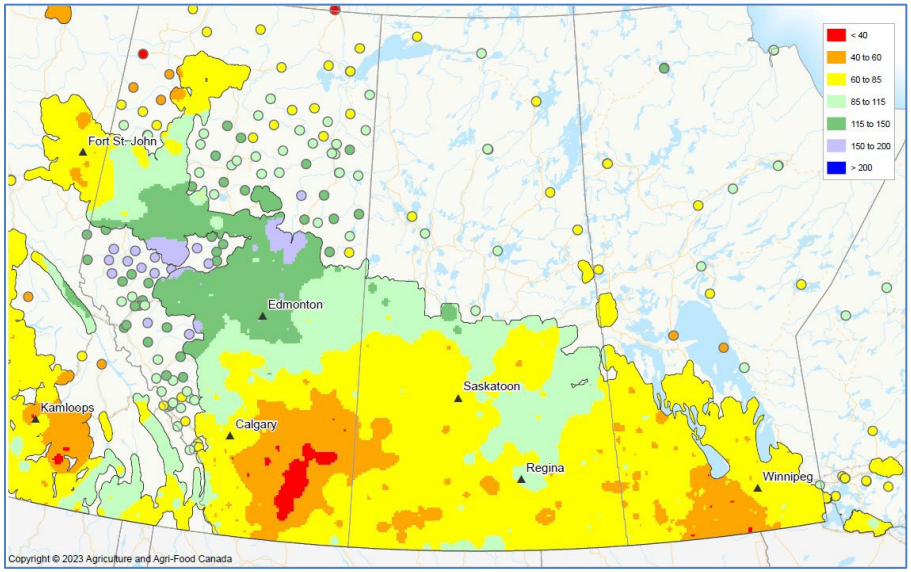
Owing to dry growing conditions across much of Western Canada, grain production fell to 69.2 million tonnes in the 2023-24 crop year, an 8.2% decline from the previous crop year's 75.4-million-tonne crop. Although crop production stood almost 40% higher than in the drought-ravaged 2021-22 crop year, many grain producers remained concerned with the increasingly erratic nature of growing conditions on the Prairies. These concerns related to not only more extreme variations in temperature but in precipitation as well, all of which contributed to abnormally longer dry periods along with heavier rainfall events. All these elements factored into the production of one of the smaller crops witnessed under the Grain Monitoring Program (GMP) in recent years. However, the scope of the downturn had limited implications for the Grain Handling and Transportation System (GHTS) as a whole, which felt only marginally less handling pressure.

General Growing Conditions

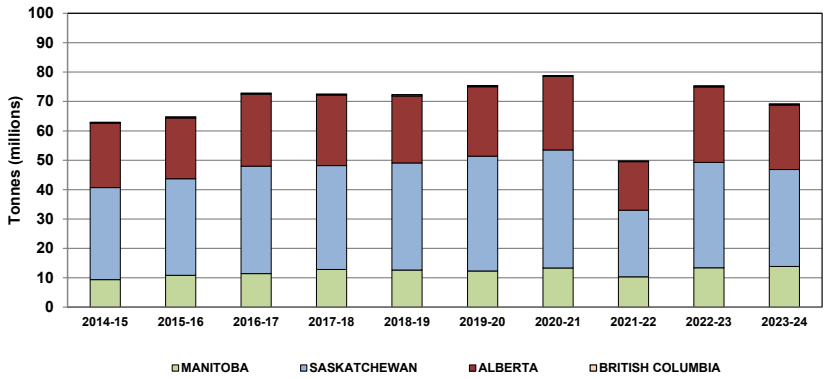
Although the crop harvested at the close of the 2023 growing season was smaller than the previous year's it ultimately proved to be of comparable quality. Moreover, the growing season began as it had a year earlier, with seeding delayed owing to cold weather and a late spring arrival. Similarly, the entire Prairie region suffered from a moisture deficit, with conditions in southern Alberta and the Peace River region reported as being especially dry. This led to delayed and uneven crop emergence, with many fields exhibiting irregular, or multi-staged plant development.

These conditions persisted through mid-June, without any Prairie-wide general rainfall. Many producers came to characterize the sporadic receipt of localized thundershowers as being akin to winning a lottery. Some modest relief came with the arrival of summer, extending through to the end of July. More moderate temperatures also helped to relieve the stresses placed on these developing crops. Additional protection from the heat came in the unlikely form of smoke from another year of record

Percent of Average Precipitation (1 April to 31 August 2023)



Grain Production - Provincial Distribution
(Western Canada)



wildfires, which blanketed the area for much of the summer. Grasshopper damage, especially in the southern tier, only added to theses difficulties.

Even so, overall crop development ultimately progressed ahead of normal. This allowed harvesting to begin in early August 2023. However, sporadic late-season rains interfered with the smooth and continuous gathering of the new crop, which extended through to October.

Impact on Provincial Production

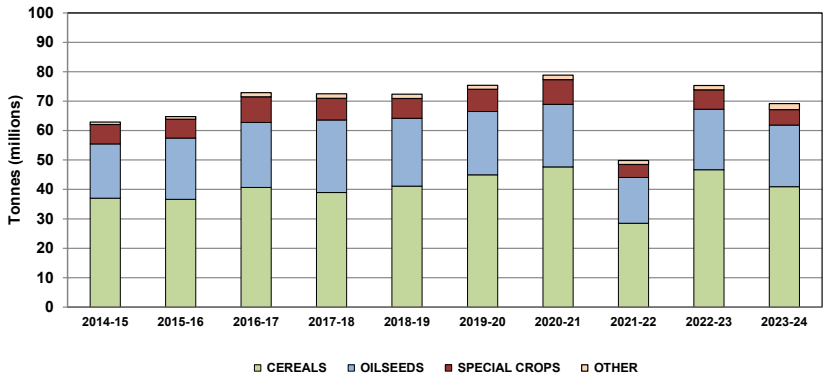
Saskatchewan remained the largest grain producer on the Prairies, with 32.9 million tonnes harvested, or a 47.6% share. This was followed in turn by Alberta with 22.0 million tonnes, or 31.9%; Manitoba with 13.9 million tonnes, or 20.0%; and British Columbia with 327,200 tonnes, or 0.5%. Alberta experienced the largest relative decline in output, with a 14.4% decrease in grain production. This was followed by reductions of 10.7% in British Columbia, and 8.1% in Saskatchewan. Only Manitoba, with a 3.4% gain, was able to report an increase in production along with the setting of a new tonnage record.

Changing Face of the Harvest

While growing conditions have always resulted in significant swings in the size of the overall crop, there has been a significant longer-term shift in both the quantity and mix of grains that are now harvested. Until 2013 prairie grain production seldom reached beyond an average of 55 million tonnes annually. At that point, grain production surged dramatically, reaching a record 77.0 million tonnes. In the wake of that historic harvest, the amount of grain drawn from prairie fields rose steadily, regularly surpassing 70 million tonnes. These enlarged harvests reflected the better yields achieved through advancements in plant genetics and agronomic practices, although favourable weather and moisture conditions remained key determinants.

At the outset of the GMP, cereals constituted about three-quarters of all grains grown in Western Canada. However, since the 2014-15 crop year, these same commodities have generally accounted for under 60% of the total tonnes harvested. The 2023-24 crop year showed a similar

Grain Production - Principal Commodities
(Western Canada)



apportionment, with 40.9 million tonnes of cereal production garnering a 59.1% share. Cereals' general decline reflects the growing significance of oilseeds and other commodities in today's marketplace, which reached a combined 28.3 million tonnes of production, claiming a 40.9% share of all grains harvested.

By far, the most significant contributor to the displacement of cereals has been oilseeds, with combined canola, soybean and flaxseed harvests totaling almost 21.0 million tonnes in the 2023-24 crop year; more than double the base year's 9.7-million-tonne production. This was bolstered by an analogous increase in the output of special crops, especially dry peas and lentils, and other commodities, which rose to a combined 7.3 million tonnes from 4.3 million tonnes in the same period.

Increasing Grain Supply and GHTS Workload

The amount of grain that the GHTS handles in any given crop year is not defined by production alone; it is augmented by the amount of grain held

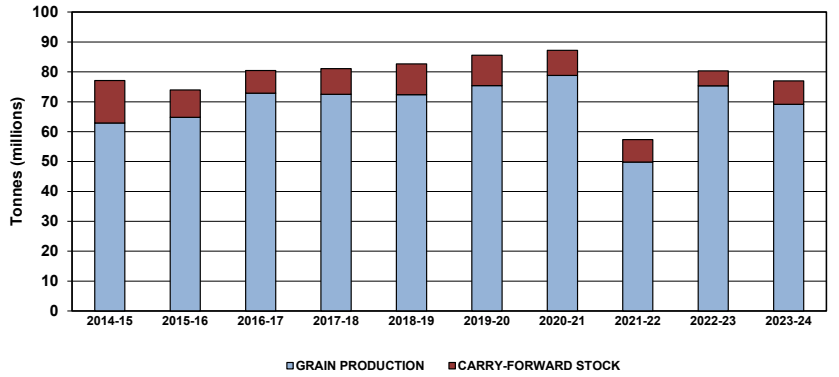
over in inventory from the previous crop year.[1] These carry-forward stocks have reached as much as 20% of annual production values. Until the 2021-22 crop year's drought-induced downturn in production, carry-forward stocks had regularly helped lift the annual grain supply to over 80.0 million tonnes. With carry-forward stocks of about 7.8 million tonnes, the grain supply reached 77.0 million tonnes in the 2023-24 crop year, down 4.1% from the previous crop year's 80.3 million tonnes. Moreover, given the 5.8 million tonnes that remained as carry-out stocks at the close of the crop year, this meant that the grain-gathering system was charged with handling some 71.2 million tonnes of grain.

Notwithstanding recent variations, growth in the grain supply has spurred the GHTS into adding new capacity. The most visible manifestation of this has been in the establishment of extra storage, be it on individual farms or at country elevators. Moreover, it has also spurred investment in still more efficient high-throughput elevators, with many featuring loop tracks that allow for the continuous loading of unit trains reaching up to 150 railcars in length. At the close of the 2023-24 crop year, 51 such facilities had already been licensed.

Significant investments in additional port handling capacity have also been made over the last decade, with much of this being centred in Vancouver, British Columbia. This has resulted in the expansion of several existing facilities, along with construction of two new ones: the state-of-the-art G3 Vancouver Terminal; and the Fraser Grain Terminal. Analogous modernization initiatives were also in evidence at the port of Prince Rupert, with much of its current efforts being directed towards supporting increased container movements.

These same market forces have also been exerting pressure on the railways to invest in additional grain-handling capacity, with perhaps the most visible facet of this being the ongoing replacement of the government-supplied, hopper-car fleet with new, higher-capacity equipment. In addition, both the Canadian National Railway (CN) and Canadian Pacific

Grain Supply
(Western Canada)



Kansas City Limited (CPKC) have continued to move on a variety of fronts aimed at adding capacity through other means, including double-tracking and the building of new sidings, locomotive purchases, and the hiring of new employees. Much the same can be said of marine carriers, which have been commissioning larger ships in a parallel effort to improve the efficiency of their own operations. All these initiatives have played a role in enabling the GHTS to deal with ever-increasing grain volumes.

At the same time, the broader growth in railway traffic – be it in the form of grain or other commodities – has drawn still more attention to existing transportation bottlenecks. Recognizing the need for improved supply-chain fluidity, the Government of Canada launched its National Trade Corridors Fund in 2017, which was aimed at supporting critical investments in the country's marine, rail, and road infrastructure.[2]

1 Carry-forward stocks are defined as inventories on hand at farms and primary elevators at the close of a crop year (i.e., 31 July) and the beginning of a new crop year (i.e., 1 August).

2 More information on the National Trade Corridors Fund can be found at: https://tc.canada.ca/en/programs/funding-programs/national-trade-corridors-fund.

Section 2: Traffic and Movement

Indicator Description	Table	1999-00	2021-22	2022-23	2023-24 Q1	Q2	Q3	Q4	YTD	% VAR
Country Elevator Throughput										
Grain Throughput (000 tonnes) – Primary Elevators	2A-1	32,493.9	34,442.1	49,363.4	11,966.9	12,667.5	11,646.6	10,926.0	47,207.0	-4.4%
Railway Traffic										
Traffic to Western Canada										
Railway Shipments (000 tonnes) – Ports Only	2B-1	26,439.2	26,533.3	43,719.6	11,195.2	10,355.8	10,968.0	9,708.5	42,227.4	-3.4%
Railway Shipments (000 tonnes) – Western Domestic	2B-1	n/a	961.8	1,045.9	244.7	274.2	268.5	260.8	1,048.2	0.2%
Traffic to Western Canada (Ports Only)										
Railway Shipments (000 tonnes) – All Grains	2B-1	26,439.2	26,533.3	43,719.8	11,195.2	10,355.8	10,968.0	9,708.5	42,227.4	-3.4%
Railway Shipments (000 tonnes) – Hopper Cars	2B-1	25,664.6	25,709.5	42,962.4	11,009.2	10,104.8	10,723.1	9,419.7	41,256.8	-4.0%
Railway Shipments (000 tonnes) – Non-Hopper Cars	2B-1	774.7	823.8	757.4	185.9	251.0	244.9	288.8	970.6	28.2%
Special Crop Shipments (000 tonnes) – All Grains	2B-2	2,102.9	2,515.4	3,842.6	1,326.5	1,109.1	681.4	362.2	3,479.2	-9.5%
Special Crop Shipments (000 tonnes) – Hopper Cars	2B-2	1,844.1	2,425.0	3,761.9	1,301.6	1,089.3	658.8	352.6	3,402.3	-9.6%
Special Crop Shipments (000 tonnes) – Non-Hopper Cars	2B-2	258.7	90.4	80.7	24.8	19.8	22.6	9.6	76.9	-4.6%
Hopper Car Shipments (000 tonnes) – Origin Province	2B-3									
Hopper Car Shipments (000 tonnes) – Primary Commodities	2B-4	25,664.6	25,709.5	42,962.4	11,009.2	10,104.8	10,723.1	9,419.7	41,256.8	-4.0%
Hopper Car Shipments (000 tonnes) – Detailed Breakdown	2B-5									
Hopper Car Shipments (000 tonnes) – Grain-Dependent Network	2B-6	8,685.9	7,198.5	11,963.7	3,519.3	2,862.4	3,118.7	2,750.8	12,251.1	2.4%
Hopper Car Shipments (000 tonnes) – Non-Grain-Dependent Network	2B-6	16,978.7	18,511.0	30,998.7	7,489.9	7,242.5	7,604.4	6,668.9	29,005.6	-6.4%
Hopper Car Shipments (000 tonnes) – Class 1 Carriers	2B-7	23,573.5	25,047.3	41,616.9	10,604.5	9,814.5	10,393.3	9,108.7	39,920.9	-4.1%
Hopper Car Shipments (000 tonnes) – Non-Class-1 Carriers	2B-7	2,091.0	662.1	1,345.5	404.7	290.3	329.8	311.0	1,335.9	-0.7%
Traffic to Eastern Canada										
Railway Shipments (000 tonnes) – All Grains	2B-8	n/a	2,270.8	2,411.1	439.0	552.1	896.0	349.9	2,237.1	-7.2%
Railway Shipments (000 tonnes) – Hopper Cars	2B-8	n/a	1,673.6	1,900.6	319.9	444.6	810.8	244.4	1,819.7	-4.3%
Railway Shipments (000 tonnes) – Non-Hopper Cars	2B-8	n/a	597.2	510.4	119.1	107.5	85.2	105.5	417.4	-18.2%
Special Crop Shipments (000 tonnes) – All Grains	2B-9	n/a	499.9	446.4	81.6	76.8	49.5	23.2	231.1	-48.2%
Western Canadian Originated Traffic										
Railway Shipments (000 tonnes) – All Grains	2B-15	n/a	36,393.6	55,473.0	13,886.9	13,191.4	14,256.6	12,304.8	53,639.7	-3.3%
Railway Shipments (000 tonnes) - Canada	2B-15	n/a	29,765.9	47,176.7	11,878.9	11,182.1	12,132.5	10,319.2	45,512.7	-3.5%
Railway Shipments (000 tonnes) – United States	2B-15	n/a	6,246.2	7,898.1	1,913.0	1,892.5	1,964.4	1,848.4	7,618.3	-3.5%
Railway Shipments (000 tonnes) – Mexico	2B-15	n/a	381.5	398.2	95.1	116.8	159.7	137.1	508.7	27.8%
Terminal Elevator Throughput										
Grain Throughput (000 tonnes) – All Commodities	2C-1	23,555.5	24,262.2	39,947.5	9,201.1	9,790.4	9,533.3	9,576.2	38,101.0	-4.6%
Hopper Cars Unloaded (number) – All Carriers	2C-2	278,255	250,400	410,466	97,626	103,113	94,675	97,868	393,282	-4.2%
Hopper Cars Unloaded (number) – CN	2C-2	144,800	129,524	214,063	52,172	58,094	56,013	56,944	223,223	4.3%
Hopper Cars Unloaded (number) – CPKC	2C-2	133,455	120,876	196,403	45,454	45,019	38,662	40,924	170,059	-13.4%
Truck Volumes to US Destinations										
Truck Shipments to US (000 tonnes) – Destination Region / Origin Province	2D-1									
Truck Shipments to US (000 tonnes) – Origin Province / Commodity	2D-2	n/a	2,230.0	2,189.5	542.2	487.4	528.7	490.3	2,048.5	-6.4%
Truck Shipments to US (000 tonnes) – Destination Region / Commodity	2D-3									

DISCUSSION AND ANALYSIS

COUNTRY-ELEVATOR THROUGHPUT
[See TABLE 2A-1]

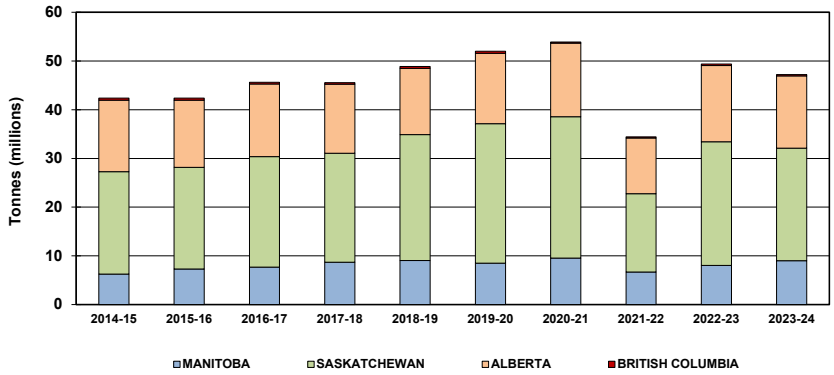
The grain produced in Western Canada is sold into both the domestic and international markets. Much of this grain first passes through the country-elevator system, which then uses road and rail transportation to distribute it through a variety of market-specific supply chains. The GMP uses primary-elevator throughput as the chief indicator of the amount of grain entering the GHTS.[3] In the 2023-24 crop year, this amounted to 47.2 million tonnes, 4.4% less than the 49.4 million tonnes handled a year earlier. While lower in total, throughput remained well above the drought-reduced tonnage witnessed in the 2021-22 crop year.

This decline proved widespread, although the largest reduction in tonnage was tied to Saskatchewan, where primary-elevator throughput fell by 2.3 million tonnes, or 8.9%, to just over 23.1 million tonnes. This was enlarged by similar decreases for Alberta, which tumbled by 5.3%, to about 14.8 million tonnes; and British Columbia, with a 9.3% reduction that pared its throughput to 267,800 tonnes. Running counter to these declines was Manitoba, which saw its throughput increase by 12.1%, to just under 9.0 million tonnes. Even with these variations, the proportion accorded shipments from each province remained generally consistent with those benchmarked in the GMP's base year. Saskatchewan claimed a 49.0% share; Alberta, 31.4%; Manitoba, 19.1%; and British Columbia, 0.6%.

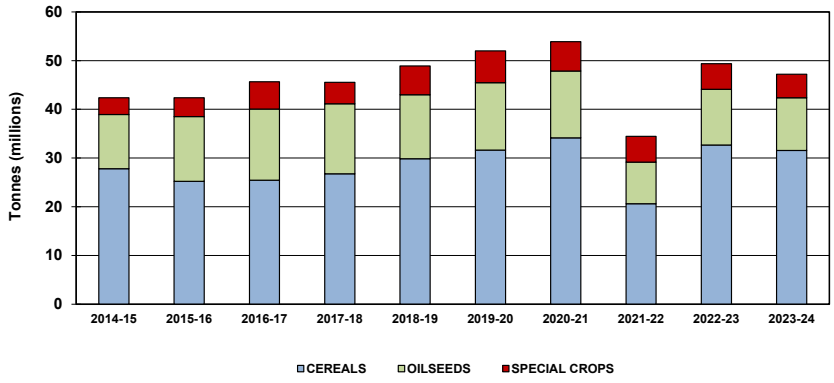
Cereals accounted for most of the grain shipped through the primary elevator network, with the total handle decreasing by 3.5%, to about 31.5 million tonnes from 32.7 million tonnes a year earlier. However, its share of total shipments climbed marginally, to 66.8% from 66.2%. Oilseed shipments also declined, albeit by a somewhat greater 5.3%, to 10.8 million tonnes from 11.4 million tonnes, with its share slipping to 22.9% from 23.2%. Similarly, special-crop shipments fell by 8.0%, to 4.8 million tonnes

3 Primary-elevator throughput is defined as all road and rail shipments from primary elevators situated across Western Canada. This measure excludes any grain that passed through a process elevator.

Primary Elevator Throughput - Originating Province



Primary Elevator Throughput - Principal Commodities



from 5.3 million tonnes, which trimmed its share to 10.2% from 10.6% a year earlier.

Primary-elevator throughput provides the all-important signal to industry stakeholders of the attendant workload to be borne by the GHTS's railways and terminal elevators. With throughput falling to 47.2 million tonnes from the previous crop year's 49.4 million tonnes, the pressure brought to bear on the GHTS was largely unchanged.

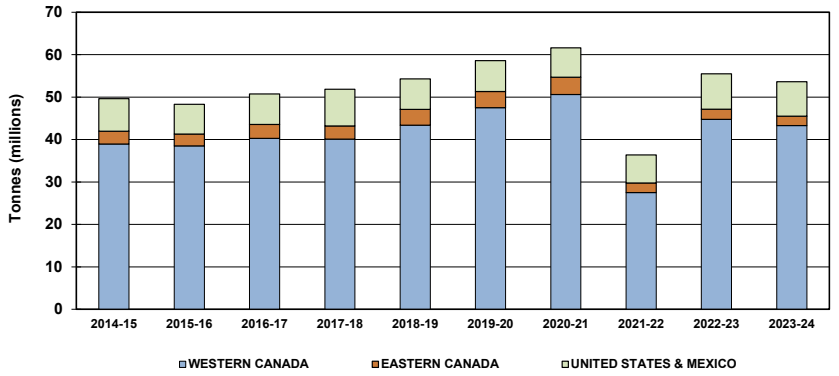
RAILWAY TRAFFIC
[See TABLES 2B-1 through 2B-21]

Although primary elevators serve as the principal gateway in moving grain through the GHTS, grain also enters the system by way of process elevators and producer-car loading sites. Producer deliveries to all these facilities totaled 58.8 million tonnes in the 2023-24 crop year, 3.8% less than the 61.1 million tonnes tendered a year earlier.[4] Ultimately, all of this grain is loaded into railcars or trucks for movement to destinations located throughout the system, with rail being the dominant mode.

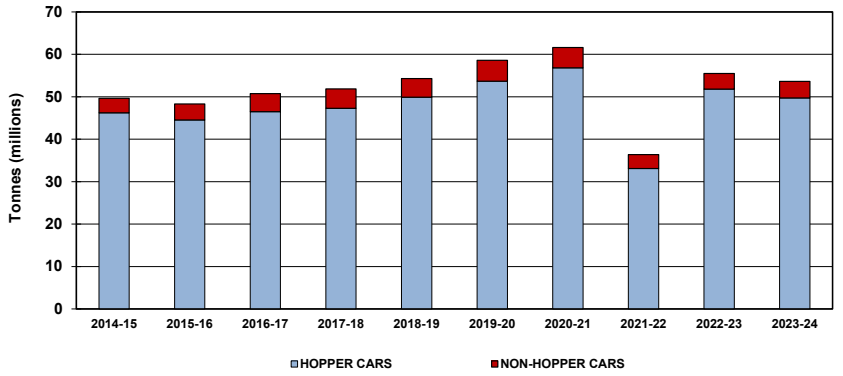
Railway grain shipments from Western Canada totaled slightly over 53.6 million tonnes in the 2023-24 crop year, down 3.3% from the previous crop year's almost 55.5 million tonnes. About 45.5 million tonnes of this traffic, or 84.9%, was directed to destinations within Canada itself, be it for export or domestic use. Much of this volume, almost 43.3 million tonnes, was destined to points within Western Canada, chiefly the ports of Vancouver, Prince Rupert, and Thunder Bay. These shipments easily overshadowed the 2.2 million tonnes that were directed into Eastern Canada as well as another 8.1 million tonnes destined to the United States and Mexico.

About 49.7 million tonnes of the traffic originated in Western Canada, or 92.7%, moved to its destination in covered hopper cars. The remaining 3.9 million tonnes moved in alternate forms of railway equipment, including boxcars and containers for bulk and bagged grain products, and tank cars for liquids such as canola oil. It is worth noting that these latter movements represented only 7.3% of total railway shipments in the 2023-

Railway Grain Shipments - Principal Destinations



Railway Grain Shipments - Hopper and Non-Hopper Cars



4 Statistics drawn from Canadian Grain Commission, *Grain Deliveries at Prairie Points.*

24 crop year, up from the 6.6% share garnered a year earlier. This gain reflected the relative strength of non-hopper-car movements, which rose by 7.0%, compared to a 4.0% decline in hopper-car shipments. Even so, this higher share is not materially different from the 6.9% benchmarked just nine years earlier. In fact, the shares accorded to both segments have not meaningfully changed under the GMP, with each growing almost proportionately with the overall market.

