Annual Report

2015-2016 Crop Year

Monitoring the Canadian Grain Handling and Transportation System

Government of Canada / Gouvernement du Canada

Quorum Corporation

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www.grainmonitor.ca

Foreword

The following report details the performance of Canada's Grain Handling and Transportation System (GHTS) for the crop year ended 31 July 2016, and focuses on the various events, issues and trends manifest in the movement of Western Canadian grain during the past year. This is the sixteenth annual report submitted by Quorum Corporation in its capacity as the Monitor appointed under the Government of Canada's Grain Monitoring Program (GMP).

As with the Monitor's previous annual reports, it is structured around a number of measurement indicators. These are grouped into six series, comprised of:

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 2015-16 crop year is largely gauged against that of the 2014-15 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 quarterly data in a time series that extends through 17 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 time series, the full series can be obtained as an .XLSX spreadsheet from the Monitor's website (www.quorumcorp.net). Similarly, much of this same data can no longer be fully presented in many of the charts found throughout this report owing to space and legibility limitations. Where necessary, the Monitor has opted to graphically portray only the last ten crop years' worth of data against its base-year values. This presents a gap within most charts, which is accompanied by a prompt for the reader to consult the Data Tables. Additional .PDF copies of this report, as well as all past reports, can also be downloaded from the Monitor's website.

QUORUM CORPORATION

Edmonton, Alberta
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Executive Summary

PRODUCTION AND SUPPLY

Western Canadian grain production in the 2015-16 crop year was the second highest volume on record at 64.7 million tonnes. Although this marked a 3.0% increase over the previous crop year's 62.9-million-tonne crop, it remained well above the preceding 16-year average of 53.4 million tonnes. When combined with 9.2 million tonnes of carry-forward stocks, the grain supply totaled 73.9 million tonnes, down 4.1% from the 77.1 million tonnes reached a year earlier. While this presented continuing challenges for the Grain Handling and Transportation System (GHTS) as a whole, the system responded effectively and efficiently, maintaining or bettering the performance observed the previous year.

TRAFFIC AND MOVEMENT

More grain moved through the GHTS in the 2015-16 crop year than at any other point in the history of the GMP. This was reflected in record or near-record handlings in the country, by rail and at the ports.

- Country elevator throughput, as gauged by all road and rail shipments from the primary elevators situated across western Canada remained effectively unchanged from the 42.4 million tonnes handled a year earlier. This denoted a continuation of the heightened performance first exhibited by the GHTS a year earlier, and which again culminated in the movement of more grain through the system than at any prior point in the history of the GMP. Despite the limited difference in overall volume, there were noteworthy shifts in provincial throughputs. Chief among these was Manitoba, where primary-elevator shipments rose by over 1.0 million tonnes, or 16.7%, to 7.3 million tonnes from 6.2 million tonnes a year earlier. Detracting from this gain were reductions in shipments from Alberta, Saskatchwan, and British Columbia.

- The amount of grain moved from western Canada totaled 48.3 million tonnes, down 2.7% from the previous crop year's 49.7 million tonnes. Of this, 38.5 million tonnes were directed to destinations in western Canada, 2.8 million tonnes to eastern Canada, and 7.0 million tonnes to the United States and Mexico. Shipments to western Canadian ports decreased by 1.1%, slipping to 38.0 million tonnes from 38.4 million tonnes a year earlier. As in past years, the vast majority of this traffic, some 37.2 million tonnes, moved in covered hopper cars. The remaining 1.3 million tonnes moved in a combination of boxcars and containers for bulk and bagged grain shipments, as well as tankcars for export canola oil.

- The port of Vancouver remained the principal export destination for western Canadian grain, with covered-hopper-car shipments increasing by 2.5%, to 23.1 million tonnes from 22.5 million tonnes. Prince Rupert posted a comparable gain, with total volume rising to 6.3 million tonnes from 6.2 million tonnes. With a 12.7% decrease in volume, Thunder Bay saw its total tonnage fall to

7.2 million tonnes from 8.2 million tonnes. Rail shipments to Churchill fell to a mere 145,400 tonnes from 471,500 tonnes due to a reduction in the demand for use of the port.

- Port throughput, as measured by the volume of grain shipped from terminal elevator and bulk loading facilities located at Canada's four western ports, declined by a marginal 0.5%, slipping to 35.6 million tonnes from 35.8 million tonnes a year earlier. Vancouver accounted for 60.9% of this volume, with total marine shipments increasing by 5.1%, to a GMP record of 21.7 million tonnes from 20.6 million tonnes. Prince Rupert saw a 3.2% increase, with shipments rising to a record 6.3 million tonnes from 6.2 million tonnes. Thunder Bay reported a 12.8% reduction in volume, with throughput falling to 7.4 million tonnes from 8.5 million tonnes. Churchill saw its handlings decline by 64.4%, to 187,800 tonnes from 527,400 tonnes.

- Total grain shipments to the United States by truck totaled 2.3 million tonnes. This marked a 29.6% decrease from the 3.2 million tonnes shipped a year earlier. Although wheat, durum and barley constituted some 771,700 tonnes, the majority of the total tonnage, about 1.5 million tonnes, encompassed a variety of other commodities. Chief among these were canola and canola-related products, along with oats, peas and soybeans. Most of this tonnage, almost 1.4 million tonnes, was directed to the US Midwest. This was followed by destinations in the US West, with 635,900 tonnes; the US Northeast, with 173,500 tonnes; and the US South, with 79,100 tonnes.

INFRASTRUCTURE

The infrastructure that defines the GHTS in western Canada has undergone significant change since the beginning of the GMP. Much of this is tied to the rationalization of the country elevator network, which has proven transformative. Even so, the evolution continues, with the following changes being noted in the 2015-16 crop year.

- The total number of licensed country elevators increased by 3.5%, to 383 from 370 at the close of the previous crop year. Much of the increase stemmed from the licensing of what had previously been unlicensed producer-car loading sites. This mitigated the accumulated loss since the beginning of the GMP to 621 facilities, or 61.9%. Much the same was true of the network's grain delivery points, which increased by 3.4%, to 271 from 262. This was complemented by 509,800 tonnes of added storage capacity, with the overall total being raised to a new record high of 7.8 million tonnes.

- The scope of the western Canadian railway network was reduced by 0.8% in the 2015-16 crop year, falling to a total of 17,288.1 route-miles from 17,424.1 route-miles a year earlier. Although this denotes a reduction of 11.2% from the 19,468.2 route-miles in place at the beginning of the GMP, the decline remains less than that of the elevator system it serves. This reduction was attributable to several discontinuances, including segments of: CN's Drumheller, Lampman and Stettler subdivisions; as well as CP's Arborg, Macleod and Okanagan subdivisions. A notable offset came by way of the construction of a 1.5-route-mile connection between the new inland terminal built by Ceres Global Ag Corp. at Northgate, Saskatchewan, and the BNSF Railway's Niobe subdivision, situated on the American side of the international border. The 2015-16 crop year also saw the establishment of

Northern Lights Rail, a new shortline railway created along a 35.2-route-mile section of CN's Tisdale subdivision in northern Saskatchewan. This served to decrease the infrastructure under Class 1 management to 14,664.2 route-miles, or 84.8%, while that under the non-Class-1 carriers increased to 2,623.9 route-miles, or 15.2%.

- The 2015-16 crop year saw the delicensing of two 10,000-tonne terminal elevator facilities at Thunder Bay: MobilEx Terminal Limited.; and Thunder Bay Terminals Ltd. This reduced the total number of facilities within the terminal-elevator network to 15 from 17, and its associated storage capacity to 2.4 million tonnes. With six terminal elevators, Thunder Bay laid claim to 40.0% of the system's facilities and 47.9% of its storage capacity. Home to seven terminal elevators, Vancouver's share of the network's facilities and storage capacity rose to 46.7% and 37.4% respectively as a result of the changes posted by Thunder Bay. Prince Rupert and Churchill both follow with one terminal elevator each, and storage capacity shares of 8.8% and 5.8% respectively.

COMMERCIAL RELATIONS

The 2015-16 crop year brought a variety of changes to the cost of many of the commercial services used to move grain through the GHTS. These are summarized as follows:

- Single-car railway freight rates saw a mix of increases and decreases throughout the 2015-16 crop year. Once again, these varied according to the corridor and carrier involved. However, the pricing actions taken by CN and CP resulted in net reductions in all corridors. By the close of the crop year, CN's single-car rates had effectively been reduced: by 6.4% in the Vancouver corridor; 5.6% in the Prince Rupert corridor; 0.9% in the Thunder Bay corridor; and 1.2% in the Churchill corridor. In comparison, CP effectively cut its rates in the Vancouver corridor by 6.7%, and by 3.8% in the Thunder Bay corridor.

- Several changes were noted in the per-tonne rates assessed by grain companies for a variety of primary elevator handling activities during the 2015-16 crop year. These ranged from a 1.6% decrease in the rates for elevation to a 9.8% increase in those tied to grain storage.

- There were only modest changes to the rates assessed by the GHTS's terminal elevators for the receiving, elevating and loading out of grain in the 2015-16 crop year, with the composite price index rising by 2.2%, while storage-charges remained effectively unchanged.

Commercial Developments

Although the quantity of grain to be moved by the GHTS remained a key concern for stakeholders in the 2015-16 crop year, there were other commercial developments that had a bearing on the workings of the GHTS.

Use of Extended Interswitching: One of the key provisions in the *Fair Rail for Grain Farmers Act* related to a temporary modification of the interswitching provisions found in the *Canada Transportation Act*. Specifically, it extended the interswitching

radius for federally-regulated railways having interchanges located within the provinces of Manitoba, Saskatchewan and Alberta from the national 30-km standard to 160 km. Its purpose was to provide grain shippers with better access to alternative railway services given the logistical problems encountered in the 2013-14 crop year. In an effort to evaluate the usage of extended interswitching by the industry at large, the Monitor approached several large grain shippers for more specific information regarding their use of this provision during the 2015-16 crop year.

Firstly, it should be noted that the Monitor estimated that 339, about 90%, of the 370 then licensed elevators were within reach of an interchange under the newly extended interswitching radius of 160 km. However, practical commercial considerations limited the potential application of this reach to about 150 facilities. In the end, only thirteen of these facilities reported use of this provision in moving traffic. The operators of these facilities reported a total of 4,795 carloads of grain having been moved using extended interswitching in the 2015-16 crop year. The largest proportion of these movements, amounting to 59.8%, was achieved with the use of railway-supplied equipment. The remaining 40.2% was accomplished using privately-owned equipment supplied by the shipper.

Although applicable to all federally-regulated railways, interswitching was largely conceived as a mechanism by which shippers could secure access to competitive CN and CP services. However, about three quarters, 75.9%, of all shipments made under the newly extended interswitching provision were used to access the services of another carrier entirely. More specifically, grain shippers employed the provision to engage the BNSF Railway in moving a total of 3,638 carloads of traffic from CN and CP-served origins to destinations in the United States. Much of this traffic, amounting to 2,390 carloads, was drawn from CP-served origins, with another 1,248 carloads originating at CN-served points. Undoubtedly, this reflects the relative proximity of both networks to the United States border, which heightens their susceptibility to the potential competitive offering of a US-based carrier. Conversely, only 24.1% of all shipments made under the newly extended interswitching provision related to domestic grain movements. Almost all involved traffic drawn away from CP-served origins by CN, with 1,152 carloads being interswitched. Only five cars were taken away from CN-served origins by CP (all in private equipment).

Data provided by the grain companies also included a freight saving estimate, based on what likely would have been paid had the 30-km interswitching radius remained unaltered. This entailed the calculation of the differential between a previously paid rate and that secured with extended interswitching to reach the same destination (although the physical routings differed). In aggregate, this estimate suggests that grain shippers avoided close to $5.3 million in conventional freight charges. The data also indicates that much of the savings was derived from the shorter physical routings that were made possible. Although shorter distances were a significant factor in the generation of these savings, many shippers claimed that a portion was also attributable to more aggressive pricing on the part of BNSF. Even so, the volumes tied to the use of extended interswitching in the 2015-16 crop year represent less than 1% of the overall grain movement. This proportion rises to almost 5% when considering grain shipments into the US alone.

CTA Review Panel Report Spurs Evaluation of Transportation Needs: On 25 February 2016 the federal Minister of Transport tabled the report of the *Canada Transportation Act* review panel in Parliament. The eighteen-month review, which concluded in December 2015, sought to identify priorities and potential actions in transportation to support Canada's long-term economic well-being. The report, which followed significant public consultations and analysis, advanced 60 recommendations. Four of these touched on the movement of grain specifically, including: phasing out the Maximum Revenue Entitlement; explicitly extending the definition of "shipper" to producer-car loaders; reviewing the methodology as it pertains to interswitching rate setting; and the sunsetting of the 160-km extended interswitching limit.

The federal government announced on 22 April 2016 that it would be extending the emergency provisions established under the *Fair Rail for Grain Farmers Act* for a period of one year to allow shippers to plan for the upcoming crop year under predictable condition while allowing the government to examine and consult with stakeholders on the recommendations of the report from the CTA Review Panel. In equal measure, it continued to enable the Canadian Transportation Agency to make regulations specifying what constituted the "operational terms" that could be referred to in a level-of-service arbitration, and to order the payment of compensation to shippers for a railway's failure to fulfill its level-of-service obligations.

OmniTRAX Seeks to Sell Churchill Assets: Although typically handling over 500,000 tonnes annually, the 2015 shipping season saw just 187,800 tonnes of grain moved through the port of Churchill; the lowest recorded under the GMP. This led Denver-based OmniTRAX to announce in November 2015 that it intended to sell the northern Manitoba properties it had purchased from the federal government and the Canadian National Railway in 1997. In addition to the various port facilities it operated, which included the only licensed terminal elevator in Churchill, OmniTRAX indicated that it was also looking to sell the Hudson Bay Railway, and the only connection the port had with the rest of the North American railway network. This followed earlier statements from the company to the effect that without additional financial support from the federal and provincial governments, OmniTRAX would be left in the position of having to curtail operations.

One month later, in December 2015, OmniTRAX confirmed that it had accepted a letter of intent for the purchase of these assets from a consortium of northern Manitoba First Nations. At that time, it was disclosed that the parties had entered a 45-day negotiation period, during which they would share information and exercise appropriate due diligence, in the hopes of concluding a deal by 1 February 2016. The consortium of First Nations communities, led by the Mathias Columb Cree Nation, was not new to the railway business; having previously purchased the line OmniTRAX operated between The Pas, Manitoba, and Lynn Lake, Manitoba, in 2006 (now known as the Keewatin Railway Company). Even so, by the time the February deadline arrived, a deal had not been struck between the parties, although discussions reportedly were ongoing. Against this backdrop, OmniTRAX indicated that it was still planning to operate the grain terminal at Churchill through the 2016 shipping season, with the hope of moving at least 500,000 tonnes.

Despite this, on 25 July 2016 the Port of Churchill announced that the grain terminal would be closed for the 2016 shipping season. In addition, the company's wholly-owned Hudson Bay Railway scaled back its freight service to just one northbound and

southbound train per week. Although the economic and political shockwaves from this announcement reverberated through Churchill and other northern communities, there was little within the grain-handling industry itself. Moreover, OmniTRAX's decision to suspend terminal operations essentially responded to the fact that no shipper had committed itself to moving grain through the port that season. This was because Churchill is a less-attractive export destination for most grain companies, given that many can use their own facilities at other ports to better commercial advantage.

More importantly, many shippers were hesitant to use the Churchill gateway in the face of the uncertainty that shrouded the port's future. Nor would they consider doing so without the financial incentive provided under the federal government's Churchill Port Utilization Program. By the close of the 2015-16 crop year, even this inducement proved to be insufficient. With little more than 1% of western Canada's total railway grain shipments being directed for movement through Churchill, the closure of the grain terminal posed little real problem for the GHTS at large. Grain that normally would have been sourced from the Churchill catchment area had already been absorbed into the traffic flows directed towards the system's other ports with little noticeable effect.

Glencore Sells Interest in Agricultural Holdings: Owing to the continuing impact of weak global commodity prices on its finances, Switzerland-based mining and trading company, Glencore PLC, announced on 7 September 2015 that it was going to take more substantive measures to reduce its US$30 billion debt by about a third. In addition to the company's previously announced plans to issue more equity and suspend dividend payments through 2016, Glencore revealed that it intended to raise another US$2 billion through the sale of company assets, including a minority interest in its agriculture assets. By the end of the month it was reported that Glencore had already moved to create a separate legal entity for the assets involved, a significant portion of which was tied to one of Canada's largest grain handlers: Viterra Inc.

By April 2016 it was revealed that Glencore had negotiated a private sale of a 40% stake in its Agricultural Products division to the Canada Pension Plan Investment Board (CPPIB) for $2.5 billion US. In addition to allowing Glencore to reduce its overall debt, the deal was touted as one that would help enable its Agricultural Group to expand into markets in which it did not already have a presence. Conversely, CPPIB was reportedly looking to expand its portfolio in the agriculture industry, with the deal also including a provision for Glencore to offer another 20% of its Agricultural Group for sale at a future date. Less than two months later, in June 2016, Glencore announced that it had reached a definitive agreement with British Columbia Investment Management Corporation (BCIMC) for the latter's purchase of a 9.99% stake in Glencore Agricultural Products for US$624.9 million in cash. As a result, Glencore's interest in its Agricultural Products division was reduced to 50.01%, although the existing management team continued to run the business.

All the while, the Canadian arm of Glencore's Agricultural Products division was itself expanding. In August 2015 Viterra announced that it had agreed to purchase Twin Rivers Technologies – Entreprises de Transformation de Graines Oléagineuses du Québec Inc. (TRT-ETGO). The company, a wholly owned subsidiary of Malaysian based FELDA Global Ventures Holdings, operated the largest oilseed processing plant in Eastern Canada, located in Bécancour, Quebec. Opened in 2010, the TRT-ETGO facility was focused on the crushing and refining of canola and soybeans into vegetable oil for food and industrial markets, as well as meal for

the livestock industry. The transaction, which was subject to regulatory approvals and other conditions, was completed in November 2015. A further indication of Viterra's expanding role in the canola-crushing industry came in January 2016 when the company announced that it had entered into a supply and marketing agreement with Pacific Coast Canola LLC (PCC), which would see PCC crush canola for Viterra at its plant in Warden, Washington. At the same time, a Viterra affiliate also increased its ownership stake in PCC to 50%.

G3 Canada Limited Embarks on Network Expansion: In the aftermath of gaining a controlling interest in what had been the Canadian Wheat Board, the newly formed G3 Canada Limited (G3) moved quickly in its stated mission of building a coast-to-coast grain-handling enterprise founded on the combined assets of CWB and Bunge Canada. Even before this acquisition was finalized, G3 had announced that it was joining with Western Stevedoring Company Limited to examine the feasibility of building a new grain terminal in North Vancouver; a move that would give its newly-consolidated grain gathering network a dedicated west-coast outlet. But the company's expansion plans did not focus solely on the west coast. In October 2015 G3 also announced that it would be constructing a new lakeside terminal in Hamilton, Ontario, to ship grains and oilseeds out of southern Ontario. Construction of the 50,000-tonne capacity facility, which will be located at the port's Pier 26, is expected to be completed in time for the 2017 harvest. When finished, the facility will be used to load vessels with product bound for the company's other handling facilities on the St. Lawrence River – at Trois-Rivieres and Quebec City – and, from there, to export markets around the world.

In May 2016 G3 received a permit from the Vancouver Fraser Port Authority allowing it to proceed with the construction of the proposed terminal in North Vancouver (to be known as G3 Terminal Vancouver). The project's approval was subject to 74 conditions aimed at ensuring that there were no significant adverse environmental impacts, and followed broad consultations with representatives of the surrounding community, stakeholders and aboriginal groups. The terminal, which is designed to handle an estimated eight million tonnes of grain annually, is planned to include: a railcar receiving facility and loop track capable of accommodating three trains of 150 cars; 48 concrete storage silos; a grain-cleaning facility; and ship-loading systems with three articulated booms capable of loading post-Panamax sized vessels. However, by the close of the 2015-16 crop year the project had still not been approved by G3's largest shareholder.

Part of this delay may have stemmed from the changes that were taking place within G3 itself, and which included a variance in its ownership structure. In mid-June 2016 it was reported that, over the course of the preceding five months, the Saudi Agricultural and Livestock Investment Company (SALIC) had increased its stake in G3 Global Holdings from 49% to 75%. G3 Global Holdings, which is itself a joint venture between US-based Bunge and SALIC, was formed in 2012 as the investment vehicle through which these two companies acquired a controlling 50.1% interest in CWB. On 1 February 2016, SALIC, through its SALIC Canada Limited subsidiary, boosted its ownership in G3 Global Holdings from 49% to 65% by converting $106 million in promissory notes into 148.3 million common shares. This effectively reduced Bunge Canada's ownership interest to 35% from 51%. Moreover, in March 2016 Bunge sold a further 10% interest to SALIC, which resulted in ownership shares of 25% for the former and 75% for the latter. In effect, control in G3 Global Holdings, and by extension G3 Canada Limited, shifted decidedly in favour of SALIC.

Legumex Walker Sells Primary Assets to The Scoular Company: In the wake of a July 2015 default on a US$54.6 million loan tied to its Pacific Coast Canola (PCC) crushing plant in Warden, Washington, Legumex Walker Inc. officially put its pulse and special crops processing plants up for sale in late August. While not entirely tied to PCC operations, the losses incurred by the company had prompted a strategic review of its business holdings earlier in 2015, with the company's board of directors ultimately finding that a sale of its special crops and oilseed businesses, which encompassed nine established facilities in Western Canada, was the most likely to maximize shareholder value.

The expectation that these assets would attract significant interest were confirmed less than a month later when, on 14 September 2015, Legumex Walker announced that it would be selling its special crops division to Omaha-based The Scoular Company for C$174.6 million, and winding up its remaining operations through a court-approved liquidation. The sale, which was subsequently approved by Legumex Walker shareholders and finalized in November 2015, allowed Scoular, a 123-year-old grain company with about US$6 billion in annual sales, to significantly expand its product and geographic reach.

AGT Food and Ingredients acquires Mobil Capital Holdings: Following on the heels of its acquisition of West Central Road and Rail (WCRR), AGT Food and Ingredients Inc. announced on 5 October 2015 that it had signed a definitive purchase agreement for the business interests of Mobil Capital Holdings Ltd. (Mobil) for $57.5 million. The transaction, which was completed before the end of October 2015, involved not only the takeover of Mobil's central-Saskatchewan based grain-processing and loading operations but the two shortline railways that the company also owned: Last Mountain Railway; and Big Sky Railway. The railways, which facilitated Mobil's use of Government of Saskatchewan covered-hopper cars in the segregated, rolling storage of grain, were an integral element in the operations of WCRR as well. In addition to being regarded as a natural follow-on to its earlier acquisition of WCRR, the transaction was viewed as one that would ultimately enhance AGT's competitive position in serving the global grain and pulse markets.

SYSTEM EFFICIENCY AND PERFORMANCE

With the second largest grain supply witnessed under the GMP, the demand pressures brought to bear on the GHTS proved heavy for a third consecutive year. Even so, the GHTS continued to meet these challenges directly.

- The overall average for time spent in the system declined by 0.4% in the 2015-16 crop year, to 41.8 days from the 42.0-day average observed a year earlier. This ranked as the second lowest recorded under the GMP. The incremental improvement was driven by a 1.0-day reduction in the railways loaded transit time, which fell to an average of 4.8 days from 5.8 days a year earlier. Detracting from this were marginal increases in the amount of time grain spent in storage, be it in the country or at port. The largest was attributable to the amount of time grain spent in inventory at a country elevator, which rose by 0.6 days, to an average of 26.1 days from 25.5 days. Another 0.2 days resulted from the additional time grain spent in storage at a terminal elevator, which rose to an average 10.9 days from 10.7 days the previous year.

- With western Canada's grain supply exceeding 70 million tonnes for a third consecutive year, the GHTS found itself again called to meet a considerable logistical challenge. Notwithstanding the fact that global grain stocks were again expected to reach new heights, thereby placing still further downward pressure on prices, Canadian grain shippers continued to pursue aggressive sales programs. This only served to sustain the elevated demand for handling capacity that had manifested itself three years earlier.

- However, the railways, which had improved their performance in the aftermath of the challenges that arose in the 2013-14 crop year, proved equal to the task. Even though total railway shipments slipped modestly in the 2015-16 crop year, the average car cycle largely improved, showing particularly in the second and third quarters. More importantly, the railways' average loaded transit time dropped by a full day, reaching a record low under the GMP of 4.8 days. Much of this result was shaped by substantive time reductions in both the Vancouver and Prince Rupert corridors.

- The effective pace at which grain moved through the GHTS was also reflected in other areas, most notably in the steady reduction of on-farm inventories. Similarly, the grain companies reported being relatively pleased with the level of service they were receiving from the railways, be it with respect to country-elevator or terminal elevator operations. This was perhaps best reflected in the reduced amount of time spent by vessels in port, as well as in the lower demurrage and higher dispatch earnings this engendered. Ultimately, the fluidity maintained through 2015-16 crop year again proved indicative of the efficiencies that can be realized with the proper deployment of resources and coordination of commercial activities.

PRODUCER IMPACT

All of the data assembled since the beginning of the GMP has consistently shown that the financial returns arising to producers have been most heavily influenced by the prevailing global price of grain. While the export basis has unquestionably risen over time, it is the prevailing price of the commodity that continues to have the most sway over these returns. This was equally true of the 2015-16 crop year, where changing market forces had both positive and negative impacts on the producer's netback.

- With prices for 1CWRS wheat (13.5% protein) slipping throughout the year, the overall average export quotation moved sharply lower, falling by 8.3%, to $296.49 per tonne from $323.38 per tonne a year earlier. Similarly, the export quotation for 1CWA durum also declined, albeit by a more substantive 19.4%, to an average of $407.69 per tonne from $505.55 per tonne the year previous. The export basis tied to these grains also declined, with that of wheat falling by 34.4%, while that of durum fell by 43.7%. After deducting the export basis, producers saw an estimated 7.9% increase in their financial return on 1CWRS wheat, which rose to an average of $214.96 per tonne from $199.18 per tonne a year earlier, as well as an estimated 2.6% decrease on that of 1CWA durum, which fell to an average of $291.55 per tonne from $299.20 per tonne in the same period.

- Canola witnessed a 4.2% price increase in the 2015-16 crop year, with the Vancouver cash price for 1 Canada canola rising to an average of $508.56 per tonne from $488.27 per tonne a year earlier. Much of this gain reflected the continuing demand for oilseeds. The positive impact of this price improvement was amplified by a 5.7% decline in the export basis. As a result the producers'

netback increased by 5.8%, to an average of $443.32 per tonne from $419.05 per tonne. A more pronounced tightening of global supplies helped to raise yellow-pea prices by 17.5%, to an average of $403.47 per tonne from $343.47 per tonne a year earlier. At the same time the export basis for yellow peas moved sharply lower, decreasing by 42.7%. As a result, the producers' netback for yellow peas rose by 45.3%, to 341.31 per tonne from $234.96 per tonne a year earlier.

While producer-car loading increased significantly over the course of the GMP's first 15 years, there has been a pronounced decline in scheduled shipments during the last two crop years. Some of the more noteworthy changes observed in the 2015-16 crop year are outlined below.

- The number of producer-car loading sites situated throughout western Canada has been reduced by almost half since the beginning of the GMP, with 314 of the original 709 left in service at the close of the 2014-15 crop year. The 2015-16 crop year saw the opening of two new sites local to the newly established Northern Lights Rail. As a result, the number of sites operated by the major railways remained unchanged at 179 while those tied to the shortlines rose to 137.

- The number of producer-cars scheduled for movement in the 2015-16 crop year fell by 40.5%, to 5,871 carloads from 9,867 carloads a year earlier. This proved to be the lowest volume seen since the 2002-03 crop year, mirroring the fewer applications that were being made. Equally noteworthy was the continuing shift in the mix of commodities handled. Until the 2009-10 crop year, wheat, durum and barley were dominant, representing virtually all of traffic moved. But the proportion accorded to oilseeds and other commodities soon began to climb against these major grains. The 2015-16 crop year saw the share given over to wheat, durum and barley decline still further, to 34.1% from 63.3% a year earlier. Conversely, shipments of oilseeds, oats and special crops continued to increase, taking a 65.9% share against 36.7% a year earlier.

