Annual Report

2014-2015 Crop Year

Monitoring the Canadian Grain Handling and Transportation System

Government of Canada / Gouvernement du Canada

Quorum Corporation

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Annual Report of the Grain Monitor: 2014-15 Crop Year

This report is available on the Quorum Corporation website.
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 2015, and focuses on the various events, issues and trends manifest in the movement of Western Canadian grain during the past year. This is the fifteenth 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 2014-15 crop year is largely gauged against that of the 2013-14 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 16 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). 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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Table of Contents

Executive Summary

PRODUCTION AND SUPPLY

Western Canadian grain production in the 2014-15 crop year was the second highest volume on record at 62.9 million tonnes. Although this is an 18.4% reduction from the previous crop year's historic 77.0-million-tonne crop, it stood well above the preceding 15-year average of 52.8 million tonnes. When combined with 14.2 million tonnes of carry-forward stocks, the grain supply totaled 77.1 million tonnes, down only 5.9% from the record 81.9 million tonnes also set a year earlier. While this presented continuing challenges for the GHTS as a whole, the system moved it effectively and efficiently, setting new performance standard at almost every turn.

TRAFFIC AND MOVEMENT

More grain moved through the Grain Handling and Transportation System (GHTS) in the 2014-15 crop year than at any other point in the history of the GMP. This was reflected in 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, increased by 2.2%, to 42.4 million tonnes from 40.7 million tonnes a year earlier. This increase was fuelled by comparatively stronger showings in each of the first three quarters, with a quarterly-throughput record of almost 11.8 million tonnes being set in the first quarter. Almost 60% of the volume increase was linked to Saskatchewan, where primary-elevator shipments rose by 1.0 million tonnes. This was supported by a 698,400-tonne increase in shipments from Alberta along with a 42,500-tonne increase in those from British Columbia. Reduced shipments from Manitoba, which fell by 62,200 tonnes, detracted marginally from these gains.

- The amount of grain moved by rail from western Canada totaled 49.7 million tonnes, with 39.0 million tonnes directed to destinations in western Canada, 3.0 million tonnes to eastern Canada, and 7.7 million tonnes to the United States and Mexico. Shipments to western Canadian ports increased by 9.8%, rising to a GMP record of 38.4 million tonnes from 34.8 million tonnes a year earlier. As in past years, the vast majority of this traffic, some 37.9 million tonnes, moved in covered hopper cars. The remaining 1.1 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 12.0%, to 22.5 million tonnes from 20.1 million tonnes. Prince Rupert posted a marginal 0.7% increase, with total volume rising to 6.2 million tonnes from 6.1 million tonnes. With a 16.3% increase in volume, Thunder Bay saw its total tonnage rise to 8.2 million tonnes from 7.1 million tonnes. Rail shipments to Churchill fell to 471,500 tonnes from 574,200 tonnes.

- Port throughput, as measured by the volume of grain shipped from terminal elevator and bulk loading facilities located at Canada's four western ports, rose by 14.9%, to a new GMP record of 35.8 million tonnes from 31.1 million tonnes a year earlier. Vancouver accounted for 57.6% of this volume, with total marine shipments increasing by 16.0%, to a GMP record of 20.6 million tonnes from 17.8 million tonnes. Prince Rupert saw a 3.9% increase, with shipments rising to a record 6.2 million tonnes from 5.9 million tonnes. Thunder Bay witnessed a 24.7% increase in volume, with throughput rising to yet another GMP record of almost 8.5 million tonnes from 6.8 million tonnes. Churchill reported a 17.1% decrease in its handlings, which fell to 527,400 tonnes from 636,000 tonnes.

- Total grain shipments to the United States by truck totaled just over 3.2 million tonnes. This marked a 40.4% increase over the 2.3 million tonnes shipped a year earlier. Although wheat, durum and barley constituted almost 1.2 million tonnes, the majority of the total tonnage, almost 2.1 million tonnes, encompassed a variety of other commodities. Chief among these were canola and canola-related products, along with oats and peas. Almost two-thirds of the total volume, just over 2.0 million tonnes, was directed to the US Midwest. This was followed by destinations in the US West, with 968,800 tonnes; the US Northeast, with 142,800 tonnes; and the US South, with 78,900 tonnes.