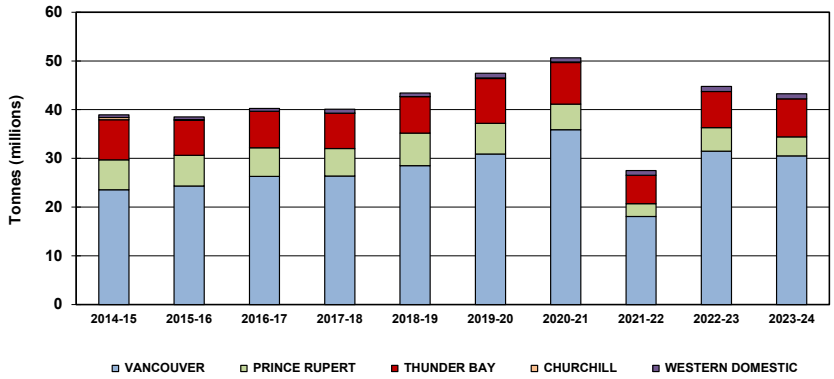
Traffic to Western Canada
[See Tables 2B-1 through 2B-7]

Almost 43.3 million tonnes of grain were moved by rail to points in Western Canada during the 2023-24 crop year. Much of this was directed to one of three ports: Vancouver, Prince Rupert, and Thunder Bay.[5] These shipments totaled just over 42.2 million tonnes, a decrease of 3.4% from the 43.7 million tonnes handled a year earlier. An additional 1.0 million tonnes were directed to points outside of the ports themselves, denoted as Western Domestic destinations, which remained effectively unchanged from the previous year's handlings.

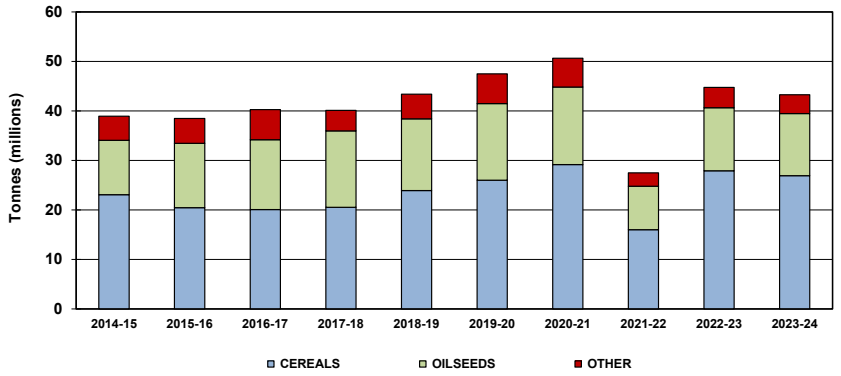
As the largest element in the movement of grain to points in Western Canada, cereals accounted for 62.2% of all railway traffic in the 2023-24 crop year, just over 26.9 million tonnes. This was followed by oilseeds with a 29.0% share, at 12.5 million tonnes, and an 8.8% share for other commodities, at 3.8 million tonnes. All three segments showed volume declines, with cereals falling by 3.5%, while oilseed and other-commodity shipments slipped by 1.6% and 7.4% respectively.

Of all the ports in Western Canada, Vancouver continues to be the preferred destination for railway grain shipments. This is due not only to the ready access it provides to Asia-Pacific markets, but to the concentration of export terminal facilities. During the 2023-24 crop year, Vancouver received almost 30.5 million tonnes of inbound grain, a decrease of 3.1% from the previous year's 31.5-million-tonne handle. This denoted 72.2% of all railway grain shipments originated in Western Canada. Prince Rupert, which represents an additional west-coast outlet for this traffic, received

Railway Grain Shipments - Main Destinations
(Western Canada)



Railway Grain Shipments - Main Commodities
(Western Canada)



5 The Port of Churchill, normally a destination for Western Canadian export grain, has been closed to traffic since the 2021-22 crop year.

3.9 million tonnes of grain, 19.2% less than the 4.8 million tonnes handled a year earlier. This resulted in the port's share falling to 9.3% from 11.1%. Together, these two ports accounted for 81.5% of all the grain originated in Western Canada, down from the 83.0% share garnered a year earlier.

The loss of share for West Coast ports was reflected in comparatively more rail deliveries to Thunder Bay, which rose by 5.5%, to 7.8 million tonnes from 7.4 million tonnes a year earlier. This increased the port's share to 18.5% from 17.0%. Owing to the extensive repair work being conducted on the Hudson Bay Railway's route to the Port of Churchill, its terminal remained shutout of handling any grain traffic for a third consecutive year. Railway grain shipments to non-port destinations – designated as Western Domestic – accounted for just 2.5% of all traffic. However, this proved little different from the 2.4% share reported a year earlier.

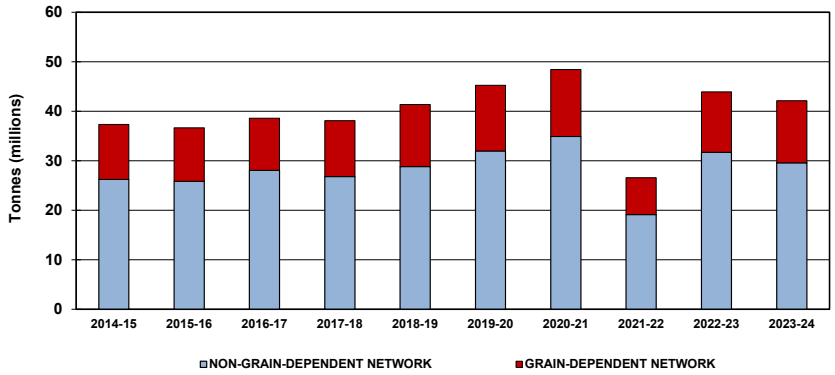
Covered Hopper Car Shipments

Owing to the dominance of bulk grain shipments, most of the grain conveyed to destinations within Western Canada travel in covered hopper cars. In fact, of the 43.3 million tonnes shipped during the 2023-24 crop year, 42.1 million tonnes, or 97.3%, moved in this type of railway equipment. Just 1.1 million tonnes, or 2.7%, of grain and grain-related products moved in other forms of railway equipment, including boxcars, tank cars and containers.

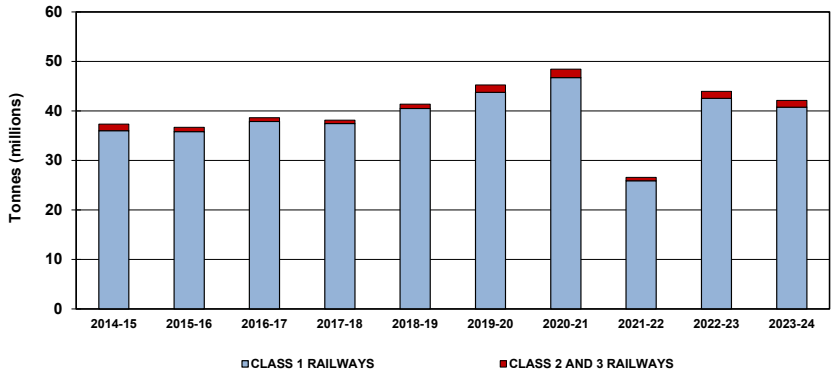
From the outset of the GMP, roughly two-thirds of covered-hopper-car shipments have originated at points on the railways' non-grain-dependent branchline network. Of the 42.1 million tonnes that were directed to destinations in Western Canada in the 2023-24 crop year, 29.6 million tonnes, or 70.2%, were sourced from points on such lines. This proportion stands moderately above the 66.2% share recorded at the beginning of the GMP. Conversely, just 12.5 million tonnes, or 29.8%, originated at points on the grain-dependent network.

More significantly, about 40.7 million tonnes, or 96.7% of the covered-hopper-car traffic, originated on the railway lines directly operated by the major Class I carriers, CN and CPKC. This dominance is even greater than the 91.9% share observed in the base year. Correspondingly, the share

Hopper-Car Shipments - Branchline Originations
(Western Canada)



Hopper-Car Shipments - Carrier Originations
(Western Canada)



garnered by the smaller Class 2 and 3 carriers (commonly referred to as regional and shortline railways) has contracted from the 8.1% it represented twenty-four years earlier. Just 1.4 million tonnes, or 3.3%, originated with these smaller carriers in the 2023-24 crop year. Much of the reduced share is attributable to declining producer-car loadings.

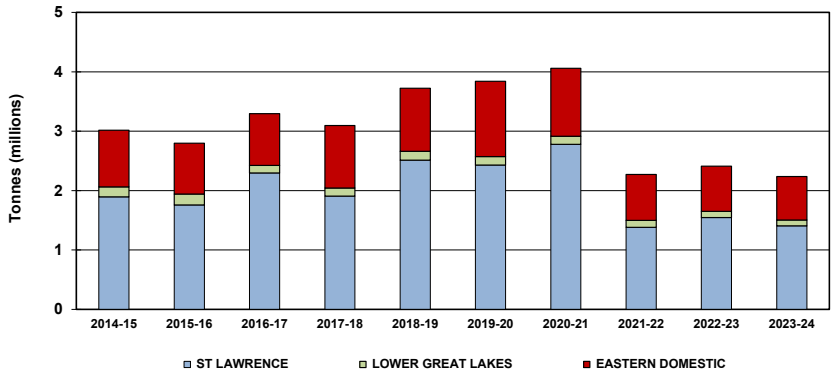
Traffic to Eastern Canada
[See Tables 2B-8 through 2B-14]

Grain shipments into Eastern Canada represented a mere fraction, 5.2%, of the tonnage directed into Western Canada. During the 2023-24 crop year, these railway shipments amounted to slightly over 2.2 million tonnes, representing a decline of 7.2% from the 2.4 million tonnes shipped a year earlier. About two-thirds of this volume, slightly over 1.5 million tonnes, were shipped to the ports that extend from the Lower Great Lakes through the Gulf of St. Lawrence, and on to Halifax. Another 731,000 tonnes were directed to inland points, designated as Eastern Domestic destinations.

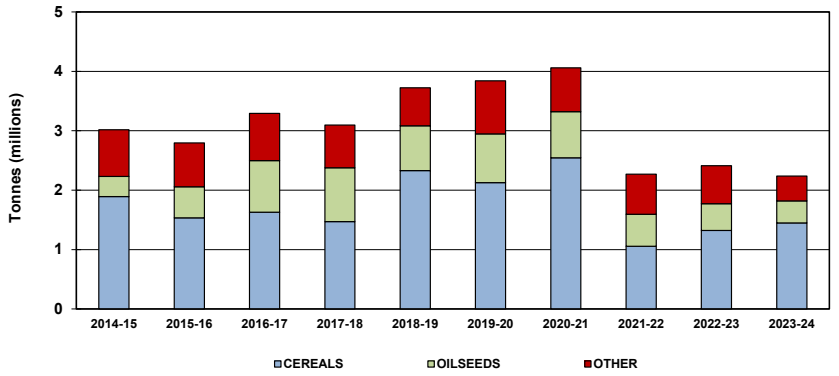
As with traffic routed to destinations in Western Canada, much of the traffic headed to points in Eastern Canada, about 1.8 million tonnes, or 81.3%, moved in covered hopper cars. The remaining 417,400 tonnes moved in other types of railway equipment. It is also worth mentioning that these latter movements claimed a more substantive 18.7% share of the regional total, compared to just 2.7% for traffic destined within Western Canada.

Correspondingly, cereals also claimed nearly two-thirds of the eastbound traffic volume, with total shipments reaching over 1.4 million tonnes, up 9.5% from 1.3 million tonnes a year earlier. Oilseeds, however, took a noticeably smaller 16.6% share of the eastbound movement, with total shipments of 370,900 tonnes, down 17.4% from the previous crop year's 449,100 tonnes. This meant that special crops figured more prominently, with total volume reaching 417,900 tonnes, despite a 34.6% decline from the preceding crop year's 639,100 tonnes. These shipments embodied a more substantive 18.7% of the eastbound total, compared to just 8.8% on westbound movements.

Railway Grain Shipments - Main Destinations
(Eastern Canada)



Railway Grain Shipments - Main Commodities
(Eastern Canada)



Covered Hopper Car Shipments

Most of the grain moving to Eastern Canada in covered hopper cars was sourced from points on the non-grain-dependent railway network in Western Canada. During the 2023-24 crop year this amounted to slightly more than 1.5 million tonnes, down a marginal 0.5% from the near same tonnage originated a year earlier. Traffic originating at points on the grain-dependent network fell by a more substantive 20.0%, to 291,700 tonnes from 364,600 tonnes. With 84.0% of the tonnage attributable to non-grain-dependent originations, this division proved somewhat greater than the 70.2% share tied to traffic destined to points in Western Canada.

Similarly, some 1.7 million tonnes, or 93.7% of the grain shipped to Eastern Canada in covered hopper cars, originated on the lines of the Class-1 railways. The tonnage originated by non-Class-1 carriers, which amounted to 115,400 tonnes, accounted for just 6.3%. These proportions were marginally less skewed than the shares garnered by traffic destined to points within Western Canada, which reached 96.7% and 3.3% respectively.

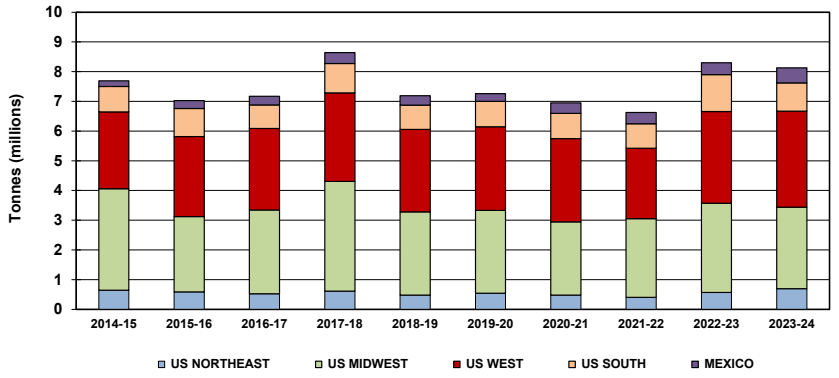
Traffic to the United States and Mexico
[See Tables 2B-15 through 2B-18]

The amount of grain moved by rail to the United States and Mexico during the 2023-24 crop year totaled about 8.1 million tonnes. This denoted a 2.0% decrease from the 8.3 million tonnes directed into these markets a year earlier. The decline stands modestly less than the 3.5% decrease noted on domestic movements.

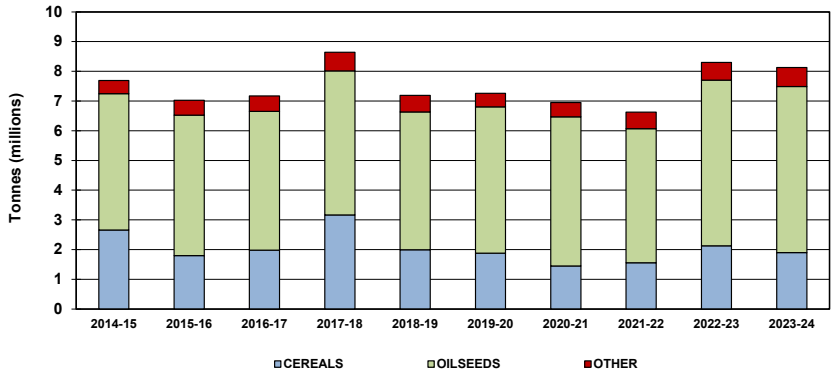
With about 7.6 million tonnes, exports to the United States accounted for 93.7% of the total volume. This embodied a decrease of 3.5% from the 7.9 million tonnes handled the previous year. Although traffic directed into Mexico accounted for a much lesser 508,700 tonnes, garnering a mere 6.3% share, shipments to that country increased substantially, up 27.8% from 398,200 tonnes a year earlier.

As opposed to domestic grain shipments, oilseeds along with their related processed products accounted for roughly two-thirds of the southbound volume. At nearly 5.6 million tonnes, oilseed traffic proved effectively

Railway Grain Shipments - Main Destinations
(United States and Mexico)



Railway Grain Shipments - Main Commodities
(United States and Mexico)



unchanged from what had been handled a year earlier, increasing by a marginal 0.3%. Cereals ranked second with just under 1.9 million tonnes in total shipments, down 10.9% from the previous crop year's 2.1 million tonnes. This was followed by other commodities, which reached 638,300 tonnes, and saw a 7.3% increase.

Movement Characteristics

Over 5.4 million tonnes of US-bound traffic moved in covered hopper cars in the 2023-24 crop year. This represented a 5.3% decrease from the 5.7 million tonnes handled a year earlier. Another 2.2 million tonnes, which were virtually all tied to the movement of canola oil in tank cars, moved in other types of railway equipment. These latter movements rose by a marginal 1.2%, effectively remaining unchanged from the previous year.

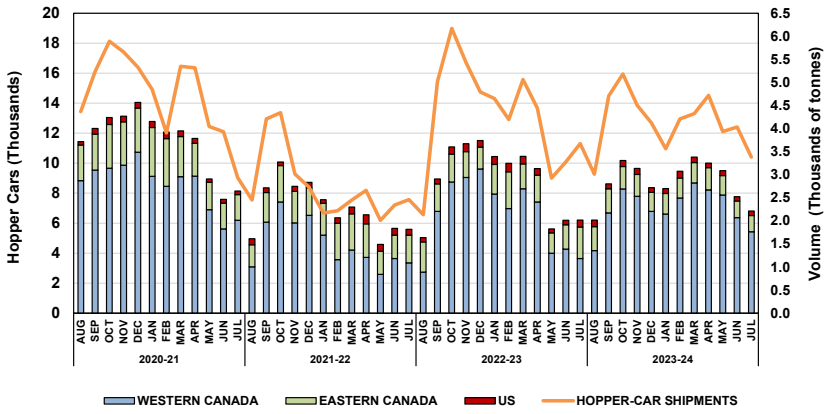
Canola and canola-related products (be it in the form of seed, meal or oil) accounted for a little more than 5.4 million tonnes, or 71.0%, of all US-bound shipments. Approximately half of this volume, nearly 3.1 million tonnes, was directed to states in the US West, chiefly California. This was followed by another 1.3 million tonnes that moved into the Midwest, 673,500 tonnes into the South, and 404,700 tonnes into the Northeast.

It is worth noting that the increase in canola-oil shipments largely arose out of a December 2022 determination by the US Environmental Protection Agency that hydrotreated canola/rapeseed oil met the greenhouse gas threshold requirements for advanced biofuels under its Renewable Fuel Standard, thereby opening the door to still more imports.

Traffic from the United States
[See Table 2B-19]

Grain imported into Canada by rail from the United States during the 2023-24 crop year increased by 45.2%, to almost 2.5 million tonnes from 1.7 million tonnes a year earlier. The largest portion, amounting to over 2.1 million tonnes, was destined to points in Western Canada, with Eastern Canadian destinations drawing in just 310,600 tonnes. Much of the

Loads on Wheels



increase stemmed from the resurgence in the demand for feed corn, which had fallen off in the aftermath of the drought that had left Western Canadian livestock producers desperate for feed in the 2021-22 crop year. Although the strategic merits of preserving American sourcing options left imports elevated well above the predrought level of 250,000 tonnes annually, the drier conditions witnessed in the 2023-24 crop year spurred these imports still higher.

Loads on Wheels
[See Table 2B-20]

The pace at which bulk grain moves through the GHTS can be gauged by tabulating the number of loaded hopper cars in transit at regular moments in time; normally the Friday of any given week.[6] The 2023-24 crop year began with a weekly in-transit average of 6,214 cars for the month of August 2023, a 23.4% increase over the 5,037 reported a year earlier. Traffic volumes increased sharply throughout the next three months,

6 The measure cited here relates only to railway-supplied equipment. It specifically excludes the private equipment also employed by shippers in moving grain.

ultimately peaking with a weekly average of 10,180 cars in October 2023. Thereafter, as total shipments declined and winter operations set in, the weekly number of cars in transit began to drift steadily lower, ultimately reaching a seasonal low of 8,303 cars in January 2024. A springtime surge in volumes spurred the count to a high of 10,409 cars just two months later, before then declining with the closeout of the crop year.

Collectively, an average of 8,712 loaded cars were in transit to their destinations during any given week of the 2023-24 crop year, a marginal 0.8% less than the 8,783-car average recorded a year earlier. As with other traffic measures, a large majority of these cars, some 80.2%, were tied to the movement of grain to destinations in Western Canada, 15.7% to markets in Eastern Canada, and 4.1% to those in the United States.

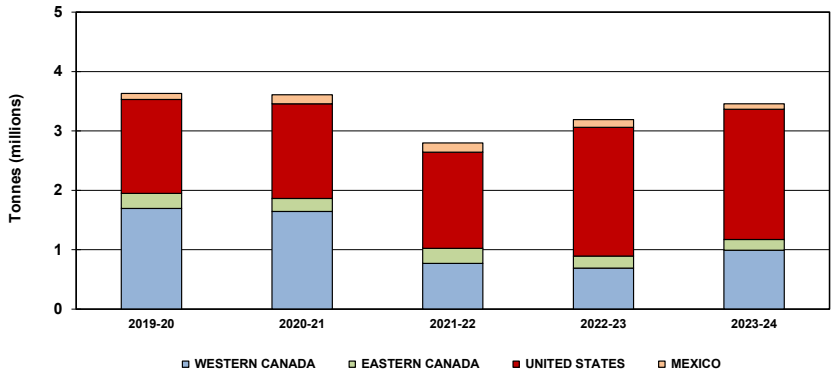
Tank-Car Shipments
[*See Table 2B-21*]

From its outset, the GMP has largely been focused on the movement of Canada's traditional grain exports. Whereas cereals represented more than three-quarters of the grain grown in 2000, it now constitutes about 60%. As cited earlier, much of this dilution is attributable to increased oilseed production, with canola accounting for much of the overall growth.

Although canola seed remains a significant export commodity, roughly 40% of the crop is directed into one of 14 domestic crushing operations (11 of which are in Western Canada), which then extract the seed's oil for sale to consumer and industrial markets. The processing of canola oil has increased along with canola-seed production. The enlargement of this segment, coupled with canola oil's comparatively higher value, led to the addition of related GMP measures in the 2021-22 crop year.

Canola-oil shipments from origins in Western Canada totaled slightly under 3.5 million tonnes in the 2023-24 crop year, up 8.4% from the 3.2 million tonnes reported a year earlier. Despite this gain, shipments still stood below the 3.6 million tonnes observed in both the 2019-20 and 2020-21 crop years. However, there was a noticeable shift in underlying traffic patterns. Until the 2020-21 crop year, these shipments were concentrated

Railway Tankcar Shipments - Main Destinations



in near equal 1.6-million-tonne movements to Vancouver and the United States, supplemented by smaller volumes to Eastern Canada and Mexico.

The 2021-22 crop year saw a significant reduction in shipments to Vancouver, with US shipments remaining largely unchanged but taking a noticeably larger share of the overall volume. A further share gain was observed a year later as US shipments climbed to almost 2.1 million tonnes from the previous crop year's 1.6 million tonnes. The 2023-24 crop year saw this course reversed, with shipments to Western Canadian destinations surging 43.4%, to nearly 1.0 million tonnes from 691,200 tonnes, while US shipments rose by a marginal 1.2%, effectively remaining unchanged at 2.2 million tonnes. This shift produced the first decline in the share accorded US movements, which slipped to 63.4% from 67.9%.

TERMINAL ELEVATOR THROUGHPUT
[See TABLES 2C-1 through 2C-2]

Ultimately, a large portion of the traffic handled by the railway system is directed into the various terminal elevators and bulk loading facilities located at Western Canadian ports. Port throughput, as gauged by the

amount of grain shipped through these facilities, decreased by 4.6% in the 2023-24 crop year, to 38.1 million tonnes from 39.9 million tonnes a year earlier.

The most significant grain volumes continued to move through the west-coast ports of Vancouver and Prince Rupert. For Vancouver, total terminal elevator throughput decreased by 4.8%, to just over 26.9 million tonnes from nearly 28.3 million tonnes a year earlier. Prince Rupert posted a steeper decline of 22.2%, with terminal shipments falling to almost 3.6 million tonnes from 4.6 million tonnes. Combined, the tonnage passing through these two west-coast ports represented 79.9% of the overall handle, down from the 82.2% share reported a year earlier.

Conversely, traffic directed through the eastern gateway of Thunder Bay rose by 7.5%, to over 7.6 million tonnes from the previous crop year's 7.1 million tonnes. As a result, the port's overall share rose to 20.1% from 17.8%. This increase came in conjunction with a third consecutive year of closure for the Port of Churchill.

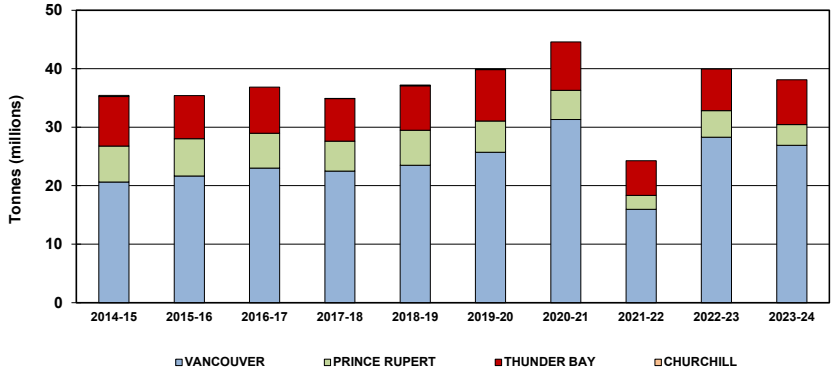
Terminal Elevator Unloads

Carrier activity is reflected in the number of covered hopper cars unloaded at Western Canadian bulk grain terminals. The total number of railcars unloaded during the 2023-24 crop year decreased by 4.2%, falling to 393,282 cars from 410,466 cars a year earlier. CN unloaded 223,223 hopper cars, up 4.3% from the 214,063 cars delivered a year earlier, while CPKC's handlings declined by 13.4%, to 170,059 cars from 196,403 cars. This made CN the largest serving railway to bulk grain terminals in Western Canada, with a share of 56.8% against 43.2% for CPKC.

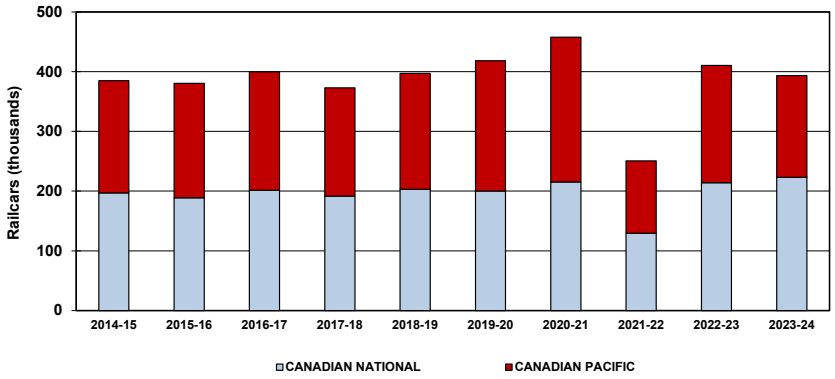
EXPORT CONTAINER TRAFFIC
[See TABLE 2C-3]

For well over a century, Canadian grain exports have been reliant on bulk ocean shipping to reach offshore markets. With the advent of larger ships, the preponderance of grain exports now moves in shipload lots of 50,000 or more tonnes. Yet a larger portion of total grain exports have been moving in containers. Their share hit a highwater mark in the 2019-20

Terminal Elevator Throughput - Port
(Western Canada)



Terminal Elevator Unloads - Carrier
(Western Canada)



crop year, when it reached roughly 11% compared to just 4% in the GMP's base year. Central to this growth was the emergence of new, state-of-the-art transloading facilities, which allowed grain carried to port in railway hopper cars to be efficiently reloaded into containers for shipment overseas.