Section 1: Production and Supply

Indicator Description	Table	1999-00	2013-14	2014-15	2015-16 Q1	Q2	Q3	Q4	YTD	% VAR
Production and Supply										
Crop Production (000 tonnes)	1A-1	55,141.7	77,021.1	62,854.9	64,738.6				64,738.6	3.0%
Carry Forward Stock (000 tonnes)	1A-2	7,418.2	4,889.9	14,196.0	9,162.6				9,162.6	-35.5%
Grain Supply (000 tonnes)		62,559.9	81,911.0	77,050.9	73,901.2				73,901.2	-4.1%
Crop Production (000 tonnes) – Special Crops	1A-3	3,936.7	6,852.2	6,554.2	6,379.5				6,379.5	-2.7%

Special Note to Readers:

Owing to the conflicting needs for space and legibility, many of the traditional charts found throughout this report can no longer accommodate a full depiction of the underlying data series. Where necessary, the Monitor has opted to graphically portray only the last ten crop years' worth of data against its base-year values. This presents a gap within most charts, which is underscored by a prompt for the reader to consult the Data Tables ("SEE TABLE").

PRODUCTION AND SUPPLY

Western Canadian grain production rose to 64.7 million tonnes in the 2015-16 crop year. Although this marked a 3.0% increase over the previous crop year's 62.9-million-tonne crop, it remained well above the preceding 16-year average of 53.4 million tonnes. This resulted in the displacement of the 2014-15 crop year's harvest as the second largest on record. Moreover, it marked the third consecutive growing season in which prairie grain production exceeded 60 million tonnes. [Table 1A-1]

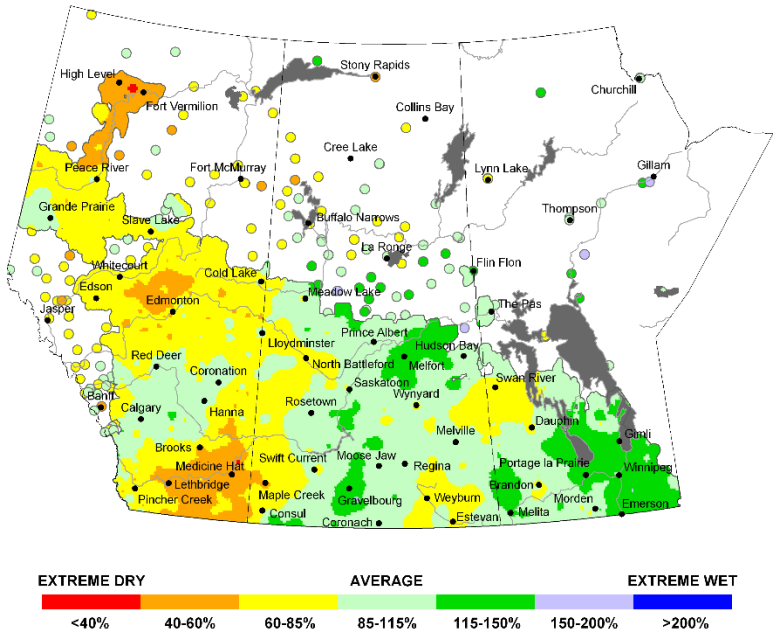
Growing conditions proved mixed across much of the prairies, with moderate temperatures and ample moisture being experienced in Manitoba while the more westerly regions of Saskatchewan and Alberta were dryer. This led to initial expectations of a significant year-over-year decline in output. However, the timely arrival of rain in August 2015 greatly improved the prospects for an overall increase in grain production. Ultimately, generally favourable harvest conditions allowed farmers to reap a crop of above-average size.

Although carry-forward stocks from the previous crop year declined by 5.0 million tonnes, falling to a more familiar 9.2 million tonnes, it still resulted in an overall grain supply that again presented potential challenges for the GHTS at large. Grain would still need to move at a vigorous pace if the crop were to be handled efficiently and effectively throughout the 2015-16 crop year. And while the International Grains Council again forecasted record global stocks along with further downward pressure on grain prices, Canadian shippers continued to pursue aggressive sales programs. However, the grain-handling industry's concerns over the system's ability to provide sufficient carrying capacity in the face of this demand were largely allayed as the year progressed, with minimal disruption to the movement of grains, oilseeds and special crops having been noted.

Provincial Distribution

The overall increase in prairie grain production was derived from gains in areas outside of Alberta, which, owing to comparatively drier growing conditions, saw its output fall by 5.2%, to 20.7 million tonnes from 21.9 million tonnes a year earlier. Saskatchewan, which accounted for just over half of total prairie crop production, reported a 4.8% larger crop, with its total rising to 32.9 million tonnes from 31.4 million tonnes a year earlier. Manitoba posted a more substantive 15.7% gain, reaping 10.8 million tonnes against 9.3 million tonnes the previous crop year. Enlarging these gains was a 63,900-tonne increase for British Columbia, which saw output rise by 21.5%, to 360,700 tonnes from 296,800 tonnes.

Figure 1: Precipitation Compared to Historical Distribution (1 April to 31 August 2015)



Commodity Distribution

The 2015 growing season resulted in an increase in the production of most crops. The most significant increase noted was among oilseeds and other commodities, which collectively rose by 8.8% against a 1.9% decline in the output of wheat, durum and barley over the previous year. Even though the combined output of wheat, durum and barley fell to 33.5 million tonnes from 34.1 million tonnes a year earlier, the sector still accounted for 51.7% of total grain production. Oilseeds and other commodities, which increased to a total of 31.3 million tonnes from 28.7 million tonnes, took a marginally lesser 48.3% share.

The 642,100-tonne decrease in wheat, durum and barley production was driven by an 8.7% decline in the amount of wheat harvested, which fell to 20.3 million tonnes from 22.2 million tonnes a year earlier. This was largely countered by the effects of a 16.2% increase in barley production, which saw output rise to 7.8 million tonnes from 6.7 million tonnes the previous year. A 3.8% increase in durum production offset another 196,000 tonnes, with total output rising to 5.4 million tonnes from 5.2 million tonnes.

With 18.3 million tonnes of production, canola accounted for 58.6% of the 31.3 million tonnes of oilseeds and other commodities harvested in the 2015-16 crop year. Moreover, this denoted an almost 2.0 million-tonne increase over the 16.4 million tonnes of canola produced a year earlier. This was enlarged by a combined 1.2 million tonnes of additional output in soybeans, oats, corn, flaxseed and other commodities. A 609,400-tonne reduction in dry-pea production, along with a lesser 12,200-tonne decline in the output of rye, served to partially counter these gains.

Special Crops

As opposed to total grain output, special-crop production declined in the 2015-16 crop year.[1] Total output for the sector amounted to slightly less

Figure 2: Provincial Grain Production

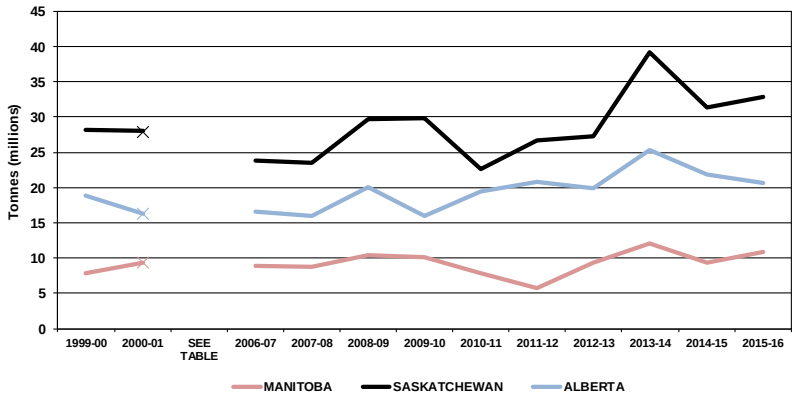
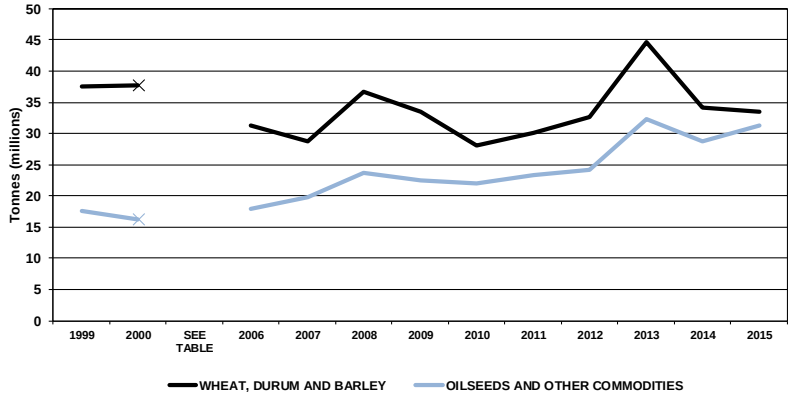


Figure 3: Grain Production – Major Commodity Groupings



1 For the purposes of the GMP, special crops are defined as including the following: dry peas; lentils; mustard seed; canary seed; chickpeas; dry beans; sunflower seed; safflower seed; buckwheat; and fababeans. An often referenced subset of special crops, known as pulse crops, encompasses dry peas, lentils, chickpeas, dry beans and fababeans.

than 6.4 million tonnes, down 2.7% from the 6.6 million tonnes reported a year earlier. Decreased dry-pea production, the sector's largest crop, was largely responsible for this reduction, with total output falling by 16.0%, to 3.2 million tonnes from 3.8 million tonnes a year earlier. More modest tonnage losses for mustard seed, chickpeas, dry beans and fababeans widened this reduction by another 160,100 tonnes. These declines were offset by a combined 594,800-tonne increase in the output of lentils, canary seed and sunflower seed. [Table 1A-3]

Carry-Forward Stock and Western Canadian Grain Supply

While grain production has the most immediate impact on the grain supply, it is also affected by the amount of grain held over in inventory from the previous crop year. In fact, carry-forward stocks typically account for about one-sixth of the overall grain supply.[2] These stocks tend to move in conjunction with changes in grain production, albeit on a lagging basis.

Totalling some 9.2 million tonnes, these stocks proved to be about one-third less than the 14.2 million tonnes that had been carried forward a year earlier. Much of the this 5.0-million-tonne decrease arose out of the methodical depletion of the surplus that had been created in the wake of the 2013-14 crop year's record production, and which had dramatically swelled the normal volume of year-end stocks. When combined with 64.7 million tonnes of new production, the grain supply fell to 73.9 million tonnes, a 4.1% decrease from the previous crop year's 77.1 million tonnes. [Table 1A-2]

With a 3.3-million-tonne decrease in carry-forward stocks, Saskatchewan posted the most substantive decline. This was followed in turn by Alberta, with a 995,800-tonne decrease; Manitoba, with a 669,300-tonne decrease; and British Columbia, with a 23,500-tonne decrease. With few exceptions, the carry-forward stocks for all major grains moved sharply lower.

Figure 4: Major Grain Production – 2015-16 Crop Year

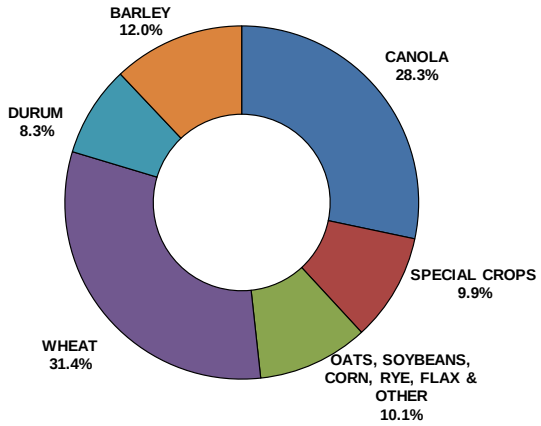
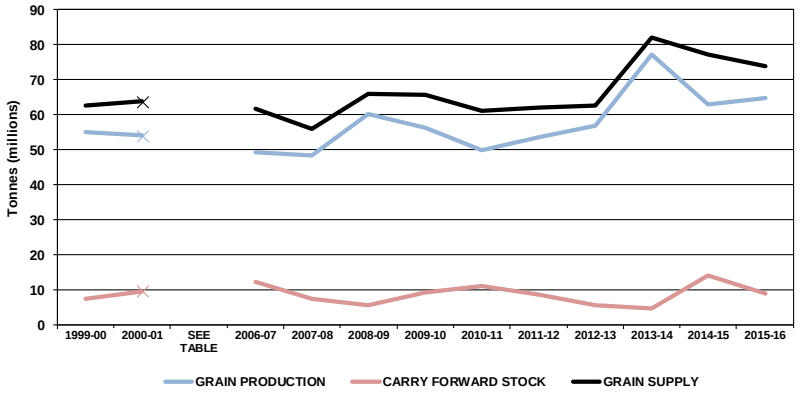


Figure 5: Western Canadian Grain Supply



2 Carry-forward stocks are defined as inventories on hand, be it on farms or at primary elevators, at the close of any given crop year (i.e., 31 July). As such, they are also deemed to be the stocks on hand as the new crop year begins (i.e., 1 August). The carry-forward stocks cited here are derived from data provided by Statistics Canada and the Canadian Grain Commission.

Section 2: Traffic and Movement

Indicator Description	Table	1999-00	2013-14	2014-15	2015-16 Q1	Q2	Q3	Q4	YTD	% VAR
Country Elevator Throughput										
Grain Throughput (000 tonnes) – Primary Elevators	2A-1	32,493.9	40,676.0	42,369.2	11,210.1	11,801.2	10,703.4	8,666.1	42,380.8	0.0%
Railway Traffic										
Traffic to Western Canada										
Railway Shipments (000 tonnes) – Ports Only	2B-1	26,439.2	34,837.3	38,389.8	10,815.6	9,885.9	9,226.5	8,028.9	37,956.9	-1.1%
Railway Shipments (000 tonnes) – Western Domestic	2B-1	n/a	n/a	562.3	127.9	169.4	127.2	115.6	540.2	-3.9
Traffic to Western Canada (Ports Only)										
Railway Shipments (000 tonnes) – All Grains	2B-1	26,439.2	34,837.3	38,389.8	10,815.6	9,885.9	9,226.5	8,028.9	37,956.9	-1.1%
Railway Shipments (000 tonnes) – Hopper Cars	2B-1	25,664.6	33,827.6	37,332.4	10,545.7	9,531.9	8,890.8	7,712.2	36,680.6	-1.7%
Railway Shipments (000 tonnes) – Non-Hopper Cars	2B-1	774.7	1,009.7	1,057.4	269.9	354.0	335.7	316.7	1,276.3	20.7%
Special Crop Shipments (000 tonnes) – All Grains	2B-2	2,102.9	3,990.7	4,566.4	2,296.3	1,180.9	797.7	457.5	4,732.5	3.6%
Special Crop Shipments (000 tonnes) – Hopper Cars	2B-2	1,844.1	3,795.1	4,306.2	2,231.2	1,125.6	731.0	392.8	4,480.6	4.1%
Special Crop Shipments (000 tonnes) – Non-Hopper Cars	2B-2	258.7	195.5	260.2	65.1	55.3	66.7	64.7	251.9	-3.2%
Hopper Car Shipments (000 tonnes) – Origin Province	2B-3									
Hopper Car Shipments (000 tonnes) – Primary Commodities	2B-4	25,664.6	33,827.6	37,332.4	10,545.7	9,531.9	8,890.8	7,712.2	36,680.6	-1.7%
Hopper Car Shipments (000 tonnes) – Detailed Breakdown	2B-5									
Hopper Car Shipments (000 tonnes) – Grain-Dependent Network	2B-6	8,685.9	9,784.4	11,071.2	3,279.6	2,925.7	2,343.3	2,258.7	10,807.3	-2.4%
Hopper Car Shipments (000 tonnes) – Non-Grain-Dependent Network	2B-6	16,978.7	24,043.2	26,261.3	7,266.0	6,606.2	6,547.5	5,453.5	25,873.3	-1.5%
Hopper Car Shipments (000 tonnes) – Class 1 Carriers	2B-7	23,573.5	32,662.8	35,994.2	10,144.1	9,293.4	8,759.0	7,592.8	35,789.2	-0.6%
Hopper Car Shipments (000 tonnes) – Non-Class-1 Carriers	2B-7	2,091.0	1,164.8	1,338.3	401.6	238.5	131.8	119.4	891.4	-33.4%
Traffic to Eastern Canada										
Railway Shipments (000 tonnes) – All Grains	2B-8	n/a	n/a	3,016.0	591.8	871.8	957.4	375.9	2,796.8	-7.3%
Railway Shipments (000 tonnes) – Hopper Cars	2B-8	n/a	n/a	2,198.3	351.4	629.6	776.4	223.5	1,980.9	-9.9%
Railway Shipments (000 tonnes) – Non-Hopper Cars	2B-8	n/a	n/a	817.8	240.4	242.1	181.0	152.4	815.9	-0.2%
Special Crop Shipments (000 tonnes) – All Grains	2B-9	n/a	n/a	600.6	181.2	192.0	114.7	58.8	546.7	-9.0%
Western Canadian Originated Traffic										
Railway Shipments (000 tonnes) – All Grains	2B-15	n/a	n/a	49,660.7	13,314.0	12,913.6	12,009.2	10,080.8	48,317.7	-2.7%
Railway Shipments (000 tonnes) - Canada	2B-15	n/a	n/a	41,968.2	11,535.3	10,927.1	10,311.1	8,520.4	41,293.9	-1.6%
Railway Shipments (000 tonnes) – United States	2B-15	n/a	n/a	7,502.6	1,721.2	1,908.6	1,639.5	1,490.0	6,759.3	-9.9%
Railway Shipments (000 tonnes) – Mexico	2B-15	n/a	n/a	189.9	57.5	77.9	58.6	70.4	264.5	39.2%
Terminal Elevator Throughput										
Grain Throughput (000 tonnes) – All Commodities	2C-1	23,555.5	31,111.1	35,761.8	9,481.0	9,647.0	8,442.6	8,017.0	35,587.6	-0.5%
Hopper Cars Unloaded (number) – All Carriers	2C-2	278,255	349,132	384,782	105,360	100,427	93,351	81,168	380,306	-1.2%
Hopper Cars Unloaded (number) – CN	2C-2	144,800	181,461	197,011	52,379	51,500	46,353	38,521	188,753	-4.2%
Hopper Cars Unloaded (number) – CP	2C-2	133,455	167,671	187,771	52,981	48,927	46,998	42,647	191,553	2.0%
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	3,501.8	3,247.6	549.1	600.8	604.1	531.6	2,285.6	-29.6%
Truck Shipments to US (000 tonnes) – Destination Region / Commodity	2D-3									

COUNTRY ELEVATOR THROUGHPUT

Country elevator throughput, as gauged by all road and rail shipments from the primary elevators situated across western Canada, remained effectively unchanged at 42.4 million tonnes in the 2015-16 crop year. This denoted a continuation of the heightened performance first exhibited by the GHTS a year earlier, and which again culminated in the movement of more grain through the system than at any prior point in the history of the GMP.

Despite the limited difference in overall volume, there were noteworthy shifts in provincial throughputs. Chief among these was Manitoba, where primary-elevator shipments rose by over 1.0 million tonnes, or 16.7%, to 7.3 million tonnes from 6.2 million tonnes a year earlier. Detracting from this gain was an 890,500-tonne reduction in shipments from Alberta, which fell by 6.1%, to 13.8 million tonnes from 14.7 million tonnes. This was followed by Saskatchewan, which saw its grain shipments fall by 132,200 tonnes, or 0.6%, to 20.9 million tonnes from 21.0 million tonnes a year earlier. Another 9,600 tonnes were lost as a result of a 2.2% reduction in volume posted by British Columbia, where shipments fell to 419,200 tonnes from 428,800 tonnes. [Table 2A-1]

RAILWAY TRAFFIC

Railway grain shipments from western Canada totaled 48.3 million tonnes in the 2015-16 crop year, down 2.7% from the previous crop year's 49.7 million tonnes. The vast majority of this traffic, amounting to some 41.3 million tonnes, was directed to destinations within Canada itself, be it for export or domestic use. The largest portion, totalling 38.5 million tonnes, was shipped to points within western Canada, with the remaining 2.8 million tonnes directed to points in eastern Canada. A further 7.0 million tonnes of grain were shipped to destinations in the United States and Mexico. [Table 2B-15]

Figure 6: Primary Elevator Throughput

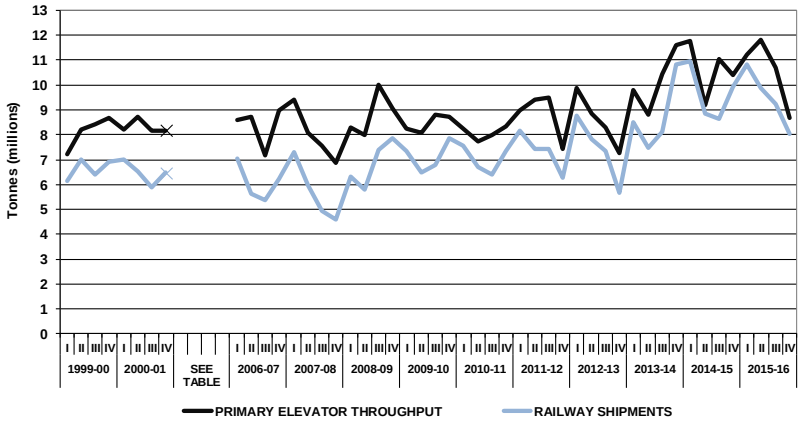
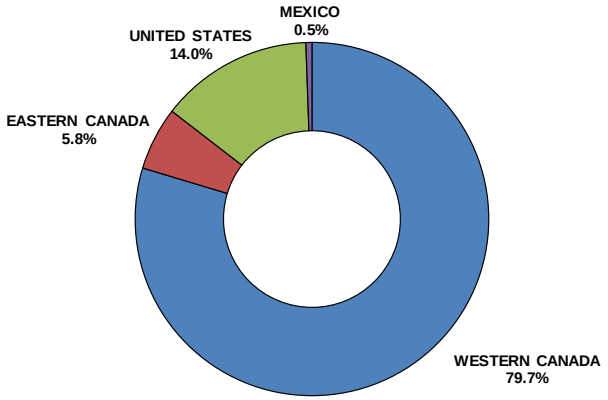


Figure 7: Western Canadian Railway Shipments – Destinations



Traffic to Western Canada

The amount of regulated grain moved by rail to western Canadian ports during the 2015-16 crop year slipped to just under 38.0 million tonnes, a decline of 1.1% from the record 38.4 million tonnes handled a year earlier. A further 540,200 tonnes were directed to points within western Canada itself (denoted as western domestic), which brought total shipments up to almost 38.5 million tonnes. [Table 2B-1]

As in past years, the vast majority of this traffic, some 37.2 million tonnes, moved in covered hopper cars. The remaining 1.3 million tonnes moved in a combination of boxcars and containers for bulk and bagged grain shipments, as well as tankcars for export canola oil. These latter movements represented a comparatively small fraction of total railway shipments, with their share amounting to just 3.5%.

Special crop shipments rose by 3.7%, to 4.7 million tonnes from 4.6 million tonnes a year earlier. Virtually all of this, 94.7%, moved in hopper cars, with shipments rising by 4.1%, to 4.5 million tonnes from 4.3 million tonnes. In comparison, non-hopper-car shipments (moving in boxcars and containers) declined by 3.1%, to 252,200 tonnes from 260,300 tonnes. [Table 2B-2]

Hopper Car Movements

Hopper-car shipments to the four ports in western Canada fell by 1.7% in the 2015-16 crop year, to 36.7 million tonnes from the 37.3 million tonnes handled a year earlier. This result was largely shaped by weaker shipments in the first and fourth quarters. Moreover, much of the overall decline was tied to a comparatively poorer showing in the fourth-quarter, where volume fell by a factor of 20%.

This decrease in volume was reflected in reduced traffic for most producing provinces. Of the provinces posting losses, Alberta reported the largest decline in tonnage, with total grain shipments falling by 5.7%, to 13.2 million tonnes from 14.0 million tonnes a year earlier. This was followed by Saskatchewan, where a 1.7% decrease resulted in total tonnage

Figure 8: Railway Shipments – Hopper and Non-Hopper Cars

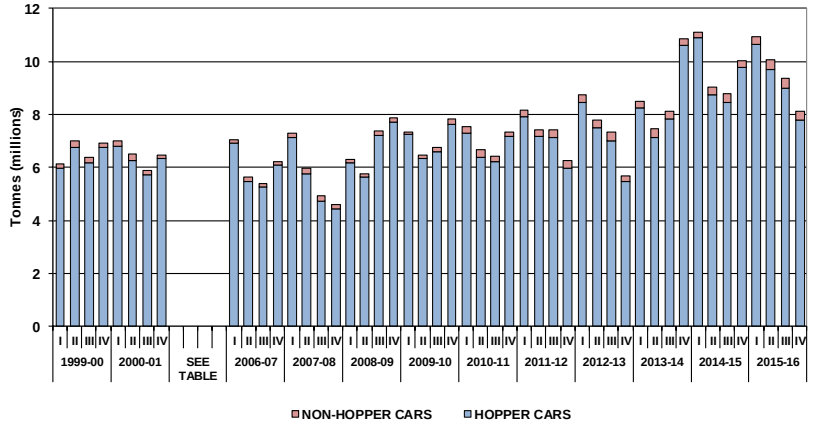
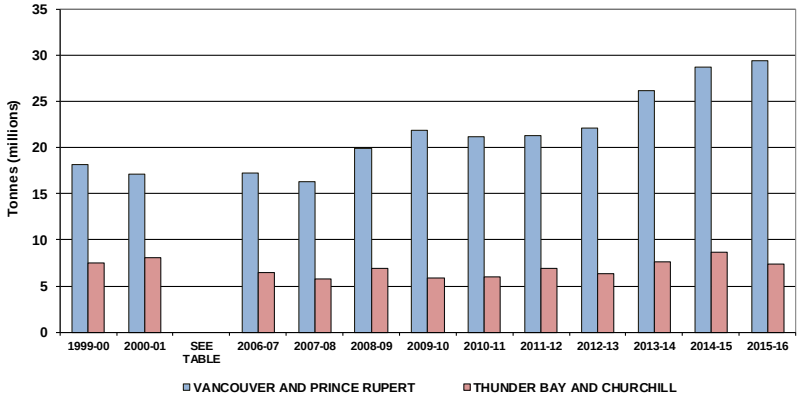


Figure 9: Railway Shipments – Western Gateways



slipping to 18.8 million tonnes from 19.1 million tonnes. British Columbia also posted a decline in traffic, which fell by 7.9%, to 333,600 tonnes from 362,400 tonnes. Partially offsetting these losses was Manitoba, where a 12.5% increase boosted shipments from that province to 4.4 million tonnes from 3.9 million tonnes.

In addition to the above, another 479,400 tonnes of grain were shipped in hopper cars to destinations within western Canada. This proved to be 8.3% less than the 522,700 tonnes moved a year earlier. Much of this net reduction stemmed from decreased shipments to points in the Lower British Columbia Mainland. [Tables 2B-3 through 2B-5]

Destination Ports

The port of Vancouver remained the principal export destination for western Canadian grain in the 2015-16 crop year. Traffic to Vancouver increased by 2.5%, to 23.1 million tonnes from the 22.5 million tonnes directed there a year earlier. The port's share of railway shipments also increased, to 62.8% from 60.2%. Prince Rupert posted a comparable gain, with railway shipments also rising by 2.5%, to just over 6.3 million tonnes from 6.2 million tonnes. The port also saw its share of the overall movement increase, to 17.2% from 16.5% the year previous. On a combined basis, these two ports handled 80.0% of the grain directed to western Canadian ports; a noticeably larger proportion than the 76.7% share they garnered a year earlier.

This increase denotes a further shift in favour of westbound grain shipments. Overall shipments into Thunder Bay and Churchill decreased by 1.4 million tonnes, or 15.7%. Much of this result was shaped by rail deliveries into Thunder Bay, which fell by 12.7%, to 7.2 million tonnes from 8.2 million tonnes a year earlier. The port's share of total hopper-car shipments decreased accordingly, to 19.6% from 22.0%. This was accompanied by a still more dramatic 69.2% decline in railway shipments into Churchill, which fell to 145,400 tonnes from 471,500 tonnes a year earlier. Churchill's traffic share was also cut, to just 0.4% from 1.3%.