INFRASTRUCTURE

The infrastructure that defines the GHTS in western Canada has undergone significant change since the beginning of the GMP. Much of this reflects the rationalization of the country elevator network, which proved transformative in the first years of the Grain Monitoring Program (GMP). Even so, the evolution continues, with the following changes being noted in the 2014-15 crop year.

- The total number of country elevators decreased by 0.3%, to 370 from 371 at the close of the previous crop year. This brought the accumulated loss since the beginning of the GMP to 634 facilities, or 63.1%. Much the same was true of the network's grain delivery points, which actually increased by 0.4%, to 262 from 261. This was complemented by 4,500 tonnes of added storage capacity, with the overall total being raised to slightly in excess of 7.3 million tonnes; a value not far removed from the GMP's base year.

- The scope of the western Canadian railway network was reduced by 1.0% in the 2014-15 crop year, falling to a total of 17,424.1 route-miles from 17,600.2 route-miles a year earlier. Although this denotes a reduction of 10.5% 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 CP discontinuances, which included portions of its Arcola, Glenboro and Gravelbourg subdivisions. This served to decrease the infrastructure under Class 1 management to 14,835.4 route-miles, or 85.1%, while that under the non-Class-1 carriers remaining unchanged at 2,588.7 route-miles, or 14.9%.

- The 2014-15 crop year saw the addition of two 10,000-tonne facilities at Thunder Bay: MobilEx Terminal Limited.; and Thunder Bay Terminals Ltd. This lifted the total number of facilities within the terminal-elevator network to 17 from 15, and its associated storage capacity by 0.8% to 2.4 million tonnes. With eight terminal elevators, Thunder Bay laid claim to 47.1% of the system's

facilities and 48.2% of its storage capacity. Although home to seven terminal elevators, Vancouver's share of the network's facilities and storage capacity slipped to 41.2% and 37.4% respectively as a result of the changes posted by Thunder Bay. Prince Rupert and Churchill both followed with one terminal elevator each, and storage capacity shares of 8.6% and 5.8% respectively.

COMMERCIAL RELATIONS

The 2014-15 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 2014-15 crop year. Once again, these varied according to the corridor and carrier involved. The differing pricing actions taken by CN and CP resulted in sharply contrasting year-end rate structures, with the single-car rates for CN showing comparatively modest net increases against those posted by CP. However, it should be noted that, owing to the depth to which CP had reduced its rates towards the close of the previous year, these rate increases appear more substantive than they really were. By the close of the crop year, westbound movements over CN and CP had been increased by 9.5% and 22.3% respectively. Eastbound pricing showed a similar contrast, with CN increasing its rates into Thunder Bay and Churchill by 4.1% and 4.5% respectively, while CP's rates into Thunder Bay rose by 25.9%.

- Modest changes were noted in the per-tonne rates assessed by grain companies for a variety of primary elevator handling activities during the 2014-15 crop year. These ranged from a 0.9% decrease in the rates for storage to a 7.2% increase in those tied to the removal of dockage.

- 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 2014-15 crop year, with the composite price index rising by 2.3%, to 153.4 from 150.0 a year earlier. Storage-charge increases for the period proved equally modest, increasing by 2.0%, with the composite price index rising to 183.6 from 180.1.

Commercial Developments

Although the quantity of grain to be moved by the GHTS remained a key concern for stakeholders in the 2014-15 crop year, there were a number of other developments in regards to the commercial activities attached to its movement. A number of these will have a significant bearing on the workings of the GHTS in the years ahead.

Trucking of Grain to the United States: Reports of an increase in the transborder truck movement of grain into the United States prompted the Monitor to examine the issue more closely. This analysis reveals that while grain shipments to the US have increased by 17.4% since the 2011-12 crop year, to 11.1 million tonnes from 9.5 million tonnes, the proportion accorded to truck movements

has ballooned from 25.2% to 40.6%. Moreover, much of the gain was tied to the increased use of trucking in the movement of wheat, durum and barley.