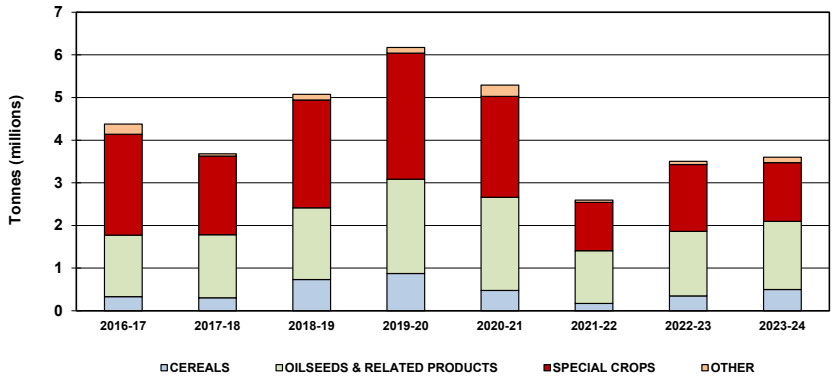
Containerized export grain shipments are tied to the servicing of small-lot purchasers, often catering to niche markets, be it specialty flour mills, brewers or processors. In large measure, these movements are made possible by employing the empty containers being returned by steamship lines to their offshore origins (predominantly Asia-Pacific countries) for reloading. Using this returning equipment typically engenders lower "backhaul" freight rates that make foreign purchases of Canadian-sourced grain in small quantities more price competitive.

Containerized grain shipments from the ports of Montreal, Vancouver and Prince Rupert totaled 3.6 million tonnes in the 2023-24 crop year. This denoted a 2.8% increase over the 3.5 million tonnes shipped a year earlier but remained well below the pre-COVID-19 high of 6.2 million tonnes. Moreover, containers secured a slightly larger share of the total grain movement, which rose to 6.7% from 6.3%. This increase was largely tied to the improved availability of empty equipment, which had also helped to reduce ocean freight rates through the first half of the new crop year.

Until reaching a peak in the 2019-20 crop year, containerized grain traffic had shown substantial growth. Although significant gains were made by cereals and oilseeds, it was special crops that figured most prominently in the growth of containerized shipments, ultimately claiming about half of the total volume. Despite an ensuing decline in volume, special crops still accounted for nearly one-third of all containerized shipments, with almost 1.4 million tonnes, or 38.2%, being moved in the crop year just ended. This share proved moderately lower than the 43.8% claimed a year earlier.

Similarly, oilseeds also played an important role in the overall growth of container exports. Moreover, with 1.6 million tonnes, or 44.4%, of total shipments in the 2023-24 crop year, they continue to rival special crops for dominance within this segment of the market. Cereal movements ranked a distant third in the commodity mix, with just 497,700 tonnes

Export Container Shipments - Canadian Ports



claiming a 13.8% share of total movements. Even so, cereal shipments rebounded sharply, posting a 43.2% gain over the 347,700 tonnes handled a year earlier. Other commodities, while also posting a stronger showing, accounted for just 127,400 tonnes, or 3.5% of all container movements.

TRUCK TRAFFIC TO THE UNITED STATES
[See TABLES 2D-1 through 2D-3]

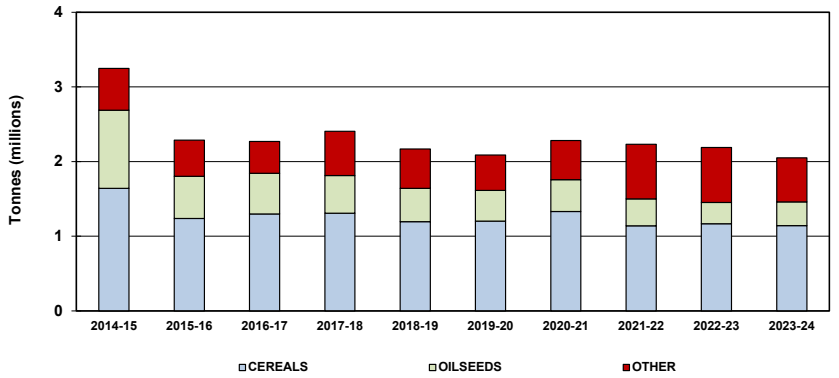
Shipments of Western Canadian grain into the United States by truck totaled about 2.0 million tonnes in the 2023-24 crop year. This proved to be 6.4% less than the near 2.2 million tonnes shipped a year earlier. Unlike other grain movements, transborder truck exports cater to the needs of a short-haul market segment, which has hovered around the 2.0-million-tonne mark for several years.

In contrast to railway shipments, much of the grain trucked into the United States travels shorter distances. Almost 1.2 million tonnes, or 56.8% of the total volume, were directed into the US Midwest, a market closer to the international border. This was followed by destinations in the US West,

with 524,000 tonnes; the US Northeast, with 221,400 tonnes; and the US South, with 140,100 tonnes.

Cereals continued to dominate, with 1.1 million tonnes claiming a 55.7% share of the total volume. This proved to be 2.3% less than the nearly 1.2 million tonnes handled a year earlier. It is worth noting that oats now figure more prominently in this mix, as wheat, durum, and barley shipments have continued to decline. Oilseeds, which claimed a 15.6% share, have also continued to wane in the face of increased domestic canola-crushing activity, although 2023-24-crop-year volume increased 12.6%, to 319,500 tonnes from 283,800 tonnes. This was accompanied by a 20.3% reduction amongst other commodities, which totaled 587,700 tonnes against 737,500 tonnes the previous year, and took a 28.7% share.

Truck Shipments - United States Destinations



Section 3: Infrastructure

Indicator Description	Table	1999-00	2021-22	2022-23	2023-24 Q1	Q2	Q3	Q4	YTD	% VAR
Country Elevator Infrastructure										
Delivery Points (number)	3A-1	628	285	282	282	282	279	282	282	0.0%
Elevator Capacity (000 tonnes)	3A-1	7,443.9	9,406.4	9,563.5	9,563.5	9,480.4	9,403.2	9,379.8	9,379.8	-1.9%
Elevators (number) – Province	3A-1									
Elevators (number) – Railway Class	3A-2	917	413	405	405	405	400	400	400	-1.2%
Elevators (number) – Grain Company	3A-3									
Elevators Capable of MCB Loading (number) – Province	3A-4									
Elevators Capable of MCB Loading (number) – Railway Class	3A-5	317	265	268	269	269	265	263	263	-1.9%
Elevators Capable of MCB Loading (number) – Railway Line Class	3A-6									
Elevator Closures (number)	3A-7	130	17	19	3	6	6	14	29	52.6%
Elevator Openings (number)	3A-8	43	19	11	3	6	1	14	24	118.2%
Delivery Points (number) – Accounting for 80% of Deliveries	3A-9	217	104	104	n/a	n/a	n/a	n/a	102	-1.9%
Railway Infrastructure										
Railway Infrastructure (route-miles) – Total Network	3B-1	19,390.1	17,265.7	17,265.7	17,265.7	17,265.7	17,265.7	17,265.7	17,265.7	0.0%
Railway Infrastructure (route-miles) – Class-1 Network	3B-1	14,503.0	14,596.1	14,596.1	14,596.1	14,596.1	14,596.1	14,596.1	14,596.1	0.0%
Railway Infrastructure (route-miles) – Non-Class-1 Network	3B-1	4,887.1	2,669.6	2,669.6	2,669.6	2,669.6	2,669.6	2,669.6	2,669.6	0.0%
Railway Infrastructure (route-miles) – Non-Grain-Dependent Network	3B-1	14,513.5	14,028.7	14,028.7	14,028.7	14,028.7	14,028.7	14,028.7	14,028.7	0.0%
Railway Infrastructure (route-miles) – Grain-Dependent Network	3B-1	4,876.6	3,237.0	3,237.0	3,237.0	3,237.0	3,237.0	3,237.0	3,237.0	0.0%
Railway Fleet Size (railcars) – Average Weekly	3B-2	n/a	21,213	22,422	22,053	21,672	21,312	21,446	21,628	-3.5%
Served Elevators (number)	3B-3	884	337	334	334	333	329	328	328	-1.8%
Served Elevators (number) – Class 1 Carriers	3B-3	797	304	303	303	302	299	297	297	-2.0%
Served Elevators (number) – Non-Class-1 Carriers	3B-3	87	33	31	31	31	30	31	31	0.0%
Served Elevators (number) – Grain-Dependent Network	3B-3	371	104	102	102	102	101	101	101	-1.0%
Served Elevators (number) – Non-Grain-Dependent Network	3B-3	513	233	232	232	231	228	227	227	-2.2%
Served Elevator Capacity (000 tonnes)	3B-3	7,323.0	8,971.7	9,115.1	9,115.1	9,033.7	8,957.4	8,920.3	8,920.3	-2.1%
Served Elevator Capacity (000 tonnes) – Class 1 Carriers	3B-3	6,823.2	8,657.8	8,813.5	8,813.5	8,732.0	8,656.9	8,628.4	8,628.4	-2.1%
Served Elevator Capacity (000 tonnes) – Non-Class-1 Carriers	3B-3	499.7	314.0	301.7	301.7	301.7	300.5	291.9	291.9	-3.2%
Served Elevator Capacity (000 tonnes) – Grain-Dependent Network	3B-3	2,475.4	2,167.4	2,246.0	2,246.0	2,232.7	2,252.0	2,211.9	2,211.9	-1.5%
Served Elevator Capacity (000 tonnes) – Non-Grain-Dependent Network	3B-3	4,847.6	6,804.4	6,869.1	6,869.1	6,801.0	6,705.4	6,708.4	6,708.4	-2.3%
Terminal Elevator Infrastructure										
Terminal Elevators (number)	3C-1	15	17	17	17	17	17	17	17	0.0%
Terminal Elevator Storage Capacity (000 tonnes)	3C-1	2,678.6	2,752.5	2,752.5	2,752.5	2,752.5	2,752.5	2,752.5	2,752.5	0.0%

DISCUSSION AND ANALYSIS

COUNTRY ELEVATOR INFRASTRUCTURE
[See TABLES 3A-1 through 3A-9]

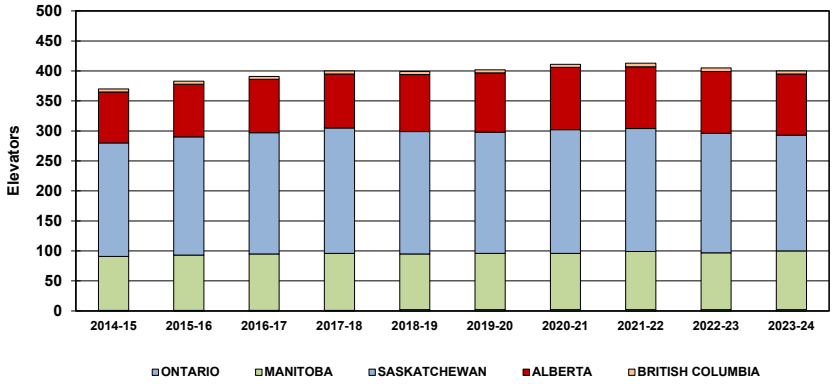
At the outset of the 1999-2000 crop year, there were 1,004 licensed primary and process elevators situated across the prairies. By the close of the 2010-11 crop year, that total had progressively fallen to a low of 366 facilities, a reduction of 63.5% from the GMP's base year. This decline marked one of the most visible changes to the GHTS. Over the course of the next twelve crop years the number of elevators rose, albeit only modestly, to encompass a total of 405 by the close of the 2022-23 crop year.

The 2023-24 crop year saw this network reduced by another 1.2%, to 400 facilities from 405. This came about through the delicensing of 29 elevators, chiefly smaller Class A and B facilities, along with the licensing of 24 others.[7] Included within the latter count were five newly constructed or retrofitted loop-track facilities: four operated by Richardson International; and one by Viterra.

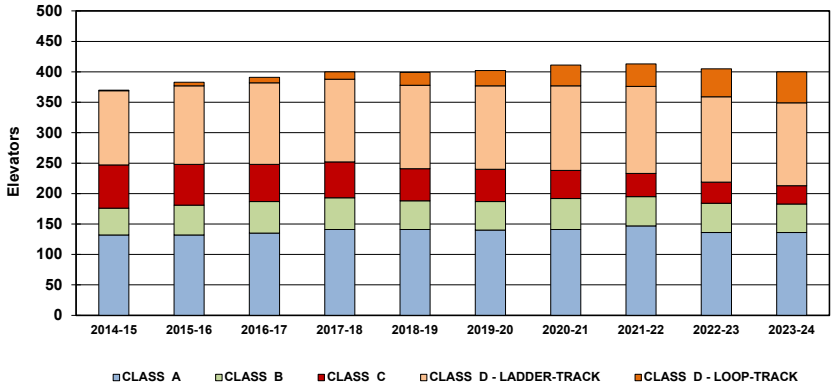
At the close of the 2023-24 crop year, 193, or 48.3% of Western Canada's licensed elevators, were situated in Saskatchewan. This was followed by Alberta and Manitoba, with 102 and 98 elevators respectively, and corresponding shares of 25.5% and 24.5%. The GHTS's remaining seven facilities were divided between British Columbia, with five, and Ontario, with two. These proportions remain consistent with those observed in the GMP's base year.

Much of the observed decline in elevators came from the closure of hundreds of the iconic wood-crib facilities that used to be found in virtually every small prairie town. Although some would be repurposed by new owners, 569 licensed Class A elevators, along with 133 Class B

Country Elevators - Provincial Distribution



Country Elevators - Facility Class



7 The facility classes employed here mirror the thresholds delineated by Canada's major railways at the beginning of the GMP for the receipt of discounts on grain shipped in multiple-car blocks. At that time, these thresholds involved shipments of 25, 50 or 100 railcars. For comparative purposes, the GMP groups elevators into four classes, which are based on the loading capability of each facility as defined by the number of railcar spots each possesses. Those with less than 25 car spots are deemed to be Class A facilities; those with 25-49, Class B; those with 50-99, Class C; and those with 100 or more, Class D.

elevators, ultimately closed their doors during the last 25 years. The closure of these elevators effectively drove a 403-community reduction in the grain-delivery network itself, which by the end of the 2023-24 crop year encompassed 282 locations as compared to the 685 benchmarked at the beginning of the GMP's base year.

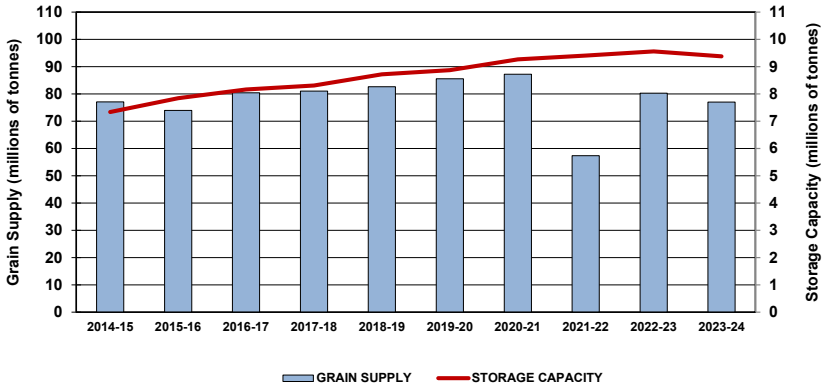
These smaller elevators became a casualty in the quest for efficiency as the grain-handling industry turned to high-throughput elevators capable of loading 50 or more railcars at a time. But even this expansion proved evolutionary, with the early Class C facilities ultimately giving way to their still larger Class D counterparts. Since peaking at 111 elevators in the 2001-02 crop year, Class C facilities have been in a progressive decline, reaching a new low of 30 in the crop year just ended. Only the largest high-throughput facilities – the licensed Class D elevators – have steadily increased in number, expanding to 187 from 38 in the base year. By the close of the 2023-24 crop year, these larger high-throughput facilities accounted for 46.8% of total system elevators and 78.4% of its storage capacity. Both shares stand significantly above their respective base-year values of 3.8% and 19.5%.

Since reaching a low of 366 facilities at the close of the 2010-11 crop year, the overall number of licensed elevators has increased by 9.3%, to the current 400. During this same period the network's storage capacity has ballooned nearly five times as much, by 47.3%. At the close of the 2023-24 crop year, the system's overall storage capacity stood at just under 9.4 million tonnes, not far removed from the GMP record of almost 9.6 million tonnes reached a year earlier. Moreover, this embodied a 64.9% increase from the 5.7-million-tonne low reached under the GMP 20 years earlier. This expansion has largely kept pace with the growth in the grain supply itself, effectively adding handling capacity as needed.

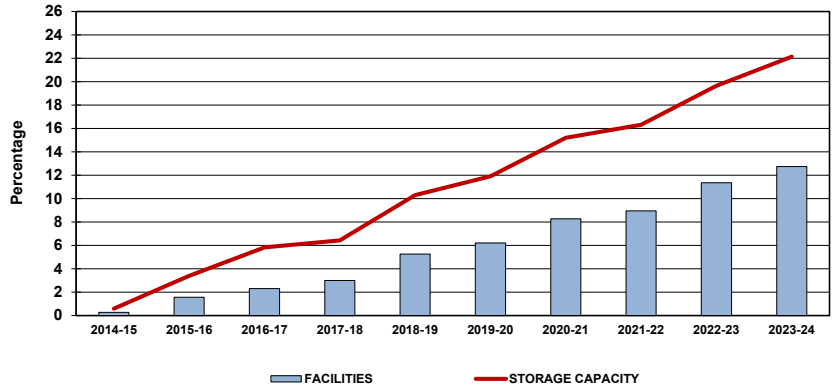
Loop-Track Facilities

Much of the recent increase in elevators and storage capacity can be traced to the emergence of still more efficient Class-D facilities. Not only are these facilities larger than their forerunners, but they also feature loop tracks with standing capacity for up to 150 covered hopper cars (or about 8,500 feet in total length) that allows for faster grain loading and more

Grain Supply and Country Elevator Storage Capacity



Loop-Track Elevators - Share of Facilities and Storage



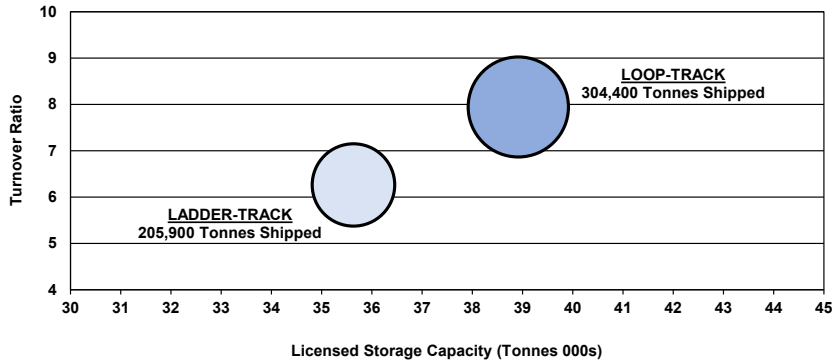
efficient unit-train operations.[8] More importantly, these facilities are proving to be as equally transformative as the older high-throughput facilities that preceded them were, producing a marked increase in elevator productivity.

Pioneered in Canada by Paterson Grain over a decade ago, the concept has been embraced by most major grain handlers. In fact, virtually all new elevator construction undertaken in Western Canada since 2015 has incorporated a loop-track. Furthermore, several established ladder-track facilities have also been retrofitted for loop-track operations. By the close of 2023-24 crop year, 51 loop-track facilities with almost 2.1 million tonnes of storage capacity had been established, with five having come online in the preceding twelve months. Loop-track facilities now account for 12.8% of total system elevators and 22.1% of its storage capacity.

A comparison of elevator data from the 2023-24 crop year revealed that an average loop-track-equipped facility had over 9% more storage capacity than a ladder-track peer, 38,900 tonnes versus 35,600 tonnes respectively. Yet a loop-track facility also turned its storage capacity over nearly 27% faster, originating almost 48% more in annual grain shipments; 304,400 tonnes compared to 205,900 tonnes. These metrics hint at the economies-of-scale that can be realized through the adoption of such facilities.

While loop-track facilities present shippers with the potential to improve efficiency and reduce costs, its realization remains contingent on the provision of consistent and reliable railway service. At the same time, loop-track facilities appear to enjoy a near five-day, or 25%, advantage in car-cycle times over comparative ladder-track elevators. However, the grain industry remains concerned with railway practices, such as the breaking up of unit trains and dispersing of individual railcars to other trains, that often interfere with the shipper's planned flow of grain into, and through, its export terminals. As the delays associated with such practices are often measured in days, their downstream effects frequently lead to slower terminal processing, postponed ship loadings, lengthier stays of vessels in port, and more burdensome demurrage costs.

HTP Elevators - Comparative Annual Shipments 2023-24



Corporate Ownership

The 400 facilities comprising the country-elevator network are licensed by dozens of separate companies. Yet much of Western Canada's grain-handling assets are controlled by just seven companies. Chief among them are such established names as Cargill Limited, Parrish & Heimbecker Limited, Paterson Grain, Richardson International, and Viterra Inc. But their ranks have also increased with the emergence of newer market entrants, including G3 Canada Limited and GrainsConnect Canada. Together, these larger entities have driven much of the industry's modernization efforts, who collectively oversee the operation of 56.0% of its facilities and 76.8% of its associated storage capacity.

8 Covered hopper cars vary in physical capacity and length. Actual standing capacity depends on the type of equipment employed. The 150 cars cited here reflects an estimate based on the newest generation of 56-foot-long hopper cars.

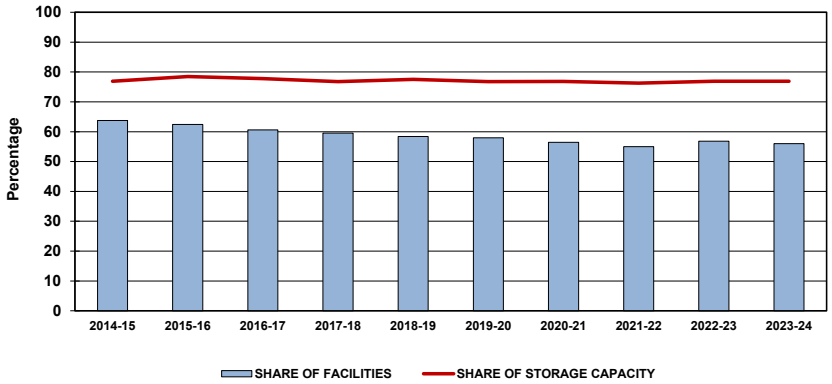
Despite this dominance, non-major grain handlers remain, with many specializing in the handling of pulses and special crops. These include firms like AGT Foods and Ingredients, Ceres Global Ag, Providence Grain Group and Scoular Canada, which, along with other players, jointly operate 44.0% of the GHTS's licensed facilities but only 23.2% of its associated storage capacity.

RAILWAY INFRASTRUCTURE
[See TABLES 3B-1 through 3B-3]

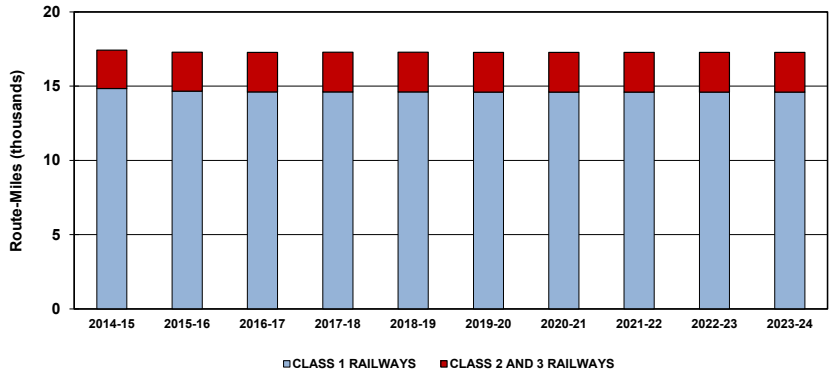
Changes to the GHTS's railway infrastructure have been substantially less than that of the country-elevator network. This is chiefly because elevator closures generally precede any railway rationalization that is likely to ensue. Moreover, given the geographic scope of the railway network and the broad mix of the traffic it generates, railway rationalization seldom mimics that of grain elevators alone. In fact, over the last 25 years, the railway network contracted only one-fifth as much as the country elevator network, shedding 2,202.5 route-miles, or 11.3%, of the 19,468.2 route-miles originally benchmarked in the GMP's base year. More importantly, this decline has all but ceased in the face of the last decade's minimal elevator changes. The template was also repeated in the 2023-24 crop year, with no changes again being recorded, and the railway network left unaltered at 17,265.7 route-miles.

To date, over three-quarters of the network reduction has been tied to the discontinuance of some 1,717.7 route-miles of light-density, grain-dependent branch lines.[9] Other changes in the composition of the railway network came from the transfer of various branch lines to smaller shortline railways, although none were recorded in the last twelve months. At the close of the 2023-24 crop year Class-1 carriers operated 84.5%, or 14,596.1

Largest Grain Companies - Facilities and Storage Capacity
(Western Canada)



Railway Infrastructure - Route-Miles Operated
(Western Canada)



9 The term "grain-dependent branch line", while largely self-explanatory, denotes a legal designation under the *Canada Transportation Act*. Since the Act has application to federally regulated railways only, grain-dependent branch lines transferred to provincially regulated carriers lose their federal designation. This can lead to substantive differences between what might be considered the physical, and the legally-designated, grain-dependent branch line networks. For comparison purposes only, the term has been affixed to those railway lines so designated under Schedule I of the *Canada Transportation Act (1996)* regardless of any subsequent change in ownership or legal designation.

route-miles, while the smaller Class-2 and 3 carriers operated the remaining 15.5%, or 2,669.6 route-miles.[10]

More relevant than the physical scope of the railway network itself is its capacity. Although seemingly simple, a railway's capacity is defined by the complexities inherent in operating over its network. This involves not only the physical constraints imposed by the infrastructure itself (be it in the form of single- or multi-track routes, overall distances, the number of passing sidings, rail yards, etc.) but the deployment of above-rail assets (locomotives and rolling stock), train crews, track speeds, and traffic-control systems.