Figure 10: Hopper Car Shipments – Grain-Dependent Originations

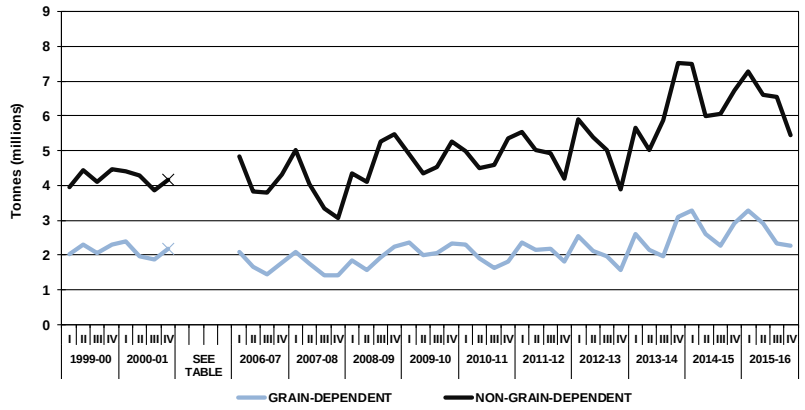
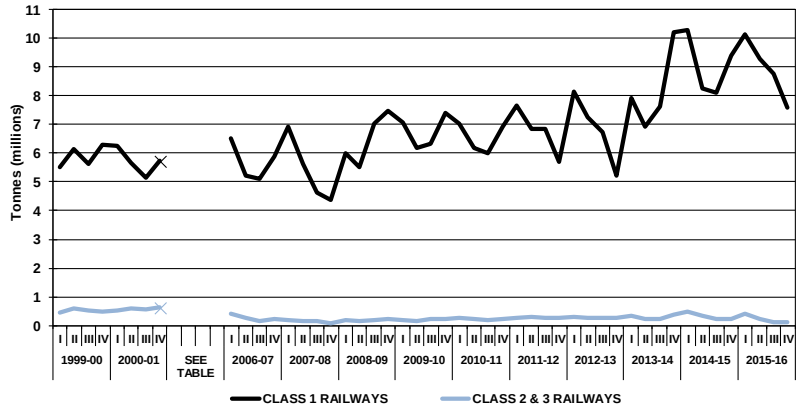


Figure 11: Hopper Car Shipments – Carrier Originations



Grain-Dependent and Non-Grain-Dependent Originations

For hopper-car traffic destined to the four ports in western Canada, the 2015-16 crop year brought a 1.5% increase in the tonnage originated by the non-grain-dependent network, which rose to 25.9 million tonnes from 26.3 million tonnes a year earlier. However, the amount of traffic originating at points on the grain-dependent network decreased by 3.0%, falling to 10.8 million tonnes from 11.1 million tonnes.

Notwithstanding seasonal fluctuations, the non-grain-dependent network continues to garner a larger share of this traffic than it did sixteen years earlier. During the 2015-16 crop year, 70.5% of all the grain originated and destined to the four ports in western Canada was forwarded from points on the non-grain-dependent network. This value stands moderately above the 66.2% share garnered in the GMP's base year. The reverse is of course true of the traffic originated by the grain-dependent network, whose relative share fell to 29.5% from 33.8% over the same period. [Table 2B-6]

Class 1 and Non-Class-1 Originations

A structural difference is also evident in the relative amounts of grain originated by the Class-1 and non-Class-1 railways. For traffic destined to the four ports in western Canada during the 2015-16 crop year, Class-1 carriers saw a decrease of 0.6% in their originated tonnage, which fell to 35.8 million tonnes from 36.0 million tonnes a year earlier. At the same time, the tonnage originated by the non-Class-1 carriers fell by 33.4%, to 891,400 tonnes from over 1.3 million tonnes.

Despite the emergence of several new shortline-railways in recent years, the traffic originated by non-Class-1 carriers has declined quite significantly over the course of the GMP. In the 2015-16 crop year, only 2.4% of the tonnage destined to the four ports in western Canada originated with a shortline carrier. This amounts to less than one-third of the 8.1% share benchmarked in the GMP's base year. Much of this decline is tied to the relative change in the underlying elevator network, which produced a deeper reduction for the shortline railways than it did for the major carriers. Even so, this loss was partially offset by a substantive increase in producer-car loadings, which account for a larger proportion of shortline grain originations.[3] [Table 2B-7]

Traffic to Eastern Canada

The amount of regulated grain moved by rail to eastern Canada during the 2015-16 crop year declined by 7.3%, to a little under 2.8 million tonnes from 3.0 million tonnes a year earlier. Comparatively, this amounted to less than five percent of the tonnage directed to points in western Canada. Over two-thirds of this volume, amounting to 1.9 million tonnes, was shipped to the ports that extend from the Lower Great Lakes through the Gulf of St. Lawrence, and on to Halifax. Another 853,300 tonnes were directed to points within eastern Canada itself (denoted as eastern domestic). [Table 2B-8]

Much of this traffic, totalling almost 2.0 million tonnes, moved in covered hopper cars. The remaining 815,900 tonnes moved in other types of railway equipment. These latter movements represented a more substantive portion of the total regional volume than observed for western Canada, 29.2% versus 3.5% respectively.

Special crop shipments to eastern Canada totalled 546,700 tonnes, down 9.0% from the 600,600 tonnes directed there the year previous. Unlike that directed to western Canadian destinations, these shipments took a much greater 19.5% share of the total volume. Only 63,200 tonnes of this moved in hopper cars. Most special crops, representing 88.4% of the total volume,

3 Another factor in the decline relates to the quality of the traffic data received by the Monitor, which is supplied by CN and CP. With an increasing number of shortlines adopting AAR Rule 11 billing, a greater proportion of data relative to their originated traffic is no longer available. This results in the movement being identified as originating on the lines of their Class-1 partner, be it CN or CP, thereby understating the amount of traffic actually originated by the non-Class-1 carriers.

moved as non-hopper-car shipments (in either boxcars or containers). [Table 2B-9]

Hopper Car Movements

Hopper-car shipments to eastern Canada emanated largely from Saskatchewan, which generated 59.5% of the overall volume. This was followed by Manitoba, which originated 39.9% of the shipments directed eastward, and Alberta, which supplied just 0.6% of the grain shipped. [Tables 2B-10 through 2B-12]

Destination Ports

Of the 2.0 million tonnes of grain shipped to eastern Canada in covered hopper cars during the 2015-16 crop year, the majority, almost 1.3 million tonnes, were directed to ports. This represented an 8.1% reduction from the 1.4 million tonnes directed there a year earlier. More than 1.2 million tonnes were moved to the ports of Montreal, Quebec City and Halifax (collectively identified as St. Lawrence Ports). The ports situated along the Lower Great Lakes received a mere 85,300 tonnes. Eastern domestic traffic constituted a more substantive 687,200 tonnes.

Grain-Dependent and Non-Grain-Dependent Originations

Most of the grain moving to eastern Canada in covered hopper cars were sourced from western Canada's non-grain-dependent railway network. During the 2015-16 crop year this amounted to 1.4 million tonnes, down 3.5% from that originated a year earlier. Traffic originating at points on the grain-dependent network declined by a more substantive 22.2%, falling to 580,800 tonnes from 747,000 tonnes. With 70.7% accorded to the former, this division is not materially different from what was observed for traffic destined to points in western Canada. [Table 2B-13]

Class 1 and Non-Class-1 Originations

Almost 1.9 million tonnes, or 95.1% of the grain shipped to eastern Canada in covered hopper cars, originated on the lines of the Class-1 railways. Although effectively unchanged, this denoted a 2.4% decline from what had been sourced a year earlier. The tonnage originated by the non-Class-1 carriers accounted for just 4.9% of the hopper-car volume, and amounted to just 97,000 tonnes. However, this represented a reduction of 63.8% from the 268,400 tonnes reported the previous year. These proportions are consistent with the respective 97.5% and 2.5% shares observed for traffic directed to points within western Canada. [Table 2B-14]

Traffic to the United States and Mexico

The amount of grain moved by rail to the United States and Mexico during the 2015-16 crop year totaled just over 7.0 million tonnes. This marked an 8.7% reduction from the 7.7 million tonnes directed into these markets a year earlier. Slightly less than 6.8 million tonnes of this was destined to the United States, down 9.9% from the 7.5 million tonnes handled the previous year. Although just 264,500 tonnes were earmarked for Mexico, shipments to the country rose by 39.2%. [Table 2B-15]

Some 5.2 million tonnes of US-bound traffic moved in covered hopper cars in the 2015-16 crop year. This was 14.6% less than the 6.1 million tonnes handled a year earlier. Another 1.6 million tonnes moved in other types of railway equipment, which proved 10.6% greater than the 1.4 million tonnes shipped the previous year. In excess of 3.9 million tonnes, or 58.2% of all US-bound shipments, originated in Saskatchewan. This was followed by 1.5 million tonnes sourced from Manitoba; 1.3 million tonnes out of Alberta; and just 800 tonnes out of British Columbia.

Over two-thirds of these shipments, amounting to almost 4.6 million tonnes, were tied to the movement of canola, be it in the form of seed, meal or oil. Approximately half of this volume, 2.4 million tonnes, were directed to destination states in the US West, chiefly California. This was followed by states in the US Midwest, which received another 1.0 million tonnes in canola-related shipments.

On a broader basis, the US West proved to be the largest market for western Canadian grain, taking in some 2.7 million tonnes. This was closely

followed by destinations in the US Midwest, with 2.5 million tonnes; the US South, with 947,500 tonnes; and the US northeast, with 587,400 tonnes. Special crops figured only marginally within this framework, with a total of only 59,300 tonnes being directed to US destinations. [Tables 2B-16 through 2B-18]

Conversely, the amount of grain imported into Canada by rail from the United States during the 2015-16 crop year only totaled 158,700 tonnes. However, this marked a 40.3% increase over the 113,100 tonnes shipped a year earlier. The largest portion, amounting to 152,000 tonnes, was destined to points in western Canada, with eastern Canadian destinations drawing in just 6,700 tonnes. The bulk of this traffic, amounting to some 101,800 tonnes, was comprised of non-mainstream commodities, chiefly feeds and allied products. Similarly, much of this traffic, amounting to 121,400 tonnes, moved as non-hopper-car shipments. [Table 2B-19]

Loads on Wheels

A complementary volume measurement used in gauging the relative performance of the GHTS in moving grain focuses on the number of loaded hopper cars in transit at a specified moment in time; normally the Friday of any given week.[4] These are then assembled into an average value for each month in the crop year.

The 2015-16 crop year began with an in-transit average of 8,378 cars for the month of August 2015. This increased gradually through the first quarter, ultimately peaking with an average of 11,803 cars in November 2015. This pace tapered off sharply in the latter months of the crop year, falling to an average 6,760 cars in May 2016. Collectively, the amount of equipment in transit during the 2015-16 crop year proved to be noticeably less than that observed a year earlier. Much of the differential appears tied to a larger proportion of the railways' equipment having been placed in storage. Even so, the broader characteristics remained largely unchanged,

4 The measure cited here relates only to railway-supplied equipment. It specifically excludes the private equipment also employed by shippers in moving grain, mostly to destinations in the United States.

Figure 12: Average Loads on Wheels by Destination Region

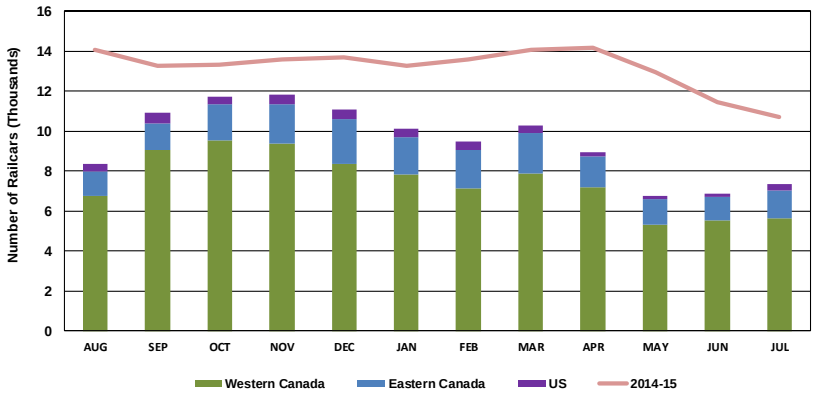
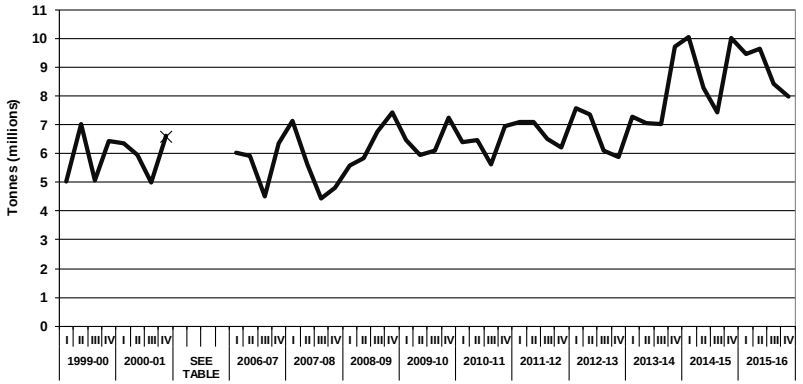


Figure 13: Terminal Elevator Throughput



with 78.9% of the equipment under load being directed to destinations in western Canada; 17.4% to markets in eastern Canada; and the remaining 3.7% to those in the United States. [Table 2B-20]

TERMINAL ELEVATOR THROUGHPUT

Port throughput, as measured by the volume of grain shipped from the terminal elevator and bulk loading facilities located at Canada's four western ports, declined by a marginal 0.5% in the 2015-16 crop year, slipping to 35.6 million tonnes from 35.8 million tonnes a year earlier. This was largely due to a comparatively weaker year-over-year showing in the fourth quarter, which saw total volume for the period fall by 19.8%, or almost 2.0 million tonnes. [Table 2C-1]

The most significant grain volumes continued to funnel its way through the west coast ports of Vancouver and Prince Rupert. For Vancouver, total marine shipments increased by 5.1%, to a GMP record of 21.7 million tonnes from 20.6 million tonnes a year earlier. This represented 60.9% of the system's total throughput. Prince Rupert posted a lesser gain, with shipments rising by 3.2%, to another GMP record of 6.3 million tonnes, from 6.2 million tonnes. When combined, the tonnage passing through these two west coast ports represented 78.7% of the overall total; up from the 74.8% share garnered a year earlier.

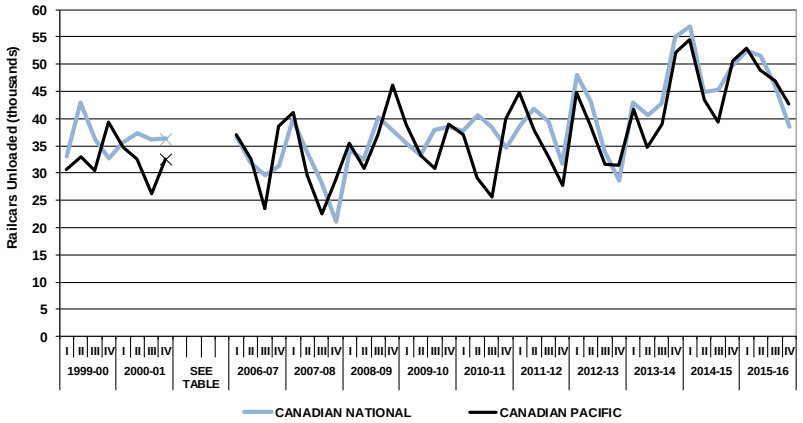
Of course, the increase posted by the west coast ports was reflected in a decrease for the GHTS's other two ports. The combined share secured by the ports of Thunder Bay and Churchill in the 2015-16 crop year fell to 21.3% from 25.2% a year earlier. Much of this decline stemmed from a weaker showing at Thunder Bay, which reported a 12.8% reduction, and saw throughput fall to 7.4 million tonnes from the previous crop year's GMP record of almost 8.5 million tonnes. This volume loss was enlarged by a 64.4% decrease for Churchill, where throughput fell to 187,800 tonnes from 527,400 tonnes.

Terminal Elevator Unloads

The number of covered hopper cars unloaded at terminal elevators in western Canada during the 2015-16 crop year decreased by 1.2%, falling to 380,306 cars from 384,782 cars a year earlier. Once again, these results reflected a particularly weak showing in the fourth quarter, which served to offset the gains made earlier in the crop year. The Canadian National Railway (CN) showed an overall decline of 4.2%, with the number of hopper cars unloaded by the carrier falling to 188,753 from 197,011 a year earlier. In comparison, the Canadian Pacific Railway's (CP) handlings increased by 2.0%, to 191,553 cars from 187,771 cars. This made CP the largest grain-handling railway in western Canada, with a share of 50.4% against 49.6% for CN. [Table 2C-2]

Most of this traffic was funneled through the west coast ports of Vancouver and Prince Rupert. Traffic destined to Vancouver rose by 4.5%, with 231,300 cars unloaded versus 221,420 cars a year earlier. CP fronted the gain, with the carrier's handlings into the port increasing by 11.9% while CN's fell by 5.0%. However, CN's handlings into Prince Rupert, which is the port's sole serving carrier, rose by 2.1%, to 69,298 cars from 67,905 cars a year earlier.

Figure 14: Terminal Elevator Unloads – Delivering Carrier



The 2015-16 crop year saw a significant reduction in the amount of grain shipped to Thunder Bay, with total handlings falling by 12.9%, to 78,024 cars from 89,560 cars a year earlier. An 18.8% decline in CP volume drove the decline, with the carrier's total handlings into the port falling to 51,343 cars from 63,251 cars. Conversely, CN saw its handlings into the port increase by 1.4%, unloading 26,681 cars against 26,309 cars the year previous. Shipments into Churchill fell even more dramatically, by 71.4%, to just 1,684 cars from 5,897 cars a year earlier.

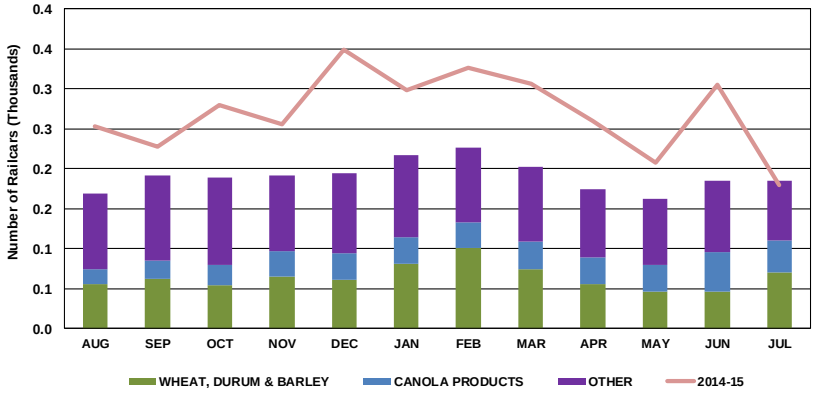
TRUCK VOLUMES TO US DESTINATIONS

Total shipments of western Canadian grain into the United States by truck totaled 2.3 million tonnes in the 2015-16 crop year. However, this marked a 29.6% reduction from the 3.2 million tonnes shipped a year earlier. Although volume reductions were noted for most grains, the deepest decline, 42.7%, was tied to decreased shipments of canola and canola-related products. This was followed by a 33.2% decline in wheat, durum and barley deliveries, as well as a 20.3% decline in the movement of other commodities. Much of the declines were attributable to diminished price incentives for cross-border deliveries into the US. [Tables 2D-1 through 2D-3]

Most of the traffic, amounting to 872,100 tonnes, or 38.2%, originated in Saskatchewan. This was followed in turn by 673,100 tonnes sourced from Manitoba, 606,900 tonnes out of Alberta and another 133,500 tonnes from British Columbia. Although wheat, durum and barley constituted some 771,700 tonnes of the grain directed into the US by truck, most of the total tonnage, amounting to slightly more than 1.5 million tonnes, encompassed a variety of other commodities. Chief among these were canola and canola-related products, along with oats, peas and soybeans.

The preponderance of the grain trucked into the United States, amounting to almost 1.4 million tonnes, was directed to the US Midwest. This was followed by destinations in the US West, with 635,900 tonnes; the US Northeast, with 173,500 tonnes; and the US South, with 79,100 tonnes.

Figure 15: Truck Shipments into the US



Section 3: Infrastructure

Indicator Description	Table	1999-00	2013-14	2014-15	2015-16 Q1	Q2	Q3	Q4	YTD	% VAR
Country Elevator Infrastructure										
Delivery Points (number)	3A-1	626	261	262	262	262	271	271	271	3.4%
Elevator Capacity (000 tonnes)	3A-1	7,443.9	7,330.3	7,334.8	7,334.8	7,334.8	7,844.6	7,844.6	7,844.6	7.0%
Elevators (number) – Province	3A-1									
Elevators (number) – Railway Class	3A-2	917	371	370	371	370	383	383	383	3.5%
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	236	235	235	235	249	249	249	6.0%
Elevators Capable of MCB Loading (number) – Railway Line Class	3A-6									
Elevator Closures (number)	3A-7	130	31	7	0	0	27	0	27	285.7%
Elevator Openings (number)	3A-8	43	11	6	0	0	40	0	40	566.7%
Delivery Points (number) – Accounting for 80% of Deliveries	3A-9	217	95	95	n/a	n/a	n/a	n/a	97	2.1%
Railway Infrastructure										
Railway Infrastructure (route-miles) – Total Network	3B-1	19,390.1	17,600.2	17,424.1	17,424.1	17,286.6	17,288.1	17,288.1	17,288.1	-0.8%
Railway Infrastructure (route-miles) – Class-1 Network	3B-1	14,503.0	15,011.5	14,835.4	14,800.2	14,662.7	14,664.2	14,664.2	14,664.2	-1.2%
Railway Infrastructure (route-miles) – Non-Class-1 Network	3B-1	4,887.1	2,588.7	2,588.7	2,623.9	2,623.9	2,623.9	2,623.9	2,623.9	1.4%
Railway Infrastructure (route-miles) – Non-Grain-Dependent Network	3B-1	14,513.5	14,135.6	14,135.6	14,135.6	14,008.3	14,009.8	14,009.8	14,009.8	-0.9%
Railway Infrastructure (route-miles) – Grain-Dependent Network	3B-1	4,876.6	3,464.6	3,288.5	3,288.5	3,278.3	3,278.3	3,278.3	3,278.3	-0.3%
Railway Fleet Size (railcars) – Average Weekly	3B-2	n/a	n/a	22,997	23,686	24,191	23,861	23,579	23,833	3.6%
Served Elevators (number)	3B-3	884	340	335	335	335	348	348	348	3.9%
Served Elevators (number) – Class 1 Carriers	3B-3	797	316	312	312	312	319	319	319	2.2%
Served Elevators (number) – Non-Class-1 Carriers	3B-3	87	24	23	23	23	29	29	29	26.1%
Served Elevators (number) – Grain-Dependent Network	3B-3	371	108	104	104	104	110	110	110	5.8%
Served Elevators (number) – Non-Grain-Dependent Network	3B-3	513	232	231	231	231	238	238	238	3.0%
Served Elevator Capacity (000 tonnes)	3B-3	7,323.0	7,170.6	7,147.5	7,147.5	7,147.5	7,673.4	7,673.4	7,673.4	7.4%
Served Elevator Capacity (000 tonnes) – Class 1 Carriers	3B-3	6,823.2	6,968.9	6,950.5	6,950.5	6,950.5	7,467.6	7,467.6	7,467.6	7.4%
Served Elevator Capacity (000 tonnes) – Non-Class-1 Carriers	3B-3	499.7	201.7	197.1	197.1	197.1	205.8	205.8	205.8	4.4%
Served Elevator Capacity (000 tonnes) – Grain-Dependent Network	3B-3	2,475.4	1,931.4	1,895.5	1,895.5	1,895.5	1,956.3	1,956.3	1,956.3	3.2%
Served Elevator Capacity (000 tonnes) – Non-Grain-Dependent Network	3B-3	4,847.6	5,239.2	5,252.0	5,252.0	5,252.0	5,717.1	5,717.1	5,717.1	8.9%
Terminal Elevator Infrastructure										
Terminal Elevators (number)	3C-1	15	15	17	15	15	15	15	15	-11.8%
Terminal Elevator Storage Capacity (000 tonnes)	3C-1	2,678.6	2,403.2	2,423.2	2,403.2	2,403.2	2,393.2	2,393.2	2,393.2	-1.2%

COUNTRY ELEVATOR INFRASTRUCTURE

At the outset of the 1999-2000 crop year, there were 1,004 licensed primary and process elevators on the prairies. By the end of the 2014-15 crop year, that number had fallen by 63.1%, to 370, making this decline one of the most visible facets of the changes brought to the GHTS since the beginning of the GMP.[5] [Table 3A-1]

The 2015-16 crop year saw the net addition of 13 elevators to this network. This raised the total number of elevators in western Canada to 383, and reduced the accumulated loss since the beginning of the GMP to 621 facilities, or 61.9%. Much of the increase stemmed from the licensing of what had previously been unlicensed producer-car loading sites. Five of these were occasioned by two corporate acquisitions made by AGT Foods and Ingredients Inc. in 2015: West Central Road and Rail Ltd.; and Mobile Capital Holdings Ltd. The opening of several new facilities by G3 Canada Limited, Ceres Global Ag Corp. and others accounted for the remainder. While marginal in relation to the network at large, these additions also marked the advent of a new generation of high-throughput facilities, and potentially further evolutionary changes.

Much the same has been true of the decline in grain delivery points, which have largely fallen in conjunction with the reduction in licensed elevators. By the close of the 2014-15 crop year the scope of this network had been reduced by 61.8%, to 262 delivery points from the 685 that had been in place at the beginning of the GMP. The 2015-16 crop year saw this count increase by nine, to 271. This trimmed the net reduction in delivery points during the GMP to 60.4%.

Provincial Distribution

At the close of the 2015-16 crop year, 197 of western Canada's licensed elevators were situated in Saskatchewan. These facilities constituted 51.4% of the system's total; a proportion similar to that held by the province at

5 The reduction in licensed elevators cited here reflects the net change arising from various elevator openings and closures.

Figure 16: Licensed Grain Elevators and Delivery Points

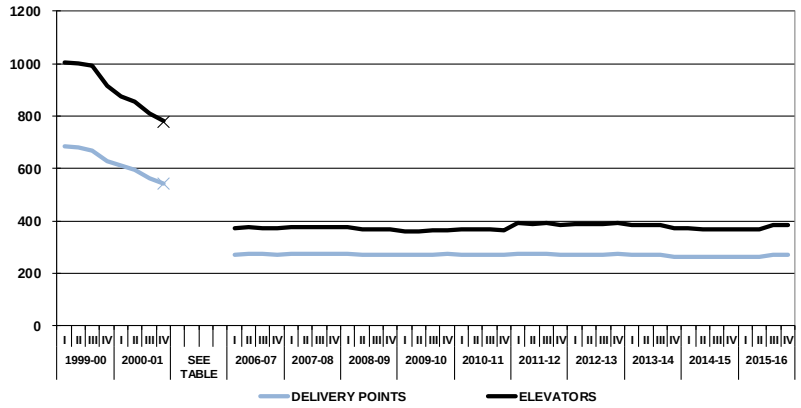
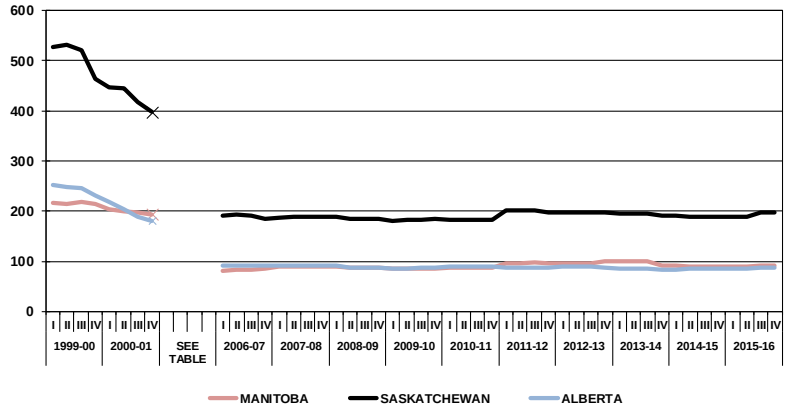


Figure 17: Licensed Grain Elevators – Provincial Distribution



the beginning of the GMP. This was followed by Manitoba and Alberta, whose corresponding 92 and 88 elevators accounted for shares of 24.0% and 23.0% respectively. The GHTS's remaining six facilities were divided between British Columbia, with five, and Ontario, with one.

Over the term of the GMP, Saskatchewan posted the greatest reduction in licensed elevation facilities, closing 330, or 62.6%, of its elevators. In comparative terms, the 164-elevator reduction in Alberta represented a slightly greater 65.1%. Manitoba followed with a 124-elevator, or 57.4%, reduction in its facilities. The comparable nature of these reductions indicates that elevator rationalization has been broadly based, and that the facilities of any single province have not been unduly targeted.