The total tonnage moved by rail into the US still exceeded that moved by road and were particularly dominant in the more distant South and Northeast markets. These margins narrowed more substantially in the West and Midwest regions, where trucking played a larger role in the transportation mix. Nowhere was this more evident than in the Midwest, which received just over half of the total tonnage directed into the US from western Canada during the 2014-15 crop year. More than a third, 35.4%, of the 5.7 million tonnes of grain shipped into the region during the last crop year was delivered by truck. Much of the grain directed into the Midwest was destined to the adjacent border states of North Dakota and Minnesota. Combined, these two states took in almost 2.8 million tonnes of western Canadian grain. Approximately 1.6 million tonnes of this, or 56.9%, was delivered by truck. More noteworthy still was the fact that North Dakota took the dominant proportion, with 1.1 million tonnes in Canadian grain deliveries having been made by truck.

Although the volume of grain shipped by truck into the US has been progressively increasing over the past four years, it took a noticeable increase in the 2014-15 crop year. Moreover, the share accorded to these shipments rose substantially, increasing to 40.6% from 24.8% a year earlier. The limited shift in modal usage during the 2011-12 through 2013-14 crop years suggests that the removal of the CWB's monopoly had little material impact on the transborder movement of grain. Rather, the evidence hints at one particularly powerful motivator: grain prices. In essence, the differential between Canadian and American prices promised better financial returns for producers who chose to deliver into the United States.

Government Owned Hopper Cars: Between 1972 and 1994, the federal government purchased some 13,500 covered hopper cars for use in the movement of western Canadian grain. These, and another 6,000 publicly supplied covered-hopper cars, were essentially provided to CN and CP free of charge for this purpose. Moreover, while both railway companies supplemented these cars with their own equipment in order to meet prevailing market demands, the aging of the publicly supplied fleet has become an issue of emerging concern for most stakeholders in the industry.

By the early 2000s, these cars had already passed the midway point in their expected economic lives, deemed to be about 40 years. Moreover, they were becoming increasingly obsolete as the railway industry invested in railcars capable of carrying heavier loads. After considering the possible sale of these cars, the federal government decided that it would maintain its ownership of the existing fleet and enter into new operating agreements for their use with CN and CP. These operating agreements, which were established in 2007 under an initial ten-year term, attempted to address some of the cars' commercial limitations. In general, terms, the agreements required CN and CP to physically upgrade the cars to a higher standard. This involved increasing the railcars' carrying capacity to 286,000 pounds along with certain mandated repairs that would add ten years to their service lives. About this same time, the owners of other publicly supplied hopper cars also embarked on upgrading programs of their own, most notably the Government of Saskatchewan and the CWB, in 2006 and 2009 respectively.

However, not all off these cars would be upgraded. In the case of the federal fleet, CN and CP committed to upgrade all steel hopper cars built after 1974 under a five-year rehabilitation program. This meant that the 2,000 cars built prior to 1975, along with the remnants of some 2,424 aluminum cars built between 1975 and 1977, would be earmarked for destruction. At the close of 2014, Transport Canada reported that only 8,410 of the nearly 13,500 hopper cars furnished to these two carriers remained in service. While other publicly-supplied fleets did not sustain such age-related losses, a number of cars were also withdrawn from service through either sale or cancelation of leases. By its own accounts, the railways had a combined fleet of almost 23,300 cars in grain service at the close of the 2014-15 crop year. Comprised within this were an estimated 8,400 federal hoppers along with some 3,000 hoppers supplied to them through the CWB and the Saskatchewan and Alberta provincial governments. This implies that CN and CP were supplementing this equipment with nearly 11,900 cars of their own. While the railways have always contributed some equipment to the mix, this proportion suggests that there has been a substantial shift in the overall composition of the fleet used to move western Canadian grain; from one almost entirely comprised of publicly-supplied equipment to one in which they constituted about half. Although the upgrading of the publicly supplied fleet enhanced the overall utility of the cars themselves, it also deferred the need for their replacement by another ten years. An important facet of the new operating agreements between CN, CP and the federal government was that it shifted the onus for replacing the federal cars from the government to the railways. Notwithstanding the commercial considerations that might lead to other unexpected reductions, attrition will continue to reduce the number of publicly supplied hopper cars now in grain service.