Railway service is contingent on capacity, which reflects the dynamic interaction of these same determinants. Moreover, the need for capacity has grown alongside railway traffic volumes which, over the course of the last 25 years, has risen by roughly 50%.[11] The pressure brought to bear on the railway system, along with expected future demands, continues to point to a greater need for capacity if network fluidity is to be maintained.

This same need was identified in the Final Report of The National Supply Chain Task Force, released in October 2022, which called for urgent action to create supply chains that are more resilient and efficient. The report noted that this went beyond the practicalities of identifying pinch points and investing in the physical infrastructure needed to safeguard the operation of crucial corridors and gateways; adapting transportation supply chains that function in the public interest.

Among the most critical vulnerabilities for the GHTS involve access to west coast ports, especially Vancouver. In recent years this access has been impeded by catastrophic wildfires, washouts and flooding in the Fraser River Canyon; conflicting marine and railway movements through the Second Narrows; congestion within the greater Vancouver area; as well as the limitations tied to aging infrastructure such as the New Westminster Rail Bridge.

A view of Vancouver's North Shore railway infrastructure as seen from the top of G3 Terminal Vancouver. The image provides a sense of the ever-present railway congestion associated with serving the various bulk terminals located in this narrowly confined area, with both CN and CPKC train movements being visible. (Image courtesy of Marcel Beaulieu)

Clearly, both CN and CPKC have continued to invest heavily in new plant and equipment. But in crowded urban settings like Vancouver, established pinch points, such as CN's Thornton Tunnel and Second Narrows Bridge, have become increasingly problematic in conducting grain and non-grain traffic to and from terminals on the North Shore.[12] This became an even greater issue following G3 Terminal Vancouver's opening in July 2020. With projected increases occasioned by other expansions (most notably

10 The classes used here to group railways are based on industry convention: Class 1 denotes major carriers such as the Canadian National Railway or Canadian Pacific Kansas City; Class 2, regional railways such as the former BC Rail; and Class 3, shortline entities such as the Great Western Railway.

11 The handling needs of the GHTS have figured equally within this broader increase. Source: Statistics Canada.

12 Rail access to the north shore of Vancouver's Burrard Inlet is largely achieved via CN's Thornton Tunnel and Second Narrows Bridge. Although also accessible from the west using the former BC Rail line (now operated by CN) that runs south from Prince George to North Vancouver, traffic along this route is restricted by the extreme grades and curvatures, which dictate the employment of shorter trains and correspondingly lighter train loads.

that of Neptune Terminals to accommodate additional coal and potash movements), it is widely estimated that total volumes on this already congested route segment will surge from about 45 million tonnes to 65 million tonnes annually by 2027. Competing with this growth is an expected 50% increase in marine traffic passing under the bridge, following the now completed Trans Mountain pipeline expansion project. The need to better coordinate these rival movements spurred, at least in part, development of the port's Active Vessel Traffic Management program.

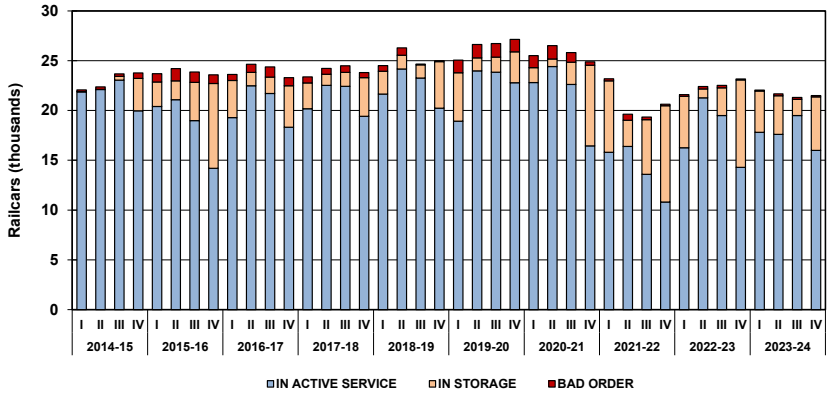
Congestion also impedes rail service to the terminals situated on Burrard Inlet's south shore. This is complicated by the fact that access to the grain and container terminals located there is shared with scheduled commuter trains which, owing to their frequency, severely constrict the windows for both industrial switching and freight train movements. Adding capacity to alleviate these bottlenecks is neither easy, immediate nor inexpensive.

Recognizing that congested trade routes have hampered Canadian export activity, various public and private sector stakeholders have moved to at least partially address the need for additional investment in railway infrastructure. These investments involve building a variety of new roads, grade separations, bridges, and railway sidings. Although such efforts will help tackle some of the GHTS's more immediate infrastructure needs, they do not fully address the longer-term need for increased railway carrying capacity.

Covered Hopper Car Fleet

The GHTS's handling capacity is heavily influenced by the number of covered hopper cars employed by the railways in moving grain. The size of the fleet arrayed varies with prevailing market conditions, expanding and contracting with changes in traffic volume. The 2023-24 crop year saw a 3.5% decrease in the size of the deployed fleet, which fell to an average of 21,628 hopper cars from the 22,422-car average posted a year earlier.[13] The deployed fleet also stood about 18% below the 26,381-car peak recorded in the 2019-20 crop year. Part of this reduction is attributable to a near 20% gain in the carrying capacity of the new hopper cars that both CN and CPKC began acquiring in 2018, which allows for an analogous cutback in the number of government hoppers they have almost completely replaced.

Covered Hopper Cars - Number and Status



At any given moment in time, the equipment used for this purpose is categorized in one of three ways: as being in active service moving grain; in storage awaiting later use; or "bad order" (i.e., removed from active service for repair). Typically, the proportion assigned to active service rises to meet peak demand, usually reaching a zenith sometime in the fall or early winter.

Buoyed by the lower bad-order rates on new equipment, the proportion of the fleet pressed into active service rose to a height of 98.0% in October 2023, a level consistent with the 97.9% peak reached nearly a year earlier. As traffic volumes began to wane, this proportion started to decline,

13 The fleet information supplied by the railways is believed to exclude many of the privately-owned or leased cars supplied by the grain companies themselves. The actual number of cars in grain service is, therefore, believed to be understated.

ultimately falling to a low of 68.0% in June 2024. This meant that the average active fleet decreased by 0.7%, to 17,689 cars from 17,805 cars a year earlier.

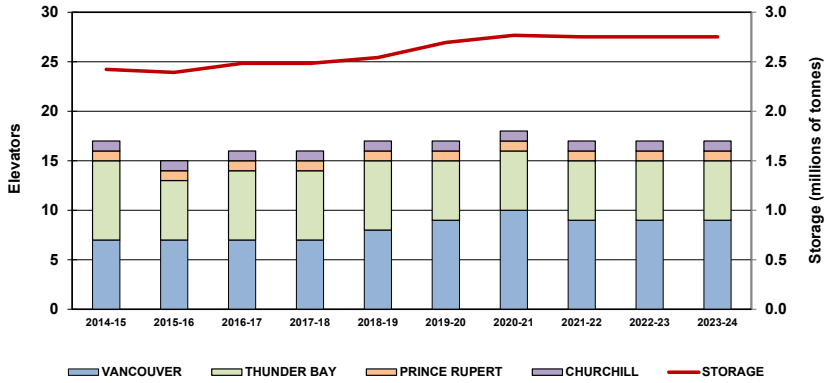
TERMINAL ELEVATOR INFRASTRUCTURE
[See TABLE 3C-1]

At the outset of the 1999-2000 crop year, there were 14 licensed terminal elevators operating in Western Canada. This network comprised facilities located in the traditional grain-handling ports of Thunder Bay and Vancouver, with outlying terminals at Churchill and Prince Rupert. By the close of the 2023-24 crop year, this network had expanded to encompass 17 facilities, a gain of 21.4% over those counted in the base year. The associated storage capacity also increased during this period, albeit by a lesser 8.2%, to somewhat under 2.8 million tonnes from 2.6 million tonnes. But these shifts are modest in comparison to the broader changes brought about over the last half century, much of which related to establishing the grain supply chains needed to support Canada's growing trade with Asian countries.

Thunder Bay, whose commercial activities had largely been focused on serving European grain markets, had long been home to the majority of the GHTS's terminal-elevators. However, as the focus of Canada's grain trade gravitated towards the Pacific Rim, Thunder Bay's role progressively diminished. With this decline in grain volume, several terminals closed their doors. While most of these closures came before 2000, a few have also occurred under the GMP. By the close of the 2023-24 crop year Thunder Bay laid claim to just six facilities and more than 1.1 million tonnes of licensed storage capacity, giving it system shares of 35.3% and 41.0% respectively. Both values are down from the 50.0% shares benchmarked two-and-a-half decades earlier.

Even so, the growing handling needs of the GHTS has spurred the demand for additional capacity along the West Coast. Vancouver has been the focus of much of the ensuing investment, which largely started with an 81,720-

Terminal Elevators - Location and Storage Capacity
(Western Canada)



tonne expansion of the Richardson International terminal in North Vancouver in 2016. This was followed by major upgrades to the ship-loading galleries at Viterra's Pacific Terminal and the Alliance Grain Terminal, and a significant enhancement of the Fibreco Export facility to permit handling of other commodities, including agricultural products. More noteworthy still was the opening of G3 Canada's new 183,000-tonne loop-track terminal in North Vancouver in 2020, followed a year later by the opening of the 72,000-tonne Fraser Grain Terminal.[14]

Given the completion of these projects, the terminal elevator infrastructure at the port of Vancouver remained unaltered for only the second time in as many years. At the close of the 2023-24 crop year this encompassed nine licensed facilities with almost 1.3 million tonnes of storage capacity, giving the port system shares of 52.9% and 46.3% respectively.

14 The Fraser Grain Terminal replaced a 15,000-tonne Parrish & Heimbecker facility, which was built by Parrish & Heimbecker Limited in partnership with GrainsConnect Canada.

Section 4: Commercial Relations

Indicator Description	Table	1999-00	2021-22	2022-23	2023-24 Q1	Q2	Q3	Q4	YTD	% VAR
Trucking Rates										
Composite Freight Rate Index – Short-haul Trucking	4A-1	100.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Country Elevators Handling Charges										
Composite Rate Index – Receiving, Elevating and Loading Out	4B-1	100.0	137.7	138.0	138.0	137.9	137.3	137.3	137.3	-0.6%
Composite Rate Index – Dockage	4B-1	100.0	146.8	146.2	146.2	146.2	146.2	146.2	146.2	0.0%
Composite Rate Index – Storage	4B-1	100.0	256.4	259.1	259.1	259.5	259.5	259.5	259.5	0.1%
Railway Freight Rates										
Composite Freight Rate Index – CN Vancouver	4C-1	100.0	152.7	153.2	217.1	189.9	165.2	171.2	171.2	11.7%
Composite Freight Rate Index – CPKC Vancouver	4C-1	100.0	176.7	170.9	218.9	197.4	178.8	178.8	178.8	4.6%
Composite Freight Rate Index – CN Prince Rupert	4C-1	100.0	134.9	132.7	191.8	167.8	145.9	145.9	145.9	10.0%
Composite Freight Rate Index – CN Thunder Bay	4C-1	100.0	153.8	152.8	210.5	189.5	164.8	164.8	164.8	7.8%
Composite Freight Rate Index – CPKC Thunder Bay	4C-1	100.0	158.1	158.3	204.4	188.9	175.3	175.3	175.3	10.7%
Effective Freight Rate ($ per tonne) – Maximum Revenue Entitlement	4C-3	n/a	$39.03	$44.66	n/a	n/a	n/a	n/a	$47.72	6.9%
Terminal Elevator Handling Charges										
Composite Rate Index – Receiving, Elevating and Loading Out	4D-1	100.0	168.9	171.5	171.5	171.5	169.5	169.5	169.5	-1.1%
Composite Rate Index – Storage	4D-1	100.0	186.8	186.8	186.8	186.8	186.8	186.8	186.8	0.0%

DISCUSSION AND ANALYSIS

COUNTRY ELEVATOR HANDLING CHARGES
[See TABLE 4B-1]

Grain companies assess fees for a variety of elevator-handling activities, predominantly the receiving, elevating and loading out of grain. These are accompanied by additional charges for the removal of dockage (cleaning) and storage, all of which differ according to the activity, grain, province, and company involved. Given the multitude of tariff rates involved, the GMP necessarily uses a composite price index to track their change over time. Throughout much of the GMP these rates have moved generally higher, albeit by varying margins.

These rates saw little movement during the last crop year. Elevation rates, which averaged $16.46 per tonne at the close of the 2023-24 crop year, decreased by a marginal 0.6% from the previous crop year's $16.56-per-tonne year-end average. This lowered the composite price index to 137.3 from 138.0.

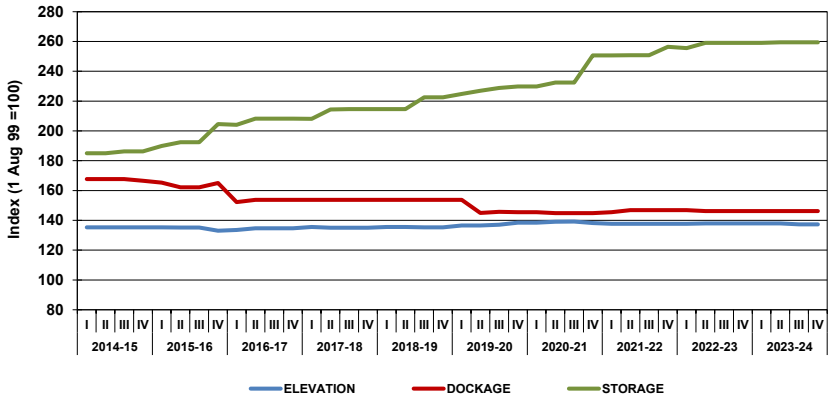
Dockage fees, which amounted to a lesser $6.57 per tonne at the close of the crop year, remained unchanged, with the index value holding at 146.2. In contrast, storage rates increased by 0.1% to an average of just over $0.15 per tonne for each day held, which raised the index value to 259.5 from 259.1.

RAILWAY FREIGHT RATES
[See TABLES 4C-1 through 4C-3]

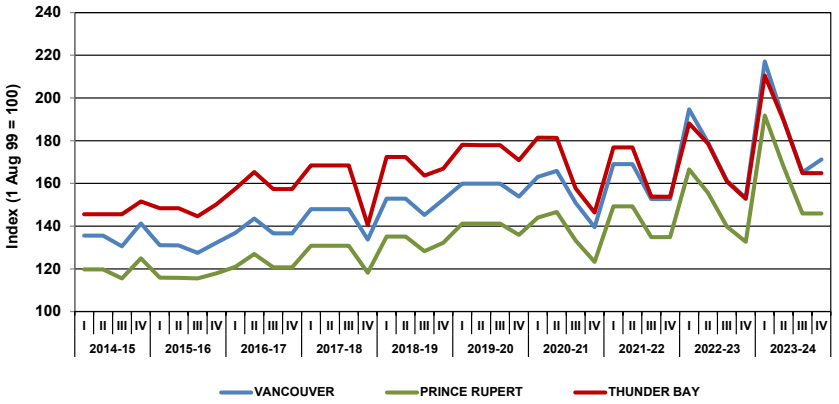
The single-car freight rates charged by the railways (CN and CPKC) for the movement of regulated grain have changed substantially since the beginning of the GMP, evolving from what were largely mileage-based per-tonne rates into a less rigidly structured set of more market-responsive per-car charges. Additionally, these per-car charges began to differentiate between commodities, size of railcar, destination, and the period in which the traffic was to move.

As with country elevator handling charges, the myriad of applicable freight rates makes the tracking of price changes over time difficult. As a result,

Primary Elevator Handling Charges



CN Single-Car Freight Rates - Primary Corridors
(Western Canada Destinations)

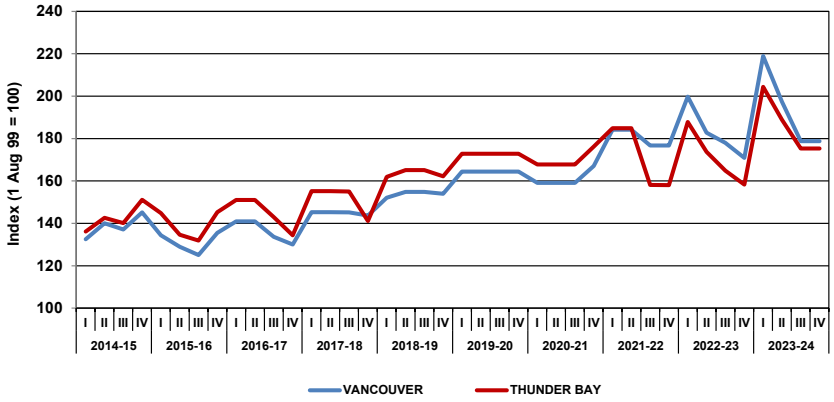


the GMP focuses only on changes in the single-car rates tied to the movement of wheat, deeming these to be reflective of general pricing action. Similarly, a composite price index is also used to track the longer-term change in rate levels. The 2023-24 crop year again saw significant swings in these rates throughout the year, with both CN and CPKC initially increasing their single-car freight rates substantially in the first quarter, with gradual reductions following in later months.

At the outset of August 2023, CN escalated its rates on both westbound movements into Vancouver and Prince Rupert, and eastbound movements into Thunder Bay, by factors of roughly 25%. These were followed by an across-the-board increase of 5.0% in September, and then hikes of 8.0% on westbound rates, and 5.0% on eastbound rates, in October. Still more marginal increases, amounting to about 1.5%, followed in November. By the close of the month, these pricing actions had produced an unparalleled 45% rise in CN's single-car rates; the most pronounced and rapid witnessed under the GMP. These rates remained unchanged until January 2024, when CN initiated reductions ranging from 11.4% to 13.7%. Westbound rates were cut by a further 13.0% in April. The compound effect of these actions produced net increases of 11.7% on movements into Vancouver; 10.0% for Prince Rupert; and 7.8% for Thunder Bay. The posted per-tonne average year-end rate in these corridors amounted to $62.84 on westbound movements into Vancouver, $60.63 on those into Prince Rupert, and $53.25 on eastbound movements into Thunder Bay.

In comparison, CPKC left its preceding year-end rates unchanged until September, when it applied an average increase of 17.5% on movements into Vancouver, and 19.7% on movements into Thunder Bay. This was followed in October with additional increases averaging 9.0% and 7.8% respectively. As was the case with CN, these rates also remained unchanged until January 2024 when CPKC put forward reductions averaging 9.8% in the Vancouver corridor, and a lesser 7.6% in the Thunder Bay corridor. Thunder Bay rates were cut by another 7.2% in March, with a 9.4% reduction on Vancouver rates applied in April. At year's end, the net effect was a 4.6% increase in CPKC's Vancouver rates, and a 10.7% increase in its Thunder Bay rates. The posted per-tonne average year-end rate in these corridors amounted to $65.78 on movements into Vancouver, and $52.74 on movements into Thunder Bay.

CPKC Single-Car Freight Rates - Primary Corridors
(Western Canada Destinations)



Multiple-Car-Block Discounts

The discounting of single-car freight rates has been the principal mechanism employed by the railways to entice shippers into moving grain in larger quantities. Such discounting – widely known as multiple-car-block discounts – have evolved considerably since the beginning of the GMP. The first significant structural change in this evolution came nearly two decades ago when the discounts on movements in blocks of 50 or more cars were increased while those for smaller block movements were phased out. Together, these actions provided grain handlers with a powerful economic incentive to ship in trainload – or partial trainload – quantities.

The next important change came in the 2018-19 crop year, when CP withdrew the $4.00-per-tonne incentive that it had long been offering on movements in blocks of 56-111 cars. This left the carrier's $8.00-per-tonne discount for movements in blocks of 112 or more cars the only published incentive still being offered to grain shippers. In contrast, CN left its existing incentives unaltered and continued to offer a $4.00-per-tonne discount on movements of 50-99 cars, and an $8.00-per-tonne discount on movements of 100 or more cars. However, the carrier also broadened its latter incentive to allow for as much as $2.00 per tonne in

additional discounts if shippers also complied with certain "heavy-loading" criteria.[15]

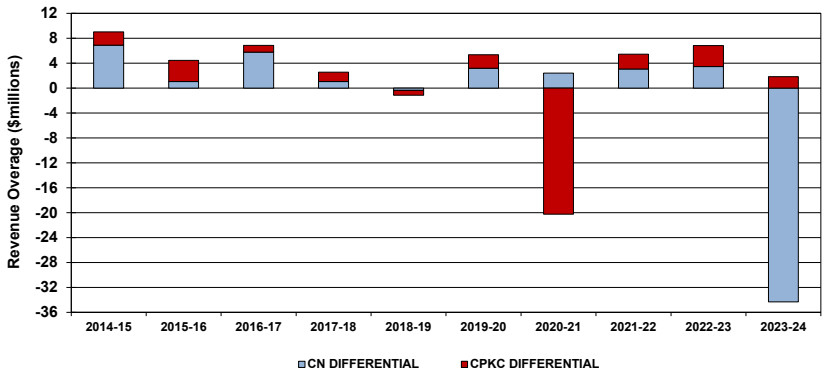
The resultant disparities occasioned by these actions were narrowed at the outset of the 2019-20 crop year when CN eliminated its $4.00-per-tonne discount on movements of 50-99 cars, effectively matching the commercial step taken by CPKC a year earlier. At the same time, CPKC brought forward a $10.00-per-tonne discount for movements under its newly introduced High-Efficiency-Product train program, which built on the deeper discounts previously made available by CN to qualifying trainload shippers.[16] Although these discounts remained effectively unchanged through the 2023-24 crop year, there were indications that they were also evolving to be more shipper specific.

Taken altogether, the railways' incentive programs are now clearly aimed at realizing the fullest economic potential of unit train operations. And while these incentives work to the financial benefit of the largest and most modern grain-handling facilities, those incapable of moving grain in trainload lots have seemingly been put at a commercial disadvantage. However, such impediments have not yet precipitated a sizable reduction in the number of smaller elevators.

Maximum Revenue Entitlement

Under the federal government's Maximum Revenue Entitlement (MRE), established in 2000, the unadjusted revenues that CN and CPKC are entitled to earn from the movement of regulated grain are based on a legislated maximum of $348.0 million and $362.9 million respectively.[17] However, these limits, expressed in year-2000 dollars, are adjusted annually to reflect changes in volume, average length of haul, and inflation. Outside of the inflationary component, these adjustments are determined by the Canadian Transportation Agency (Agency) following a detailed analysis of the traffic data submitted to it by CN and CPKC at the end of any given crop year.

Maximum Revenue Entitlement - Carrier Compliance



The Volume-Related Composite Price Index (VRCPI), which provides for an inflationary adjustment to carrier revenues, is determined by the Agency in advance of each crop year. For the 2023-24 crop year, the Agency determined the value of the VRCPI to be 1.8364 for CN, and 1.7616 for CPKC. These values denoted a year-over-year increase of 12.5% for CN, and 5.4% for CPKC.[18] As a result, the MRE for CN and CPKC were set at $1,248.1 million and $869.9 million respectively.[19] The Agency also determined that, for the 2023-24 crop year, the statutory revenues derived

15 In addition to meeting all basic tariff requirements, a shipper of 100 or more cars could also receive an additional $1.00 per tonne (approximate) under CN's "Heavy Loading Incentive" as well as another $1.50 per tonne under it's "Loop/Tangent Track Incentive."

16 CPKC's High-Efficiency-Product train program is built around the carrier's plan to operate trains to an 8,500-foot standard and takes advantage of the efficiency gains to be had by using the higher-capacity hopper cars it has purchased to increase trainloads by over 40%. When combined with the promise of faster and more efficient loop-track loading systems, these trains can help accelerate the flow of grain to market.

17 The regulated railway grain traffic referred to includes only that portion moving to a designated Western Canadian port in accordance with the provisions of the *Canada Transportation Act*. It does not include grain traffic originating in Western Canada and destined to locations outside these ports (denoted as Western Domestic), Eastern Canada or the United States of America.

18 The Volume-Related Composite Price Index (VRCPI), which had been expressed as a single value applicable to both CN and CPKC, was re-established as separate values by amendment to the *Canada Transportation Act* in 2018.

19 See Canadian Transportation Agency Determination R-2024-190 dated 24 December 2024.

from the movement of regulated grain by CN amounted to $1,213.7 million, and to $871.7 million for CPKC. Accordingly, the Agency found that CN's revenues fell $34.3 million, or almost 2.8%, below its allowable maximum. This constituted the largest monetary differential recorded by any single carrier since implementation of the MRE almost a quarter century earlier. Conversely, the Agency found that CPKC's revenues had exceeded its entitlement by a more marginal 0.2%, or $1.8 million.[20]

TERMINAL ELEVATOR HANDLING CHARGES
[See TABLE 4D-1]

About two-thirds of terminal-elevator revenues are derived from the charges levied for the receiving, elevating and loading out of grain. These are accompanied by additional charges for storage, all of which differ according to the activity, grain, province, and company involved. As with other price-related measures, the myriad of applicable tariff rates naturally lends itself to the use of composite indexes in gauging price movement over time.

The 2023-24 crop year again brought marginal changes to these rates. The rates for elevation, which averaged $15.46 per tonne at the close of the crop year, decreased by 1.1% from the previous crop year's $15.64-per-tonne year-end average. This lowered the composite price index to 169.5 from 171.5.

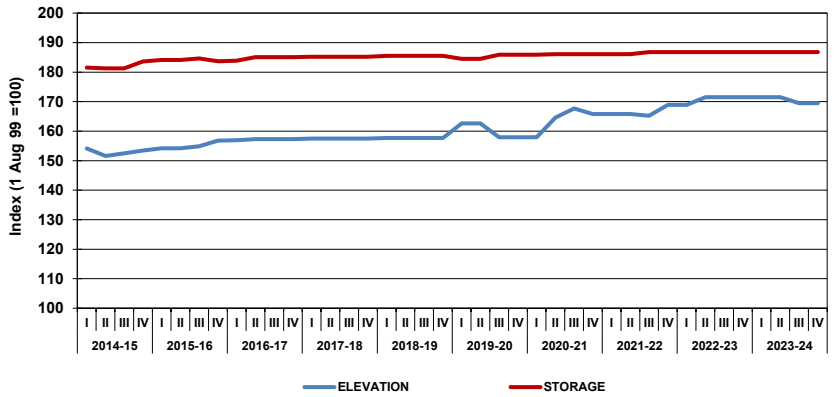
The daily charge for storage remained unchanged in the 2023-24 crop year. The year-end average stood at just over $0.12 per tonne with the associated composite price index remaining at 186.8.