Elevator Storage Capacity

Despite a 61.9% decline in the overall number of elevators, the network's storage capacity has risen to a level 11.6% above the 7.0 million tonnes noted at the outset of the GMP. This differential reflects the character of the transformation that had taken place: that grain companies were substituting the handling capacity inherent in their existing wood-crib elevators with that provided by a lesser number of more efficient high-throughput facilities. In fact, the capacity added through their investment in these larger facilities temporarily outpaced that removed by the closure of older elevators early in the GMP, raising the system's total storage capacity to over 7.5 million tonnes. But this expansion proved brief, and by the close of the 2003-04 crop year total GHTS storage capacity had fallen by 19.0%, to reach a low of 5.7 million tonnes.

As elevator closures began to moderate, this trend was again reversed. Marked by a 157,000-tonne expansion in the 2004-05 crop year, the system's total storage capacity began to increase steadily. By the close of the 2014-15 crop year, it had risen to somewhat over 7.3 million tonnes. The 2015-16 crop year saw another 509,800 tonnes of storage capacity added to the system. This 7.0% increase raised total storage capacity to over 7.8 million tonnes, and a new high that well outdistanced the GMP's previous record of 7.5 million tonnes.

Figure 18: Change in Licensed Elevators and Storage Capacity

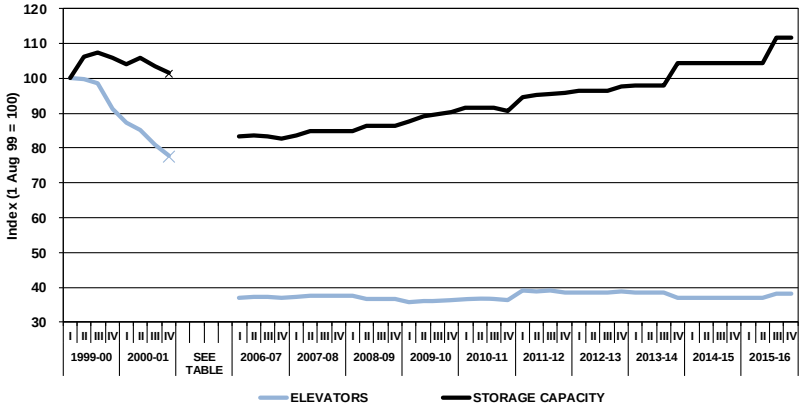
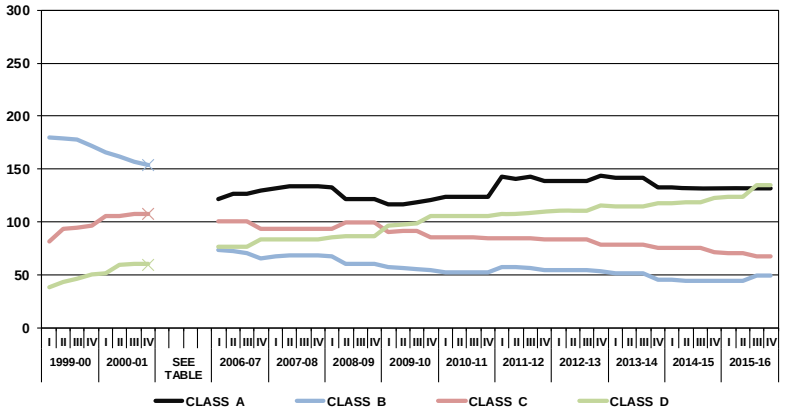


Figure 19: Licensed Elevators – Facility Class



Facility Class

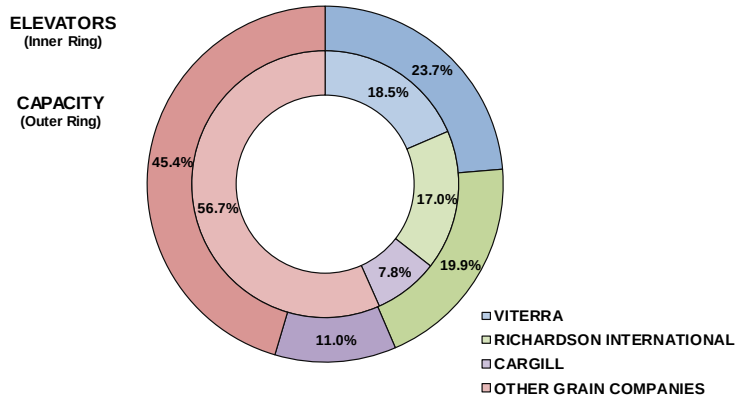
For comparative purposes, the GMP groups elevators into four classes. These classes are based on the loading capability of each facility, which is in turn defined by the number of railcar spots each possesses. Those with less than 25 car spots are deemed to be Class A facilities; those with 25-49, Class B; those with 50-99, Class C; and those with 100 or more, Class D.[6] In addition, the GMP deems Class C and D facilities to be high-throughput elevators given their ability to load railcars in larger numbers.

Within this framework, the composition of the elevator network can be seen to have changed significantly since the beginning of the GMP. The most striking aspect of this has been the decline in the number of smaller elevators. Over the course of the last 17 years the number of licensed Class A elevators has been reduced by 81.3%, to 132 from 705. This was complemented by a 72.8% reduction in the number of licensed Class B elevators, which fell to 49 from 180.

But these losses are now being augmented by reductions in the number of licensed Class C facilities, which has slipped by 17.3% from its base-year level, to 67 from 81. Only the largest high-throughput facilities, the licensed Class D elevators, have increased in total number, effectively expanding more than threefold, to 135 from 38. More importantly, an even more efficient generation of Class-D facilities has begun to emerge. These facilities incorporate not only greater elevator storage capacity but loop tracks that permit longer and faster unit-train operations.

With the close of the 2015-16 crop year, high-throughput facilities accounted for 52.7% of total system elevators and 81.8% of its storage capacity. Both shares stand significantly above their respective base-year values of 11.9% and 39.4%.

Figure 20: Licensed Elevators and Capacity



Grain Companies

For most grain companies, the key to improving the economic efficiency of their grain-gathering networks has been to rationalize their elevator assets. With the cornerstone of this strategy being the replacement of smaller elevators by larger high-throughput facilities, it follows that this would better lend itself to those grain companies having large physical networks. In fact, the largest grain companies proved to be the primary practitioners of elevator rationalization.

Through the close of the 2015-16 crop year, the deepest reductions were made by the predecessor companies of today's Viterra Inc., which on a combined basis oversaw the closure of 629, or 89.9%, of the 700 facilities

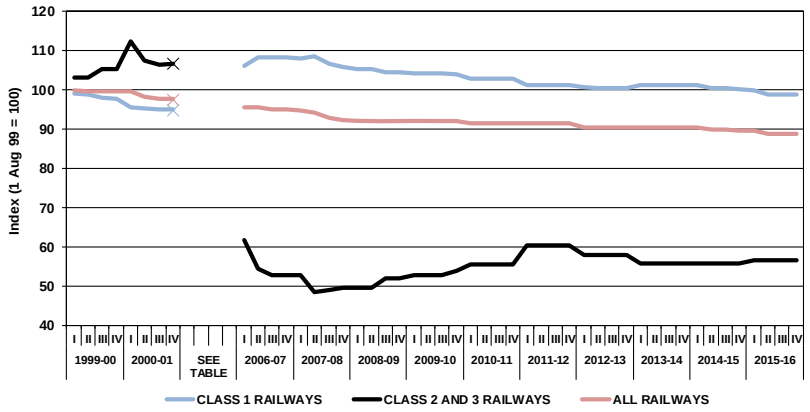
6 The facility classes employed here mirror the thresholds delineated by Canada's major railways at the beginning of the GMP for the receipt of discounts on grain shipped in multiple-car blocks. At that time, these thresholds involved shipments of 25, 50 or 100 railcars. First introduced in 1987, these incentives were aimed at drawing significantly greater grain volumes into facilities that could provide for movement in either partial, or full, trainload lots.

they had in place at the beginning of the GMP.[7] The next deepest cut, 50.8%, was posted by Cargill Limited. This was followed in turn by Paterson Grain and Richardson International, which saw reductions of 40.0% and 38.1% respectively.[8] Rounding out the field was Parrish and Heimbecker, which posted a 15.4% decrease. [Table 3A-3]

Elevator closures have abated significantly since the creation of Viterra in 2007. In fact, the total number of facilities began to rise after reaching a GMP low of 360 elevators in the first quarter of the 2009-10 crop year. However, much of the subsequent increase is misleading, since it largely reflects changes in the licensing requirements of the CGC rather than in the physical addition of new elevators. The facilities tied to companies such as Alliance Pulse Processors Inc., Simpson Seeds Inc. and the former Legumex-Walker Inc., figured prominently in this expansion since most – if not all – had previously been unlicensed. Nevertheless, there have been some noteworthy physical additions, such as the new facilities established by G3 Canada Limited and Ceres Global Ag Corp. The net result has been a near tripling in the number of elevators operated by other grain companies, which has climbed to 143 from 54.

Despite this numerical shift, Viterra, Richardson International and Cargill remain the dominant handlers of grain in western Canada, accounting for approximately three quarters of the annual export grain movement. This concentration is also reflected in the way grain is gathered into the system, with most of the tonnage collected at fewer than half of the GHTS's delivery points. In the 2015-16 crop year, 97 of the GHTS's 238 locations reporting deliveries received 80% of the overall grain. Although this 40.4% share is greater than the 33.5% recorded in the GMP's base year, it still suggests

Figure 21: Change in Route-Miles – Railway Class



that deliveries remain highly concentrated within a smaller grain-gathering network. [Table 3A-9]

RAILWAY INFRASTRUCTURE

At the outset of the 1999-2000 crop year, the railway network in western Canada encompassed 19,468.2 route-miles of track. Of this, Class-1 carriers operated 76.2%, or 14,827.9 route-miles, while the smaller Class-2 and 3 carriers operated the remaining 23.8%, or 4,640.3 route-miles.[9] Although the railway network has contracted, the reduction has proven substantially less than that of the elevator system it serves. By the close

7 Viterra Inc. was formed in 2007 following Saskatchewan Wheat Pool's purchase of Agricore United, which was itself the product of a merger between Agricore Cooperative Ltd. and United Grain Growers Limited in 2001. As such, Viterra Inc. is the corporate successor to the three largest grain companies in existence at the beginning of the GMP.

8 In advancing its acquisition of Viterra Inc in December 2012, Glencore International PLC agreed to a sale of Viterra's interest in 19 country and two terminal elevators to Richardson International. This asset transfer, which was finalized on 1 May 2013, effectively reduced the size differential between the two largest grain companies in western Canada. Up until Richardson International assumed control of these assets, the company had reduced the scope of its elevator network by 49.5%.

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

of the 2014-15 crop year, the net reduction in western Canadian railway infrastructure amounted to just 10.5%, with the network's total mileage having been reduced to 17,424.1 route-miles. The largest share of this 2,044.1-route-mile reduction came from the abandonment of 1,666.2 route-miles of light-density, grain-dependent branch lines.[10] [Table 3B-1]

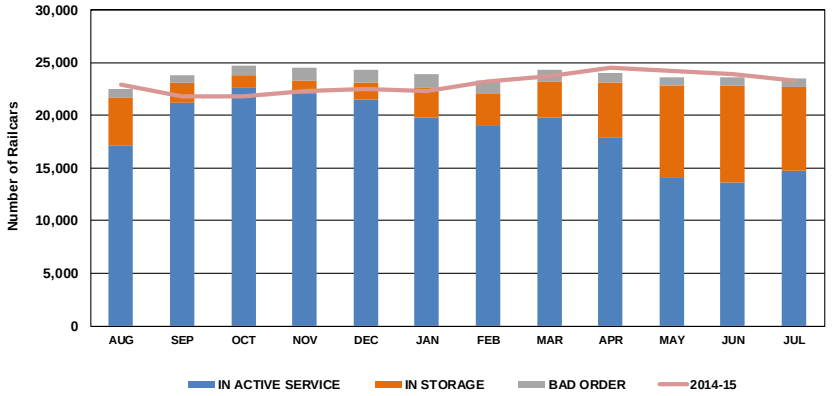
Only modest changes to the railway network in western Canada were noted during the 2015-16 crop year, which was reduced by another 0.8%, to 17,288.1 route-miles. This reduction was shaped by several branch-line discontinuances, including segments of: CN's Drumheller, Lampman and Stettler subdivisions; as well as CP's Arborg, Macleod and Okanagan subdivisions. A notable offset came by way of the construction of a 1.5-route-mile connection between the new inland terminal built by Ceres Global Ag Corp. at Northgate, Saskatchewan, and the BNSF Railway's Niobe subdivision, situated on the American side of the international border.

The 2015-16 crop year also saw the establishment of Northern Lights Rail, a new shortline railway created along a 35.2-route-mile section of CN's Tisdale subdivision in northern Saskatchewan. The remaining Class-1 railway network thus decreased by 1.2%, to 14,664.2 route-miles from 14,835.4 route-miles. Correspondingly, the infrastructure tied to non-Class-1-carrier operations increased by 1.4%, to 2,623.9 route-miles from 2,588.7 route-miles.

Fleet Size

A significant portion of the GHTS's grain-handling capacity is tied to the number of hopper cars used by Canada's major railways in moving grain from the prairies. The size of the fleet arrayed to accomplish this task varies with prevailing market conditions, expanding and contracting as necessary. During the 2015-16 crop year, an average of 23,833 hopper cars were deployed to move grain, an increase of 3.6% over the 22,997-car average observed a year earlier.[11] [Table 3B-2]

Figure 22: Fleet Size and Status – 2015 - 16 Crop Year



At any given moment in time, the equipment used for this purpose can be categorized in one of three ways: as being in active service moving grain; as being in storage awaiting later use; or as being "bad order" (i.e., removed from active service for repair). Typically, the proportion assigned to active service rises to meet peak demand, usually reaching its zenith sometime in the fall. This was much the case in the 2015-16 crop year, with the proportion in active service rising from 76.4% in August 2015 to 90.5% in November 2015. Thereafter, the utilization rate began to decline as more cars were placed in storage, ultimately falling to a low of 57.5% in June 2016. Owing to the same underlying forces, this pattern reflects that presented in the earlier discussion surrounding loads-on-wheels.

10 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.

11 See the Monitor's Annual Report for the 2014-15 crop year for a fuller discussion on the general composition of the hopper-car fleet.

Local Elevators

As previously outlined, the GHTS's elevator infrastructure has been transformed more substantively over the course of the last 17 years than has the railway network that services it. In broad terms, these facilities have decreased by 64.5%, to 348 from 979, while the associated storage capacity has increased by 10.7%, to almost 7.7 million tonnes from 6.9 million tonnes.[12]

These reductions, however, manifested themselves in noticeably different ways for the Class-1 and non-Class-1 railways. Through to the end of the 2015-16 crop year the decline in the number of elevators tied to each group proved roughly analogous, 63.9% against 69.8% respectively. Yet the change in associated storage capacities was noticeably different, with an increase of 16.6% for elevators local to Class-1 carriers set against a 61.0% decline for elevators local to the non-Class-1 carriers. [Table 3B-3]

These latter changes underscore the fact that the grain companies have been investing in facilities served by the major railways rather than the shortlines, situating virtually all their high-throughput elevators on the networks belonging to CN and CP.[13]

A more telling portrayal comes from examining the change in facilities local to both the grain-dependent, and non-grain-dependent, railway networks. Elevators situated along the grain-dependent network have fallen by 73.8% since the beginning of the GMP, to 110 from 420. For those situated along the non-grain-dependent network, the decline was 57.4%, with the number of elevators having fallen to 238 from 559. The change in associated storage capacity shows an even greater contrast, with that of the grain-dependent network falling by 21.3%, to just under 2.0 million tonnes from 2.5 million tonnes, while that of the non-grain-dependent network increased by 28.6%, to 5.7 million tonnes from 4.4 million tonnes. These shifts clearly indicate that the elevators tied to the grain-dependent railway network have diminished at a comparatively faster pace than those associated with the non-grain-dependent network.

TERMINAL ELEVATOR INFRASTRUCTURE

The 2015-16 crop year saw the loss of two facilities in the terminal elevator network, which fell to 15 from the 17 in service at the close of the previous crop year. These losses were also largely responsible for a 1.2% reduction in the network's associated storage capacity, which remained effectively unchanged at 2.4 million tonnes. This compares to the network of 14 elevators with 2.6 million tonnes of storage capacity benchmarked in the GMP's base year.[14] [Table 3C-1]

From the outset of the GMP, Thunder Bay has been home to most of the GHTS's terminal-elevator assets. At the close of the 2014-15 crop year this was comprised of eight facilities with almost 1.2 million tonnes of storage capacity. However, the 2015-16 crop year brought the delicensing of the very same two 10,000-tonne facilities that had been licensed in February 2015: that of MobilEx Terminal Ltd.; and Thunder Bay Terminals Ltd.

Owing to this, the number of licensed terminal elevators operating in Thunder Bay was reduced to six, with over 1.1 million tonnes of associated storage capacity. These reductions resulted in the port taking a 40.0% share of the system's elevators and a 47.9% share of its licensed storage capacity; both down from the 50.0% shares benchmarked 17 years earlier.

Aside from Thunder Bay, the only other change to the makeup of the terminal elevator system in western Canada was tied to an interim loss of 10,000 tonnes of storage capacity at Vancouver. This was occasioned by

12 The reductions cited here relate only to the facilities directly served by rail.

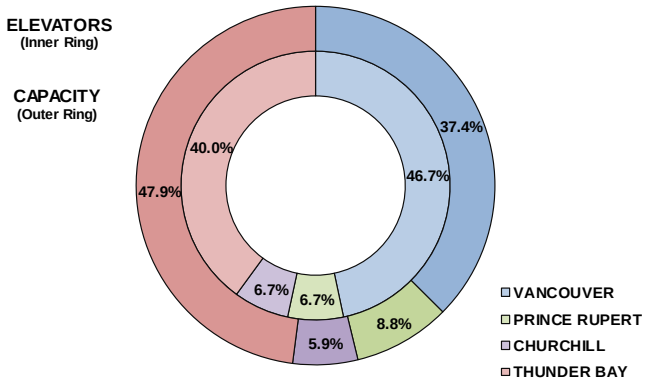
13 As at 31 July 2016 there were 201 high-throughput elevators served by rail. Of these, 193 were served by CN and CP.

14 Beyond the change in its physical scope, the network was affected by a series of changes in terminal ownership. Much of this stemmed from the various corporate mergers and acquisitions undertaken since the beginning of the GMP. Those with the most bearing on terminal ownership came from the merger of Agricore Cooperative Ltd. and United Grain Growers Limited, which combined to form Agricore United in 2001. This entity was itself bought out by Saskatchewan Wheat Pool in 2007, which later rebranded itself as Viterra Inc.

the ongoing construction activity associated with the expansion of the Richardson International terminal. In consequence, Vancouver's total storage capacity declined by 1.2%, to 896,200 tonnes from 906,200 tonnes a year earlier. Vancouver, which had seen its terminal elevators increase to seven from five over the course of the previous 17 years, now accounted for 46.7% of the system's facilities and 37.4% of its licensed storage capacity as compared to their corresponding base-year values of 35.7% and 36.3%.

Similarly, while neither Prince Rupert nor Churchill saw changes to their terminal assets during this same period, both gained relatively higher standing because of the evolution at Thunder Bay and Vancouver. Both still registered one terminal elevator apiece, and storage capacity shares of 8.8% and 5.8% respectively.

Figure 23: Terminal Elevators – 2015-16 Crop Year



Section 4: Commercial Relations

Indicator Description	Table	1999-00	2013-14	2014-15	2015-16 Q1	Q2	Q3	Q4	YTD	% VAR
Trucking Rates										
Composite Freight Rate Index – Short-haul Trucking	4A-1	100.0	162.2	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	131.2	135.3	135.3	135.2	133.2	133.1	133.1	-1.6%
Composite Rate Index – Dockage	4B-1	100.0	155.4	166.6	165.3	162.2	162.2	165.0	165.0	-1.0%
Composite Rate Index – Storage	4B-1	100.0	188.0	186.3	189.9	192.4	192.4	204.6	204.6	9.8%
Railway Freight Rates										
Composite Freight Rate Index – CN Vancouver	4C-1	100.0	129.1	141.3	131.1	131.0	127.5	132.2	132.2	-6.4%
Composite Freight Rate Index – CP Vancouver	4C-1	100.0	118.7	145.2	134.4	129.0	125.1	135.5	135.5	-6.7%
Composite Freight Rate Index – CN Thunder Bay	4C-1	100.0	145.6	151.6	148.4	148.4	144.6	150.2	150.2	-0.9%
Composite Freight Rate Index – CP Thunder Bay	4C-1	100.0	120.0	151.1	144.8	134.6	131.9	145.3	145.3	-3.8%
Effective Freight Rates ($ per tonne) – CTA Revenue Cap	4C-3	n/a	$33.69	$35.57	n/a	n/a	n/a	n/a	$33.84	-4.9%
Terminal Elevator Handling Charges										
Composite Rate Index – Receiving, Elevating and Loading Out	4D-1	100.0	150.0	153.4	154.2	154.2	154.9	156.8	156.8	2.2%
Composite Rate Index – Storage	4D-1	100.0	180.1	183.6	184.1	184.1	184.6	183.7	183.7	0.0%

TRUCKING RATES

Short-haul trucking rates rose substantially between the 2004-05 and 2008-09 crop years, increasing by a factor of one-third from what they had been at the beginning of the GMP. Although this escalation was largely derived from rising fuel and labour costs, it was also supported by a heightened demand for carrying capacity, which allowed service providers a greater degree of latitude in passing these costs onto grain producers. Even with a subsequent collapse in crude oil prices, these rates remained unchanged through the close of the 2009-10 crop year.

But the 2010-11 crop year saw oil prices regain a lot of lost ground, reaching as much as $110 US per barrel by April 2011. This ultimately raised fuel prices and brought new pressure to bear on the cost of moving grain by truck. Accordingly, the composite price index for short-haul trucking rose to a GMP high of 162.2 by the close of the 2010-11 crop year. While fuel prices remained volatile over the next three crop years, trucking rates varied little. This left the composite price index unchanged through the 2013-14 crop year. However, in the wake of the various corporate acquisitions made during this same period, the freight rates used to calculate this price index were no longer being published. This left the Monitor unable to track changes to these rates in either the 2014-15 or 2015-16 crop years. [Table 4A-1]

COUNTRY ELEVATOR HANDLING CHARGES

Grain companies charge for a variety of primary elevator handling activities predominantly for the receiving, elevating and loading out of grain. These are also fees levied for the removal of dockage (cleaning) and storage, all of which vary widely with the activity, grain and province involved.

Given the wide variety of tariff rates, the GMP necessarily uses a composite price index to track changes in them. Since the beginning of the GMP, the rates for these various services have risen considerably. The smallest increases have been in those tied to the receiving, elevating and loading-

Figure 24: Change in Composite Freight Rates – Short-Haul Trucking

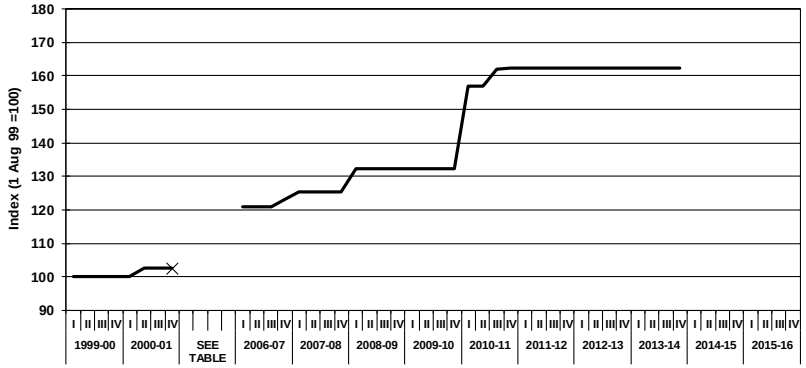
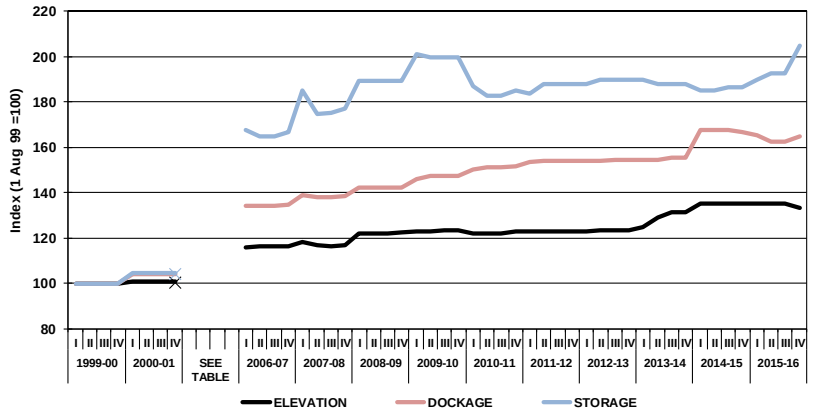


Figure 25: Change in Primary Elevator Handling Charges



out of grain. Through to the end of the 2014-15 crop year, these costs had risen by 35.3%. Modest reductions in the 2015-16 crop year, particularly in the fourth quarter, helped to reduce these rates by an average of 1.6%. Consequently, the overall composite price index fell to 133.1 from 135.3.

The rates associated with the removal of dockage have increased at a somewhat faster pace. Through to the end of the 2014-15 crop year, these rates had already increased by 66.6%. Reductions in the rates posted in Saskatchewan served to offset modest increases made in Manitoba and Alberta in the 2015-16 crop year, resulting in the overall composite price index contracting by 1.0%, to 165.0 from 166.6.

The most substantive rate escalations have been tied to elevator storage. Much of the initial price shock came towards the end of the 2000-01 crop year, when these rates were raised by a factor of almost one-third. Since then they have continued to climb, having risen by 86.3% through to the end of the 2014-15 crop year.[15] With all provinces posting substantive increases in the 2015-16 crop year, the composite price index rose by another 9.8%, to 204.6 from 186.3. [Table 4B-1]

RAILWAY FREIGHT RATES

The single-car freight rates charged by CN and CP for the movement of regulated grain have changed substantially since the beginning of the GMP, evolving from what were largely mileage-based tariffs into a less rigidly structured set of more market-responsive rates. Likewise, these changes also employed differential pricing based on commodity, type of railcar, destination and period in which the traffic was to move. [Table 4C-1]

CN's initial pricing actions in the 2015-16 crop year resulted in its westbound rates into Vancouver and Prince Rupert being reduced by an average of 7.4%. In comparison, the carrier's single-car rates into Thunder Bay and Churchill were reduced by a lesser 2.4%. These were followed in mid-November 2015 with an across-the-board cut of $100 per car, which

15 It should be noted that all tariff rates constitute a legal maximum, and that the rates actually paid by any customer for storage may well fall below these limits.

Figure 26: CN Single-Car Freight Rates – Primary Corridors

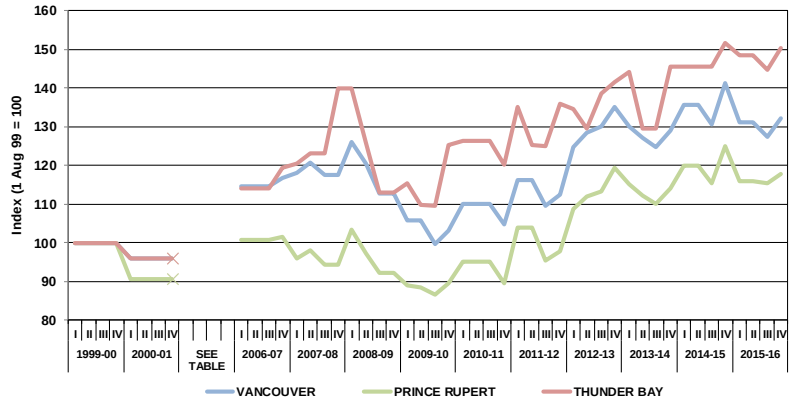
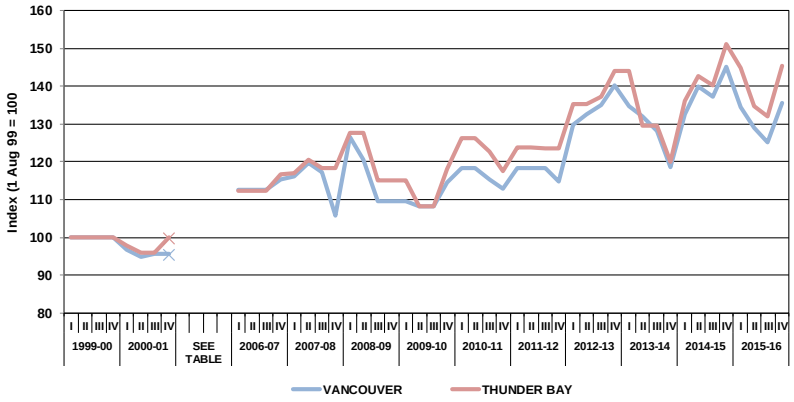


Figure 27: CP Single-Car Freight Rates – Primary Corridors



equated to a reduction of roughly 2%. These reductions lasted until the beginning of January 2016, when they were effectively reversed, largely reinstating the rates that had been in place at the end of the first quarter. The carrier initiated another round of selective reductions in April 2016, with rates in all corridors except that of Prince Rupert falling by anywhere from $100 to $300 per car. But these were more than countered by the rate hikes brought forward in all corridors in mid-June 2016. By the close of the 2015-16 crop year, CN's single-car rates had effectively been reduced: by 6.4% in the Vancouver corridor; 5.6% in the Prince Rupert corridor; 0.9% in the Thunder Bay corridor; and 1.2% in the Churchill corridor.