The pace of this decline is expected to accelerate noticeably in 2022, when the Alberta government's fleet reaches the end of its economic life. A more significant reduction will follow between 2025 and 2027 when the remnants of the federal hopper cars bought in the mid-1970s are slated for retirement, which will decrease their active number to an estimated 4,300. Over the course of the following decade, virtually all of these cars will have reached the end of their economic lives and be withdrawn from service. To date, the data suggests that CN and CP have been backfilling the decline occasioned by the equipment losses previously noted. Replacement of the current federal fleet would entail an estimated expenditure of $840 million. Were all publicly supplied cars to be replaced, the industry would face an investment in excess of $1.4 billion. This does not take into account the reduction in capacity requirements that emanate from productivity improvements such as reduced car cycles and increased size of cars.

Removal of Mandatory Minimum Volume Thresholds: In the face of mounting shipper displeasure with railway service in the opening months of 2014, the federal government took the extraordinary step of issuing an Order in Council (OIC) on 7 March 2014 under section 47(1) of the *Canada Transportation Act*. This action set a minimum weekly volume of grain to be moved by CN and CP. In essence, the OIC directed that the railways ultimately provide for the movement of a combined 1.0 million tonnes of grain per week in order to reduce a mounting backlog. As winter began to give way to spring there were signs that the backlog of grain was beginning to move. By the close of the 2013-14 crop year country elevator stocks had begun to fall, railway shipments were rising; and west coast terminal elevator inventories were increasing. Moreover, there was a steady decline in the number of ships waiting to load at port as the GHTS oversaw the movement of a record 10.8 million tonnes of grain in the fourth quarter of the crop year. Even so, there was still in excess of 14.2 million tonnes of grain left to move. Confronted with such carry-forward stocks, along with the growing prospects for a larger-than normal new crop, the government opted to renew the OIC through to 29

November 2014, increasing the minimum threshold for each carrier from 500,000 tonnes per week to 536,000 tonnes per week. With the onset of winter the government then chose to renew the OIC for a second time, although it progressively reduced the weekly thresholds through December 2014 to 200,000 tonnes per carrier, before then gradually rising them to 465,000 tonnes per carrier by the last week of March 2015. On 28 March 2015, however, the government announced that the OIC would not be renewed for a third time. Citing the robust volume record already witnessed through the first half of the crop year, the Ministers of Transport and Agriculture both indicated that the OIC had served its intended purpose, and that it would be allowed to lapse.

CWB Commercialization: On 15 April 2015 the Minister of Agriculture and Agri-Food announced that, pursuant to the *Marketing Freedom for Grain Farmers Act*, the Government of Canada had approved in principal a deal struck between the Canadian Wheat Board (CWB) and G3 Global Grain Group (G3), a joint venture between Bunge Canada and SALIC Canada Limited, in fulfillment of its marketing freedom policy. The deal, which would see G3 invest $250 million and acquire a controlling 50.1% interest in CWB, with the remaining 49.9% to be held in trust for the benefit of western farmers having delivered grain to the CWB from August 1, 2013 onward. This denoted a major step in the company's plan to develop a coast-to-coast grain-handling enterprise. Finalization of this agreement, which came on 31 July 2015, effectively completed the legislative initiative launched by the federal government in 2011. Since losing its monopoly at the beginning of the 2012-13 crop year, the recast CWB had been engaged in an effort 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. In addition, the CWB also embarked on the construction of four new state-of-the-art elevator facilities in Manitoba and Saskatchewan. While the deal would ultimately see the CWB name phased out and replaced with the G3 brand, still other corporate expansion initiatives were being explored. On 2 June 2015 G3 announced that it was joining with Western Stevedoring Company Limited to examine the feasibility of building an export grain terminal on the Lynnterm West Gate site in North Vancouver. The study denoted another step in the new entity's quest to create a coast-to-coast Canadian grain operation that built on the footprint arising out of its intended merger of existing CWB and Bunge assets.