COMMERCIAL DEVELOPMENTS

Bunge-Viterra merger plan prompts additional review:

From the outset of its June 2023 announcement, it was known that the global reach of the proposed merger between Bunge and Viterra would require the regulatory approval of numerous countries. Shortly afterwards, the Competition Bureau affirmed that it would be undertaking

Terminal Elevator Handling Charges



an appropriate assessment of the proposed transaction in Canada. However, on 26 September 2023 the federal transport minister stated that the department would be launching its own review under the merger and acquisition provisions of the *Canada Transportation Act*. Noting that both companies had ownership interests in port terminals throughout Canada, and that the transaction was important to the smooth functioning of the transportation sector and the broader supply chain, this review was to focus on the public interest.

On 23 April 2024 the Competition Bureau released its report on the proposed acquisition, which concluded that the transaction was likely to have substantial anti-competitive effects. The report was referred to the federal transport minister for consideration in a broader public interest review of the transaction. The merger of these two agricultural giants was largely being scrutinized because of Bunge's position as a minority shareholder in G3 Global Holdings (G3), a direct competitor to Viterra. The Bureau's findings suggested that Bunge's involvement with G3 provided it with access to sensitive competitive information, which could

20 Excess revenues, along with applicable penalties, are payable by the carrier to the Western Grains Research Foundation.

detrimentally influence market behaviours, and result in broader commercial harm to the agricultural sector. The process now hinges on Transport Canada's assessment, which had been scheduled for completion by June 2024, but remained outstanding at the close of the crop year.

Unifor strike disrupts Seaway operations:

Unionized employees of the St. Lawrence Seaway Management Corp. (SLSMC), represented by Unifor, issued a 72-hour strike notice on 18 October 2023. This set the stage for a work stoppage that began on 22 October, suspending marine traffic movement through the seaway and much of the Great Lakes region. The strike came at the height of the shipping season for several commodities, including the eastbound movement of Western Canadian grain. The main point of contention appeared to be salaries, with Unifor's leadership finding the offers advanced by the SLSMC to be insufficient.

Although negotiations continued, the perceived harm to the Ontario and Quebec economies brought mounting pressure for a quick resolution to the dispute. Much of the concern centered on a possible reincarnation of the July 2023 labour dispute in British Columbia, which hindered supply chain operations across the country for weeks. Accordingly, a variety of stakeholders urged the federal government to intervene. Ultimately, the strike lasted but a week, with the parties reaching a tentative agreement that saw Unifor's 360 striking lock workers return to their jobs on 30 October.

Labour strife leads to national stoppage of railway service:

In mid-February 2024, both Canadian National (CN) and Canadian Pacific Kansas City (CPKC) requested that the federal labour minister appoint a conciliator to assist in their negotiation of new collective agreements with train and yard workers. These negotiations revolved around the renewal of three collective agreements, covering about 9,300 employees all represented by the Teamsters Canada Rail Conference (TCRC), that expired on 31 December 2023. By all accounts, the parties remained far apart on the key issues. The dispute led to the initiation of a union strike vote, which overwhelmingly supported strike action. This set the stage for a strike that could have come as early as 22 May if no deal was reached. All

Locked-out railway workers are seen picketing in Montreal on the first day of a nationwide stoppage of railway service that began on 22 August 2024. (Image courtesy of Canadian Press)

parties were quick to note that such a widespread work stoppage, which would interrupt the railway movement of goods and people throughout the country, would be cataclysmic for Canada's supply chains. This heightened the demand for more effective government action, including the use of binding arbitration to prevent or terminate a work stoppage that could result in widespread economic harm.

Ultimately, the federal government stepped in on 19 May and asked the Canada Industrial Relations Board (CIRB) to determine whether a work stoppage at both carriers would threaten public safety. In a determination handed down on 9 August 2024, the CIRB found that a shutdown of Canada's two major railways would not present a threat to public health and safety. In the face of a potentially simultaneous work stoppages at both carriers, the decision cleared the way for what many observers feared could become the most costly and disruptive railway strike in Canadian labour history. In the face of a renewed threat to initiate strike action, both CN and CPKC moved to lockout its TCRC employees effective 22 August 2024 and began an orderly shutdown of their networks. However, within hours of the lockout and shutdown taking effect, the federal labour

minister announced that he had asked the CIRB to issue a back-to-work order, begin a binding arbitration process, and extend the terms of the current labour agreements until new ones were reached.

Although ultimately short in duration, the very threat of a work stoppage had progressively reduced and slowed the movement of railway traffic. When it did come, the impact was instantaneous, halting everything from consumer goods to bulk commodities like grain. The entire GHTS had effectively been paralyzed in the process. Rail operations, which had taken a week to stop, took still longer to return to normal, and stretched well into September.

Active Vessel Traffic Management development continues:

With the growth in marine traffic through the Port of Vancouver has come an increasing need to optimize the movement of vessels through its busy and confined waterways. At the outset of the 2021-22 crop year the Vancouver Fraser Port Authority (VFPA) launched its Active Vessel Traffic Management (AVTM) program, with the stated goals of improving the port's efficiency, increasing collaboration between stakeholders, reducing environmental and social impacts, and ensuring the port remains capable of handling continued growth.

The AVTM consists of five elements to be rolled out in stages. These include centralized scheduling, anchorage management, supply chain collaboration, port call optimization, and port community systems. Although progress along each of these fronts continued to be made in the 2023-24 crop year, the Centralized Scheduling System (CSS) saw the attainment of several major milestones. The CSS, which aims to manage the movement of all vessels within the port, was initially rolled out in October 2023 with its implementation at the Second Narrows, designated as Traffic Control Zone 2 (TCZ-2).

TCZ-2 denotes an important passageway within the Vancouver harbour complex, providing critical access to marine terminals situated as far afield as Port Moody. More significantly, the passage is spanned by two bridges that connect Vancouver to the North Shore: The Iron Workers Memorial Bridge; and the Second Narrows Rail Bridge. The latter is a

An overview of the traffic control zones within the Vancouver Port Authority's jurisdictional waters. (Image courtesy of the Vancouver Fraser Port Authority)

vertical-lift bridge owned by CN, which must either be raised or lowered to allow select vessel or train movements.

Of the 29 terminals situated at the Port of Vancouver, just over half rely either on rail access over the bridge, or on vessel access beneath it. There are six terminals located east of the rail bridge that require bridge lifts for their inbound and outbound vessel movements, and nine terminals located on the North Shore that depend on the bridge for their railway shipments. Notably, this includes the recently completed Trans Mountain pipeline terminus at Westridge Marine Terminal, located east of the CN lift bridge. The company's expansion has resulted in a near tripling of the tanker traffic passing through the Second Narrows, which has risen from a pre-expansion average of six vessels per month to 17.

Any terminal located within TCZ-2 uses the web-based scheduling system to request and plan their vessel movements. The increased visibility on scheduled vessel movements provided by the CSS, along with predictions for safe navigation windows based on tides and water currents, has improved the operational planning for terminals that require vessels to cross under the CN rail bridge. The VFPA reported that scheduled transits through the Second Narrows were met by a better than 99% fulfilment rate.

With the close of the 2023-24 crop year, the CSS was expanded to govern vessels traversing the First Narrows, designated as Traffic Control Zone 1 (TCZ-1), which is spanned by the Lions Gate Bridge at the entrance to the harbour. As with the Second Narrows, shippers and vessel agents utilize the web-based scheduling system to request and plan their vessel movements. All grain terminals at the Port of Vancouver, except for Fraser Grain Terminal, require their vessels to pass through TCZ-1.

Panama Canal restrictions tighten:

Traffic through the Panama Canal continued to be restricted owing to the record low water level in the rainfall-fed Gatun Lake, the freshwater reservoir used to refill the locks after each vessel's passage to prevent the mixing of Atlantic and Pacific waters. The number of daily vessel transits was reduced to 24, versus about 40 normally. This meant substantial delays for the mounting backlog of ships waiting to transit the canal. Although not hugely disruptive to Canadian grain shipments, these delays were having a broader impact on international trade, forcing many shipowners into paying exorbitant passage fees or diverting their vessels around South America, and increasing global shipping rates in the process.

Bulk carriers had faced wait times of up to three weeks to pass through the canal while container vessels and others on more regular schedules, which often booked passage months in advance, were given preference. The canal authority also reportedly offered slots that became available to its best customers first, none of which were bulk carriers. Any scheduled slots that did become available were also being auctioned off, with some slots going for US $1 million or more. Wait-times for bulk grain vessels ballooned from around five days in October to about 20 days by late November.

The Baltic Dry Index, considered the benchmark for bulk grain freight, spiked to an 18-month high in early December 2023, more than doubling the value observed just a month earlier. Similarly, some container lines, such as Maersk, started to employ the "land bridging" option inherent in using the Panama Canal Railway (in which CPKC has a 50% interest) to traverse the isthmus and bypass these problems.

Red Sea chaos impacts trade:

In mid-December 2023, Houthi rebels based in Yemen began attacking cargo ships traversing the Red Sea. Although the Iranian-backed Houthis had sporadically targeted ships in the corridor before, they were ramping up their attacks in the wake of the Israeli war on Hamas in the Gaza Strip, supposedly to thwart ships from serving Israeli ports. As these attacks increased in number, the conflict threatened to widen, and began to disrupt shipping through the Suez Canal. The route handles more than 10 percent of total ocean shipments and nearly one-third of the world's container trade. Against this backdrop many shipping companies began to reroute traffic away from the conflict area and over a much longer route around the Cape of Good Hope in southern Africa. This resulted in a 50% reduction in Suez Canal tanker traffic and still further increases in ocean freight rates, all of which was expected to translate into higher prices for consumers of multiple goods.

Seaway's winter closing date extended:

In mid-November 2023 the St. Lawrence Seaway announced that it was extending the closing date for its 2023 navigation season, with the Montreal-Lake Ontario section scheduled to close on 5 January 2024, and the Welland Canal section two days later. The extension was aimed at compensating for the impact of an eight-day strike that disrupted traffic and prevented over 100 vessels from transiting the seaway in October 2023. It also denoted the latest scheduled closing of the Seaway since its opening in 1959.

G3 Canada acquires additional facility:

In February 2024 G3 Canada Limited (G3), which already operated terminals in Quebec, announced that it had acquired Elevateurs Beauchemin, a 30,000-tonne facility located in Saint-Denis-sur-Richelieu. This acquisition was aimed at strengthening G3's presence in the province's Monteregie region as well as addressing its needs for additional grain drying and storage. The expansion came on the heels of a 30-year renewal of G3's lease with the Port of Quebec, on whose land is located the company's 225,000-tonne terminal, a facility catering to ships transiting the St. Lawrence Seaway.

Churchill gets additional funding:

On 23 February 2024 the governments of Canada and Manitoba announced that a further $60 million was being invested to finish upgrading the Hudson Bay Railway (HBR) and to start redeveloping the Port of Churchill. The new investment builds on the $293 million in financial aid allotted to help restore rail service to Churchill and surrounding communities since 2018. Viewed as the backbone of the northern economy, and a vital connection to food and fuel for the families that live there, repair and maintenance work on the HBR over the past two construction seasons had seen the replacement of more than 166,000 railway ties, the resurfacing of almost 400 miles of track, the upgrading and repair of 10 bridges, and the installation of fresh ballast on nearly a quarter of the route between The Pas and Churchill, Manitoba.

Wildfires disrupt rail service:

In the face of another year of widespread wildfires throughout British Columbia and Alberta, many were again poised to threaten the region's primary transportation arteries through the Rocky Mountains. With two such wildfires rapidly converging on Jasper, Alberta, local officials ordered the town's immediate evacuation along with the surrounding National Park on 22 July 2024. Within the next 24 hours some 25,000 people had fled for safety, with the town's vital transportation links severed. This included CN's mainline route to and from the West Coast ports of Vancouver and Prince Rupert, which used Jasper to crew and service its through-train movements.

Although CN had initially been able to maintain some intermittent train service, all operations were suspended once the wildfires overwhelmed the town's defenses two days later. Despite widespread damage to the town, the railway's infrastructure remained largely intact, and the carrier was able to resume partial operations on July 26. Even so, the movement of some 120 trains had been paused, with eastbound traffic staged around Kamloops, and westbound traffic near Hinton. By the close of the month, however, CN was approaching near-normal operations and had managed to eat significantly into the traffic backlog. Even so, the downstream effects extended well into August.

ILWU issues strike notice:

On 5 July 2024 Local 514 of the International Longshore and Warehouse Union (ILWU), representing some 600 ship and dock foremen, issued a 72-hour strike notice following a favourable membership vote. However, the ILWU, which had been engaged in protracted negotiations for a new contract with the BC Maritime Employers Association (BCMEA) since November 2022, conducted the vote amongst members employed by only one BCMEA constituent, DP World Canada. This limited polling resulted in the Canada Industrial Relations Board (CIRB) ruling the vote inconsistent with the Canada Labour Code and deeming a strike to be illegal.

Both the BCMEA and the ILWU were scheduled to resume their hearing into the matter with the CIRB in early August, with the ILWU reportedly planning for an industry-wide strike vote immediately thereafter.

Stakeholders were concerned that a strike could badly disrupt Vancouver port operations. Although bulk grain shipments would continue to flow due to the protective provisions contained in the Canada Labour Code, containerized grain shipments would be affected.

Section 5: System Efficiency and Performance

Indicator Description	Table	1999-00	2021-22	2022-23	2023-24 Q1	Q2	Q3	Q4	YTD	% VAR
Country Elevator Operations										
Average Elevator Capacity Turnover Ratio	5A-1	4.8	4.2	5.9	1.4	1.5	1.4	1.3	5.6	-5.1%
Average Weekly Elevator Stock Level (000 tonnes)	5A-2	3,699.3	3,548.6	3,382.3	3,310.9	3,593.8	3,723.5	2,451.2	3,260.8	-3.6%
Average Days-in-Store (days)	5A-3	41.7	38.3	24.2	24.0	26.9	26.0	20.1	24.4	0.8%
Average Weekly Stock-to-Shipment Ratio – Grain	5A-4	6.2	5.9	3.4	3.3	3.6	3.7	2.8	3.4	0.0%
Railway Operations										
Movements to Western Canada										
Railway Car Cycle (days) – Empty Movement	5B-1	10.7	9.7	7.3	7.5	8.2	8.1	8.4	8.0	10.6%
Railway Car Cycle (days) – Loaded Movement	5B-1	9.2	8.1	6.7	6.8	7.7	7.8	7.1	7.3	9.5%
Railway Car Cycle (days) – Total Movement	5B-1	19.9	17.8	14.0	14.3	15.8	15.8	15.5	15.4	10.1%
Railway Car Cycle (days) – Non-Special Crops	5B-2	19.3	17.5	13.7	14.0	15.4	15.6	15.3	15.1	10.3%
Railway Car Cycle (days) – Special Crops	5B-3	25.8	20.9	17.5	17.4	19.8	20.5	20.8	19.2	9.3%
Railway Loaded Transit Time (days)	5B-4	7.8	6.8	5.7	5.8	6.5	6.7	6.0	6.2	9.6%
Movements to Eastern Canada										
Railway Car Cycle (days) – Empty Movement	5B-5	n/a	14.4	11.5	10.2	10.7	9.2	11.7	10.1	-12.5%
Railway Car Cycle (days) – Loaded Movement	5B-5	n/a	15.5	12.8	14.0	11.6	9.9	14.7	11.6	-9.1%
Railway Car Cycle (days) – Total Movement	5B-5	n/a	29.9	24.3	24.2	22.3	19.1	26.4	21.7	-10.7%
Railway Loaded Transit Time (days)	5B-8	n/a	13.6	10.9	12.2	9.9	8.6	13.0	10.1	-7.5%
Movements to the United States										
Railway Car Cycle (days) – Empty Movement	5B-9	n/a	12.3	11.2	12.3	12.5	11.0	13.1	12.2	9.0%
Railway Car Cycle (days) – Loaded Movement	5B-9	n/a	15.4	14.9	15.4	15.3	14.9	13.3	14.7	-1.3%
Railway Car Cycle (days) – Total Movement	5B-9	n/a	27.7	26.1	27.7	27.8	25.9	26.4	26.9	3.1%
Railway Loaded Transit Time (days)	5B-12	n/a	11.4	10.3	11.0	10.7	10.8	9.0	10.4	0.3%
Traffic to Western Canada										
Hopper Car Grain Volumes (000 tonnes) – Non-Incentive	5B-13	12,718.7	4,781.2	7,263.5	1,922.6	1,789.3	1,611.7	1,333.6	6,657.1	-8.3%
Hopper Car Grain Volumes (000 tonnes) – Incentive	5B-13	12,945.9	21,798.2	36,661.4	9,308.8	8,547.6	9,315.8	6,288.4	35,460.7	-3.3%
Hopper Car Grain Volumes ($ millions) – Incentive Discount Value	5B-14	$31.1	$174.4	$293.3	$74.5	$68.4	$74.5	$66.3	$283.7	-3.3%
Traffic Density (tonnes per route mile) – Total Network	5B-15	330.4	384.9	636.0	650.5	598.7	632.9	557.3	609.8	-4.1%
Terminal Elevator Operations										
Average Terminal Elevator Capacity Turnover Ratio	5C-1	9.1	9.1	15.7	n/a	n/a	n/a	n/a	15.5	-1.3%
Average Weekly Terminal Elevator Stock Level (000 tonnes)	5C-2	1,216.2	1,118.4	1,168.8	1,151.9	1,314.1	1,099.1	1,157.0	1,182.1	1.1%
Average Days-in-Store – Operating Season (days)	5C-3	18.6	16.5	10.5	11.6	12.8	8.4	11.8	11.1	5.7%
Average Weekly Out-of-Car Time	5C-5	n/a	15.3%	13.3%	14.6%	13.6%	18.8%	11.1%	14.3%	7.5%
Port Operations										
Average Vessel Time in Port (days)	5D-1	4.3	9.1	9.8	9.4	8.5	13.4	7.2	9.5	-3.1%
Average Vessel Time in Port (days) – Waiting	5D-1	1.9	4.6	5.3	5.2	4.7	7.8	3.4	5.2	-2.5%
Average Vessel Time in Port (days) – Loading	5D-1	2.4	4.5	4.5	4.2	3.8	5.6	3.8	4.3	-3.8%
System Performance										
Total Time in Supply Chain (days)	5E-1	68.1	61.6	40.4	41.4	46.2	41.1	37.9	41.7	3.3%

DISCUSSION AND ANALYSIS

COUNTRY ELEVATOR OPERATIONS
[See TABLES 5A-1 through 5A-4]

The combined effects of changes in primary elevator throughput and storage capacity are reflected in the system's capacity-turnover ratio, which fell by 5.1%, to 5.6 turns in the 2023-24 crop year from 5.9 turns a year earlier. Much of this decline reflected the 4.4% decrease in primary elevator throughput, which as noted earlier, fell to 47.2 million tonnes from the previous year's 49.4 million tonnes. A 220,600-tonne reduction in the primary-elevator system's storage capacity, after having risen steadily for several years, helped soften the decline in the turnover ratio.

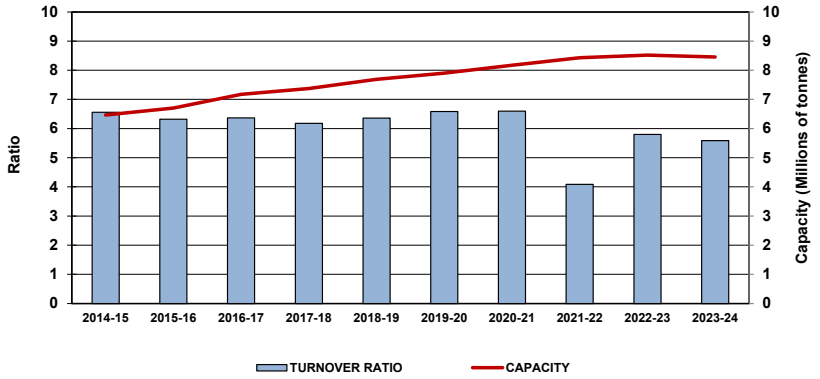
Elevator Inventories

In assessing the operational efficiency of the primary elevator system, the GMP also considers the amount of grain maintained in inventory. Beyond measuring stock levels alone, this examination also considers the amount of time grain spent in inventory, along with its ability to satisfy immediate market needs.

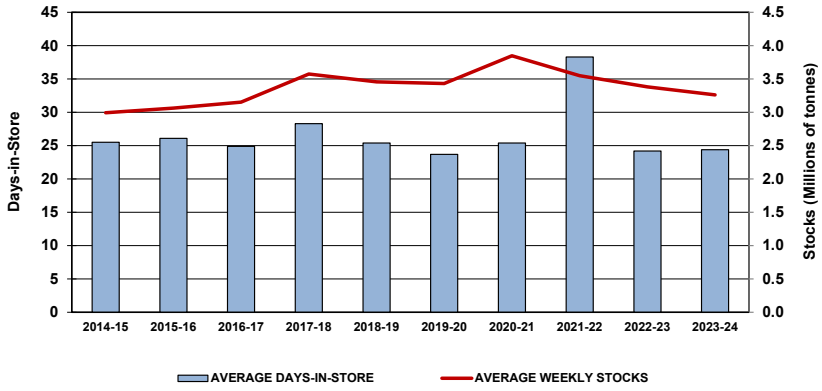
Notwithstanding periodic fluctuations, approximately half of the GHTS's primary elevator storage capacity is employed in maintaining its operational grain inventories. From the outset of the GMP primary elevator stocks seldom rose above the 3.0-million-tonne mark. It was not until the 2013-14 crop year that an allied expansion in storage capacity allowed primary elevator stocks to consistently rise above this threshold, facilitating the handling of ever larger harvests without congesting the system.

The 2023-24 crop year saw average primary elevator inventories of just under 3.3 million tonnes reach above the 3.0-million-tonne mark for an eleventh consecutive year, although this was down 3.6% from the previous crop year's 3.4-million-tonne average. These inventories effectively claimed 39.0% of the system's storage capacity, which had slipped to nearly 8.4 million tonnes by the close of the crop year.

Primary Elevator Capacity Turnover Ratio



Primary Elevator Inventories



Days in Store

While stock levels have progressively risen, the amount of time spent by grain in inventory has declined. From a benchmark 41.7 days in the GMP's base year, the average has moved gradually lower, breaking through the 30-day mark about a decade later. Further reductions brought the average closer to 25 days. This decline simply reflected the faster pace at which grain was flowing through elevators to maintain fluidity. These needs eased significantly in the wake of the 2021-22 crop year's drought but returned with the 2022-23 crop year's larger harvest. As a result, grain began moving through the GHTS at a comparable pre-drought rate. The 2023-24 crop year saw little change in this, with the average days-in-store rising by a marginal 0.8%, to 24.4 days from 24.2 days.

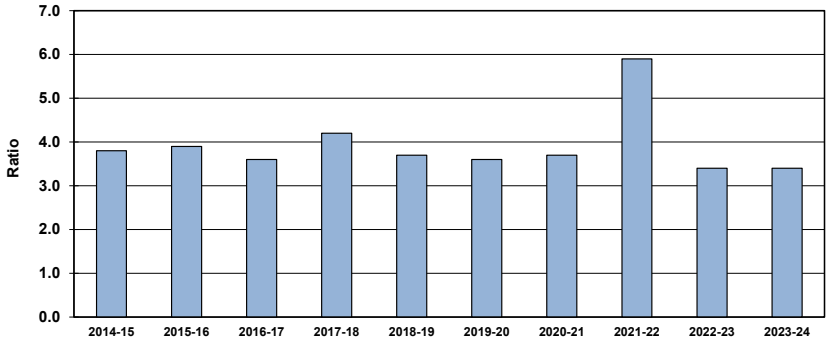
Stock-to-Shipment Ratios

The adequacy of country elevator inventories can be broadly gauged by comparing their level at the end of any given shipping week, with the truck and railway shipments that follow in the next seven days. Over a decade ago, the average stock-to-shipment ratio typically hovered around a value of 4.5. In more recent years, however, the average ratio has repeatedly fallen below 4.0, suggesting that tighter inventories were being maintained in relation to the amount of grain needed for shipment in the coming week. Although this was largely reversed in the 2021-22 crop year owing to reduced throughput and slower rail service, tighter inventories returned alongside the following year's more plentiful harvest. This continued to be the norm in the 2023-24 crop year, with the average stock-to-shipment ratio of 3.4 remaining unchanged.

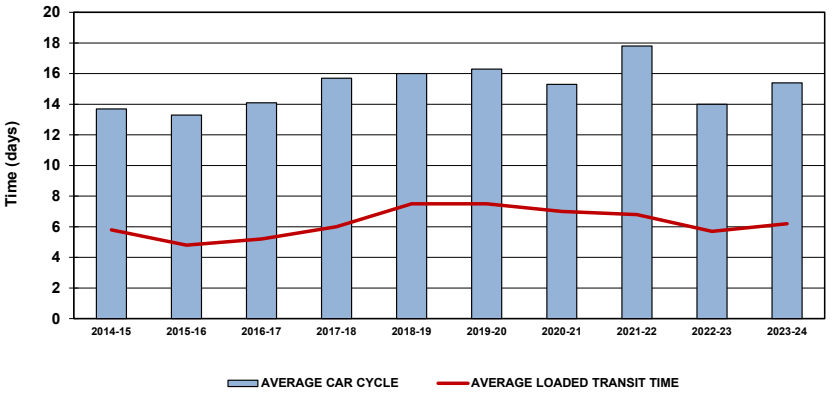
RAILWAY OPERATIONS
[See TABLES 5B-1 through 5B-15]

The average amount of time taken by the railways in delivering a load of grain to its destination and then returning the empty railcar back to the prairies for reloading is embodied in the average car cycle. Since expansion of the GMP's measures in the 2014-15 crop year, car-cycle data are gathered on movements to Western Canada, Eastern Canada, and the United States.