As was the case with CN, CP also initiated single-car rate reductions at the beginning of the 2015-16 crop year, which equated to about 7.4% on movements into Vancouver and 4.2% on movements into Thunder Bay. These rates were reduced still further in December 2015, when the carrier brought forward additional cuts amounting to about 4.0% and 7.0% respectively. A third round of reductions followed in April 2016 when CP reduced its single-car rates into Vancouver by another 3.0%, and into Thunder Bay by another 2.0%. But these were largely offset by the selective application of rate increases that reached up to 5.0% in mid-May and 8.0% in mid-July. By the close of the crop year, CP's single car rates in the Vancouver corridor had fallen by a factor of 6.7%, and by 3.8% in the Thunder Bay corridor.

Despite the differing pricing actions taken by CN and CP, the year-end rate structures of both carriers proved quite similar. An examination of the net change in these single-car freight rates over the course of the past 17 years provides some insight into their evolution. At the close of the 2015-16 crop year, the single-car rates applicable on the movement of grain to the jointly served port of Vancouver had risen by about 33.9% since the beginning of the GMP. The CN-served port of Prince Rupert, which benefited from a change to the rate structure more than a decade ago, posted a much lesser increase of 17.9%. In comparison, the rate increases imposed in the Thunder Bay and Churchill corridors proved more substantive, amounting to 47.8% and 50.2% respectively.

Taken altogether, however, these increases were consistent with the broader 26.7% escalation allowed in the Canadian Transportation Agency's Volume-Related Composite Price Index, and which is used by the Agency in determining the railways' Maximum Revenue Entitlement.

Multiple-Car-Block Discounts

There have been equally significant changes to the structure of the freight discounts both carriers use to promote the movement of grain in multiple car blocks. The most noteworthy aspect of this evolution was the gradual elimination of the discounts applicable on movements in blocks of less than 50 cars, along with a progressive escalation in the discounts tied to blocks of 50 or more cars. Over the course of the GMP, the discount applicable on the largest of these has risen by a factor of 60%, to $8.00 per tonne from $5.00 per tonne. These multiple-car block discounts have been a central force in the rationalization of the western Canadian elevator system and in the expansion of high-throughput facilities.

These discounts remained unchanged throughout the 2015-16 crop year. CN continued to offer discounts on movements in blocks of 50-99 cars that equated to $4.00 per tonne, and to $8.00 per tonne on movements of 100 or more cars. The corresponding discounts for CP remained at $4.00 per tonne for shipments in blocks of 56-111 cars, and at $8.00 per tonne for shipments in blocks of 112 or more cars. [Table 4C-2]

Maximum Revenue Entitlement

Under the federal government's Maximum Revenue Entitlement (MRE), established in 2000, the unadjusted revenues that CN and CP 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. These limits are not static, rather they are adjusted annually to reflect changes in volume, average length of haul, and inflation. With the exception of the inflationary component, these adjustments are determined by the

Canadian Transportation Agency following a detailed analysis of the traffic data submitted to it by CN and CP at the end of any given crop year.[16]

For the 2015-16 crop year, the MRE for CN and CP were set at $684.7 million and $677.9 million respectively, or $1,362.6 million on a combined basis.[17] This marked the fifth consecutive instance since the MRE was introduced that the carriers' combined revenue entitlement actually reached above $1.0-billion. [Table 4C-3]

At the same time, the Agency determined that the statutory revenues derived from the movement of regulated grain by CN and CP amounted to $685.8 million and $681.3 million respectively, or $1,367.1 million on a combined basis. These determinations resulted in both carriers exceeding their maximum entitlement: by $1.0 million in the case of CN; and by $3.4 million in the case of CP.[18] Total carrier revenues were 0.3% above the prescribed limit.

TERMINAL ELEVATOR HANDLING CHARGES

The rates posted for the receiving, elevating and loading out of grain nominally are the highest assessed by the terminal elevator operators. As seen with earlier measures, an examination of price movement is best performed using a composite index, given the myriad of different tariff rates. At the end of the 2014-15 crop year these ranged from a low of about $9.99 per tonne on wheat delivered at Thunder Bay, to a high of $17.13 per tonne on oats shipped to Vancouver.

Figure 28: Maximum Revenue Entitlement – Compliance

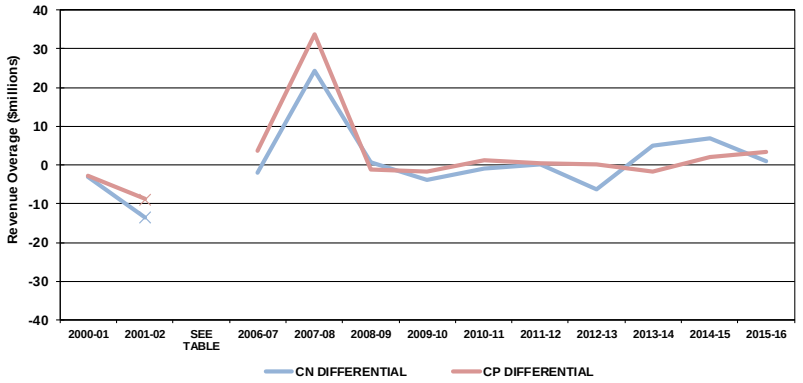
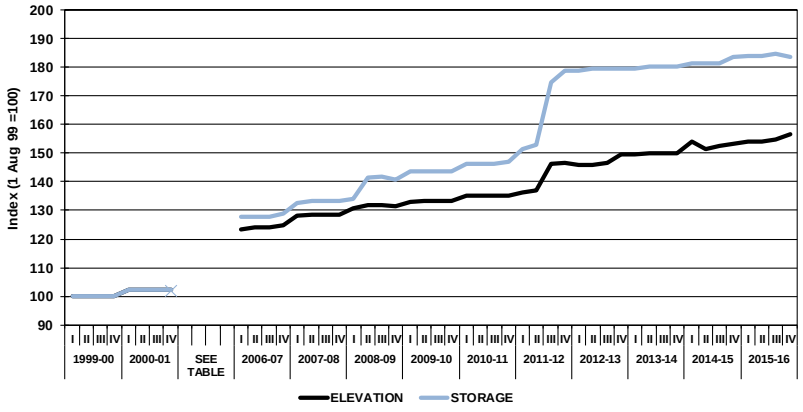


Figure 29: Change in Terminal Elevator Handling Charges



16 The Volume-Related Composite Price Index (VRCPI), which provides for an inflationary adjustment to carrier revenues, is determined by the Canadian Transportation Agency in advance of each crop year. For the 2015-16 crop year, the Agency determined the value of the VRCPI to be 1.2668, which represented a year-over-year decrease of 4.9%. See Canadian Transportation Agency Decision Number 131-R-2016, dated 29 April 2016, and which supplanted the Agency's original determination as set out in 114-R-2015, dated 13 April 2015.

17 See Canadian Transportation Agency Decision Number 378-R-2016 dated 22 December 2016.

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

The 2015-16 crop year brought several changes to these rates. The most substantive were at Prince Rupert, which posted an average increase of 6.8%. This, coupled with lesser escalations of 3.3% at Thunder Bay and 1.2% at Vancouver, led to a 2.2% increase in the composite price index, which rose to 156.8 from 153.4. [Table 4D-1]

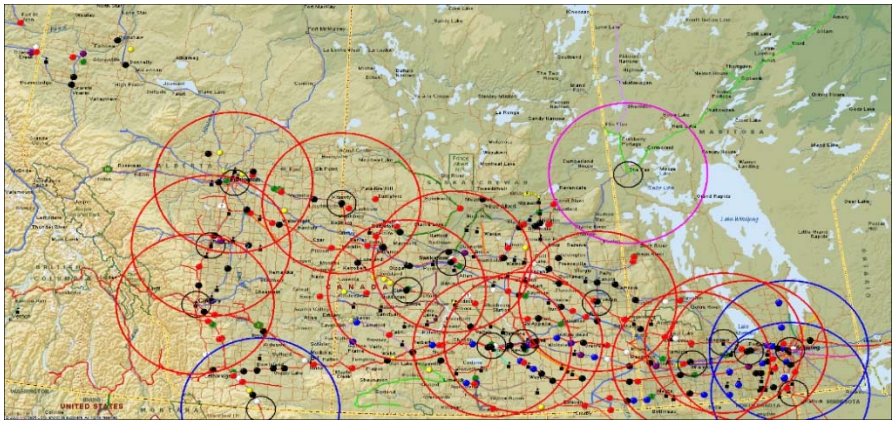
As with the cost of elevation, the daily charge for storage also varied widely, at the close of the 2014-15 crop year these ranged from a common low of about $0.09 per tonne on most wheat held at port to a high of $0.16 per tonne on oats maintained in inventory at Vancouver and Churchill. Modest increases in the storage rates for grain at Vancouver and Thunder Bay, which averaged 0.8% and 0.9% respectively, were largely countered by a 2.0% reduction at Prince Rupert. This led to a marginal increase in the composite price index, which rose to 183.7 from 183.6.

COMMERCIAL DEVELOPMENTS

Use of Extended Interswitching

One of the key provisions in the *Fair Rail for Grain Farmers Act*, which received royal assent on 29 May 2014, related to a temporary modification of the interswitching provisions found in the *Canada Transportation Act*. Specifically, it extended the interswitching radius for federally-regulated railways having interchanges located within the provinces of Manitoba, Saskatchewan and Alberta from the national 30-km standard to 160 km.[19] Its purpose was to provide grain shippers with better access to alternative railway services given the logistical problems encountered in the 2013-14 crop year.[20]

Figure 30: Western Canada Interchanges and Interswitching Zones (30km and 160km)



In an effort to evaluate the usage of extended interswitching by the industry at large, the Monitor approached several large grain shippers for more specific information regarding their use of this provision during the 2015-16 crop year.[21] The statistics derived from this exercise, along with some general observations, are summarized here.

Firstly, it should be noted that the Monitor estimated that 339, about 90%, of the 370 then licensed elevators were within reach of an interchange under the newly extended interswitching radius of 160 km. However, practical commercial considerations limited the potential application of this reach to about 150 facilities. In the end, only thirteen of these facilities would report use of this provision in moving traffic.

19 As a practical matter, the *Canada Transportation Act* prescribes a maximum interswitching radius of 30 km, denoted as zone 4, within Canada. The *Fair Rail for Grain Farmers Act* temporarily established a larger 160-km radius, denoted as zone 5, for interchanges located in Manitoba, Saskatchewan and Alberta. This was to remain in effect until 31 July 2016.

20 See the Annual Report of the Monitor for the 2013-2014 Crop Year for a fuller discussion of the logistical problems encountered during this period.

21 Working initially through the Western Grain Elevator Association and the Canadian Oilseed Processors Association, the Monitor initiated discussions to secure detailed information on grain shipments employing extended interswitching. Ultimately, a protocol for the monthly collection of this data was agreed to, with the data then summarized by the Monitor and shared with all participating grain companies as well as the Government of Canada.

The operators of these facilities reported a total of 4,795 carloads of grain having been moved using extended interswitching in the 2015-16 crop year. These are summarized in Table 1. The largest proportion of these movements, amounting to 59.8% were achieved with the use of railway-supplied equipment. The remaining 40.2% was accomplished using privately-owned equipment supplied by the shipper.

Although applicable to all federally-regulated railways, interswitching was largely conceived as a mechanism by which shippers could secure access to competitive CN and CP services. However, about three quarters, 75.9%, of all shipments made under the newly extended interswitching provision were used to access the services of another carrier entirely. More specifically, grain shippers employed the provision to engage the BNSF Railway in moving a total of 3,638 carloads of traffic from CN and CP-served origins to destinations in the United States. Much of this traffic, amounting to 2,390 carloads, was drawn from CP-served origins, with another 1,248 carloads originating at CN-served points. Undoubtedly, this reflects the relative proximity of both networks to the United States border, which heightens their susceptibility to the potential competitive offering of a US-based carrier.[22]

Conversely, only 24.1% of all shipments made under the newly extended interswitching provision related to domestic grain movements. Almost all involved traffic drawn away from CP-served origins by CN, with 1,152 carloads being interswitched. Only five cars were taken away from CN-served origins by CP (all in private equipment).

Data provided by the grain companies also included a freight saving estimate, based on what likely would have been paid had the 30-km interswitching radius remained unaltered. This entailed the calculation of the differential between a previously paid rate and that secured with extended interswitching to reach the same destination (although the physical routings differed). In aggregate, this estimate suggests that grain shippers avoided close to $5.3 million in conventional freight charges[23]. The data also indicates that much of the savings was derived from the shorter physical routings that were made possible. This is exemplified by a comparison of the alternative routes tied to two specific movements:

- A routing from Lethbridge, Alberta, to Stockton, California, where a CP routing through Vancouver, British Columbia, would involve a total distance of approximately 2,790 km against a BNSF routing totalling just 2,145 km; a reduction of 23%.
- A routing from St. Agathe, Manitoba, to La Mirada, California, where a CN routing through Vancouver would involve a total distance of approximately 4,590 km against a BNSF routing totalling just 3,280 km; a reduction of 29%.

Although shorter routing distances were a significant factor in the generation of these savings, many shippers claimed that a portion was also attributable to more aggressive pricing on the part of BNSF. Even so, the volumes tied to the use of extended interswitching in the 2015-16 crop

Table 1: Summary of Extended Interswitching Movements

Traffic Originated As	Railway Supplied	Privately Supplied	Total Cars	% of Total
Cars from CP Origins to BNSF	866	1,524	2,390	49.8%
Cars from CN Origins to BNSF	1,141	107	1,248	26.0%
Cars to Foreign Carriers	**2,007**	**1,631**	**3,638**	**75.9%**
Cars from CP Origins to CN	861	291	1,152	24.0%
Cars from CN Origins to CP	-	5	5	0.1%
Cars to Domestic Carriers	**861**	**296**	**1,157**	**24.1%**
Cars to All Carriers	**2,868**	**1,927**	**4,795**	**100.0%**

22 As a federally regulated carrier under the *Canada Transportation Act*, the provisions of the Act allow the BNSF Railway, which is the only US-based carrier with interchanges situated in the prairie provinces, to provide a competitive interswitching-based service to reach CN and CP-served grain elevators. Since there is no direct equivalent to the Canadian interswitching provisions under the laws of the United States, US-based shippers with facilities local to the BNSF cannot access alternative CN or CP services in the same way. It

23 It should be noted that the Freight Savings are self reported by the grain companies and therefore unaudited.

year represent less than 1% of the overall grain movement. This proportion rises to almost 5% when considering grain shipments into the US alone.

CTA Review Panel Report Spurs Evaluation of Transportation Needs

On 25 February 2016 the federal Minister of Transport tabled the report of the *Canada Transportation Act* review panel in Parliament. The eighteen-month review, which concluded in December 2015, sought to identify priorities and potential actions in transportation to support Canada's long-term economic well-being. The report, which followed significant public consultations and analysis, advanced 60 recommendations. Four of these touched on the movement of grain specifically, including: phasing out the Maximum Revenue Entitlement; explicitly extending the definition of "shipper" to producer-car loaders; reviewing the methodology as it pertains to interswitching rate setting; and the sunsetting of the 160-km extended interswitching limit.

While these recommendations largely reflected the positions that had been advanced by Canada's two major railways, they drew a less favourable reaction from other stakeholders in the grain-handling industry, who argued that the review did not fully address the more fundamental issue of railway market power and its impact on the provision of railway services. Yet the review's broader scope reached well beyond this narrower perspective. And it was within this context that the Minister of Transport indicated that the review's advice would be considered; helping to position Canada's transportation system to meet the country's future needs. To this end, the minister announced that Transport Canada would engage in a series of related consultations lasting into the fall of 2016 before giving definition to any new government policies and legislation.

In the meantime, the government moved to address some of the grain industry's more immediate concerns. Chief among these were the emergency provisions that had been put forward in August 2014 and which were set to expire at the end of the 2015-16 crop year.[24]

On 22 April 2016 the Federal Government announced that it would be extending the emergency provisions established under the *Fair Rail for Grain Farmers Act* for a period of one year allowing industry stakeholders to plan for the upcoming year under predictable conditions while the government considered the recommendations of the CTA Review Panel. It also allowed the Canadian Transportation Agency to consider regulations specifying what constituted the "operational terms" that could be referred to in a level-of-service arbitration, and to order the payment of compensation to shippers for a railway's failure to fulfill its level-of-service obligations.

OmniTRAX Seeks to Sell Churchill Assets

Although typically handling over 500,000 tonnes annually, the 2015 shipping season saw just 187,800 tonnes of grain moved through the port of Churchill; the lowest recorded under the GMP. This led Denver-based OmniTRAX to announce in November 2015 that it intended to sell the northern Manitoba properties it had purchased from the federal government and the Canadian National Railway in 1997. In addition to the various port facilities it operated, which included the only licensed terminal elevator in Churchill, OmniTRAX indicated that it was also looking to sell the Hudson Bay Railway, and the only connection the port had with the rest of the North American railway network. This followed earlier statements from the company to the effect that without additional financial support from the federal and provincial governments, OmniTRAX would be left in the position of having to curtail operations.

In December 2015, OmniTRAX confirmed that it had accepted a letter of intent for the purchase of these assets from a consortium of northern Manitoba First Nations. At that time, it was disclosed that the parties had

24 The emergency provisions referred to here were contained in the *Fair Rail for Grain Farmers Act*, which was brought forward in response to the logistics problems experienced in moving grain by rail during the 2013-14 crop year.

entered a 45-day negotiation period, during which they would share information and exercise appropriate due diligence, in the hopes of concluding a deal by 1 February 2016.

The consortium of First Nations communities, led by the Mathias Columb Cree Nation has railway management experience having previously purchased the line OmniTRAX operated between The Pas, Manitoba, and Lynn Lake, Manitoba, in 2006 (now known as the Keewatin Railway Company). Even so, by the time the February deadline arrived, a deal had not been struck between the parties, although discussions reportedly were ongoing. Against this backdrop, OmniTRAX indicated that it was still planning to operate the grain terminal at Churchill through the 2016 shipping season, with the hope of moving at least 500,000 tonnes.

On 25 July 2016 the Port of Churchill announced that the grain terminal would be closed for the 2016 shipping season. In addition, the company's wholly-owned Hudson Bay Railway immediately scaled back its freight service to just one northbound and southbound train per week. While the announcement itself had impact on the northern communities, there was little within the grain-handling industry itself. Moreover, OmniTRAX's decision to suspend terminal operations essentially responded to the fact that very few shippers had committed themselves to moving grain through the port that season.

In the view of most grain companies, Churchill is a less-attractive export destination given that many can use their own facilities at other ports to better commercial advantage. In addition, many had grown leery of using the Churchill gateway in the face of the uncertainty that shrouded the port's future. Nor would they consider doing so without the financial incentive provided under the federal government's Churchill Port Utilization Program.[25] By the close of the 2015-16 crop year, even this inducement had proven to be insufficient.

With little more than 1% of western Canada's total railway grain shipments being directed for movement through Churchill, the closure of the grain terminal posed little real problem for the GHTS at large. Grain that normally would have been sourced from the Churchill catchment area had already been absorbed into the traffic flows directed towards the system's other ports with little noticeable effect.

Glencore Sells Interest in Agricultural Holdings

Owing to the continuing impact of weak global commodity prices on its finances, Switzerland-based mining and trading company, Glencore PLC, announced on 7 September 2015 that it was going to take more substantive measures to reduce its US$30 billion debt by about a third. In addition to the company's previously announced plans to issue more equity and suspend dividend payments through 2016, Glencore revealed that it intended to raise another US$2 billion through the sale of company assets, including a minority interest in its agriculture assets. By the end of the month it was reported that Glencore had already moved to create a separate legal entity for the assets involved, a significant portion of which was tied to one of Canada's largest grain handlers: Viterra Inc.[26]

By April 2016 it was revealed that Glencore had negotiated a private sale of a 40% stake in its Agricultural Products division to the Canada Pension Plan Investment Board (CPPIB) for $2.5 billion US. In addition to allowing Glencore to reduce its overall debt, the deal was touted as one that would help enable its Agricultural Group to expand into markets in which it did not already have a presence. Conversely, CPPIB was reportedly looking to expand its portfolio in the agriculture industry, with the deal also including a provision for Glencore to offer another 20% of its Agricultural Group for sale at a future date.

25 The Churchill Port Utilization Program was introduced by the federal government in 2012 as a $25-million, five-year transitionary measure tied to the removal of the Canadian Wheat Board's (CWB) monopoly over the sale of wheat, durum and barley. With the loss of that role, the port of Churchill could no longer count upon the CWB to exercise its traditional role as the port's primary customer. The program was intended to encourage grain marketers to consider the using Churchill. It is intended to provide an economic incentive to shippers of all grains (including oilseeds, pulses and special crops). This incentive, which initially amounted to $9 per tonne, had risen to $12 per tonne by 2016.

26 Just four years earlier, in 2012, Glencore acquired Viterra Inc. for US$6 billion.

Less than two months later, in June 2016, Glencore announced that it had reached a definitive agreement with British Columbia Investment Management Corporation (BCIMC) for the latter's purchase of a 9.99% stake in Glencore Agricultural Products for US$624.9 million in cash. As a result, Glencore's interest in its Agricultural Products division was reduced to 50.01%, although the existing management team would continue to run the business.

All the while, the Canadian arm of Glencore's Agricultural Products division was itself expanding. In August 2015 Viterra announced that it had agreed to purchase Twin Rivers Technologies – Entreprises de Transformation de Graines Oléagineuses du Québec Inc. (TRT-ETGO). The company, a wholly owned subsidiary of Malaysian based FELDA Global Ventures Holdings, operated the largest oilseed processing plant in Eastern Canada, located in Bécancour, Quebec. Opened in 2010, the TRT-ETGO facility was focused on the crushing and refining of canola and soybeans into vegetable oil for food and industrial markets, as well as meal for the livestock industry. The transaction, which was subject to regulatory approvals and other conditions, was completed in November 2015.

A further indication of Viterra's expanding role in the canola-crushing industry came in January 2016 when the company announced that it had entered into a supply and marketing agreement with Pacific Coast Canola LLC (PCC), which would see PCC crush canola for Viterra at its plant in Warden, Washington. At the same time, a Viterra affiliate also increased its ownership stake in PCC to 50%.

G3 Canada Limited Embarks on Network Expansion

After gaining a controlling interest in what had been the Canadian Wheat Board in the latter portion of the 2014-15 crop year, G3 Canada Limited (G3) moved quickly in its stated mission of building a coast-to-coast grain-handling enterprise founded on the combined assets of CWB and Bunge Canada.[27] One of its first initiatives was their joining with Western Stevedoring Company Limited to examine the feasibility of building a new grain terminal in North Vancouver; a move that would give its newly-consolidated grain gathering network a dedicated west-coast outlet.[28]

In October 2015 G3 also announced that it would be constructing a new lakeside terminal in Hamilton, Ontario, to originate grains and oilseeds out of southern Ontario. Construction of the 50,000-tonne capacity facility, which will be located at the port's Pier 26, is expected to be completed in time for the 2017 harvest. When finished, the facility will be used to load vessels with product bound for the company's other handling facilities on the St. Lawrence River – at Trois-Rivieres and Quebec City – and, from there, to export markets around the world.

In May 2016 G3 received permit from the Vancouver Fraser Port Authority allowing it to proceed with the construction of the proposed terminal in North Vancouver (to be known as G3 Terminal Vancouver). The project's approval was subject to 74 conditions aimed at ensuring that there were no significant adverse environmental impacts, and followed broader consultations with representatives of the surrounding community, stakeholders and indigenous groups. The terminal, which is designed to handle an estimated eight million tonnes of grain annually, is to include: a railcar receiving facility and loop track capable of accommodating three

27 On 31 July 2015, G3 Global Grain Group, a joint venture between Bunge Canada and SALIC Canada Limited, concluded a $250-million acquisition of a 50.1% interest in what had been the Canadian Wheat Board (then operating as CWB). The remaining 49.9% interest in the CWB remained with the federal government, and was to be held in trust for the benefit of western farmers, although an option to buy out the farmers' stake after seven years was also secured by the controlling shareholder. Since losing its monopoly at the beginning of the 2012-13 crop year, CWB had been working to transform itself into a viable commercial entity. Much of this centred on an expansion program that saw the CWB absorb several grain-handling companies with existing country origination and port terminal facilities. The CWB also began construction on four new state-of-the-art elevator facilities in Manitoba and Saskatchewan. For its part, Bunge Canada contributed its non-oilseed operations to the venture, which chiefly consisted of its terminal elevator in Quebec City. Combined, these operations would carry on business as G3 Canada Limited.

28 The proposed site for the terminal, currently used by Western Stevedoring, is the Lynnterm West Gate on the north shore of Burrard Inlet.

trains of 150 cars; 48 concrete storage silos; a grain-cleaning facility; and ship-loading systems with three articulated booms capable of loading post-Panamax sized vessels. However, by the close of the 2015-16 crop year the project had still not been approved by G3's largest shareholder.

During this period, there were changes taking place within G3 itself, most particularly a variance in its ownership structure. In mid-June 2016 it was revealed that, over the course of the preceding five months, the Saudi Agricultural and Livestock Investment Company (SALIC) had increased its stake in G3 Global Holdings from 49% to 75%. G3 Global Holdings, which is itself a joint venture between US-based Bunge and SALIC, was formed in 2012 as the investment vehicle through which these two companies acquired a controlling 50.1% interest in CWB. On 1 February 2016, SALIC, through its SALIC Canada Limited subsidiary, boosted its ownership in G3 Global Holdings from 49% to 65% by converting $106 million in promissory notes into 148.3 million common shares. This effectively reduced Bunge Canada's ownership interest to 35% from 51%. Subsequently, in March 2016 Bunge sold a further 10% interest to SALIC, which resulted in ownership shares of 25% for the former and 75% for the latter. In effect, control in G3 Global Holdings, and by extension G3 Canada Limited, shifted decidedly in favour of SALIC.

Legumex Walker Sells Primary Assets to The Scoular Company

In the wake of a July 2015 default on a US$54.6 million loan tied to its Pacific Coast Canola (PCC) crushing plant in Warden, Washington, Legumex Walker Inc. officially put its pulse and special crops processing plants up for sale in late August. While not entirely tied to PCC operations, the losses incurred by the company had prompted a strategic review of its business holdings earlier in 2015, with the company's board of directors ultimately finding that a sale of its special crops and oilseed businesses, which encompassed nine established facilities in Western Canada, was the most likely to maximize shareholder value.

The expectation that these assets would attract significant interest were confirmed less than a month later when, on 14 September 2015, Legumex Walker announced that it would be selling its special crops division to Omaha-based The Scoular Company for C$174.6 million, and winding up its remaining operations through a court-approved liquidation. The sale, which was subsequently approved by Legumex Walker shareholders and finalized in November 2015, allowed Scoular, a 123-year-old grain company with about US$6 billion in annual sales, to significantly expand its product and geographic reach.

AGT Food and Ingredients acquires Mobil Capital Holdings

Following on the heels of its acquisition of West Central Road and Rail (WCRR), AGT Food and Ingredients Inc. announced on 5 October 2015 that it had signed a definitive purchase agreement for the business interests of Mobil Capital Holdings Ltd. (Mobil) for $57.5 million. The transaction, which was completed before the end of October 2015, involved not only the takeover of Mobil's central-Saskatchewan based grain-processing and loading operations but the two shortline railways that the company also owned: Last Mountain Railway; and Big Sky Railway.

The railways, which facilitated Mobil's use of Government of Saskatchewan covered-hopper cars in the segregated, rolling storage of grain, were an integral element in the operations of WCRR as well. In addition to being regarded as a natural follow-on to its earlier acquisition of WCRR, the transaction was viewed as one that would ultimately enhance AGT's competitive position in serving the global grain and pulse markets.