AGT Foods purchase of West Central Road and Rail: On 14 April 2015 West Central Road and Rail Ltd. announced that it, along with subsidiary Goals Marketing Inc., had entered into an asset-purchase agreement with Alliance Pulse Processors Inc., a subsidiary of AGT Food and Ingredients Inc., for substantially all of the company's assets. The agreement effectively covered all of WCRR's producer-car loading facilities in Eston, Laporte, Lucky Lake, Beechy and Dinsmore, Saskatchewan, along with most of its other assets for the storing, receiving, loading and merchandising of grains, pulses, oilseeds and special crops. Alliance indicated that it would continue using these facilities to strengthening its bulk-sourcing abilities for lentils, peas, durum wheat and other specialty crops and grains. The transaction, estimated to be worth $22 million, was subsequently approved by WCRR shareholders some five weeks later and ultimately finalized on 2 June 2015. Just prior to the completion of this transaction, Alliance's parent, AGT Food and Ingredients Inc., announced that it would also be expanding its facility in Minot, North Dakota. While this announcement signaled a deferral of its previously cited plans to expand capacity in Western Canada, it also indicated that the company was making strategic investments aimed at better positioning itself for future growth.

CTA Review Panel concludes the consultation phase: After receiving more than 200 written submissions and conducting hundreds of additional in-person meetings, the Canada Transportation Act review panel concluded the public-consultation phase of its examination on 30 June 2015. The panel's focus would now shift towards the actual analysis of the information gathered along with the formulation of recommendations. The panel's report was expected to be submitted to the federal minister of transport before the end of 2015.

CTA Level of Service Decision: The problems that manifest themselves in the movement of grain during the 2013-14 crop year saw several shippers file level-of-service complaints with the Canadian Transportation Agency. These included complaints from three of Canada's largest grain handlers: Louis Dreyfus Commodities Canada Ltd.; Richardson International Limited; and Viterra Inc. Effectively, all of these complaints alleged that CN had breached its level-of-service obligations by failing to provide the shipper with a sufficient number of railcars to meet their commercial needs. In general terms, each complainant argued that CN had failed to provide it with the cars it was entitled to receive under either a confidential contract or an allocation commitment made by the carrier. Although each case acknowledged the unusual circumstances that led to the rationing of equipment during this period, the Agency found that the shippers' service requests had been reasonable under the circumstances. Moreover, while shippers consistently received even less equipment than they had been repeatedly told to expect by CN, the Agency found that the carrier was unable to establish justifiable reasons for the repeated service failures. As such, the Agency found that CN had breached its level-of-service obligations in all three instances. In so finding, the Agency also ordered the carrier to make up the allocation shortfalls owing to each shipper by providing them with a weekly supplement of hopper cars until the obligations had been fully discharged.

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 second consecutive year. Even so, the GHTS moved to meet these challenges directly.

- The overall average for time spent in the system rose by 2.2% in the 2014-15 crop year, to 42.0 days from the 41.1-day average observed a year earlier. The result was mainly shaped by a 1.8-day increase in the amount of time spent by grain in storage at a terminal elevator, which rose to 10.7 days from the previous crop year's 8.9-day average. A further 0.5 days were added as a result of an increase in the railways' loaded transit time, which rose to an average of 5.8 days from 5.3 days. These increases were, however, tempered by a 1.4-day reduction in the amount of time grain spent in inventory at a country elevator, which fell to an average of 25.5 days from 26.9 days.

- Notwithstanding the fact that the global market remained awash in grain, Canadian grain shippers continued to pursue aggressive sales programs. The railways, which were still contending with the aftermath of the previous crop year's record crop, remained well arrayed to deal with the prolonged movement of larger-than-normal volumes. In fact, through the opening months of the 2014-15 crop year the railways continued to move grain at a record pace. Aiding in all of this was the fact that the railways did

not have to struggle with the same weather conditions that were experienced in the winter of 2013-14. Railway grain shipments continued to track above those observed for the same period a year earlier until the fourth quarter.