Primary Elevators - Stock-to-Shipment Ratio



Railway Car Cycles and Loaded Transit Times
(Western Canada)



Hopper-Car Movements to Western Canada
[See Tables 5B-1 through 5B-4]

During the 2022-23 crop year the car cycle for shipments terminating within Western Canada averaged 15.4 days, a 10.1% increase over the 14.0-day average recorded a year earlier. The increase was driven by sharply higher values in both westbound corridors, with the critical Vancouver average car cycle climbing by 11.2%, to 15.9 days from 14.3 days a year earlier. This was bolstered by a 19.7% increase in the Prince-Rupert average, which rose to 15.6 days from 13.1 days. A more modest increase of 1.5% was noted in the Thunder Bay corridor, where the average rose to 13.4 days from 13.2 days.

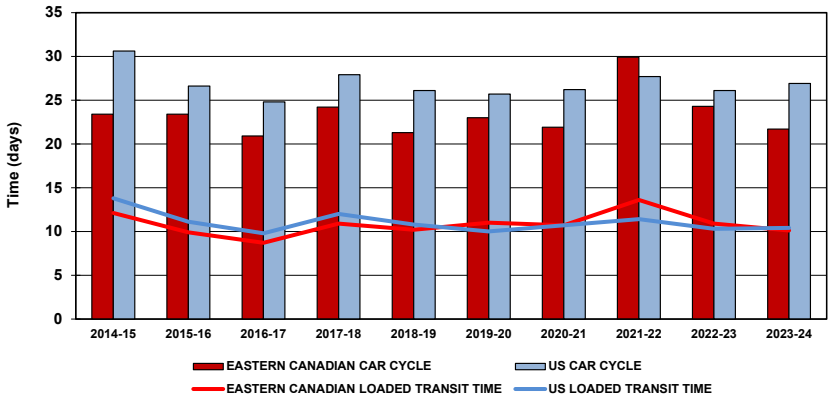
Owing to the heavy weighting of non-special crops in the overall traffic mix, the car cycle for these commodities showed an analogous increase, with the average climbing 10.3%, to 15.1 days from 13.7 days a year earlier. The car cycle tied to special crops showed a similar worsening, rising by 9.3% to an average of 19.2 days from 17.5 days. The higher average for special crops still appears linked to the handling traits of these shipments, which tend to move in smaller numbers in merchandise-train service rather than in the unit-train lots more typical of non-special crops.

Loaded Transit Time

A key component in the railways' average car cycle is its average loaded-transit time. This measure focuses on the amount of time taken in moving grain from a country elevator to a port terminal for unloading. Changes in the average loaded-transit time tend to move in tandem with the overall car cycle. Such was again the case in the 2023-24 crop year given a 9.6% increase in the average loaded-transit time, which rose to 6.2 days from 5.7 days a year earlier. Even with this worsening, the average remained almost 20% below the recent high of 7.5 days reached five years earlier.

The irregularity in the underlying distribution, as gauged by the coefficient of variation, proved little different in the 2023-24 crop year, declining modestly to 34.5% from 35.1% a year earlier. Both values are not far removed from those observed in previous years, indicating that the amount of time taken in moving a loaded hopper car to a port in Western Canada remains inconsistent and somewhat unpredictable.

Railway Car Cycles and Loaded Transit Times
(Eastern Canada and the United States)



Hopper-Car Movements to Eastern Canada and the United States
[See Tables 5B-5 through 5B-12]

Parallel performance measures for grain shipments into Eastern Canada and the United States were added to GMP reporting in the 2014-15 crop year. Owing to the greater distances involved in reaching these markets, these data show noticeably higher averages than observed for Western Canadian destinations. In the case of movements into Eastern Canada, the car cycle decreased 10.7% in the 2023-24 crop year, with the average falling to 21.7 days from 24.3 days a year earlier. This improvement stood in contrast to the 3.1% increase observed on movements into the United States, where the average car cycle rose to 26.9 days from 26.1 days. Despite these variances, it is worth noting that the average car cycle into Eastern Canada still tends to fall below that of movements into the United States.

In equal measure, the average loaded-transit time associated with movements into Eastern Canada and the United States are substantially higher than those to Western Canadian destinations. In the case of the former, this amounted to an average of 10.1 days, which represented a decrease of 7.5% from the 10.9 days reported a year earlier. Movements

into the United States saw a marginal increase of 0.3%, with the average rising to 10.4 days from 10.3 days. Interestingly, the average tied to movements into Eastern Canada reached marginally below that for movements into the United States. Similarly, the underlying distributions proved less irregular, with the coefficient of variation on movements into Eastern Canada standing at 24.6% against 42.6% for those into the United States.

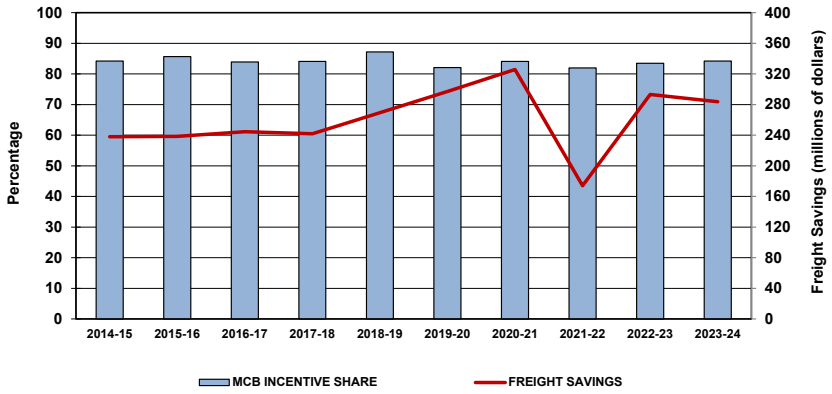
Multiple Car Blocks
[See Tables 5B-13 through 5B-14]

The amount of railway traffic moving in multiple car blocks has increased substantially since the beginning of the GMP. In fact, since the 2013-14 crop year, at least 80% of the regulated grain moving to the four ports in Western Canada has earned an incentive discount, against only half in the GMP's base year. However, the structure of these discounts has been changing, with ever greater emphasis being placed on larger block movements.

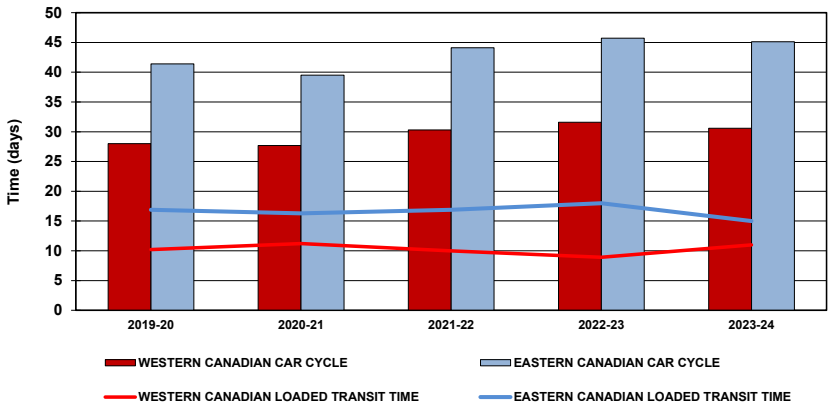
In effect, CN and CPKC now only offer an $8.00-per-tonne freight discount on trainload shipments of 100 or more cars (112 or more cars in the case of CPKC). A further $2.50-per-tonne discount can also be earned if such shipments meet certain high-efficiency train conditions, typically associated with loop-track originations. These requirements effectively preclude less-than-trainload shippers from receiving any discounts on what had previously been qualifying smaller car-block movements. The proportion of grain shipped in these qualifying multiple-car blocks continues to reach above 80%, with 84.2% having done so in the 2023-24 crop year, up from 83.5% a year earlier.

The monetary value of the discounts earned by these qualifying grain shipments – estimated as gross savings in railway freight charges – has consequently risen over the span of the GMP.[21] Owing to the 2023-24 crop year's smaller grain supply, these savings fell by an estimated 3.3%, to $283.7 million from $293.3 million a year earlier.

MCB Movements and Freight Savings
(Western Canada)



Tank Car Cycles and Loaded Transit Times
(Western Canada and Eastern Canada)



21 Data supplied by CN and CP does not allow for the identification of grain movements earning the maximum $10.50-per-tonne discounts made available on qualifying trainload shipments. As a result, the gross savings in railway freight charges estimated here are based on a nominal $8.00-per-tonne minimum, effectively understating the actual value of these discounts.

Tank-Car Movements
[See Tables 5B-16 through 5B-17]

As outlined earlier, the GMP was expanded to include measures relating to the movement of canola-oil from origins in Western Canada. This expansion also extended to the calculation of average car-cycles and loaded-transit times on domestic movements. During the 2023-24 crop year the car cycle for shipments terminating within Western Canada averaged 30.6 days, down 3.1% from the 31.6-day average recorded a year earlier. Movements to Eastern Canada showed a significantly longer car cycle, with the average reaching 45.1 days, 1.2% less than the 45.7-day average noted a year earlier.

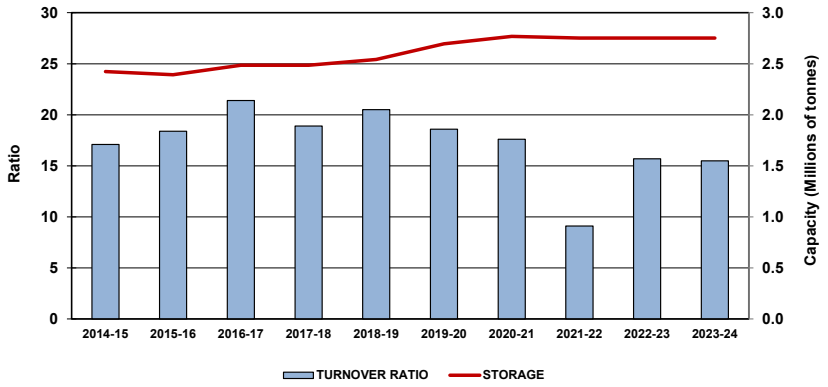
The movements' average loaded-transit time focuses on how long it takes to physically transport canola oil from a prairie crushing facility to a terminal for unloading. As with the movement of covered hopper cars, changes in the average loaded-transit time of tank cars tends to mimic that of the overall car-cycle. However, the 2023-24 crop year proved more dissimilar. The average loaded-transit time for movements terminating in Western Canada rose by 23.1%, to 11.0 days from 8.9 days a year earlier. Conversely, the average on movements into Eastern Canada declined by 16.2%, to 15.0 days from 18.0 days a year earlier.

TERMINAL ELEVATOR OPERATIONS
[See TABLES 5C-1 through 5C-5]

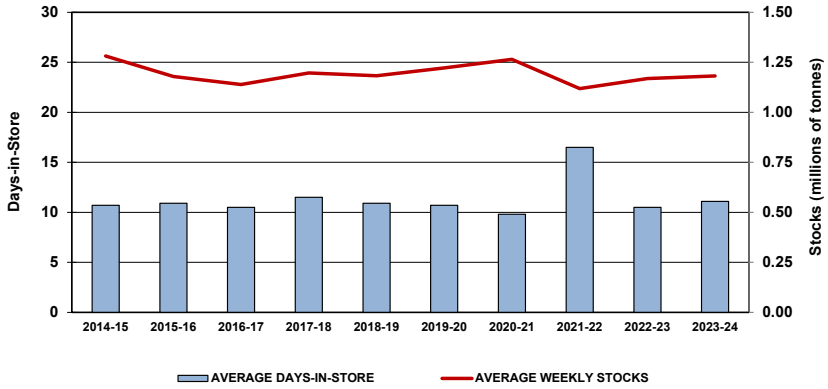
A key indicator of terminal activity is the system's capacity-turnover ratio, which gauges terminal-elevator throughput against storage capacity. The 2023-24 crop year saw this measure fall by 1.3%, to an average of 15.5 turns from 15.7 turns a year earlier.[22] This decrease reflected the 4.6% decline in terminal-elevator throughput noted earlier. Even so, this overall turnover ratio stands well above the 9.1 first recorded in the GMP's base year.

It is worth noting that the expansion in terminal storage capacity witnessed over the past decade has done much to lessen the overall turnover ratio, which has steadily declined from a record 21.4 turns in the 2016-17 crop

Terminal Elevator Capacity Turnover Ratio



Terminal Elevator Inventories



22 Changes in the turnover ratio are often amplified because, as a simple composite value, it is sensitive to any significant swing in the tonnage handled through, or the storage capacity of, individual facilities. The turnover values tied to some of the smaller terminals at the ports of Vancouver and Thunder Bay can be especially distortionary.

year. Likewise, its decline in the face of normalized volumes strongly suggests that terminal-handling capacity has risen, and that the GHTS's newer, and most recently modernized facilities are poised to handle still more traffic. The West-Coast gateways of Vancouver and Prince Rupert, which have made the most significant capital investments in capacity expansion, appear to have the largest upside potential, as signaled by individual turnover ratios that have declined by roughly 40% during this same period.

Terminal Elevator Inventories

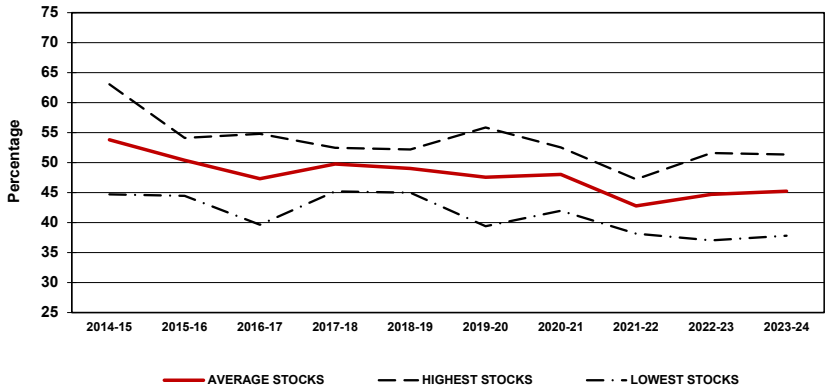
Despite recent changes to the physical makeup of the GHTS's terminal elevator system, grain inventories have not varied substantially since the beginning of the GMP. In fact, average weekly stock levels have tended to fluctuate in a band between 1.0 million tonnes and 1.5 million tonnes. This was again the case in the 2023-24 crop year, with the average weekly stock level increasing by just 1.1%, effectively remaining unchanged at 1.2 million tonnes.

Although terminal stocks are typically maintained at about half of the system's licensed storage capacity, they fluctuate from week to week, rising and falling in conjunction with the workings of the supply chain itself. This means that stocks normally occupy anywhere from 40% to 60% of the licensed storage capacity at any given time. A utilization rate that exceeds these bounds, such as was the case in the 2013-14 crop year, typically denotes a major exception in the orderly flow of grain through the GHTS. Although weekly terminal stocks varied throughout the 2023-24 crop year, they represented an average of 45.2% of the system's stated storage capacity, up from the previous crop year's 44.7% average. However, with quarterly utilization rates ranging from a low of 37.8% to a high of 51.3%, the inbound flow of grain remained comparatively tight.

Days in Store

With a modest decline in terminal throughput, the pressure on maintaining adequate terminal stocks remained largely unchanged. Average stocks, however, rose to 3.1% of the system's annual throughput, up from 2.9% a year earlier. This implies that the need for a consistent flow of the right grain, to the right terminal, at the right time continued unaltered.

Terminal Elevator Capacity Utilization



Stock adequacy is also reflected in the amount of time grain spends in terminal inventory, which has effectively been cut by roughly 40% over the course of the GMP. Although the 2023-24 crop year's average of 11.1 days increased 5.7% from the previous crop year's 10.5-day average, it was not far removed from recent norms. Much of the increase was shaped by the additional time grain spent in storage at Vancouver, which rose by 4.7%, to an average of 9.0 days from 8.6 days a year earlier. This was supported by a more substantive increase in the average for Prince Rupert, which jumped 23.5%, to 10.0 days from 8.1 days. Conversely, Thunder Bay posted a marginal decline of 0.6%, with its average trimmed to 16.2 days from 16.3 days.

However, these annual averages disguise some of the more significant monthly swings, among them: Vancouver's decrease from an average of 14.5 days in August 2023 to a low of 6.2 days in October. Such declines underscore the faster pace at which grain passes through the GHTS at harvest time.

Stock-to-Shipment Ratios

The pressures brought to bear on terminal inventories are also reflected in grain-specific stock-to-shipment ratios. Although most commodities showed averages that stood comfortably above 1.0, many – particularly those tied to wheat and durum shipments through Vancouver – moved lower. Moreover, almost all had minimums that fell substantially below this threshold. These minimum ratios show that almost every grain was in short supply at various points during the crop year, which indicates that there were problems in getting the right grain in terminal position when needed.

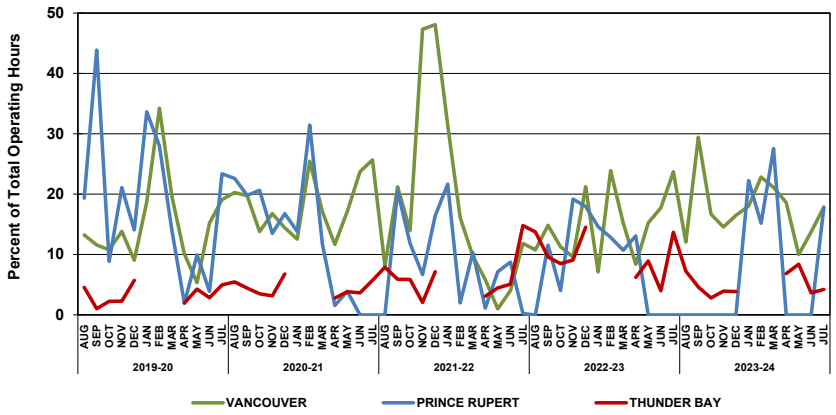
This is consistent with long-standing indications that inbound rail deliveries are often out of sequence, which leads to erratic grain stocking and interruptions in vessel loading. Non-sequential railcar deliveries can be highly disruptive to the efficient flow of grain through a terminal. Oftentimes, vessel loading schedules must be juggled to deal with the grain on hand. This commonly requires the exporter to contend with the additional costs incurred, be it from the need for multiple berthings or vessel demurrage.

Port Terminal Out-of-Car Time

A related measure, out-of-car time, gauges how often a port terminal had no railcars to unload while staffed, operating, and awaiting their expected arrival. The proportion suggests how consistently grain flowed through the terminal system during the period specified. This measure offers some insight into how the pace of inbound rail deliveries matches with the terminals' handling capacity, and whether a slowdown in the flow of traffic has generated any undue idle activity. These statistics tend to show a degree of seasonality, with out-of-car time often peaking in the winter months, typically the most difficult operational period of the crop year. Taken collectively, terminal elevators were left without grain to unload 14.3% of the time in the 2023-24 crop year, up from 13.3% the previous year.

With its greater operating hours, Vancouver's out-of-car time is most indicative of the system's overall efficiency. Proportionately, 17.3% of the port's total terminal operating hours were idled during the 2023-24 crop

Terminal Elevator Out-of-Car Time



year, up from the 14.6% recorded in the previous year. However, the underlying monthly values showed greater variability, ranging from a low of 10.0% to a high of 29.4%, with sharp swings among terminals on both the north and south shores. Much the same can be said of Prince Rupert, which reported equally erratic out-of-car times in past crop years. Despite this, the port saw its idle-time proportion fall to 7.4% in the 2023-24 crop year, down from 8.9% a year earlier. These gyrations continue to suggest that terminal efficiency is highly dependent on the provision of reliable, and consistent railway service.

Unlike Vancouver and Prince Rupert, Thunder Bay typically shows a lower proportion of its total working hours being idled by a lack of railcars to unload. This was again the case in the 2023-24 crop year, where its out-of-car time proportion dropped to 5.5% from 10.3% a year earlier. It should be noted, however, that while Thunder Bay has regularly posted the lowest proportion among the three principal ports in Western Canada, its monthly scores belie an equally irregular pattern. Moreover, these variations have become more pronounced in recent years.

PORT OPERATIONS
[See TABLES 5D-1 through 5D-8]

A total of 906 vessels called for grain at Western Canadian ports during the 2023-24 crop year. This represented a 1.8% decrease from the 923 ships that arrived for loading a year earlier. Over half of these ships, 504, called at Vancouver. This was followed by Thunder Bay with 340, and Prince Rupert with 62.

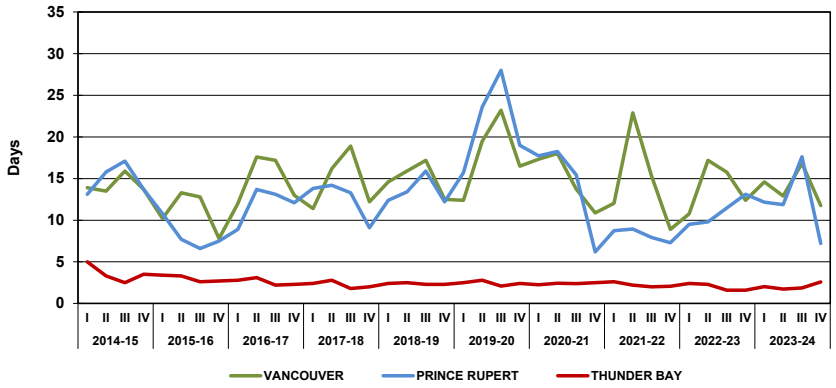
Average Vessel Time in Port

The amount of time spent by vessels in port is generally indicative of the GHTS's overall efficiency: when low, it suggests that grain is moving through the system in a timely and uniform manner; when high, it hints at some underlying impediment. The 2023-24 crop year saw a 3.1% decrease in this average, which fell to 9.5 days from 9.8 days a year earlier. The overall reduction was the product of a 2.5% decline in the amount of time vessels spent waiting to load, which was trimmed to an average of 5.2 days from 5.3 days a year earlier, and a 3.8% decrease in the amount of time vessels spent loading, which fell to an average of 4.3 days from 4.5 days.

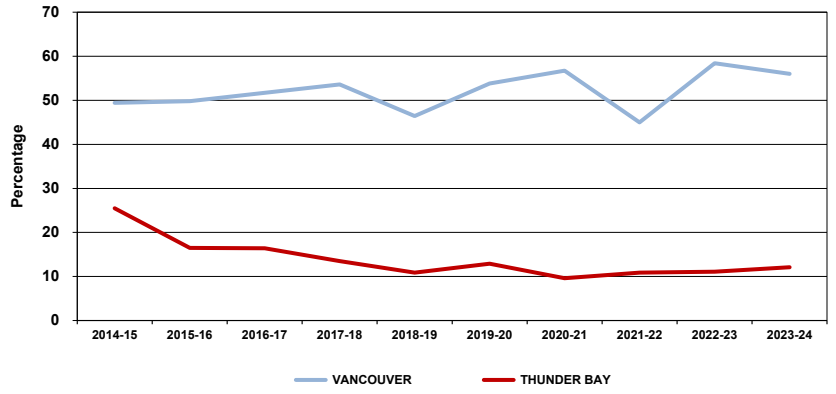
With most vessel calls, the overall decrease in time-in-port was largely shaped by a reduction at the Port of Vancouver, which declined by 2.3%, to 14.2 days from 14.5 days. Running counter to this improvement was Thunder Bay, which saw a 5.0% increase, to 2.1 days from 2.0 days. Together these two ports accounted for 93.2% of the 906 vessels that called at Western Canadian ports during the 2023-24 crop year. However, Thunder Bay's comparative 2.5-point gain in share, coupled with its comparatively lower 2.1-day average, still helped reduce the overall average time-in-port. Much the same was true for Prince Rupert, where the average increased by a 14.0%, to 12.4 days from 10.9 days, but which proved less impactful owing to a much smaller 6.8% share.

It is worth noting that the time spent by vessels in port rose progressively throughout much of the crop year's first three quarters, with the overall average reaching a height of 16.7 days in February 2024. This rise was driven by increases in the amount of time ships spent at west-coast ports, with the Vancouver average plateauing at 17.4 days in March, and the Prince Rupert average at 19.8 days in February. Thereafter, these averages

Vessel Time in Port
(Western Canada)



Multiple Vessel Berthing Rate



moved steadily lower, ultimately falling to July lows of 10.2 days and 5.7 days respectively.

The variations cited here point yet again to the critical underpinnings inherent in coordinating the inbound movement of grain by rail with its scheduled outbound movement by ship. The better synchronization of these flows leads to fewer waiting vessels, and the better use of available anchorages.[23] All of which helps to limit harbour congestion, reduce vessel demurrage costs, and strengthen supply-chain performance.

Distribution of Vessel Time in Port

Impediments to the flow of grain through the terminal network are also reflected in the number of ships spending long periods of time in port. The proportion of ships with stays of more than five days fell marginally in the 2023-24 crop year, to 53.4% from 55.9% a year earlier. Conversely, ships in port for an unusually long time increased marginally, with the proportion of vessels spending 16 or more days in port rising to 24.0% from 23.8%. These averages suggest that exports remain vulnerable to impediments in the flow of grain, whether on the inbound movement by rail or the dockside loading onto ships.

Distribution of Berths per Vessel

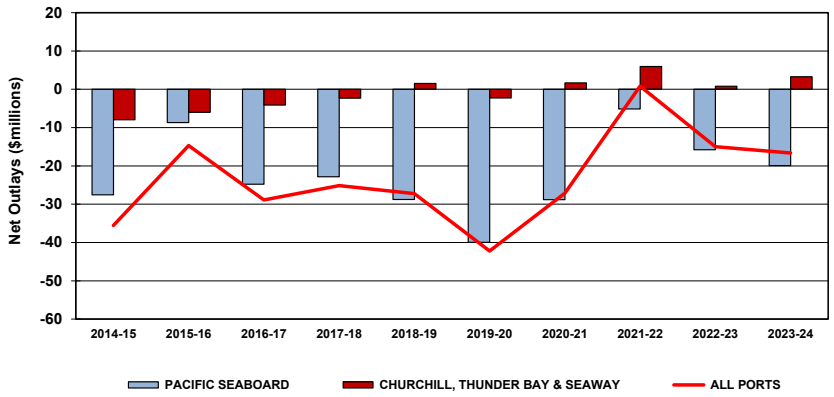
Similarly, there were noteworthy changes in the proportion of vessels needing to berth more than once during the 2023-24 crop year. At Vancouver, this proportion declined to 56.0% from 58.4% a year earlier. Thunder Bay saw a modest increase, with the proportion rising to 12.1% from 11.1%. Although the Vancouver proportion remains generally consistent with those observed in the first years of the GMP, the percentage accorded Thunder Bay has moved significantly lower.