Section 5: System Efficiency and Performance

Indicator Description	Table	1999-00	2013-14	2014-15	2015-16 Q1	Q2	Q3	Q4	YTD	% VAR
Country Elevator Operations										
Average Elevator Capacity Turnover Ratio	5A-1	4.8	6.8	6.6	1.7	1.8	1.5	1.3	6.3	-4.5%
Average Weekly Elevator Stock Level (000 tonnes)	5A-2	3,699.3	3,084.4	2,993.7	2,939.1	3,345.4	3,512.5	2,474.8	3,062.8	2.3%
Average Days-in-Store (days)	5A-3	41.7	26.9	25.5	24.0	25.5	29.5	25.6	26.1	2.3%
Average Weekly Stock-to-Shipment Ratio – Grain	5A-4	6.2	4.1	3.8	3.4	3.7	4.5	3.9	3.9	2.6%
Railway Operations										
Movements to Western Canada										
Railway Car Cycle (days) – Empty Movement	5B-1	10.7	6.7	6.8	7.4	6.6	7.1	8.1	7.3	6.0%
Railway Car Cycle (days) – Loaded Movement	5B-1	9.2	6.4	6.9	6.0	6.5	5.7	5.7	6.0	-12.9%
Railway Car Cycle (days) – Total Movement	5B-1	19.9	13.0	13.7	13.5	13.1	12.8	13.7	13.3	-3.7%
Railway Car Cycle (days) – Non-Special Crops	5B-2	19.3	12.8	13.5	13.1	12.7	12.7	13.7	13.0	-3.6%
Railway Car Cycle (days) – Special Crops	5B-3	25.8	15.3	16.0	15.2	16.1	14.3	15.0	15.2	-5.2%
Railway Loaded Transit Time (days)	5B-4	7.8	5.3	5.8	4.9	5.3	4.5	4.5	4.8	-16.1%
Movements to Eastern Canada										
Railway Car Cycle (days) – Empty Movement	5B-5	n/a	n/a	9.6	10.9	9.6	11.4	12.6	10.9	13.9%
Railway Car Cycle (days) – Loaded Movement	5B-5	n/a	n/a	14.8	13.0	13.1	11.7	12.8	12.4	-16.1%
Railway Car Cycle (days) – Total Movement	5B-5	n/a	n/a	23.4	23.8	22.7	23.1	25.4	23.4	0.0%
Railway Loaded Transit Time (days)	5B-8	n/a	n/a	12.1	10.1	10.3	9.6	9.3	9.9	-18.3%
Movements to the United States										
Railway Car Cycle (days) – Empty Movement	5B-9	n/a	n/a	11.2	11.1	10.7	11.0	13.6	11.4	1.5%
Railway Car Cycle (days) – Loaded Movement	5B-9	n/a	n/a	19.3	15.0	16.1	15.2	14.0	15.2	-21.3%
Railway Car Cycle (days) – Total Movement	5B-9	n/a	n/a	30.6	26.1	26.7	26.2	27.6	26.6	-12.9%
Railway Loaded Transit Time (days)	5B-12	n/a	n/a	13.8	10.8	11.7	11.4	10.2	11.1	-19.2%
Traffic to Western Canada										
Hopper Car Grain Volumes (000 tonnes) – Non-Incentive	5B-13	12,718.7	6,672.6	5,983.1	1,435.3	1,536.7	1,311.5	1,029.7	5,313.3	-11.2%
Hopper Car Grain Volumes (000 tonnes) – Incentive	5B-13	12,945.9	27,155.1	31,872.0	9,228.3	8,150.1	7,685.4	6,774.1	31,837.9	-0.1%
Hopper Car Grain Volumes ($ millions) – Incentive Discount Value	5B-14	$31.1	$200.6	$238.1	$68.8	$61.3	$58.0	$50.6	$238.6	0.2%
Traffic Density (tonnes per route mile) – Total Network	5B-15	330.4	480.5	541.7	612.0	560.4	520.4	451.9	536.3	-1.0%
Terminal Elevator Operations										
Average Terminal Elevator Capacity Turnover Ratio	5C-1	9.1	13.5	17.1	n/a	n/a	n/a	n/a	18.4	7.6%
Average Weekly Terminal Elevator Stock Level (000 tonnes)	5C-2	1,216.2	890.6	1,281.8	1,201.4	1,203.6	1,246.1	1,035.7	1,179.4	-8.0%
Average Days-in-Store – Operating Season (days)	5C-3	18.6	9.1	10.7	11.8	9.8	9.1	11.8	10.9	1.9%
Average Weekly Out-of-Car Time	5C-5	n/a	n/a	17.1%	9.0%	13.4%	13.3%	11.1%	11.7%	-31.6%
Port Operations										
Average Vessel Time in Port (days)	5D-1	4.3	12.5	10.2	7.4	8.3	10.1	5.8	7.9	-22.5%
Average Vessel Time in Port (days) – Waiting	5D-1	1.9	7.5	4.6	3.3	3.1	4.3	2.1	3.2	-30.4%
Average Vessel Time in Port (days) – Loading	5D-1	2.4	5.0	5.6	4.1	5.2	5.8	3.7	4.7	-16.1%
System Performance										
Total Time in Supply Chain (days)	5E-1	68.1	41.1	42.0	40.8	40.6	43.1	41.9	41.8	-0.4%

COUNTRY ELEVATOR OPERATIONS

The net effect of changes in primary elevator throughput and storage capacity is reflected in the system's capacity-turnover ratio. Although primary elevator throughput remained effectively unchanged at 42.4 million tonnes, the turnover ratio for the 2015-16 crop year fell by 4.5%, to 6.3 turns from the 6.6 turns reported a year earlier. Much of this reduction was attributable to the 7.4% increase in associated storage capacity posted in the third quarter of the crop year. [Table 5A-1]

Reduced turnover ratios were reported for all provinces with the exception of Manitoba. Alberta reported the most substantive decline, with its ratio falling by 8.2%, to 7.8 turns from 8.5 turns in the 2014-15 crop year. This was followed by Saskatchewan, which posted a reduction of 3.2%, with its ratio slipping to 6.0 turns from 6.2 turns a year earlier. British Columbia saw its ratio slip by 2.9%, to 10.2 turns from 10.5 turns. Manitoba, the only province to report a gain, saw its ratio rise by 10.4%, to 5.3 turns from 4.8 turns.

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, this examination takes into account 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 actively employed in maintaining its operational grain inventories. Even as the system's associated storage capacity rose, stocks typically remained well below the 3.7-million-tonne average benchmarked at the beginning of the GMP[29], seldom exceeding 3.0 million tonnes. This was not the case throughout much of the 2015-16

[29] The 3.7 million tonne "benchmark" represents an estimate of the systems "working capacity". Working capacity is an estimate of the optimal amount of space that grain can use in the total storage capacity of an elevator in order for that facility to continue normal operation.

Figure 31: Primary Elevator Capacity Turnover Ratio

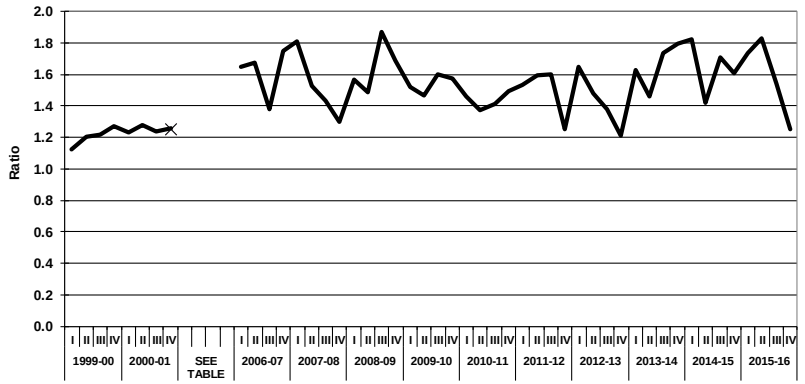
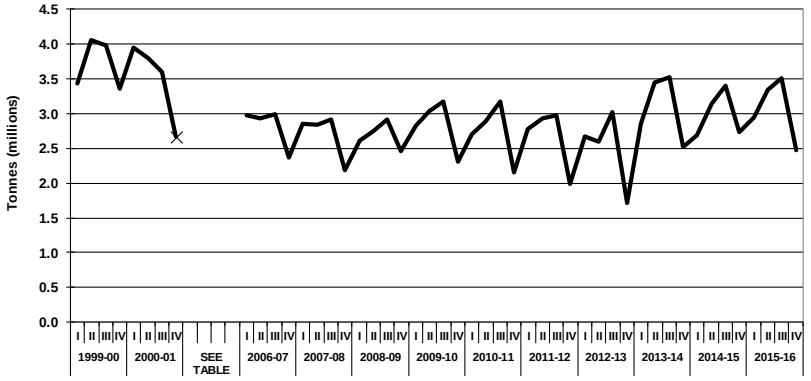


Figure 32: Average Weekly Stock Levels



crop year, as average primary elevator inventories again reached above this threshold for a third consecutive year: from 2.9 million tonnes in the first quarter; to 3.3 million tonnes in the second; and to 3.5 million tonnes in the third. It was not until the fourth quarter that stocks again fell below the 3.0-million-tonne level, to 2.5 million tonnes. The resultant overall average for the crop year therefore rose by 2.3%, to 3.1 million tonnes from a little below 3.0 million tonnes a year earlier. Even so, much of the buildup was tied to the harvesting of yet another large crop, and the broader efforts undertaken in getting it to market. [Table 5A-2]

Notwithstanding the more recent rise in average stock level, the average amount of time spent by grain in inventory has declined. While seasonality remains a factor, the quarterly average has continued to sink steadily below the GMP's base-year average of 41.7 days. After having fluctuated around 30 days for several years that average now appears to have drifted closer to the 25-day mark. The faster pace at which grain now moves through the GHTS has contributed significantly to the decrease in the amount of time grain spends in storage at an elevator.

The amount of time spent by grain in inventory largely moved in step with the buildup in grain inventories, and rose from an average of 24.0 days in the first quarter, to an average of 25.5 days in the second, and an average of 29.5 days in the third, before falling back to 25.6 days in the fourth. These comparatively higher quarterly averages lifted the 2015-16 crop year's overall average by 2.3%, to 26.1 days from 25.5 days a year earlier. Increases in the average days-in-store for all provinces except Manitoba, which decreased by 6.1%, figured into this result. [Table 5A-3]

Stock-to-Shipment Ratios

The adequacy of country elevator inventories can be gauged by comparing their level at the end of any given shipping week, with the truck and railway shipments actually made in the next seven days. In recent years the quarterly average stock-to-shipment ratio has generally fluctuated

Figure 33: Average Days in Store

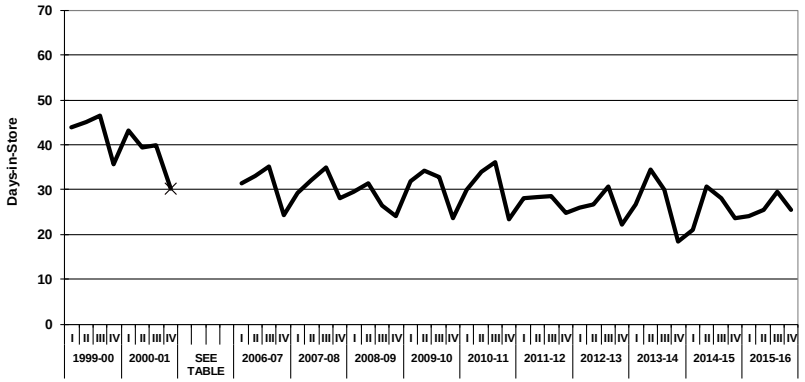
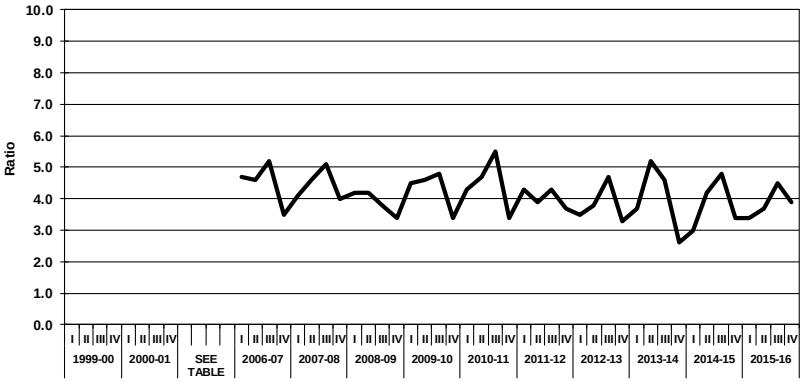


Figure 34: Primary Elevators – Stock-to-Shipment Ratio



around a value of 4.0.[30] As such, the inventory on hand at the close of any given week typically exceeded that required for shipment in the next by a factor of at least four. These ratios are, however, heavily influenced by the amount of time that grain spends in inventory, and mimic their movement rather closely. [Table 5A-4]

This analogous pattern was again witnessed in the 2015-16 crop year. From the first quarter's initial average of 3.4, the stock-to-shipment ratio moved substantially higher, reaching a peak of 4.5 in the third quarter. Ultimately, this slipped to a value of 3.9 in the fourth quarter. The overall average for the crop year increased by 2.6%, with the ratio rising to 3.9 from 3.8 a year earlier.

RAILWAY OPERATIONS

In the context of the GHTS, the car cycle measures the average amount of time taken by the railways in delivering a load of grain to its final destination, and then returning the empty railcar back to the prairies for reloading.

During the 2015-16 crop year this task required an average of 13.3 days to complete when moving to a point in western Canada, a 3.7% decrease from the 13.7-day average recorded a year earlier. Much of this reduction was attributable to a 7.5% decline in the Vancouver corridor, which saw its average drop to 13.5 days from 14.6 days a year earlier. This was supported by a 1.3% decrease in the Prince Rupert corridor, where the average fell to 12.2 days from 12.4 days. To an extent, these gains were partially offset by a 5.9% increase in the Thunder Bay corridors, which saw its average rise to 13.4 days from 12.6 days. Movements in the Churchill corridor, which were concentrated in the first quarter, also rose by 5.9% and averaged a lengthier 22.0 days. [Table 5B-1]

30 In the event that the ratio of these two values amounts to 1.0, it would mean that country elevator stocks exactly equalled shipments made in the following week. A ratio above this value would denote a surplus supply in the face of short-term needs.

Figure 35: Average Railway Car Cycle

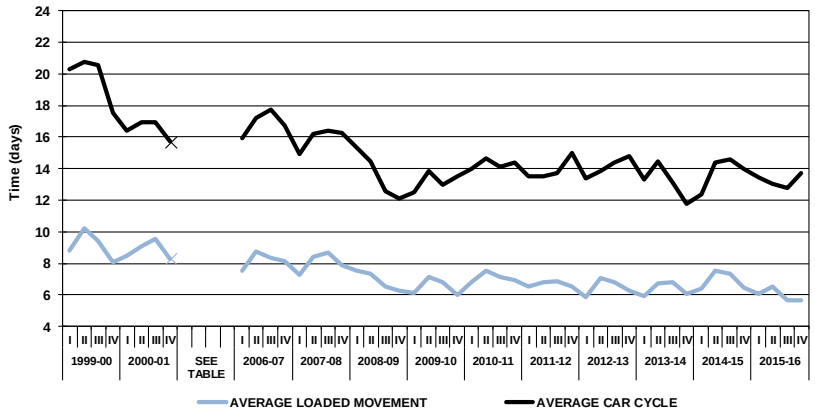
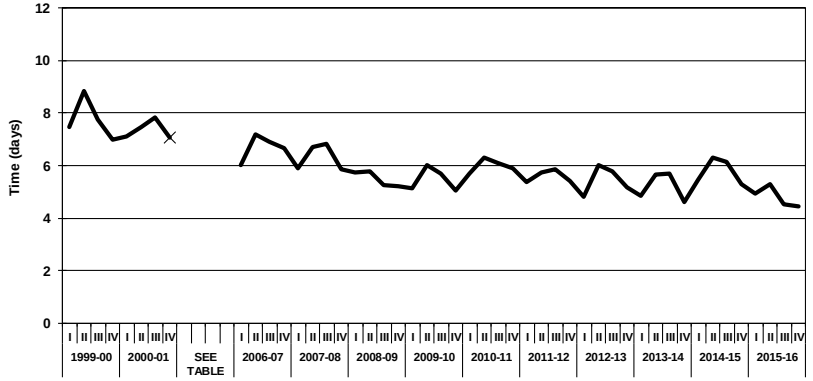


Figure 36: Average Loaded Transit Time



The overall decline in the average car cycle was derived chiefly from a reduction in the amount of time tied to the loaded portion of the movement, which was shortened by 12.9%, to an average of 6.0 days from 6.9 days a year earlier. This was partially offset by a 6.0% increase in the empty portion of the movement, which rose to an average of 7.3 days from 6.8 days a year earlier.

Owing to the relative weighting of non-special crops in the overall traffic mix, the car cycle tied to these commodities showed a similar decline, with the average falling 3.6%, to 13.0 days from 13.5 days a year earlier. A steeper decline was noted for the car cycle tied to special crops, which fell by 5.2%, to an average of 15.2 days from 16.0 days. Comparatively, the average for special crops proved to be 16.9% greater than that of non-special crops. In large measure, this appears to be linked to the character of special-crop shipments, which generally move as small-block shipments in regular freight service rather than in the unit-train lots typical of non-special crops. [Tables 5B-2 and 5B-3]

Loaded Transit Time

More important than the railways' average car cycle, is the 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. As with the overall car cycle, the average loaded transit time has drifted gradually lower since the beginning of the GMP. In keeping with the observed decline in the overall car cycle for the 2015-16 crop year, the railways posted a 16.1% reduction in its loaded transit time, which fell to an average of 4.8 days from 5.8 days a year earlier. It is important to note that this denoted a near 40% reduction from the 7.8-day average benchmarked in the GMP's base year.

The variability in the underlying distribution also fell in the 2015-16 crop year, to 31.6% from 34.1% a year earlier.[31] Despite the year-over-year improvement, this value is not far removed from those observed in the initial years of the GMP. This indicates that the amount of time taken in moving a loaded hopper car to a port in western Canada remains quite variable. [Table 5B-4]

Eastern Canada and US Car Cycles and Loaded Transit Times

Parallel statistical and performance measures for grain shipments into eastern Canada and the United States were added to GMP reporting in the 2014-15 crop year. This data shows noticeably longer averages than that observed for western Canada. [Tables 5B-5 through 5B-12]

In the case of movements into eastern Canada, although the car cycle was reduced by 4.4% in the 2015-16 crop year, the average remained effectively unchanged at 23.4 days. However, a more substantive reduction was observed for movements into the United States, with the average car cycle declining by 12.9%, to 26.6 days from 30.6 days.

Distance remains the principal determinant in the generation of these greater time values. This was especially true of movements into the US, which showed greater variation between its destination regions. The Midwest, which has destinations in closer physical proximity to the grain sourced from western Canada, saw the lowest car-cycle average, 24.9 days. Conversely, movements into the more distant South, Northeast and West produced progressively greater averages of 34.5 days, 35.8 days and 40.4 days respectively.

In equal measure, the average loaded-transit times into eastern Canada and the US are substantially higher than observed for western Canada. In the case of the former, this amounted to an average of 9.9 days, down 18.3% from the 12.1 days reported a year earlier. For movements into the United States, the reduction amounted to a slightly greater 19.2%, with the average declining to 11.1 days from 13.8 days. In both instances, the underlying

31 The coefficient of variation effectively removes the distortions that arise from measuring the transit times tied to individual movements in a diverse population set by focusing on the underlying variability in the distributions tied to each origin-destination pair. As a ratio, smaller values depict tighter distributions than larger ones. To this end, a lower ratio can be deemed indicative of better consistency around the average loaded transit time presented.

distributions showed somewhat less variability than that outlined with respect to western Canada, with a coefficient of variation of 24.2% on movements into eastern Canada, and 29.8% on those into the United States.

Multiple-Car Blocks

During the 2015-16 crop year, a total of 31.8 million tonnes of grain were moved to the four ports in western Canada in the multiple-car blocks that offered discounted freight rates. This denoted a decrease of just 0.1% from the 31.9 million tonnes that were moved in such blocks the previous crop year. [Table 5B-13]

The proportion of railway traffic moving in multiple-car blocks remains substantial. Since the 2005-06 crop year, more than three-quarters of the regulated grain moving to the four ports in western Canada was earning a discount, against the roughly one-half observed in the GMP's base year. While this value has exhibited a highly seasonal variability, it has continued to steadily rise, and now regularly reaches beyond the 80% mark. The 2015-16 crop year saw 85.7% of the grain shipped move in blocks of 50 or more cars; the highest proportion yet recorded under the GMP.

At the same time, the annual value of the discounts earned by grain shippers – estimated as gross savings in railway freight charges – increased to a level seven times greater than the $31.1 million assessed in the GMP's base year.[32] The savings generated by these discounted freight rates are estimated to have risen by 0.2% in the 2015-16 crop year, to a GMP record of $238.6 million from $238.1 million a year earlier. For the most part, this was indicative of the continuing shift towards movements in blocks of 100 or more cars, aided in part by the physical conversion of some Class C elevators into larger Class D facilities. This shift was also reflected in a marginal rise in the average earned discount, which reached an estimated $7.49 per tonne against $7.47 per tonne a year earlier. [Table 5B-14]

32 Much of this expansion was the product of more substantive increases in the per-tonne discounts than it was in the traffic base itself.

Figure 37: Railway Traffic Moving Under Incentive

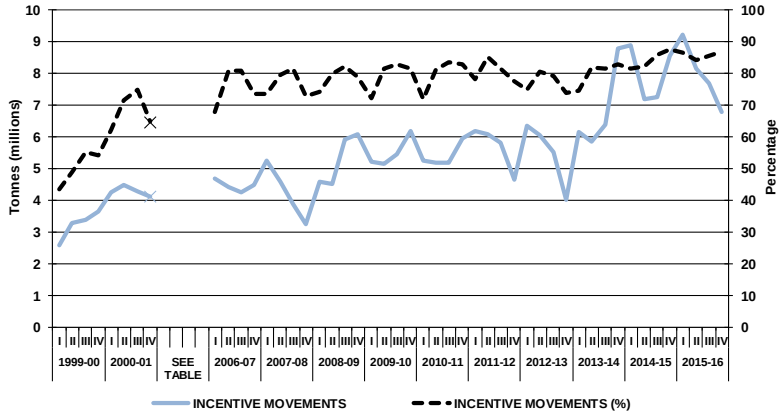
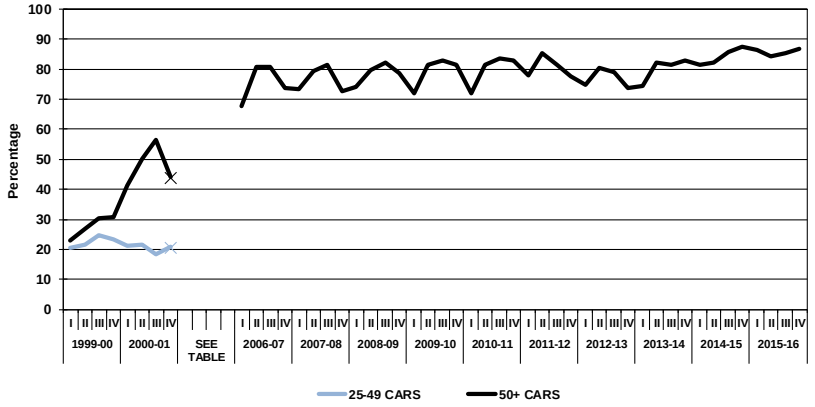


Figure 38: Composition of Multiple-Car-Block Movements



TERMINAL ELEVATOR OPERATIONS

The terminal elevator system saw a 7.6% increase in its capacity-turnover ratio for the 2015-16 crop year, rising to a record-setting 18.4 turns from 17.1 turns a year earlier.[33] Both Vancouver and Prince Rupert posted modest gains compared to the previous year. In Vancouver, the ratio rose by 1.7%, to a GMP record of 29.7 turns from 29.2 turns. A similar record was set by Prince Rupert, which saw its ratio increase by 3.1%, to 30.3 turns from 29.4. The eastern gateways of Thunder Bay and Churchill both declined. In the case of Thunder Bay, the capacity-turnover ratio fell by 7.6%, to 6.1 turns from 6.6 turns a year earlier. Naturally, the reduction at Churchill proved a more substantive 65.8%, with its ratio falling to 1.3 turns from 3.8 turns. [Table 5C-1]

Terminal Elevator Inventories

Over the course of the GMP, the amount of grain held in inventory at terminal elevators has had a consistent relationship with the system's overall handlings, typically encompassing about 20% of the quarterly throughput. However, with rising throughput, this proportion has slipped closer to 15%, thereby amplifying the need to always maintain adequate grain inventories. This principle was reflected throughout much of the 2015-16 crop year with average inventories remaining largely unchanged at 1.2 million tonnes until the fourth quarter, when it slipped to 1.0 million tonnes. This stability was equally evident in a 1.2-million-tonne average for the entire crop year, a reduction of 8.0% from the 1.3-million-tonne average posted a year earlier.

Stocks held at the west coast ports of Vancouver and Prince Rupert accounted for 53.3% of total terminal stocks, contracting by 4.1%, to an average of 628,400 tonnes from 655,100 tonnes a year earlier. An 11.5% reduction was reported by Thunder Bay, with stocks falling to an average of 507,300 tonnes from 573,000. However, the largest decrease was seen

Figure 39: Terminal Elevators – Capacity Turnover Ratio

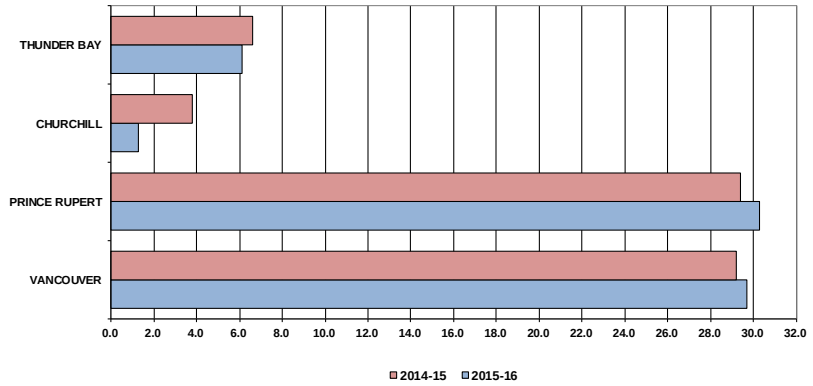
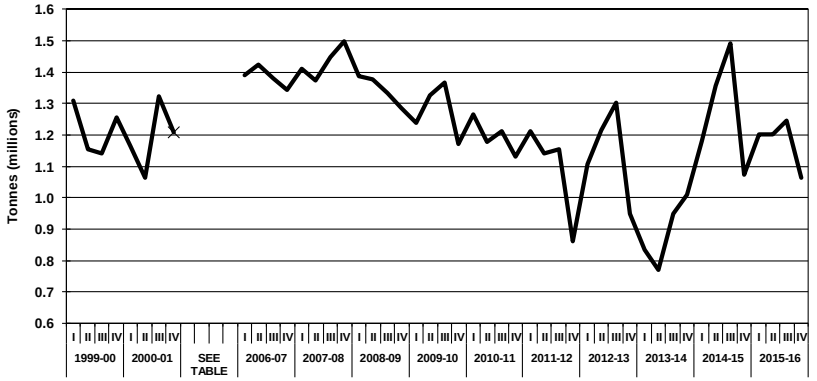


Figure 40: Terminal Elevators – Average Weekly Stocks



33 The capacity turnover ratio of the terminal elevator network is a simple average based on each facility's individual handlings. As such, the measures for any particular port, as well as the GHTS at large, can be skewed by outlying values. The magnitude of the year-over-year change cited here is not tied to a change in throughput alone.

at Churchill, which dropped by 18.6%, to an average of 43,700 tonnes from 53,700 tonnes, a reflection of overall decrease in volumes that lay ahead. [Table 5C-2]

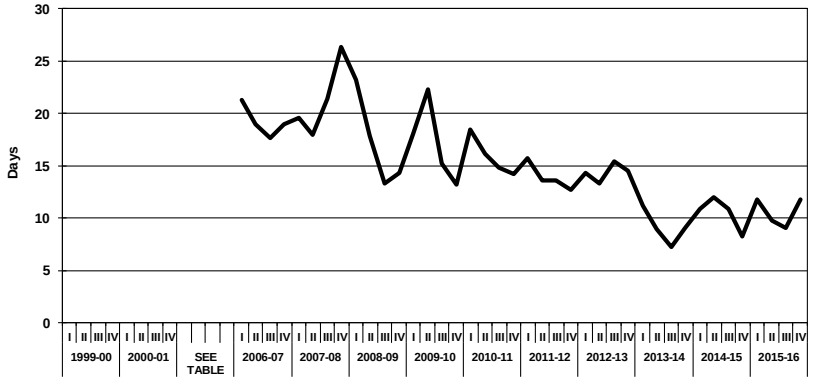
As in past years, wheat constituted the largest single commodity held in inventory, accounting for 43.9% of total stocks. Yet wheat inventories decreased by 19.8%, to an average of 517,400 tonnes from 644,800 tonnes a year earlier. Conversely, canola stocks, which ranked second largest in size, increased by 11.6%, to an average of 274,200 tonnes from 245,800 tonnes. Durum, peas and rye also saw increases, with gains of 14.3%, 15.3% and 133.3% respectively. Among the other commodities posting decreases were: barley, down 23.3%; oats, 55.8%; lentils, 2.8%; soybeans, 2.8%; and flaxseed, 26.0%. [Table 5C-2]

Days in Store

The 2015-16 crop year saw a marginal increase in the amount of time grain spent in terminal elevators inventory, with the average number of days-in-store rising by 1.9%, to 10.9 days from 10.7 days a year earlier. Much of this can be attributed to escalations at Thunder Bay and Churchill. In the case of Thunder Bay, this amounted to an increase of 9.3%, with the average rising to 18.8 days from 17.2 days. Churchill saw an even more substantive increase, with its average rising by 219.6%, to 47.3 days from 14.8 days. The Pacific Seaboard reported markedly different results, with the number of days-in-store dropping by 5.7%, to an average of 8.2 days from 8.7 days a year earlier.[34] [Table 5C-3]

The overall increase in storage time reflected the escalations of certain specific commodities. Chief among these was canola, which ranked second in terms of total tonnes maintained in inventory, and which posted a 22.2% increase in its average storage time, to 8.8 days from 7.2 days a year earlier. Durum stocks, which ranked third in size, saw a more substantive 54.0% increase, with storage time climbing to an average of 19.4 days from 12.6 days. This was furthered by increases of 20.0% for barley, 17.9% for peas, and 47.8% for flaxseed. Among decliners were: wheat, down 7.0%; oats, 71.6%; lentils, 13.2%; and soybeans, 24.0% from the previous year.