- Hopper-car shipments of export grain to the four ports in western Canada rose by 9.8%, to a GMP record of 38.4 million tonnes. Ultimately, this performance led the federal government to lift the Order in Council that had imposed minimum weekly grain volumes for both CN and CP. Gone too was much of the farmer and shipper displeasure over railway service that had so influenced the industry's commercial relationships a year earlier.

- The fluidity with which grain moved through the GHTS during the 2014-15 crop year was a testament to the efficiencies that could be realized with the proper deployment of resources and effort. This was evident in the establishment of new volume records for country-elevator throughput, railway shipments and terminal-elevator throughput.

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 heavily influenced by the prevailing 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 2014-15 crop year, where changing grain prices had both positive and negative impacts on the producer's netback.

- Changes in the export quotations for 1CWRS wheat (13.5% protein) and 1CWA durum proved markedly different in the 2014-15 crop year. Although prices for 1CWRS wheat fluctuated throughout the year, the overall average slipped by a modest 1.1%, to $323.38 per tonne from $327.12 per tonne a year earlier. Conversely, the price for 1CWA durum climbed steadily higher over the course of this same period, ultimately increasing by 36.6%, to an average of $505.55 per tonne from $370.09 per tonne the year previous. Similarly, the export basis tied to these grains also moved in opposite directions, with that of wheat falling by 6.2%, while that of durum rose by 28.3%. After deducting the export basis, producers would have seen an estimated 2.3% increase in their financial return on 1CWRS wheat, which rose to an average of $199.18 per tonne from $194.71 per tonne a year earlier, as well as an estimated 43.0% increase on that of 1CWA durum, which climbed to an average of $299.20 per tonne from $209.27 per tonne in the same period.

- Canola witnessed a 3.8% price decline in the 2014-15 crop year, with the Vancouver cash price for 1 Canada canola falling to an average of $488.27 per tonne from $507.30 per tonne a year earlier. Much of the loss was again tied to a second year of ample oilseed supplies. The negative impact of this price decline was partially offset by a 14.3% decline in the export basis. As a result the producers' netback fell by a more modest 1.8%, to an average of $419.05 per tonne from $426.54 per tonne. Unlike canola, a tightening of global supplies helped to raise yellow-pea prices by 5.3%, to an average of $343.47 per tonne from $326.12 per tonne

a year earlier. Unlike canola, the export basis for yellow peas moved sharply higher, increasing by 33.6%. As a result, the producers' netback for yellow peas declined by 4.1%, to 234.96 per tonne from $244.88 per tonne a year earlier.

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. Some of the significant changes observed in the 2014-15 crop year are noted 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 346 of the original 709 left in service at the close of the 2013-14 crop year. The 2014-15 crop year saw another 32 closures made by CN and CP, which reduced the number of sites to 314. As a result, the number of sites operated by the major railways fell to 179 while those tied to the shortlines remained unchanged at 135.

- The number of producer-cars scheduled for movement in the 2014-15 crop year fell by 36.8%, to 9,867 carloads from the record 15,603 carloads posted a year earlier. This was simply the product of far fewer applications and amplified by comparison to the atypical 2013-14 crop year. 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 in producer cars. The 2014-15 crop year saw this share decline still further, to 63.3% from 73.4% a year earlier. On the other hand, shipments of oilseeds and other commodities continued to increase, encompassing 36.7% of scheduled producer-car movements against 26.6% the year previous.

Section 1: Production and Supply

Indicator Description	Table	1999-00	2012-13	2013-14	2014-15 Q1	Q2	Q3	Q4	YTD	% VAR
Production and Supply										
Crop Production (000 tonnes)	1A-1	55,141.7	56,882.1	77,021.1	62,854.9				62,854.9	-18.4%
Carry Forward Stock (000 tonnes)	1A-2	7,418.2	5,733.5	4,889.9	14,236.0				14,236.0	191.1%
Grain Supply (000 tonnes)		62,559.9	62,615.6	81,911.0	77,090.9				77,090.9	-5.9%
Crop Production (000 tonnes) – Special Crops	1A-3	3,936.7	5,551.8	6,852.2	6,554.2				6,554.2	-4.3%