Demurrage and Dispatch

Changes to the amount of time vessels spend in port are often reflected in the demurrage costs and dispatch earnings reported by the Western Grain Elevator Association, which provides a monetary indication of how efficiently grain flowed through Western Canadian ports.[24] Once again, these two elements dovetailed to produce a net cash outflow of about $16.6 million. This financial result was shaped chiefly by a 15.5% increase in demurrage costs, which rose to almost $36.4 million from $31.5 million the previous year. However, the financial loss was narrowed by a 19.6% increase in dispatch earnings, which rose to almost $19.8 million from $16.5 million.

These results were driven by an increase in the financial penalties incurred along the Pacific Seaboard, which produced a net cash outlay of $19.9 million against $15.8 million a year earlier. Conversely, the results from activity at Thunder Bay and points along the St. Lawrence Seaway proved less punitive, with increased demurrage costs and higher dispatch earnings leading to a net cash inflow of $3.3 million, up 306.4% from the $813,000 earned a year earlier.

Annual Demurrage and Dispatch



23 There have been instances in the last several crop years where vessels waiting to load grain in Vancouver have tied up all of the nearby anchorages, with the overflow then forced to moor further to the west along the coast of Vancouver Island.

24 Demurrage is charged when an ocean vessel remains in port for a period longer than that contracted with the shipper in the charter party agreement. Dispatch is paid when the contracted vessel loads and departs the port in less time than stated in the agreement.

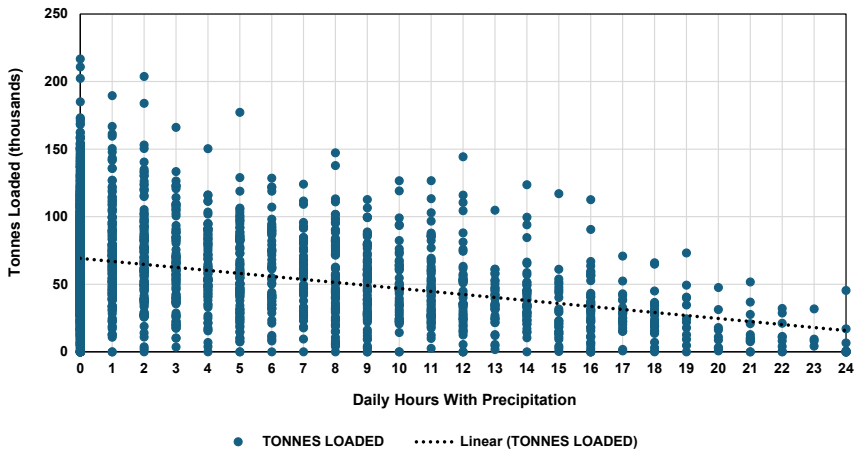
Loading Grain Vessels During Inclement Weather

To prevent spoilage, grain must be kept dry. This requirement figures into the protection given to grain as it moves through the supply chain, from off-farm deliveries into the country-elevator system though to its ultimate arrival at destination, be it in a foreign or domestic setting. All of this involves physically shielding grain from exposure to the elements.

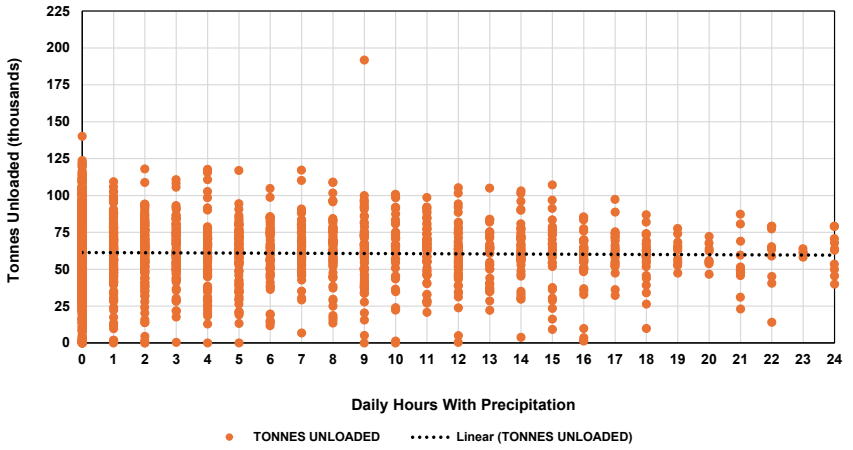
In recent years, Canada's major railways have repeatedly argued that delays arising from loading grain vessels in the rain posed a real impediment to its efficient flow, especially at the Port of Vancouver. Since 2017 there has only been one practical option available to terminal operators in loading grain during periods of inclement weather, which is to load through feeder holes.[25] While feeder holes provide an option for continuing loading operations, the process is not without its limitations. Setup and teardown procedures to ensure safe working conditions take from one to five hours, the loading rate is reduced to about 30-40% of normal, not all vessels have feeder holes, and not all terminals have loading setups conducive to reaching the feeder holes. With these limitations, operators have found that it is generally more efficient to wait until rain stops rather than mobilize for loading in the rain with feeder holes.

The 2023-24 crop year recorded some 1,440 hours of precipitation at the Vancouver Harbour Climate Station.[26] This represented slightly more than 16% of the total hours available during the crop year, and the upper limit on the amount of time terminals may have been precluded from loading vessels due to inclement weather. Even so, precipitation alone does not diminish the possible role of other factors, including major climatic events such as fires, floods, snowstorms, high winds, etc.; rail performance that results in low car-order-fulfilment rates, nonsequential train movements or greater out-of-car times; terminal operational and maintenance needs; and labour stoppages. Just as inclement weather may not occasion a reduction in vessel loading, the same must also be said of any increase attributable to fair weather conditions alone.

Tonnes Loaded onto Vessels vs Hours with Precipitation
(Daily Values - 2015 through 2022)



Tonnes Unloaded from Railcars vs Hours with Precipitation
(Daily Values - 2015 through 2022)



25 Feeder holes are built into vessel hatches and provide an access point that protects the grain from precipitation during loading.

26 Environment and Climate Change Canada Station Id 888

The GHTS is a multifaceted supply chain with numerous determinants, aside from local weather conditions, that can shape the day-to-day functionality of the Port of Vancouver. Operational problems tied to any of these elements can contribute to significant variations in vessel-loading activity, independent of actual rainfall or duration. Nevertheless, a 2023 analysis of data from the preceding eight years indicated that only 12% of the variability in tonnage loaded onto vessels could be explained by deviations in precipitation alone.[27]

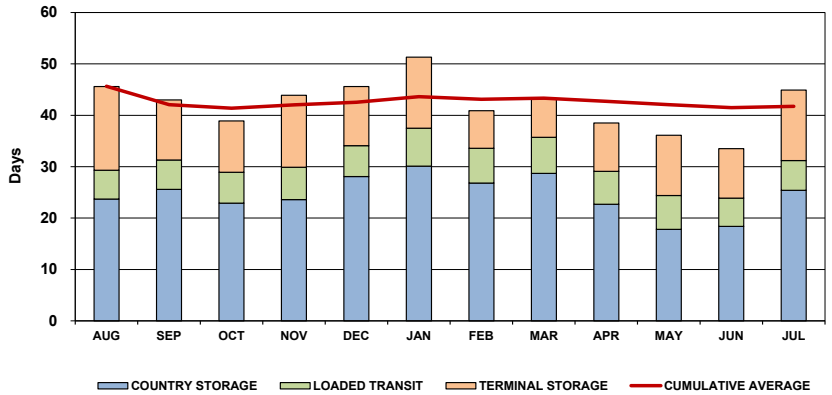
Regardless, the process of unloading railcars is not subject to the same challenges since it is an activity conducted in enclosed sheds. Thus, inclement weather does not directly affect a terminal operator's ability to unload railcars. On occasion, however, terminal congestion can lead to the delayed spotting of additional railcars, but this has been independent of vessel-loading activity. The same 2023 analysis cited above also examined the relationship between rainfall and the number of railcars unloads on the same day, or even if offset by up to three days. This analysis also concluded that there was no significant impact from precipitation on the amount of grain unloaded from railcars.

SYSTEM PERFORMANCE
[See TABLE 5E-1]

Overall GHTS performance can most readily be gauged by the amount of time taken by grain in moving through the system. For the 2023-24 crop year, it took an average of 41.7 days for grain to move from the Prairies to export positions within Western Canada, a 3.3% increase from the 40.4-day average posted a year earlier. Despite the increase, this average still ranked among the lowest recorded under the GMP, and 38.8% below the 68.1-day average first benchmarked in the base year.

The 2023-24 crop year's 1.3-day worsening stemmed from increases in all three of its constituent elements. The most significant gain came from a 0.6-day, or 5.7%, increase in terminal-elevator storage time, which rose to an average of 11.1 days from 10.5 days a year earlier. This was followed by a 0.5-day, or 9.5%, increase in the railways' loaded-transit time, which

Time in the System



rose to an average of 6.2 days from 5.7 days. Adding to both was a marginal 0.8% increase in country-elevator storage time, which rose to an average of 24.4 days from 24.2 days.

With a total grain supply of 77.0 million tonnes down only modestly from the 80.3 million tonnes reported a year earlier, it was apparent that the GHTS would be required to handle a comparable volume. From the outset, however, the amount of grain entering the country elevator system proved to be almost 50% more than what had been handled the previous August, which signaled a stronger start to the fall movement. This was followed by more consistent weekly grain deliveries throughout the remainder of the 2023-24 crop year. Ultimately, Western Canadian producers delivered an estimated 58.8 million tonnes of grain into the GHTS, 3.8% less than in the previous crop year.

The downturn in volume was reflected in a 3.5% constriction in the hopper-car fleet deployed to handle it, which declined to an average of 21,628 cars from the 22,422-car average posted a year earlier. This decline was

27 See Loading Grain in Inclement Weather: Jurisdictional Scan, Quorum Corporation, December 2023.

partially offset by an increase in the serviceable car rate, which rose to an overall average of 81.6% from the previous year's 79.4%. However, there were also indications that the railways' carrying capacity, which is largely defined by crew and locomotive availability, had also been reduced.

One of the more visible indicators in this regard is the average car-cycle, which for movements within Western Canada, rose by 10.1%, to 15.4 days from 14.0 days a year earlier. This elongation implied that the productivity gains realized by the railways in the aftermath of the 2021-22 crop year's drought were at least partially reversed.

This elongation of the overall car cycle was echoed in a lengthening of the railways' loaded-transit time, which as cited earlier, increased by 0.5 days to an average of 6.2 days for movements terminating in Western Canada. This meant that the speed with which grain was moving through the supply chain had been slowed. It is worth noting that the average car cycle and average loaded-transit time recorded in the 2023-24 crop year both fall modestly below their corresponding longer-term GMP averages of 15.7 days and 6.4 days. However, these same averages also stand well above the record lows reached roughly a decade earlier (13.0 days and 4.8 days respectively).[28]

To be sure, there are a myriad of external determinants that can shape these indicators of railway performance. The 2023-24 crop year was replete with such externalities – from labour disputes that resulted in work stoppages at the Port of Vancouver and the St. Lawrence Seaway, to yet another year of devastating wildfires in Western Canada – all of which obstructed the movement of trains across the country at different times. This was reflected in undulating monthly time-in-the system values, which reached from a low of 33.5 days to a high of 51.3 days.

A complementary metric widely used by grain shippers is order-fulfilment, which gauges how well the railways have met their specific railcar orders. During the 2023-24 crop year, this was seen to vary significantly. Moreover, it was observed to fall precipitously as winter progressed, ultimately declining to a low of just 66% in March 2024. This came despite

Days Spent Moving Through the GHTS Supply Chain

FARM OPERATIONS

COUNTRY ELEVATOR STORAGE TIME

RAILWAY LOADED TRANSIT TIME

TERMINAL ELEVATOR STORAGE TIME

MARINE OPERATIONS

				TOTAL	NET CHANGE
1999-00	41.7	7.8	18.6	68.1	
2020-21	25.4	7.0	9.8	42.2	-38.8%
2021-22	38.3	6.8	16.5	61.6	
2022-23	24.2	5.7	10.5	40.4	
2023-24	24.4	6.2	11.1	41.7	

28 Changes in these two values over the last decade can be found in the section relating to Railway Operations beginning on page 42.

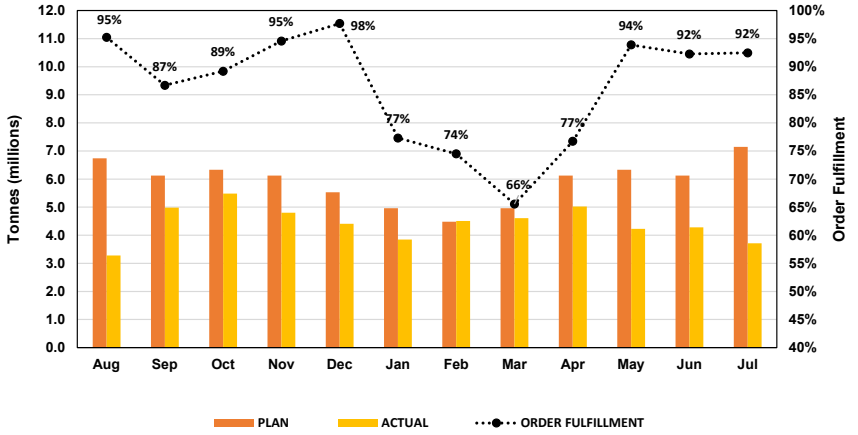
a total movement that ultimately proved to be almost 25% below the implied 71-million tonnes of carrying capacity delineated as being offered under the railways' Grain Plans.[29]

Inconsistent railway service has long been a complaint of shippers at large. Although the railways have adapted to certain commercial threats, such as that arising out of modal competition, bulk movements – including coal, sulphur, potash and grain – have seen little change in the way of its handling over the past half century. Indeed, most of the efficiency gains made in the movement of these commodities have come from the investments shippers and consignees have made in their respective loading and unloading facilities. Outside of some significant technological advancements, the railways still manage bulk shipments in much the same way they did a century earlier.

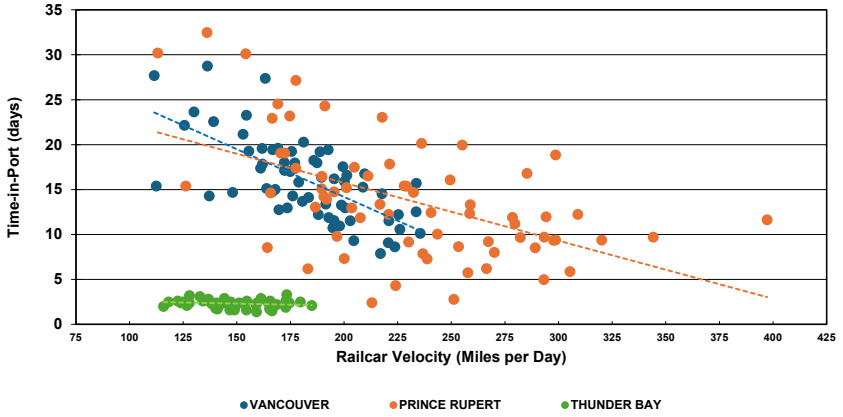
This does not mean that the railways have failed to improve their bulk-service offering. Prior mention was made of the economic and operational benefits inherent in moving the growing number of unit trains coming from new loop-track-equipped elevators. These train movements have had a perceptible impact on the railways' loaded-transit times and overall car-cycles. But they are equally vulnerable to the constraints arising from the allocation of limited resources (primarily locomotives and crews). At times, however, the railways have also shown a renewed interest in running trains more reliably and on time, along with a greater willingness to deploy the resources needed to provide better resiliency to their operations.

The philosophical underpinnings that give rise to such alternating practices are deeply ingrained within the railway industry. But the downstream effects of such inconsistent railway service are measurable. The more orderly, consistent, and reliable the railways' flow of grain into the ports, the better the ability of terminals to maintain the stocks that are needed to meet the demand of arriving vessels. Moreover, the promotion of supply-chain fluidity ultimately leads to vessels spending less time in port, and the avoidance of congestion.

Grain Plan Performance and Order Fulfillment Rate
(2023-24 Crop Year)



Correlations - Railcar Velocity vs Vessel Time-in-Port
(Average Monthly Values - 2018-19 through 2023-24 Crop Years)



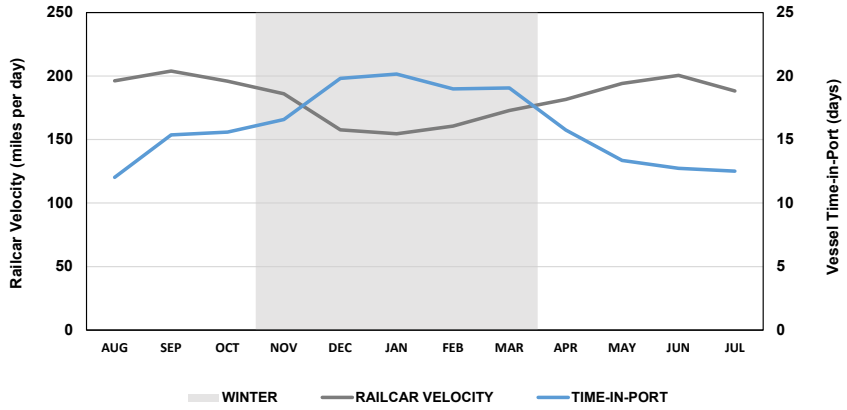
29 Order-Fulfillment rates are based on statistics drawn from AG Transport Coalition reports for the 2023-24 crop year. Tonnage measures are based on the Grain Plans submitted by CN and CPKC to the federal minister of transport in advance of the 2023-24 crop year.

As cited earlier, the railways have argued that weather-related delays in loading vessels pose more of a problem to supply-chain fluidity than uneven railway service. However, a 2023 analysis of vessel-loading data suggests that weather-related delays are quite limited, and that its impact on inbound railcar delivery and unloading is even more marginal. Moreover, an ensuing 2024 analysis again affirmed that delays to the inbound movement of loaded railcars have greater sway over the amount of time spent by vessels in port.

This latter analysis built on railcar velocity, which measures how far a railcar moves between its country origin and its destination port in a specified period. Expressed in terms of miles per day, railcar velocity normalizes for the differing lengths-of-haul within the GHTS.[30] Based on data drawn from the last six crop years, it revealed a clearly negative correlation between railcar velocity and the average amount of time spent by vessels in West Coast ports. That is to say that as railcar velocity increases, time-in-port decreases. This relationship suggests that railcar velocity has greater explanatory power over, and is a better predictor of, general port performance than inclement weather.

At Vancouver, the GHTS's busiest port, it was found that 46% of the variation in average monthly vessel time-in-port could be explained by changes in railcar velocity.[31] Owing to the simpler logistics associated with operations at Prince Rupert and Thunder Bay, however, this explanatory power was seen to fall to 30% and 4% respectively.[32] Nevertheless, the Vancouver data suggested that for every 10-mile-per-day increase in average railcar velocity, a vessel's average time-in-port could be expected to decline by slightly over one day. The data also revealed the seasonal nature of this variability, with reduced railcar velocity resulting in longer vessel time-in-port during the winter months. This feature spotlights the irregular character of grain flowing through the supply chain, which must contend with the periodic rise and fall in railway carrying capacity.

Seasonal Variability - Vancouver
(2018-19 through 2023-24 Crop Years)



Of course, none of these general observations constitute hard-and-fast rules since 54% of the variability in a vessel's average time-in-port comes from other factors. Such was the case in the 2023-24 crop year, where despite a near 10%, reduction in average railcar velocity in the Vancouver corridor, the monthly average for vessel time-in-port declined by 2.3%.

30 Car velocity effectively converts the time (expressed in days) used in typical car-cycle metrics into a distance traveled per day. It is calculated by dividing the miles a loaded railcar traveled by its total time in transit. Specifically, this includes the time tied to three segments of the car cycle: origin dwell, loaded transit, and destination dwell.

31 This conclusion is drawn from a linear regression of these two variables, which produced an R-Squared value of 0.4637. This statistic indicates the percentage of the variance in the dependent variable that the independent variables can explain collectively. R-Squared measures the strength of the relationship between the model and the dependent variable on a simple 0%-to-100% scale.

32 The lower value for Thunder Bay underscores the lack of variability in the data. This can be attributed to various factors. Firstly, the port's annual throughput is about a quarter of what the West Coast ports manage, providing less opportunity for fluctuation in wait times. Thunder Bay also has more storage space relative to its throughput, which allows for the maintenance of larger safety stocks and its less vulnerability to rail delays than West Coast ports. Additionally, railway capacity in the Thunder Bay corridor is less problematic than on routes to the West Coast. Lastly, vessels serving Thunder Bay are primarily focused on repositioning grain through the St. Lawrence Seaway rather than meeting immediate export sales needs, as is the case at the West Coast ports. This means that the rotation of a largely defined fleet of vessels travelling shorter distances gives less opportunity for variation in vessel wait times.

Yet, as mentioned previously, that railway carrying capacity is not regulated by a change in the seasons alone. It is largely determined by a complex mix of managerial decisions involving the allocation of limited resources – including locomotives, rolling stock and personnel – operating over a far-reaching physical network to transport all the traffic offered for movement.

The *Canada Transportation Act* builds on the premise that market forces should govern the commercial relationship between shippers and railways. But it also requires the railways to furnish shippers with the "adequate and suitable accommodation" for the receiving, carrying and delivering of shippers' traffic. It has been the willingness of the railways to devote the resources needed to fulfill this service obligation that have repeatedly been called into question by shippers.

The Final Report of The National Supply Chain Task Force, released in October 2022, also called for urgent action in creating supply chains that are more resilient and efficient. The report noted that this went beyond the practicalities of merely identifying pinch points and investing in the physical infrastructure needed to safeguard the operation of crucial corridors and gateways; but to adapt transportation supply chains that function in the public interest. These objectives were lauded by grain shippers at large, who continue to be concerned with the railway industry's willingness to deploy the resources required to provide for improved service.

Section 6: Producer Impact

Indicator Description	Table	1999-00	2021-22	2022-23	2023-24 Q1	Q2	Q3	Q4	YTD	% VAR
Export Basis										
1CWRS Wheat ($ per tonne) – Original Methodology	6A-10A	$54.58	n/a	n/a						
1CWRS Wheat ($ per tonne) – Revised Methodology (1)	6A-10A	n/a	$97.19	$78.89					$102.83	30.3%
1CWA Durum ($ per tonne) – Original Methodology	6A-10B	$67.63	n/a	n/a						
1CWA Durum ($ per tonne) – Revised Methodology (1)	6A-10B	n/a	$161.87	$120.61					$170.33	41.2%
1 Canada Canola ($ per tonne)	6A-10C	$52.51	$68.45	$61.71					$62.16	0.7%
Canadian Large Yellow Peas – No. 2 or Better ($ per tonne)	6A-10D	$54.76	$82.64	$69.57					$26.65	-61.7%
Producer Cars										
Producer-Car-Loading Sites (number) – Class 1 Carriers	6B-1	416	142	142	142	141	141	141	141	-0.7%
Producer-Car-Loading Sites (number) – Class 2 and 3 Carriers	6B-1	122	130	130	130	130	130	130	130	0.0%
Producer-Car-Loading Sites (number) – All Carriers	6B-1	538	272	272	272	271	271	271	271	-0.4%
Producer-Cars Scheduled (number) – Covered Hopper Cars	6B-2	3,441	1,113	1,954	421	512	452	319	1,734	-11.3%

(1) The methodology used to calculate the export basis in the 2012-13 through 2023-24 crop years does not allow for direct comparison with those of previous crop years.

DISCUSSION AND ANALYSIS

CALCULATION OF THE EXPORT BASIS

One of the GMP's principal objectives involves gauging the logistics cost associated with moving prairie grain to market – commonly referred to as the "export basis" – along with the resultant "netback" earned by producers after subtracting these costs from a grain's sale price. Both the export basis and the producer netback are location-specific calculations that include provisions for the elevation, cleaning, storage and transportation costs tied to the handling of grain.

There are well over 1,000 distinct origin-destination pairs that arise from tying together the hundreds of grain-delivery points scattered across the prairies with the four principal export gateways in Western Canada. Moreover, given the number of differing grains, grain grades, grain company service charges, and freight rates, the permutations inherent in calculating the export basis and netback of individual producers takes on extraordinary dimensions.

The only practical means of addressing these calculations rests in standardizing the estimates around a representative sample of grains, and grain stations. As a result, the GMP consciously limits its estimations to four specific grains: wheat; durum; canola; and peas.[33] The export basis and producer netback for each commodity is then calculated for each of the 43 grain stations in the sample. These location-specific calculations are then clustered to portray the averages for nine geographic areas, comprised of four to six grain stations each, namely: Manitoba East; Manitoba West; Saskatchewan Northeast; Saskatchewan Northwest; Saskatchewan Southeast; Saskatchewan Southwest; Alberta North; Alberta South; and Peace River.

Components of the Calculation

It is important to remember that every individual producer's cost structure differs. As a result, no general calculation can be expected to precisely depict the export basis and netback that is specific to each farmer. The methodology employed here is intended to typify the general case within each of the nine geographic areas identified. Caution, therefore, must be exercised in any comparison between the general values presented, and those arising to individual producers within each of these areas. The specific assumptions employed in these determinations are delineated in the table that follows. The reader is encouraged to consider these before drawing any specific conclusions from the calculations presented.

33 In addition to the grains themselves, the GMP also specified the grades to be used, namely: 1 CWRS Wheat; 1 CWA Durum; 1 Canada Canola; and Canadian Large Yellow Peas (No. 2 or Better).