Figure 41: Terminal Elevators – Average Days -in-Store



Stock-to-Shipment Ratios

Whether sufficient stocks were on hand to meet demand can best be gauged by the average weekly stock-to-shipment ratios. This measure provides an indication of how terminal stock levels related to the volume of grain loaded onto ships during any particular week.[35]

34 Owing to changes in the presentation of data received from the Canadian Grain Commission, many of the statistics that had previously been made available for Vancouver and Prince Rupert are now aggregated into a single value for the Pacific Seaboard.

35 As a multiple of the volume of grain ultimately shipped in a given week, the stock-to-shipment ratio provides an objective measurement of whether or not sufficient terminal stocks were on hand to meet short-term demand. Ratio values of one or more denote a sufficient amount of stock on hand. By way of example, a ratio of 2.5 would indicate that two-and-a-half times the volume of grain ultimately shipped in a given week had been held in inventory at the beginning of that same week.

In a reflection of the increased activity at the ports of Vancouver and Prince Rupert, the average ratio for all grains fell from those posted a year earlier, although most retained a value above 1.0. Wheat was typical, with its average ratio falling by 20.0%, to 1.3 from 1.6 a year earlier. Even so, all commodities showed minimums that fell substantially below a value of 1.0, indicating that each was in short supply at various points in time. [Table 5C-4]

For the most part, the ratios posted by Thunder Bay stood well above a value of 2.0. This included: wheat, with a ratio of 2.7 (up 11.9%); durum, with a ratio of 5.2 (up 98.5%); and canola, with a ratio of 4.7 (up 12.0%). The ratios associated with all other commodities at the port, save that of oats, showed an incremental increase. The ratio for wheat at Churchill also rose substantially, rising by 59.1% to 3.1, its highest level in several years.

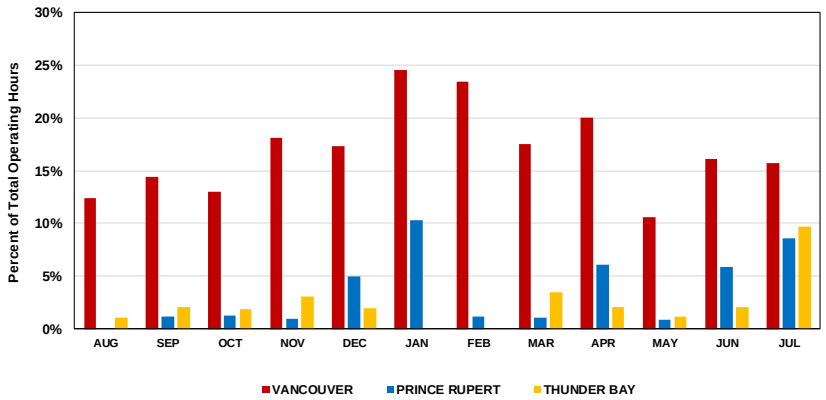
Port Terminal Out-of-Car Time

Out-of-car time gauges the amount of time that a port terminal had no railcars to unload against the amount of time it was staffed and operating within the same week. The resultant proportion provides an indication of just how effectively the terminals' overall unloading ability was being utilized during a given period. [Table 5C-5]

In addition, these statistics offer some insight into how the pace of inbound rail deliveries affects the operational productivity of the port terminals. It does so by reflecting how well inbound rail movements are matched against the terminals' handling capacity, and whether any slowdown in the flow of traffic is generating an undue amount of idle activity. These statistics tend to show a high degree of seasonality, with the percentage of the time terminals find themselves out of cars peaking in the winter months of January through March. They also show the impact that the closing of the seaway has on the productivity of the terminals in Thunder Bay, as their operations decline sharply during its winter closure.

With the highest throughput, Vancouver's out-of-car time has the greatest bearing on the system's overall efficiency. Out-of-car time at Vancouver

Figure 42: Port Terminal Out-of-Car Time – 2015-16 Crop Year



ranged from a monthly low of 10.6% in May 2016 to a high of 24.5% in January, with an annualized average of 16.9% for the 2015-16 crop year. This was 3.1 percentage points less than the 20.0% average reported a year earlier. The impact is much less at Prince Rupert where, owing to its single-terminal operation, the out-of-car time proportion is generally much lower. In fact, Prince Rupert reported being out of cars to unload just 3.6% of the time in the 2015-16 crop year. This represented a 2.7 percentage point drop from the 6.3% average observed the previous year. Thunder Bay also tends to report comparatively lower out-of-car time proportions, with the overall average for the crop year having fallen to 2.4% from 14.6%.

The overall perspective indicates that terminals were without grain to unload about 11.7% of the time. This compares favourably against the noticeably greater 17.1% average posted a year earlier, and denotes a general improvement in the use of terminal capacity.

PORT OPERATIONS

A total of 944 vessels called for grain at western Canadian ports during the 2015-16 crop year. This represented a 3.0% decrease from the 973 ships that arrived for loading a year earlier. The largest decline was posted by Thunder Bay, where 327 vessels called compared to 377 a year earlier. This was augmented by a 10-ship decrease at Churchill, which reported 6 vessels calling against the previous crop year's 16. Partially offsetting these declines were the greater number of vessels that loaded at Vancouver and Prince Rupert, which reported corresponding vessel increases of 23 and eight, for year-over-year gains of 5.1%, and 6.3% respectively.

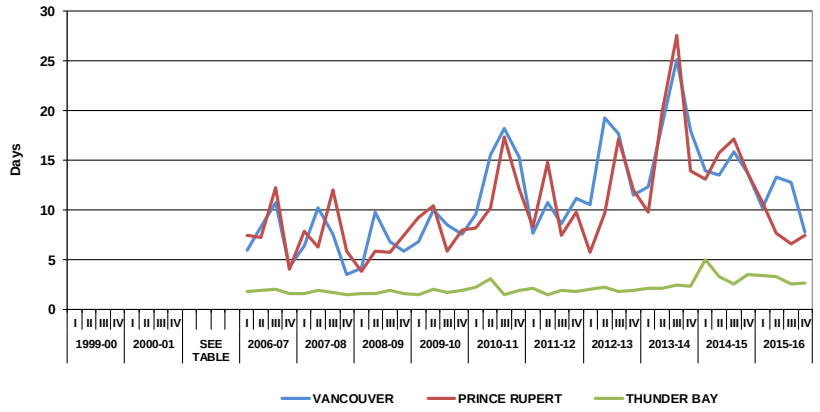
Average Vessel Time in Port

The amount of time spent by vessels in port decreased by 22.5% in the 2015-16 crop year, falling to an average of 7.9 days from the 10.2-day average posted a year earlier. This was chiefly due to a 30.4% decrease in the amount of time vessels spent waiting to load, which fell to an average of 3.2 days from 4.6 days a year earlier, and supported by a 16.1% reduction in the actual amount of time vessels spent loading, which dropped to an average of 4.7 days from 5.6 days.[36] [Table 5D-1]

All ports reported reductions in the average amount of time vessels spent in port. The most significant reduction was posted by Prince Rupert, where the average fell by 46.0%, to 8.1 days from 15.0 days a year earlier. This was followed by a noticeably lesser 21.1% decrease for Vancouver, which saw its average decline to 11.2 days from 14.2 days. As with the west-coast ports, those used in directing grain eastward also fell: by 20.5% in the case of Thunder Bay, where the average fell to 3.1 days from 3.9 days a year earlier; and by 10.9% at Churchill, with its average time-in-port declining to 5.7 days from 6.4 days.

36 The number of days a vessel spent waiting is determined using the difference between the time the vessel passed the inspection of the Port Warden and Canadian Food Inspection Agency, and the time at which actual loading was commenced.

Figure 43: Average Vessel Time in Port – Western Ports



It is worth highlighting that the 2015-16 crop year saw the second consecutive reduction in the averages posted by the west-coast ports of Vancouver and Prince Rupert. These results served to temper much of the concern that many GHTS stakeholders had raised while these averages began moving sharply upwards in the 2010-11 crop year, ultimately reaching record highs three years later. Even with the 2015-16 crop year's average falling back under eight days for the first time in six years, it still proved substantially greater than that recorded during the first ten years of the GMP.

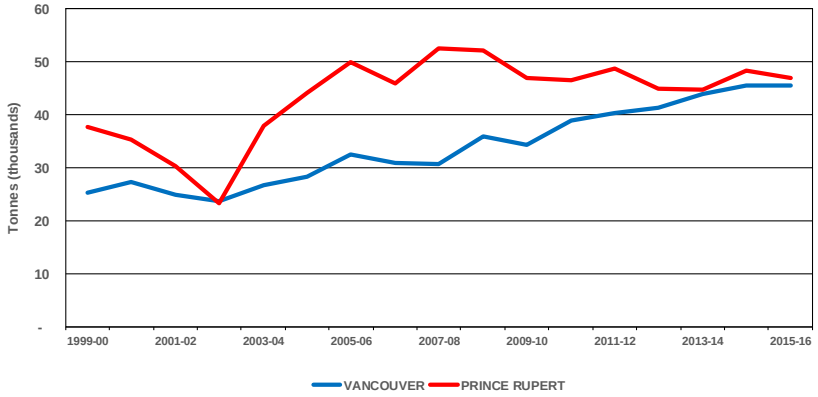
In addition to the delay that this occasions in moving grain through the GHTS, there are the physical demands that a heightened number of vessels waiting can place on a port, particularly if it is as commercially active as Vancouver. The most significant concern to port authorities is the disproportionate use of the port's available achorages in support of waiting vessels.

Between 1999 and 2010 the typical number of ships either waiting to load, or actually engaged in loading, grain at Vancouver ranged from eight to twelve.[37] But with the 2013-14 crop year, Vancouver's vessel line-up reached an all-time high of 38 ships. Much the same happened at Prince Rupert, where, during that same crop year, the vessel line-up reached a height of 14 ships. As a consequence, there were periods when vessels waiting to load grain in Vancouver have tied up all of the nearby anchorages, with the overflow forced to anchor at much greater distances. While the 2015-16 crop year saw a general reduction in the vessel line-up, with some 17 being typical, this still proved to be double what was observed in the first ten years of the GMP.

Higher vessel counts lead to increased costs and potential congestion in and around the affected harbour. In the case of Vancouver, when all anchorage spots are taken, vessels are compelled to anchor along the east coast of Vancouver Island, a day's sailing away. Not only does this require additional pilotage services, it drives up vessel demurrage costs and incoveniences all other vessels seeking a berth in the harbour.

As was outlined in the Monitor's previous Annual Report, however, such a line-up may be indicative of a "new normal" in so far as terminal operators now appear desirous of having one vessel at berth and at least one waiting at anchor in order to ensure optimal ship-loading performance.

Figure 44: Average Load per Vessel



Average Vessel Loadings

The loads taken onto vessels calling for grain at West Coast ports has increased substantially during the course of the GMP. From 1999-2000 crop year averages of 25,300 tonnes and 37,700 tonnes at Vancouver and Prince Rupert respectively, loads increased to an average of 45,500 tonnes (up 80%) and 47,000 tonnes (up 25%) respectively by the 2015-16 crop year. While Prince Rupert experienced a greater degree of variability in the early years, its average has fluctuated around the current level since the 2005-06 crop year. Comparatively, loadings at Vancouver have seen a relatively steady increase throughout the entire period.[38]

Various factors no doubt have contributed to this change over the past 17 years. The nature of sales programs along with the commodities exported

37 The number of ships either waiting to load, or actually loading, for a particular day is frequently referred to as the "vessel line-up."

38 Due to limits on the size of vessel that transit the Seaway, the size of grain cargos loaded onto the vessels presenting at Thunder Bay has not exhibited the same degree of change.

have undergone significant change. But the overall makeup of larger vessels in the fleets of bulk carriers has also increased during this period. An aggressive building program has been underway with larger new vessels replacing smaller bulk vessels reaching the end of their serviceable lives. This has largely necessitated the dedication of more time in loading at terminal elevators. In response to this, various west coast terminals have moved to increase their ship-loading efficiency, investing heavily in modernization, expansion and – in a few instances – new terminals.

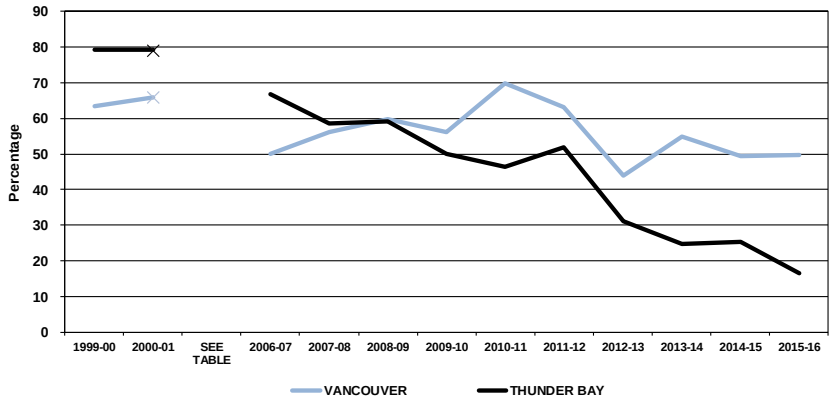
Distribution of Vessel Time in Port

In keeping with the reduced time taken by ships in port, the proportion of ships spending more than five days in port also fell, to 50.0% from 56.9% a year earlier. Moreover, there was a marked decline in the number of ships that remained in port for an uncommonly lengthy time, with the proportion of vessels spending 16 or more days in port falling to 14.5% from 26.0% a year earlier. With virtually all of these latter delays tied to ships calling at Vancouver and Prince Rupert, it was clear that west-coast exports were more directly affected. [Table 5D-2]

Distribution of Berths per Vessel

There was a modest reduction in the overall proportion of vessels needing to berth more than once during the 2015-16 crop year. At Vancouver, the proportion of vessels needing to berth two or more times rose to 49.8% from 49.4% a year earlier. However, this remains comparable to the proportion witnessed throughout much of the GMP. Conversely, the proportion of vessels needing more than one berthing at Thunder Bay fell substantively, to 16.5% from 25.5% a year earlier. This value ranks well below the 79.2% benchmarked for the port in the 2000-01 crop year, and marks a continuation of the decline that has been evident since the beginning of the GMP. [Table 5D-3]

Figure 45: Multiple Berthing Vessels



Demurrage and Dispatch

Members of the WGEA report total vessel demurrage costs and dispatch earnings to the Monitor.[39] This is intended to provide some indication of the effectiveness with which grain flowed through western Canadian ports[40]. For the sixth consecutive year, the combination of the two elements netted a negative outflow, this year of $14.7 million. However, this was an improvement over the previous years $35.5 million. [Table 5D-4]

This improvement was primarily shaped by a sharp reduction in demurrage costs, which fell to $34.2 million from $44.2 million the year previous. The most significant monetary contributor to this was a 39.3% decrease in the demurrage costs incurred along the Pacific Seaboard, which fell to $19.5 million from $32.2 million a year earlier. This was partially offset by a 22.4% increase in demurrage for Churchill, Thunder Bay and

39 Data relating to vessel demurrage and dispatch are both un-audited and aggregated. In addition, they pertain to shipments made during the crop year and, as such, may vary from the figures presented in the financial statements of the organizations that provided the data.

40 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 is loaded and departed the port in a time period less than stated in the agreement.

points along the St. Lawrence Seaway, which rose to $14.7 million from $12.0 million a year earlier.

The improved financial results were also bolstered by higher dispatch earnings, which rose to $19.5 million from $8.7 million the year previous. Once again, the most significant monetary contribution was tied to the Pacific Seaboard, which saw a 134.9% increase, and rose to $10.9 million from $4.6 million. A 114.6% increase for Churchill, Thunder Bay and points along the St. Lawrence Seaway resulted in dispatch earnings rising to $8.7 from $4.0 million.

Terminal Revenues

The GMP includes a provision for an annual reporting of terminal elevator revenues. The WGEA and its members developed a method of reporting total terminal revenues using a number of key financial measures, and provided data for their terminals at Thunder Bay and Vancouver.[41] [Table 5D-8]

Total reported terminal revenues for the 2015-16 crop year increased by 6.7% to $573.0 million from $536.9 million a year earlier. This result was shaped by two inputs: a 7.5% increase at Vancouver, which saw revenues increase to $456.3 million from $424.5 million; and a 3.8% increase at Thunder Bay, where terminal revenues climbed to $116.7 million from $112.4 million.

SYSTEM PERFORMANCE

The supply chain model provides a useful framework by which to examine the speed with which grain moves through the GHTS. During the 2015-16 crop year, it was observed that this process required an average of 41.8 days, improving by a marginal 0.4% from the 42.0-day average reported a year earlier. Reductions in the supply chain's principal components – time in storage at a country elevator, time in transit as a railway shipment, and

Figure 46: 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	
2012-13	26.5	5.4	14.3	46.2	-38.6%
2013-14	26.9	5.3	8.9	41.1	
2014-15	25.5	5.8	10.7	42.0	
2015-16	26.1	4.8	10.9	41.8	

41 It should be noted that the terminal revenue data used here is un-audited.

time in inventory at a terminal elevator – were all instrumental in shaping a 26.3-day improvement over the base-year average of 68.1 days.

The incremental improvement of 0.2 days posted in the 2015-16 crop year was driven by a 1.0-day reduction in the railways' loaded transit time, which fell to an average of 4.8 days from 5.8 days a year earlier. Detracting from this were marginal increases in the amount of time grain spent in storage, be it in the country or at port. The largest increase was attributable to the amount of time grain spent in inventory at a country elevator, which rose by 0.6 days, to an average of 26.1 days from 25.5 days. Another 0.2 days resulted from the additional time grain spent in storage at a terminal elevator, which rose to an average 10.9 days from 10.7 days the previous year. [Table 5E-1]

Consistent with the broader trend that has witnessed a progressive decline in the amount of time taken by grain in moving through the GHTS supply chain, the 41.8-day average posted in the 2015-16 crop year ranked as the second lowest recorded under the GMP. A few observations relative to this performance follow:

- With western Canada's grain supply exceeding 70 million tonnes for a third consecutive year, the GHTS found itself again called to meet a considerable logistical challenge. Notwithstanding the fact that global grain stocks were again expected to reach new heights, thereby placing still further downward pressure on prices, Canadian grain shippers continued to pursue aggressive sales programs. This only served to sustain the elevated demand for handling capacity that had manifested itself three years earlier.

- However, the railways, which had improved their performance in the aftermath of the problems that arose in the 2013-14 crop year, proved again equal to the task. Even though total railway shipments slipped modestly in the 2015-16 crop year, the average car cycle largely improved, showing particularly sharp betterments in the second and third quarters. More importantly, the railways' average loaded transit time dropped by a full day, reaching a record low under the GMP of 4.8 days. Much of this result was shaped by substantive time reductions in both the Vancouver and Prince Rupert corridors.

- The effective pace at which grain moved through the GHTS was also reflected in other areas, most notably in the steady reduction of on-farm inventories. Similarly, the grain companies reported being relatively pleased with the level of service they were receiving from the railways, be it with respect to country-elevator or terminal elevator operations. This was perhaps best reflected in the reduced amount of time spent by vessels in port, as well as in the lower demurrage and higher dispatch earnings this engendered. Ultimately, the fluidity maintained through 2015-16 crop year again proved indicative of the efficiencies that can be realized with the proper deployment of resources and coordination of commercial activities.

Section 6: Producer Impact

Indicator Description	Table	1999-00	2013-14	2014-15	2015-16 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	$132.41	$124.20					$81.53	-34.4%
1CWA Durum ($ per tonne) – Original Methodology	6A-10B	$67.63	n/a	n/a						
1CWA Durum ($ per tonne) – Revised Methodology (1)	6A-10B	n/a	$160.82	$206.35					$116.14	-43.7%
1 Canada Canola ($ per tonne)	6A-10C	$52.51	$80.76	$69.22					$65.24	-5.7%
Canadian Large Yellow Peas – No. 2 or Better ($ per tonne)	6A-10D	$54.76	$81.24	$108.51					$62.16	-42.7%
Producer Cars										
Producer-Car-Loading Sites (number) – Class 1 Carriers	6B-1	415	211	179	179	179	179	179	179	0.0%
Producer-Car-Loading Sites (number) – Class 2 and 3 Carriers	6B-1	122	135	135	137	137	137	137	137	1.5%
Producer-Car-Loading Sites (number) – All Carriers	6B-1	537	346	314	316	316	316	316	316	0.6%
Producer-Cars Scheduled (number) – Covered Hopper Cars	6B-2	3,441	15,603	9,867	2,192	2,101	1,020	558	5,871	-40.5%

(1) The methodology used to calculate the export basis in the 2012-13 through 2015-16 crop years does not allow for direct comparison with those of previous crop years.

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. By definition, both the export basis and the producer netback are location-specific calculations, and include considerations for the elevation, elevator cleaning and storage, and transportation (be it road, rail or marine) of grain, along with any discounts that may be applicable.

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. Such calculations can easily swell into thousands of separate estimates.

The only practical means by which to manage this undertaking 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.[42] Sampling techniques were used to select 43 separate grain stations as a representative sample in the calculation of the export basis and producer netback. These grain stations are grouped into 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.[43] Caution, therefore, must be exercised in any comparison between the general values presented, and those arising to individual producers within each of these areas.

Prior to 1 August 2012 special consideration was given to the distinct merchandising activities tied to CWB and non-CWB commodities, which compelled the use of discrete methodologies in calculating the export basis and producer netback for both. With the removal of the Canadian Wheat Board's monopoly, the methodology for determining the export basis and producer netback for wheat and durum had to be amended. This calculation now employs a methodology that parallels the one used for both canola and yellow peas since the beginning of the GMP. The specifics differentiating these two methodologies are delineated in the table that follows. The reader is encouraged to become familiar with this material before attempting to draw any specific conclusions from the ensuing discussion.

42 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).

43 Owing to competitive pressures, many of the stakeholders in the GHTS use some form of financial incentive to draw grain volumes into their facilities (i.e., country elevators) or over their systems (i.e., railways). Many of these incentives are of a highly sensitive commercial nature. In order to safeguard all such information, estimates of the export basis and producer netback are calculated at a higher-than-grain-station level of aggregation.

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.[1] 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.[2]
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. For 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.[3] 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. In the 2015-16 crop year 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.[3] 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	All elevator deliveries of wheat and durum are subject to a $0.48 per tonne "check-off" in order to fund variety research, market development and technical support to the industry. The current Western Canada Deduction is administered by the Alberta Barley Commission. The Alberta Wheat Commission implemented a refundable service charge (for research, market development, policy and advocacy initiatives and education) of $0.70 per tonne on all commercial wheat and durum in Alberta on 1 August 2012. A similar deduction of $0.52 per tonne was implemented by the Saskatchewan Wheat Development Commission on 1 August 2013. The Manitoba Wheat and Barley Growers Association implemented a $0.52 per tonne deduction on 1 February 2014.	All elevator deliveries of canola in Saskatchewan are subject to a $0.75 per tonne "check-off" for provincial canola association dues. The applicable "check-off" on deliveries made in Manitoba and Alberta are somewhat higher, amounting to $1.00 per tonne in both provinces. Similarly, a levy of 0.5% is deducted for the Manitoba Pulse Growers Association on the delivery of yellow peas, while 1.0% is deducted for the Pulse Growers Associations in Saskatchewan and Alberta.
Trucking Premiums	Grain companies report on the trucking premiums they pay to producers at each of the facilities identified in the sampling methodology.[4] 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.	Grain companies use their basis (the spread between their cash and the nearby futures price) as the mechanism to attract producer deliveries. Narrowing their basis, resulting in higher return to producers, is the signal that a company needs a commodity. Conversely a wide basis signals a lack of demand for the product. Some companies, however, offer premiums over and above their basis in order to attract delivery of some commodities. These premiums are presented as a producer benefit when factored into the export basis. Owing to the limited use of this mechanism, they assume relatively small values when weighted by the applicable tonnage at a regional level.
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) – ICE Futures Canada (formerly the Winnipeg Commodity Exchange) collects Vancouver cash prices and spot prices at selected country elevator locations daily.
2) – 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.
3) – 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).
4) – 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

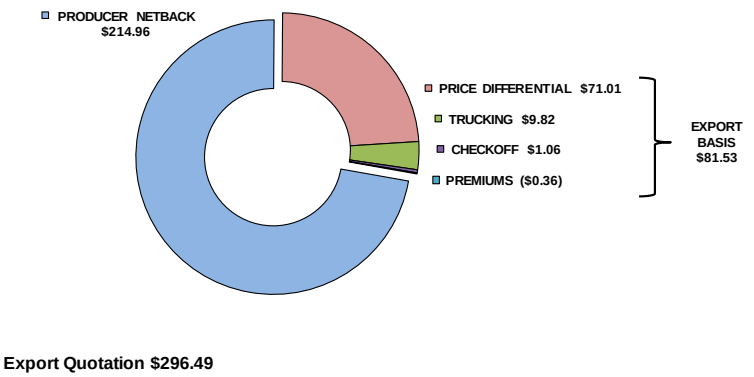
In its earlier reports, the Monitor described how increased commodity prices had largely been responsible for the improvement in the per-tonne returns accruing to producers of wheat and durum. Even in those years when the export basis fell, the financial gain derived from the reduction could not compare to that provided through better grain prices.

Moreover, the long-established pattern of rising and falling prices would also be seen repeatedly over the course of the GMP, with its attendant impact – both positive and negative – on the producer's financial returns. While the returns for wheat and durum in the 2015-16 crop year stood generally below their pre-recessionary highs, they still overtook those registered at the beginning of the GMP.

Owing to the repeal of the Canadian Wheat Board's monopoly over the sale of wheat and barley at the beginning of the 2012-13 crop year, the Monitor was required to amend the approach it had taken in calculating the producers' netback for wheat and durum. This was largely because the forces then beginning to shape the competitive environment no longer provided for the identification of the specific elements that had been integral to this calculation.

In general terms, wheat and durum were now being sold in a manner that mimicked that characteristic of canola and yellow peas. Although this move to open-market operations allowed for the adoption of a common approach in the calculation of the producers' netback, it also ended a relatable time series for wheat and durum that extended back to the beginning of the GMP.

Figure 47: Producer Netback – 1CWRS Wheat



1CWRS WHEAT

The financial return to farmers of 1CWRS wheat amounted to an estimated $214.96 per tonne in the 2015-16 crop year. This was 7.9% more than the $199.18 reported for the 2014-15 crop year. Much of this improvement was attributable to the attendant reduction in the export basis that accompanied a general decrease in grain prices. [Table 6A-10A]

Export Quotation

Since the 2012-13 crop year the GMP has used a tonnage-based weighted average export quotation as the principal barometer for the price of 1CWRS wheat (13.5% protein).[44] With prices declining throughout much of the 2015-16 crop year, the overall average moved sharply lower, falling by 8.3%, to $296.49 per tonne from $323.38 per tonne a year earlier.

44 The tonnage-based weighted average export quotation developed by the Monitor is derived from AAFC data obtained from the Canadian Grain Exporters for West-Coast exports, and the International Grains Council for St. Lawrence exports. This is employed as a representative average price for 1CWRS wheat when calculating the netback to producers.

This decline in price reflected an anticipated continuation of plentiful international wheat supplies along with forecasts of sustained production levels. Much of this was tied to wheat production in the Black Sea region, which had enabled an expansion into new markets in recent years. Despite this, a weaker Canadian dollar helped to support the domestic price.

Export Basis

As in past years, the methodology used to determine the export basis focuses on two structural components. The first of these relates to the direct costs incurred by producers in delivering grain to market. Traditionally, this has centred on railway freight, but it also included the costs associated with trucking, elevation, dockage, CGC weighing and inspection, as well as those of the Canadian Wheat Board. However, the advent of open-market operations effectively camouflaged many of these costs. Instead, a price differential – or spread – between the export quotation and the spot price given to the producer at the elevator is calculated as a substitute. In effect, this differential includes the cost of freight, handling, cleaning, storage, weighing and inspection, as well as an opportunity cost or risk premium. Beyond this are the stand-alone costs of trucking and other ancillary items, primarily industry check-offs.

The second component encompasses all financial benefits accruing to producers from the receipt of any offset to these expenses. For the most part, this now relates only to the trucking premiums farmers receive from grain companies for choosing to deliver grain to them. As a result of the move to open-market operations, the benefit of any transportation savings that had been passed back to them through the CWB's pool accounts is no longer applicable.

Export Basis – Direct Costs

Owing to the change in methodology already cited, the GMP cannot place the direct costs associated with 1CWRS wheat within a longer-term historical context. Even so, it is worth noting that within the first two years under this new methodology, direct costs more than doubled, jumping to as much as $132.94 per tonne in the 2013-14 crop year. Still, these costs have since been on the decline, falling by another 34.1% in the 2015-16 crop year, to an average of $81.89 per tonne from the $124.26-per-tonne a year earlier. The largest cost element within this framework is represented by the price differential, which accounted for an average of $71.01 per tonne, or 86.7% of the total. It is the change in this cost element that has had the most bearing on total direct costs and, in turn, the export basis.

This was followed by the costs associated with trucking wheat from the farm gate to a local elevator. This cost, which is assumed to have averaged $9.82 per tonne in the 2015-16 crop year, comprised about 12.0% of total direct costs.[45] As opposed to the price differential, the cost of trucking can still be traced back over much of the last 17 years, and has increased by a factor of 65.3% over the $5.94 per tonne benchmarked at the beginning of the GMP. The residual element within this framework is the cost derived from industry check-offs, which amounted to an average of $1.06 per tonne, and accounted for just 1.3% of the overall total.

Export Basis – Financial Benefits

In past years, the direct costs cited above were typically offset by two financial benefits that accrued to producers. These came in the form of any trucking premium that may have been received directly from a grain company, as well as their indirect share in the transportation savings realized by the CWB. However, as the industry moved to an open-market environment, these benefits virtually disappeared. More specifically, the new environment saw trucking premiums slashed while the CWB's roughly

45 Data that had previously been collected with respect to short-haul commercial trucking rates has been unavailable since the 2013-14 crop year. Despite this, the last published value of $9.82 per tonne is assumed to provide a reasonable estimate of these costs, and is employed here to provide continuity.

$2.00-per-tonne transportation savings vanished altogether.

Under the old regime, trucking premiums were widely used by the grain companies as the primary instrument with which to draw grain into their facilities.[46] Moreover, they had grown significantly in value, reaching an average of $8.17 per tonne in the 2011-12 crop year compared to the $2.32 per tonne benchmarked in the GMP's 1999-2000 base year. But the move to open-market operations dramatically diminished the role to be played by this incentive. In keeping with the trade's custom of using a spread between the cash and nearby futures prices as the primary signalling mechanism in attracting deliveries, trucking premiums fell to an average of just $0.80 per tonne in the 2012-13 crop year. The next two crop years saw this cut still further, with the average falling to just $0.06 per tonne. However, the 2015-16 crop year produced a sharp reversal, with the average premium increasing by 500.0%, to $0.36 per tonne. This served to offset just 0.4% of the associated direct costs.

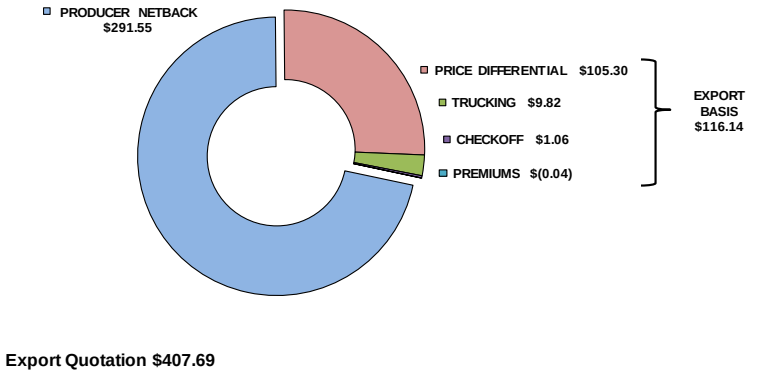
1CWA DURUM

The financial return to farmers of 1CWA durum amounted to an estimated $291.55 per tonne in the 2015-16 crop year. This was only 2.6% less than the $299.20 per tonne reported in the 2014-15 crop year. Although the decline was driven by lower durum prices, a near corresponding reduction in the export basis effectively served to counter much of the negative impact. [Table 6A-10B]

Export Quotation

As outlined with respect to 1CWRS wheat, the GMP now uses a tonnage-based weighted average export quotation as the principal barometer of the price for 1CWA durum (13.5% protein). This indicator saw the price for durum decline over the course of the 2015-16 crop year. By the close of the period, the average had fallen to $407.69 per tonne, 19.4% below the $505.55-per-tonne average recorded for the previous crop year.

Figure 48: Producer Netback – 1CWA Durum



Increased global supplies of good-quality durum proved to be the main factor in this price decline. Canadian prices were also undermined by more aggressive American sales competition, which adversely affected the demand for Canadian durum. Finally, the expectation of an increase in carry-forward stocks at the close of the crop year only added to this downward pressure.

Export Basis

As outlined with respect to 1CWRS wheat, the methodology used to determine the export basis for 1CWA durum also focuses on two structural components: the direct costs incurred by producers in delivering grain to

46 There were a number of other enticements that a grain company could use in getting farmers to deliver their grain to its elevators; what the grain companies often referred to as their toolbox. In addition to trucking premiums, grade promotions, discounts on farm supplies, favourable credit terms, or even the absorption of trucking costs were also employed. The GMP does not attempt to evaluate these other benefits.

market; and the financial benefits accruing from the receipt of any offset to these costs.

Export Basis – Direct Costs

Owing to the change in methodology instituted in the 2012-13 crop year, the GMP cannot place the direct costs associated with 1CWA durum within a longer-term historical context. Nevertheless, these costs virtually doubled over the two crop years that followed, rising to an average of $206.43 per tonne from $109.25 per tonne. The 2015-16 crop year saw this tumble by 43.7%, with the average falling to $116.18 per tonne. The largest cost element within this framework is represented by the price differential, which accounted for an average of $105.30 per tonne, or 90.6% of the total.

This was followed by the costs associated with trucking durum from the farm gate to a local elevator. This cost, which is assumed to have averaged $9.82 per tonne in the 2015-16 crop year, comprised about 8.5% of total direct costs. As opposed to the price differential, the cost of trucking can still be traced back over much of the last 17 years, increasing by a factor of 65.3% over the $5.94 per tonne benchmarked at the beginning of the GMP. The remaining direct costs are derived from industry check-offs, which amounted to an average of $1.06 per tonne, and accounted for just 0.9% of the overall total.

Export Basis – Financial Benefits

In past years, the direct costs cited above were typically offset by two financial benefits that accrued to producers. These came in the form of any trucking premium that may have been received directly from a grain company, as well as their indirect share in the transportation savings realized by the CWB. As was the case with wheat, these benefits all but disappeared in the move to an open-market environment, with trucking premiums being the only element to remain.

Under the old regime, trucking premiums were widely used by the grain companies as the primary instrument with which to draw grain into their facilities. Moreover, they were of significant value, reaching an average of $9.08 per tonne in the 2011-12 crop year against $3.14 per tonne in the 1999-2000 crop year. But the move to open-market operations diminished the role to be played by this incentive. In keeping with the trade's custom of using a spread between cash and nearby futures prices as the primary signalling mechanism in attracting deliveries, trucking premiums fell dramatically in the 2012-13 crop year, to an average of just $0.78. This was significantly eroded in the following two crop year when the average fell to just $0.08 per tonne. The 2015-16 crop year saw this cut in half, falling to a mere $0.04 per tonne, which represented an offset of well under 0.1% to direct costs.

CANOLA AND YELLOW PEAS

Unlike those for wheat and durum, the methodology surrounding the calculation of the netback to producers of canola and large yellow peas was unaffected by the removal of the CWB's monopoly. As a result, the monitor has been able to carry forward with the time series begun 17 years earlier. This data has consistently shown that the financial returns arising to producers of canola and yellow peas have been heavily influenced by the prevailing price for these commodities. While the export basis has generally risen during this same timeframe, it has had far less sway over these returns.

1 Canada Canola

The visible netback to producers from the delivery of 1 Canada canola has fluctuated rather significantly over the course of the GMP. Once again, much of this was due to dramatic swings in market prices. These forces propelled the farmer's return from a base-year value of $239.10 per tonne to as much as $595.10 per tonne in the 2012-13 crop year. Notwithstanding this broader gain, periodic price declines would lower the farmer's financial return. This occurred most recently in the 2013-14 and 2014-15 crop years, where reduced prices ultimately lowered the latter's

return to $419.05 per tonne. But the return of higher prices help lift the netback to producers in the 2015-16 crop year by 5.8%, to $443.32 per tonne.

Vancouver Cash Price

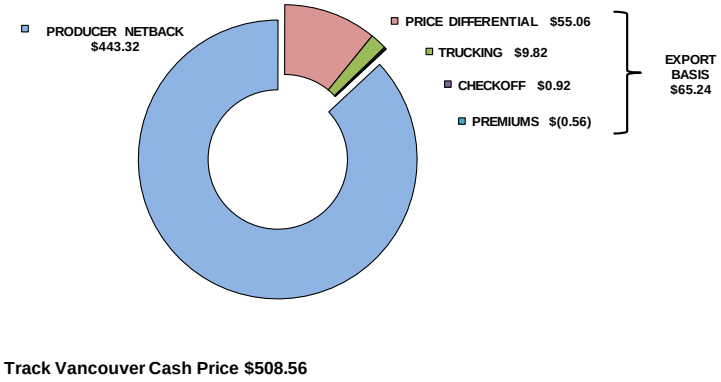
As with other grains, higher market prices proved instrumental in improving the netback to producers of 1 Canada canola. To be sure, the price of canola has fluctuated significantly since the beginning of the GMP. From its base-year benchmark of $291.61 per tonne, the Vancouver cash price moved considerably higher, ultimately attaining a GMP record of $651.60 per tonne in the 2012-13 crop year. Although much of this was tied to a growing export demand as well as the advent of new crushing capacity in western Canada, prices fell substantially in the 2013-14 and 2014-15 crop years in the face of record oilseed production. These forces moderated somewhat in the 2015-16 crop year, spurring a 4.2% increase in the average Vancouver cash price, which rose to $508.56 per tonne from $488.27 per tonne a year earlier.

Export Basis

While the export basis for 1 Canada canola rose markedly in the 2013-14 crop year, reaching a GMP record of $80.76 per tonne, this was in sharp contrast to the limited change witnessed over the course of the preceding 14 crop years. In fact, the export basis seldom strayed significantly above its base-year value of $52.51 per tonne during this entire period. The last two crop years saw the export basis pullback from its highpoint, ultimately falling to an average of $65.24 per tonne for the 2015-16 crop year.

The export basis for 1 Canada Canola shares the same structural characteristics of wheat and durum: the direct costs incurred in delivering grain to market; and any financial benefits that serve to offset them. Here too, a price differential – or spread – between the Vancouver cash price and the producers' realized price at the elevator or processing plant stands in for a number of specific costs, including the cost of freight, handling, cleaning, storage, weighing and inspection, as well as an opportunity cost or risk premium.

Figure 49: Producer Netback – 1 Canada Canola



Export Basis – Direct Costs

Although the direct costs tied to 1 Canada canola moved generally lower in the initial years of the GMP, ultimately falling to a low of $41.31 per tonne in the 2004-05 crop year, they started to move progressively higher thereafter. After reaching a height of $81.64 per tonne in the 2013-14 crop year, however, these direct costs began to decline. With the 2015-16 crop year they had slipped to $65.80 per tonne, 6.2% below the $70.15 per tonne reported a year earlier.

Much of the decline was due to a contraction in the price differential, which itself reflected a better balance between canola supplies and the prevailing demand. The 2015-16 crop year saw the price differential fall by 7.3%, to an average of $55.06 per tonne from $59.41 per tonne a year earlier. This represented 83.7% of the direct costs, against a benchmark share of 88.3% in the base year.

The next largest component in canola's direct costs was that of trucking. As with wheat and durum, these costs are estimated to have risen by 65.3% in the last 17 years, increasing to an average of $9.82 per tonne from $5.94 per tonne at the beginning of the GMP. Trucking accounted for a greater proportion of direct costs in the 2015-16 crop year than it did in the base year, 14.9% versus 10.8% respectively. The remaining direct costs, which accounted for just 1.4% of the overall total, were derived from a provincial check-off that is applied as a means of funding the Canola Growers Association.

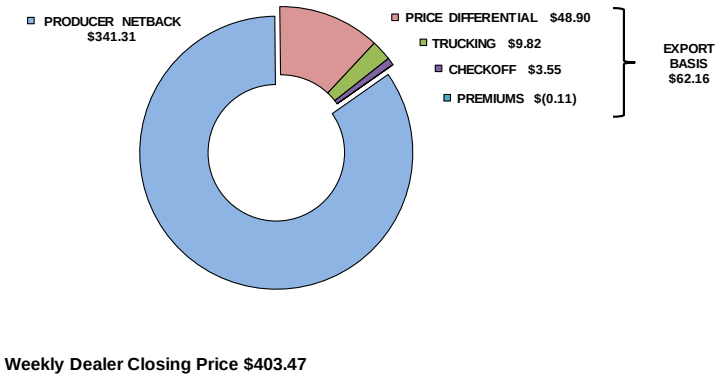
Export Basis – Financial Benefits

In comparison to wheat and durum, trucking premiums were never used aggressively to entice the delivery of canola. In fact, over the course of the last 17 years, the average trucking premium paid on canola has fallen to $0.56 per tonne from $2.48 per tonne. Moreover, the value of these premiums as an offset to the direct costs has also declined, falling to just 0.9% from 4.5%. It is worth noting that these premiums have largely been displaced by the price differential, which reflects the trade's preference to use the spread between the spot price and the futures price as the primary signalling mechanism in attracting deliveries. While prevailing market conditions can produce sizable swings in these premiums, their role remains rather limited.

Large Yellow Peas

The visible netback arising to producers of large yellow peas has proven to be the most volatile of the four commodities monitored under the GMP. As with other commodities, this volatility was occasioned primarily by the rise and fall in market prices. But it has also been affected by pronounced shifts in the export basis as well. Over the course of the GMP these forces effectively whipsawed the producer's netback for large yellow peas from a low of $118.75 per tonne in the 2005-06 crop year to a high of $318.28 per tonne in the 2011-12 crop year. Ensuing price reductions were largely responsible for cutting this back to $234.96 per tonne over the next three crop years. Better prices along with a reduction in the export basis worked

Figure 50: Producer Netback – Large Yellow Peas



to raise the producer's netback to a GMP record of $341.31 per tonne in the 2015-16 crop year, a gain of 45.3% over the $234.96 per tonne realized a year earlier.

Dealer's Closing Price

Although the supply of Canadian large yellow peas exercises significant sway in the marketplace, its price is sensitive to wider international influences. This sensitivity to changes in international supply and demand saw the dealer's closing price rise and fall rather dramatically over the course of the GMP's first 14 years, from a low of 171.69 per tonne in the 2005-06 crop year to a high of $410.92 per tonne in the 2011-12 crop year. This was followed by a two-year decline that saw the dealer's closing price slide by about a fifth, to an average of $326.12 per tonne in the 2013-14 crop year. The ensuing crop year brought a modest rebound in price, which strengthened a further 17.5% in the 2015-16 crop year, ultimately lifting the average price to $403.47 per tonne. Much of this increase stemmed from a tightening of global supplies, occasioned largely by a decline in Indian production as well as a weaker Canadian dollar.

Export Basis

Over the course of the GMP's first 15 year the export basis for large yellow peas rose progressively, albeit somewhat erratically. From its base-year value of $54.76 per tonne the export basis climbed to as much as $101.57 per tonne in the 2008-09 crop year before then drifting somewhat lower. Following a spike in the 2014-15 crop year, the export basis fell yet again, decreasing by 42.7%, to an average of $62.16 per tonne from $108.51 per tonne a year earlier.

Owing to the structure of the export basis, changes in the direct costs attributable to large yellow peas are virtually indistinguishable from the larger measure to which it belongs. As with the commodities already discussed, over 80% of the direct cost associated with yellow peas cannot be examined directly. Instead, a price differential between the dealer's closing price and the grower's bid closing price is calculated as an approximation for the cost of freight as well as other handling, cleaning, and storage activities.

Export Basis – Direct Costs

The direct costs associated with large yellow peas has fluctuated considerably since the beginning of the GMP, ranging from a low of $54.94 per tonne in the base year to a high of $108.58 per tonne in the 2014-15 crop year. Much of this movement was occasioned by changes in the price differential – the single largest cost element – which climbed fitfully to $96.29 per tonne from $48.23 per tonne in a reflection of prevailing market conditions. However, the 2015-16 crop year saw these direct costs decline by 42.7%, to $62.27 per tonne from $108.58 per tonne a year earlier. Once again, this was due almost entirely to a reduction in the price differential, which fell to $48.90 per tonne from $96.29 per tonne.

The second largest component in the direct costs of large yellow peas is trucking. As elsewhere, these costs are estimated using an average haul distance of 40 miles, and are deemed to have amounted to $9.82 per tonne in the 2015-16 crop year. On a comparative basis, this element accounted for 15.8% of the direct costs, against a lesser 10.8% in the base year. The remaining 5.7% was derived from a levy assessed by the provincial Pulse Growers Association at the time of delivery, which proved sharply higher than the 1.4% share it represented at the outset of the GMP.

Export Basis – Financial Benefits

Historically, the use of trucking premiums to encourage the delivery of large yellow peas has proven less common than for other commodities. From the outset of the GMP these premiums amounted to an average of just $0.18 per tonne, and provided an offset value of just 0.3% to total direct costs. Although premium payments spiked periodically, reaching as much as $0.64 per tonne in the 2001-02 crop year, its use remains very much restricted. In the 2015-16 crop year, these premiums averaged $0.11 per tonne, and shielded less than 0.2% of the producer's direct costs.

PRODUCER CARS

Producer-car loading has increased substantially since the beginning of the GMP. This has come about as a result of many factors, not the least of which has been the formation of producer-car loading groups. These range from small groups loading cars with mobile augers on a designated siding, to more sophisticated organizations with significant investments in fixed trackside storage and carloading facilities. Some have gone so far as to purchase the branch lines then being abandoned by CN or CP, establishing shortline railways that became integral elements in their broader grain-handling operations. Regardless of the approach taken, the aim was the same: to provide producers with a competitive alternative to the movement of their grain through a traditional grain-handling company. Although the majority of these producer groups are situated in Saskatchewan, a number can also be found in Manitoba and Alberta.

Loading Sites

Through the first 16 years of the GMP the number of producer-car loading sites situated across western Canada was reduced by more than half. With the close of the 2014-15 crop year, only 314 out of 709 remained. Much of the overall decline can be traced back to the closures made by the larger Class-1 carriers, which reduced their serviced sites by 72.2%, to 179 from 644. Conversely, those operated by the smaller Class 2 and 3 carriers more than doubled, to 135 from 65. The 2015-16 crop year saw the opening of two new sites, with the overall total rising by 0.6%, to 316 from 314. Both sites were tied to the newly established Northern Lights Rail, which increased the total number serviced by Class 2 and 3 carriers by 1.5%, to 137 from 135. [Table 6B-1]

Since the GMP's inception, Manitoba and Alberta have posted the largest attrition rates, with the number of producer-car loading sites declining by 74.1% and 72.4% respectively. The rate of decline in Saskatchewan was substantially less, with the number of sites having fallen by only 33.2% during the same interval. The two sites added in the 2015-16 crop year, both of which are situated in Saskatchewan, brought the first net increase to the network in a decade.

Producer-Car Shipments

Despite the general reduction in loading sites, producer-car shipments rose significantly over the course of the GMP's first 15 years, increasing to a high of 15,603 carloads in the 2013-14 crop year from 3,441 carloads in the base year. However, this growth proved somewhat sluggish in the face of periodic downturns in volume. Moreover, the last two crop years have witnessed a marked decline in scheduled shipments, with only 5,871 carloads planned during the 2015-16 crop year. In addition to marking a 40.5% reduction from the 9,867 carloads scheduled a year earlier, it proved to be the lowest volume seen since the 2002-03 crop year. This decline in scheduled producer cars simply mirrors the fewer applications now being made.

Figure 51: Producer Car Loading Sites

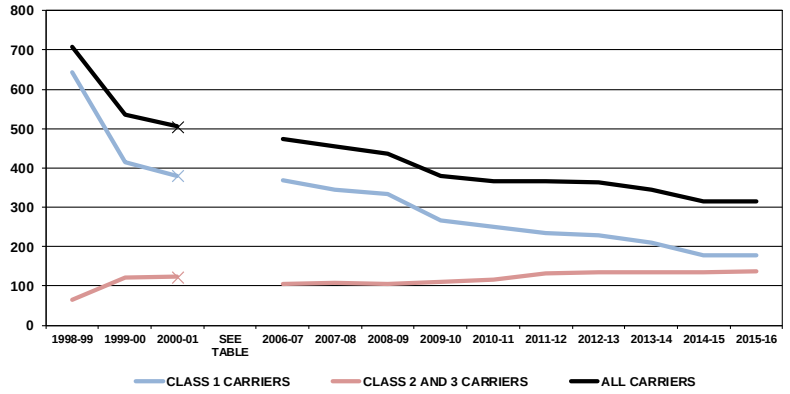
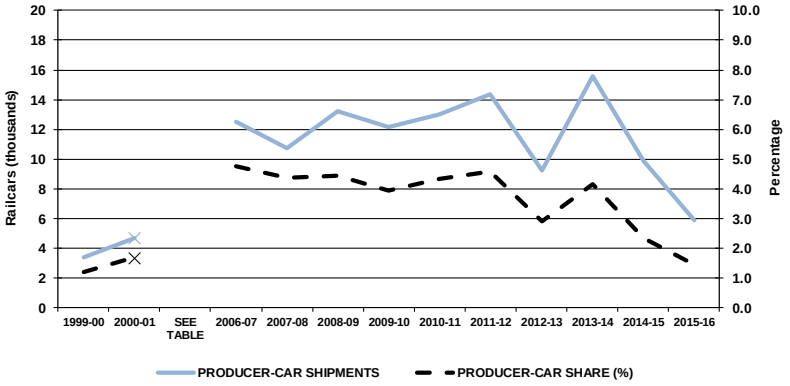


Figure 52: Producer-Car Shipments



Equally noteworthy was the continuing shift in the mix of commodities handled. Until the 2009-10 crop year, wheat, durum and barley was dominant, representing virtually all the traffic moved. But the proportion accorded to oilseeds and other commodities soon began to climb against these major grains. The 2015-16 crop year saw the share given over to wheat, durum and barley decline still further, to 34.1% from 63.3% a year earlier. Conversely, shipments of oilseeds and special crops continued to increase, taking a 65.9% share against 36.7% a year earlier. This marked the first time in the history of the GMP that the shipment of these commodities displaced that 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 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.

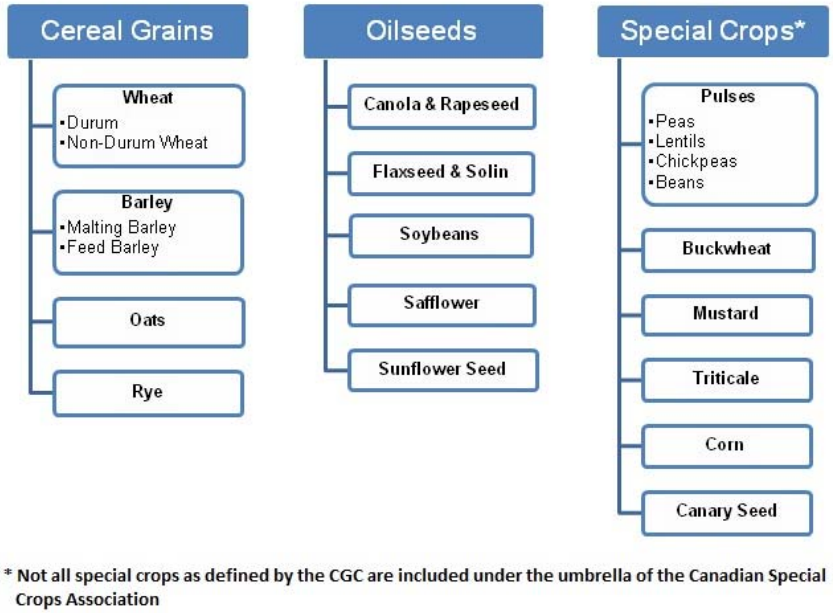
- Series 4 – Commercial Relations: Measurements relating to the rates applicable on various grain-handling and transportation services.

- 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.



* Not all special crops as defined by the CGC are included under the umbrella of the Canadian Special Crops Association

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, sunflower, and triticale.

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 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 implement the Grain Monitoring Program. 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 quality of the program as a whole. We look forward to their continued input and cooperation throughout the duration of the Monitoring Program.

Agricultural Producers Association of Saskatchewan
Agriculture and Agri-Food Canada
Alberta Agriculture, Food and Rural Development
Alberta Barley Commission
Alberta Federation of Agriculture
Alberta Transportation
Alberta Wheat Commission
Alliance Grain Terminal Ltd.
AGT Food and Ingredients
Battle River Railway
BC Maritime Employers Association
Boundary Trail Railway Company Inc.
Canadian Canola Growers Association
Canadian Grain Commission
Canadian Maritime Chamber of Commerce
Canadian National Railway
Canadian Pacific Railway
Canadian Ship Owners Association
Canadian Special Crops Association
Canadian Transportation Agency
Cando Contracting Ltd.
Canola Council of Canada
Cargill Limited
Ceres Global Ag Corp.
Chamber of Shipping of British Columbia
CMI Terminals
Fife Lake Railway Ltd.
G3 Canada Limited
Gardiner Dam Terminal
Government of British Columbia
Grain Growers of Canada
Great Western Railway Ltd.
ICE Futures Canada, Inc.
Inland Terminal Association of Canada
Keystone Agricultural Producers
Kinder Morgan Canada
Lake Line Railroad Inc.
Long Creek Railroad
Louis Dreyfus Canada Ltd.
Manitoba Agriculture, Food and Rural Development
Manitoba Infrastructure and Transportation
Manitoba Wheat and Barley Growers Association
National Farmers Union
North West Terminal Ltd.
Norther Lights Rail
OmniTRAX Canada, Inc.
Parrish & Heimbecker Ltd.
Paterson Grain
Port of Vancouver
Port of Churchill
Port of Thunder Bay
Prairie Oat Growers Association
Prince Rupert Grain Ltd.
Prince Rupert Port Authority
Pulse Canada
Red Coat Road and Rail Ltd.
Richardson Pioneer Ltd.
Saskatchewan Agriculture
Saskatchewan Highways and Infrastructure
Saskatchewan Association of Rural Municipalities
Saskatchewan Barley Development Commission
Saskatchewan Wheat Development Commission
South West Terminal
Statistics Canada
Stewart Southern Railway
Transport Canada
Viterra Inc.
Western Barley Growers Association
Western Canadian Wheat Growers Association
Western Grain By-Products Storage Ltd.
Western Grain Elevator Association