ELEMENT	WHEAT AND DURUM	CANOLA AND YELLOW PEAS
Grain Price	The price for 1 Canada Western Red Spring Wheat and 1 Canada Western Amber Durum are tonnage-based weighted averages of the West Coast export quotation from Canadian Grain Exporters and the St. Lawrence export quotation from the International Grains Council (ICG), as reported by AAFC.	As of the 2015-16 crop year, the price for 1 Canada Canola is represented by the Track Vancouver Cash price (as reported by AAFC). For all previous crop years, the price for 1 Canada Canola was the weighted average Vancouver cash price provided by ICE Futures Canada. The weights used reflect monthly exports as recorded by the Canadian Grain Commission (CGC). The price for Canadian Large Yellow Peas is based on the average weekly dealer closing price, track Vancouver, reported by Stat Publishing for the months of October and November.[1]
Trucking Costs	The trucking costs are based on the commercial short-haul trucking rates for an average haul of 40 miles as presented in Table 4A-1. Although current data is unavailable, the last published value is still employed for the purpose of continuity.	The trucking costs are based on the commercial short-haul trucking rates for an average haul of 40 miles as presented in Table 4A-1. Although current data is unavailable, the last published value is still employed for the purpose of continuity.
Price Differential	A price differential – or spread – is used to estimate certain costs for 1 Canada Western Red Spring Wheat and 1 Canada Western Amber Durum. For the 2012-13 through 2014-15 crop years this spread was based on the difference between the weighted average of the West Coast and St. Lawrence export quotations and the average Saskatchewan producer spot price (both reported by AAFC). However, the average Saskatchewan producer spot price encompassed all grades and, therefore, provided an imperfect comparison to the export quotations. As of the 2015-16 crop year the latter element in this comparison was altered, with it now being made against an average of the daily bid prices within each region as reported by PDQ.[2] Readers should consider this when attempting to draw conclusions from the data.	A price differential – or spread – is used to estimate certain costs for 1 Canada Canola. Prior to the 2015-16 crop year this spread was based on the difference between the weighted Vancouver cash price and the weighted average spot price in each of the nine regions as reported by ICE Futures Canada. For 2015-16 to 2019-20 crop years this was replaced by a differential based on the Track Vancouver Cash Price (as reported by AAFC) and the average of the daily bid prices within each region reported by PDQ.[2] As of 2020-21, the spread is the differential between the Par Region Cash Price and the Track Vancouver Cash Price (as reported by AAFC). For yellow peas, a price differential is calculated using the average weekly dealer closing price, track Vancouver, and the average weekly grower bid closing price for the months of October and November. These differentials effectively represent the incorporated per-tonne cost of freight, elevation, storage and any other ancillary elements. As such, it encompasses a large portion of the Export Basis.
Grower Association Deductions	Elevator deliveries of wheat and durum are subject to various per-tonne "check-offs" in order to fund variety research, market development and technical support to the industry. The check-offs are administered by the appropriate provincial wheat commission.	Elevator deliveries of canola and peas are subject to various per-tonne "check-offs" in order to fund variety research, market development and technical support to the industry. The check-offs are administered by the appropriate provincial canola and pulse-grower association.
Trucking Premiums	Grain companies report on the trucking premiums they pay to producers at each of the facilities identified in the sampling methodology.[3] The amounts depicted reflect the average per-tonne value of all premiums paid for the designated grade of wheat or durum within the reporting area. In the post-monopoly environment, grain companies have increased the use of their basis (the spread between their cash and the nearby futures price) as the mechanism to attract producer deliveries. This has been accompanied by a significant decline in the use of trucking premiums. As of the 2023-24 crop year, competitive premiums have fallen to a level such that they are no longer commercially significant or statistically valid and are no longer included in the netback calculation.	Grain companies report on the trucking premiums they pay to producers at each of the facilities identified in the sampling methodology.[3] The amounts depicted reflect the average per-tonne value of all premiums paid for the designated grade of canola or yellow peas within the reporting area. Grain companies primarily use their basis (the spread between their cash and the nearby futures price) as the mechanism to attract producer deliveries. This practice results in relatively little use of trucking premiums. As of the 2023-24 crop year, competitive premiums have fallen to a level such that they are no longer commercially significant or statistically valid and are no longer included in the netback calculation.
Other Deductions	Other deductions, such as drying charges, GST on services, etc., may also be applied to, and appear as an itemized entry on the cash ticket of, any grain delivery. No attempt is made to capture these deductions within the framework employed here.	Other deductions, such as drying charges, GST on services, etc., may also be applied to, and appear as an itemized entry on the cash ticket of, any grain delivery. No attempt is made to capture these deductions within the framework employed here.

1) – Data provided by Stat Publishing. Using a "snapshot" period of two months during the fall, when pricing of the new crop is relatively heavy, was deemed to be an appropriate representation of producer prices, thereby avoiding the need to incorporate a weighting factor.
2) – PDQ (Price, Data, Quotes) is a web-based information service operated by the Alberta Wheat Commission which publishes cash grain market price and related statistical data (www.pdqinfo.ca).
3) – Various terms are used by grain companies to describe the premiums they offer to producers in an effort to attract deliveries to their facilities – i.e., trucking premiums, marketing premiums, and location premiums. The most common term, however, remains "trucking premium," and it is utilized generically in the calculation of the Export Basis.

WHEAT AND DURUM
[See TABLES 6A-1A through 6A-10B]

In its earlier reports, the Monitor described how higher prices have generally been responsible for any improvement in the per-tonne returns accruing to producers of wheat and durum. In comparison, reductions in the export basis have proven to be secondary. Whether it be price or the export basis, their periodic rise and fall have been the prime determinants in the financial returns for producers.

The 2023-24 crop year brought largely lower commodity prices. Much of the decline was attributable to an increase in global wheat supplies, which sent commodity prices largely lower.

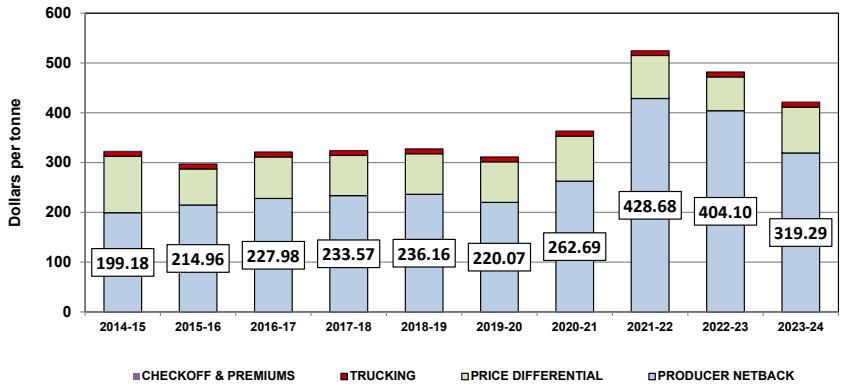
1CWRS Wheat
[See Tables 6A-1A through 6A-10A]

The financial return to farmers of 1CWRS wheat amounted to an estimated $319.29 per tonne in the 2023-24 crop year. This represented a 21.0% reduction from the $404.10 estimated a year earlier. Much of the decrease was attributable to a decline in the average price, which is constructed around a tonnage-based weighted average export quotation for 1CWRS wheat (13.5% protein), and which fell by 12.6%, to $422.12 per tonne from $482.99 per tonne a year earlier.

The decrease in the average price of wheat reflected the effects of various global forces. The most significant of these involved another large Russian harvest, which led to a flood of cheap wheat available for export. This was more than enough to counter the effects of a reduction in North American supplies. Adding to this downward pressure was continued speculation in the commodity markets, where large short-selling positions dominated.

The $60.87-per-tonne decrease in wheat prices was aggravated by a $23.94-per-tonne increase in the export basis, which rose by 30.3%, to $102.83 per tonne from $78.89 per tonne a year earlier. This increase was almost entirely attributable to a widening of the price differential – or

Producer Netback - 1CWRS Wheat



spread – between the export quotation and the elevator spot price, which rose 35.1%, to $91.98 per tonne from $68.10 per tonne a year earlier.[34] In effect, the price differential includes applicable freight, handling, cleaning, storage, weighing and inspection charges, as well as an opportunity cost or risk premium. Trucking charges and check-offs remained unchanged at $9.82 per tonne and $1.03 per tonne respectively.

1CWA Durum
[See Tables 6A-1B through 6A-10B]

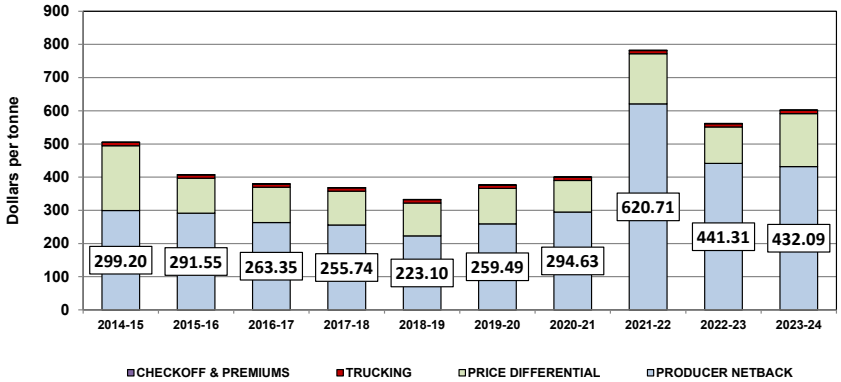
The financial return to farmers of 1CWA durum amounted to an estimated $432.09 per tonne in the 2023-24 crop year. This represented 2.1% less than the $441.31 per tonne reported in the 2022-23 crop year. The decline came despite higher durum prices, which rose to an average of $602.42 per tonne, 7.2% above the $561.92-per-tonne average recorded a year earlier.

[34] Owing to its diminished relevance, trucking premiums have been removed from the calculation of the export basis. Exclusion of this element results in a one-time escalation of the export basis for the 2023-24 crop year by as much as $0.11 per tonne depending on the commodity.

Durum prices were largely impacted by the quantity and quality of European production in 2023, which suffered due to excessive rains. This favoured higher-quality Canadian supplies despite a 30% decline in production. Owing to the broader decline, market forecasters largely predicted a multi-year low in global supplies, which pushed durum prices upward. This initial pressure was somewhat mitigated by export supplies from Turkey, following that country's large harvest. Dry conditions in early 2024 along with projections of production shortfalls in Italy and North Africa lent further support.

The full benefit of stronger prices was reduced by a 41.2% increase in the export basis, which rose to $170.33 per tonne from $120.61 per tonne a year earlier. Virtually all of this $49.72 increase was attributable to a $49.61 increase in the price differential, which rose to $159.48 per tonne from $109.87 per tonne the year before. As outlined with respect to 1CWRS wheat, the $9.82-per-tonne trucking cost did not change in the 2023-24 crop year, so did not factor into the decline of the producer netback. Nor did an unchanged check-off charge of $1.03 per tonne.

Producer Netback - 1CWA Durum



CANOLA AND YELLOW PEAS
[See TABLES 6A-1C through 6A-10D]

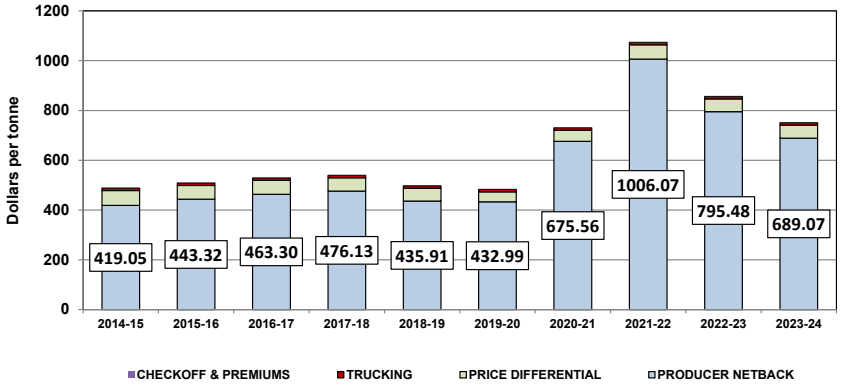
Like wheat and durum, the data used in calculating the financial return to producers of canola and large yellow peas shows that they have also been heavily influenced by the prevailing prices for these commodities. While the export basis has also risen over time, it has proven to have far less sway over these returns.

1 Canada Canola
[See Tables 6A-1C through 6A-10C]

The netback to producers of 1 Canada canola decreased by 13.4% in the 2023-24 crop year, falling to $689.07 per tonne from $795.48 per tonne a year earlier. This result was driven by significantly lower canola prices, with the average Vancouver cash price slumping 12.4%, to $751.23 per tonne from $857.19 per tonne.

While the domestic canola-crushing industry was working at a record pace, the export sales program for the 2023-24 crop year proved lackluster.

Producer Netback - 1 Canada Canola



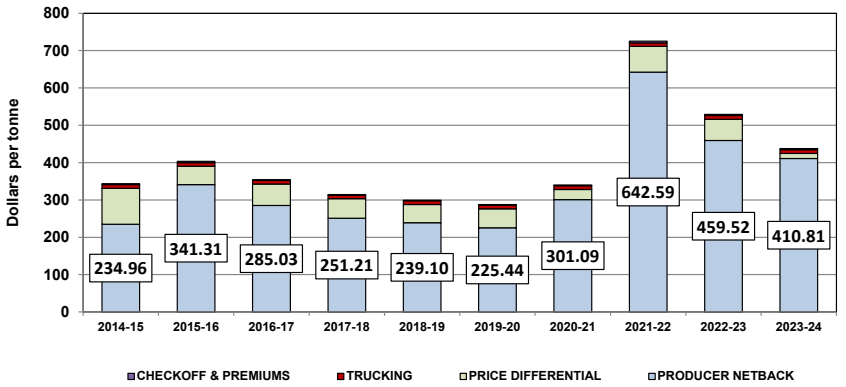
Huge soybean crops in both Brazil and Argentina, along with a large canola crop in Australia, served to weaken the overall demand for canola and weigh down prices. Canola prices fell throughout the fall of 2023 with weaker crude oil and vegetable oil prices leading the way down. A sharp increase in the importation of waste biodiesel (primarily used cooking oil and animal fat from China), as a feedstock for renewable diesel and biodiesel production in both Europe and the United States, contributed to the further decrease in canola demand and prices. So too did the American government's setting of lower-than-expected clean-fuel targets for renewable diesel made from oil (including canola oil). Adding to this downward pressure was the speculation that gave rise to substantial short selling in the futures market.

The decline was enlarged by a marginal 0.7% increase in the export basis, which rose to an average of $62.13 per tonne from $61.71 per tonne a year earlier. As observed with wheat and durum, virtually all the increase was tied to a change in the price differential, which rose to $51.42 per tonne from $51.02 per tonne a year earlier. The costs derived from trucking and the payment of a check-off did not change in the 2023-24 crop year, so did not contribute to the variance in the producer netback. These were estimated at $9.82 per tonne and $0.92 per tonne respectively.

Large Yellow Peas
[*See Tables 6A-1D through 6A-10D*]

The visible netback to producers of large yellow peas has proven the most erratic of the four commodities monitored under the GMP. Producers experienced a 10.6% decrease in these returns during the 2023-24 crop year, which fell to $410.81 per tonne from $459.52 per tonne a year earlier. Much of this decline was attributable to the effects of large Russian supplies (carry-in and harvest) coupled with a new phytosanitary agreement (trade arrangement) with China. Even in the face of a smaller crop, Canadian exports remained consistent with that of the previous crop year. This was in part due to the return of India as the primary purchaser of Canadian peas after dropping the import restrictions that dated from 2019, ultimately displacing China in the process. As a result, the dealer's closing price decreased by 17.3%, to $437.46 per tonne from $529.09 per tonne.

Producer Netback - Large Yellow Peas



The export basis for large yellow peas declined by 61.7% in the 2023-24 crop year, to $26.65 per tonne from $69.57 per tonne a year earlier. As with other commodities, much of the decrease was rooted in a lower price differential, which stands in for the cost of freight as well as other handling activities, and which fell by 75.3%, to $13.99 per tonne from $56.61 per tonne. This was supported by a $0.33-per-tonne decrease in Pulse Growers Association fees. No impact on the export basis was derived from changes in trucking costs.

PRODUCER CARS
[See TABLES 6B-1 through 6B-2]

Producer-car loading increased substantially through the first decade of the GMP. This was due in large measure to the advent of modern producer-car loading groups that invested significantly in fixed trackside storage and carloading facilities. Some even went so far as to purchase the branch lines then being abandoned by CN or CPKC to establish shortline railways that became integral elements in their broader grain-handling operations. Ultimately, their aim was to safeguard a cost-competitive alternative for producers in moving their grain to market.

Loading Sites
[See Table 6B-1]

The number of producer-car loading sites situated across Western Canada has declined significantly from the 710 first benchmarked at the beginning of the GMP. However, after having been culled by a factor of nearly 60%, the decline effectively came to an end in the 2017-18 crop year. Following six consecutive years in which the overall number of producer-car loading sites remained unchanged, the 2023-24 crop year saw a reduction of one Saskatchewan-based site, with the total falling to 271 from 272. Class 1 carriers closed out the crop year with 141 operational sites, while Class 2 and 3 carriers operated 130.

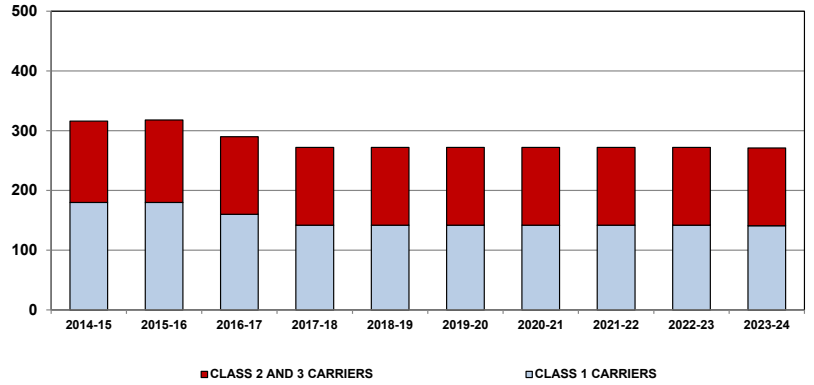
Producer-Car Shipments
[See Table 6B-2]

Scheduled producer-car shipments decreased by 11.3% in the 2023-24 crop year, to 1,734 cars from 1,954 a year earlier. The reduction marked a continuation of the broader decline witnessed since the 2013-14 crop year, and in which shipments reached a highwater mark of 15,603 cars. Much of this decline reflects the realities of today's competitive environment, where the limited financial reward of the producer-loading option is often outweighed by its broader commercial risks. Simply stated, few producers feel that it is worth the trouble. Still, what remains has largely been refocused on serving the American market for select grains, with about two-thirds of total producer-car shipments now being directed into the United States.

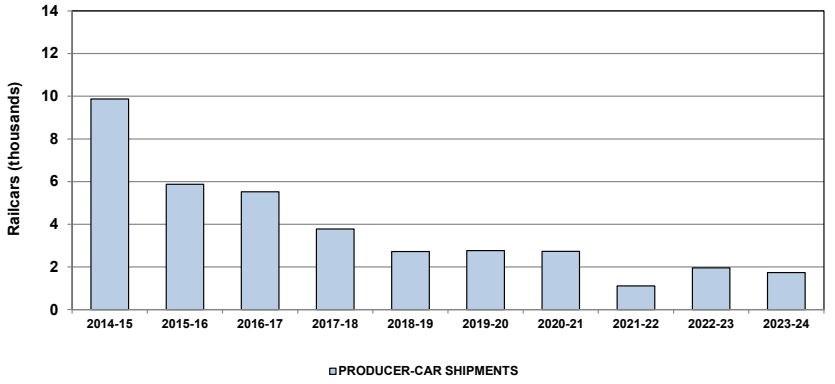
Equally noteworthy is the attendant shift in the mix of commodities handled. Until the 2009-10 crop year, wheat, durum, and barley were dominant, representing virtually all the traffic moved. But the proportion accorded to oilseeds and other commodities soon began to climb. By the close of the 2018-19 crop year the share given over to wheat, durum and barley shipments had fallen to an estimated 24.6%, while oats, oilseeds and other commodities commanded a 75.4% share.

However, the last five crop years have witnessed a modest recovery in the proportion given over to major cereal-grain shipments, with the 2023-24 crop year producing a 42.2% share, down modestly from the 45.0%

Producer-Car Loading Sites



Producer-Car Shipments



estimated a year earlier. Conversely, shipments of oilseeds, special crops and oats rose to a 57.8% share, up from the 55.0% claimed the previous year. Even so, this marked the ninth consecutive crop year in which the shipment of these latter commodities displaced those of wheat, durum, and barley.

Appendix 1: Program Background

The Government of Canada selected Quorum Corporation to serve as the Monitor of Canada's Grain Handling and Transportation System (GHTS) in June 2001. Under this mandate, Quorum Corporation provides the government with a series of regular reports relating to the system's overall performance, as well as the effects of the various policy reforms enacted by the government since 2000.

In a larger sense, these reforms were expected to alter the commercial relations that have traditionally existed between the primary participants in the GHTS: producers; the former Canadian Wheat Board; grain companies; railway companies; and port terminal operators. Using a broad series of indicators, the government's Grain Monitoring Program (GMP) was designed to measure the performance of the GHTS as this evolution unfolded. Moreover, these indicators are intended to reveal whether grain is moving through the supply chain with greater efficiency and reliability.

To this end, the GMP provides for a number of specific performance indicators grouped under six broad series, namely:

- Series 1 – Production and Supply: Measurements relating to grain production in western Canada. In addition to the major cereal grains, this also includes oilseeds and special crops.

- Series 2 – Traffic and Movement: Measurements focusing on the amount of grain moved by the western Canadian GHTS. This includes shipments from country elevators; by rail to western Canada, eastern Canada, the United States and Mexico; by vessel from terminal elevators at the four ports in western Canada; and by truck to the United States.

- Series 3 – Infrastructure: Measurements illustrating the makeup of the GHTS. These statistics include both the number and capacity of the country as well as terminal elevator systems, and the composition of the western Canadian railway network.

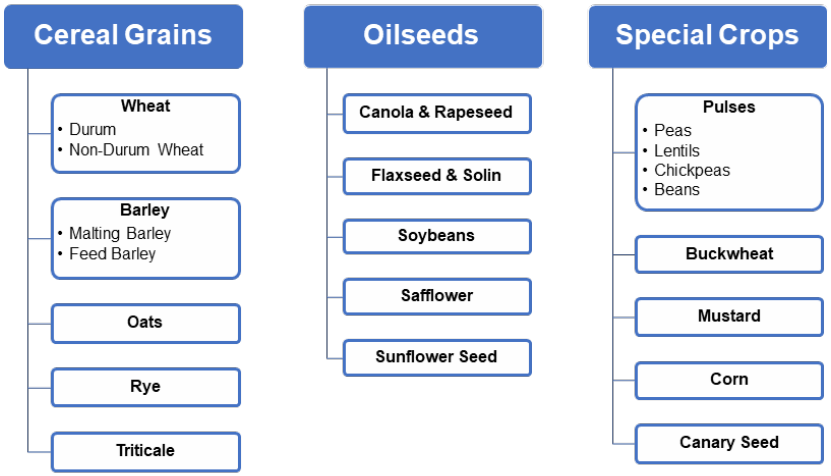
- Series 4 – Commercial Relations: Measurements relating to the rates applicable on various grain-handling and transportation services.

- Series 5 – System Efficiency and Performance: Measurements aimed at gauging the operational efficiency with which grain moves through the logistics chain.

- Series 6 – Producer Impact: Measurements designed to capture the value to producers from changes in the GHTS, and which are focused largely on the calculation of the "producers' netback."

Appendix 2: Commodity Guide

The following provides a high-level overview of the various commodities discussed in this report. The delineations made here are drawn from the Canadian Grain Commission's Official Grain Grading Guide Glossary.



Cereal Grains: Cereal grains are any grain or edible seed of the grass family which may be used as food.

Oilseeds: Oilseeds include flaxseed and solin, canola and rapeseed, soybeans, safflower and sunflower seed.

Canola: The term "canola" was trademarked in 1978 by the Western Canadian Oilseed Crushers' Association to differentiate the new superior low-erucic acid and low-glucosinolate varieties and their products from older rapeseed varieties.

Special Crops: Special crops are considered to be beans, buckwheat, chick peas, corn, fababeans, lentils, mustard, peas, safflower, soybeans, and sunflower.

Pulses: Pulses are crops grown for their edible seeds, such as peas, lentils, chick peas or beans.

Screenings: Screenings is dockage material that has been removed by cleaning from a parcel of grain.

Appendix 3: Acknowledgements

The scope of this review is far-reaching and could not have been completed without the assistance of the various stakeholders that submitted views on the detailed monitoring design and provided the data in support of the Grain Monitoring Program (GMP). Quorum Corporation would like to thank the following organizations, and more particularly the individuals within them, for the cooperation they have extended in our efforts to develop the GMP. We have come to appreciate not only their cooperation as suppliers of data under the program, but to value their assistance in helping to improve the GMP itself. We look forward to their continued input and cooperation.

Agricultural Producers Association of Saskatchewan
Agriculture and Agri-Food Canada
AGT Food and Ingredients
Alberta Agriculture and Irrigation
Alberta Federation of Agriculture
Alberta Grains
Alberta Transportation and Economic Corridors
Alliance Grain Terminal Ltd.
Archer Daniels Midland Co.
Battle River Railway
BC Chamber of Shipping
BC Maritime Employers Association
Boundary Trail Railway Company Inc.
Bunge Limited
Canada Grains Council
Canadian Canola Growers Association
Canadian Federation of Agriculture
Canadian Grain Commission
Canadian Maritime Chamber of Commerce
Canadian National Railway
Canadian Pacific Kansas City Limited
Canadian Ship Owners Association
Canadian Special Crops Association
Canadian Transportation Agency
Canadian Transportation Research Forum
Cando Contracting Ltd.
Canola Council of Canada
Cargill Limited
Cereals Canada
Ceres Global Ag Corp.
Chamber of Shipping of British Columbia
CMI Terminal Ltd.
Fibreco Export Inc.
Fraser Grain Terminal
G3 Canada Limited
Government of British Columbia
Grain Growers of Canada
GrainsConnect Canada
Great Western Railway Ltd.
Inland Terminal Association of Canada
Intercontinental Exchange / ICE
Keystone Agricultural Producers
Lake Line Railroad Inc.
Long Creek Railroad
Louis Dreyfus Canada Ltd.
Manitoba Agriculture
Manitoba Crop Alliance
Manitoba Transportation and Infrastructure
National Farmers Union
North West Terminal Ltd.
Northern Lights Rail
OmniTRAX Canada, Inc.
Parrish & Heimbecker Ltd.
Pacific Pilotage Authority
Paterson Grain
PKM Canada Marine Terminal Limited Partnership
Port of Churchill
Port of Hamilton
Port of Montreal
Port of Thunder Bay
Prairie Oat Growers Association
Prince Rupert Grain Ltd.
Prince Rupert Port Authority
Pulse Canada
Railway Association of Canada
Red Coat Road and Rail Ltd.
Richardson Pioneer Ltd.
St. Lawrence Seaway Management Corporation
Saskatchewan Agriculture
Saskatchewan Highways
Saskatchewan Association of Rural Municipalities
Saskatchewan Barley Development Commission
Saskatchewan Wheat Development Commission
South West Terminal
Statistics Canada
Stewart Southern Railway
The Scoular Company
Transport Canada
Vancouver Fraser Port Authority
Viterra Inc.
Western Barley Growers Association
Western Canadian Short Line Railway Association
Western Canadian Wheat Growers Association
Western Grain Elevator Association