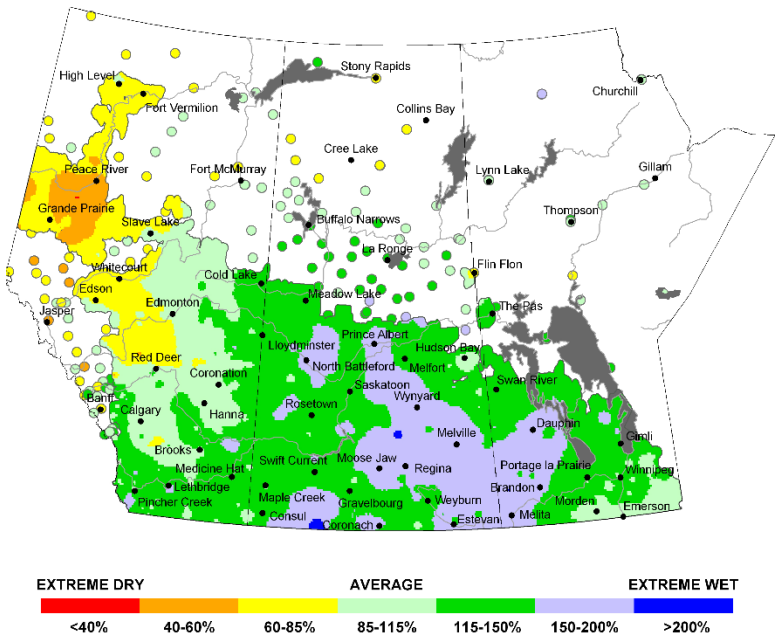
PRODUCTION AND SUPPLY

Western Canadian grain production fell to 62.9 million tonnes in the 2014-15 crop year. Although this marked an 18.4% decrease from the previous crop year's record-setting 77.0-million-tonne crop, it remained well above the preceding 15-year average of 52.8 million tonnes. While this proved to be the second largest crop on record, the 2014 growing season also brought its share of challenges. [Table 1A-1]

Chief among these were the generally cooler conditions that prevailed throughout much of the prairies, and which delayed overall crop development. In addition, a higher-than-normal rainfall caused flooding that removed a significant amount of land from production in eastern Saskatchewan and western Manitoba. The ensuing late harvest, which forced farmers to contend with further weather-related delays, also contributed to the production of a lower-quality crop.

The sheer size of the crop, along with another 14.2 million tonnes in carry-forward stocks, presented continuing challenges for the GHTS as a whole. In addition to bolstering global grain supplies, which reached a record 3.0 billion tonnes, shippers continued to pursue aggressive sales programs.[1] As a result, concerns over the GHTS's ability to effectively and efficiently provide for the movement of another above-average Canadian crop persisted, particularly in the face of the commercial pressures that had already brought a further decline in grain prices.

Figure 1: Precipitation Compared to Historical Distribution (1 April to 31 August 2014)



Provincial Distribution

The overall decline in prairie grain production from that seen in the previous year reflected the broader reduction that reached across all provinces. Saskatchewan accounted for just over half of overall crop production and where output fell by 19.9%, to 31.4 million tonnes from 39.1 million tonnes a year earlier. This decline proved consistent with that experienced by other provinces as well. Alberta, which posted the next largest reduction, reaped 21.9 million tonnes against 25.3 million tonnes the previous crop year. Manitoba, with a reduction of 23.0%, saw its production fall to 9.3 million tonnes from 12.1 million tonnes. Enlarging these declines was a 116,500-tonne decrease for British Columbia, which saw output fall by 28.2%, to 296,800 tonnes from 413,300 tonnes.

1 The 3.0-billion-tonne estimate cited here for the 2014-15 crop year supply is drawn from the United States Department of Agriculture's World Agricultural Supply and Demand Estimates (WASDE), as released on 9 December 2015.

Commodity Distribution

The 2014 growing season saw substantive decreases in the production of virtually all crops. The most significant decline was posted by wheat, durum and barley, which collectively fell by 23.6% against an 11.2% reduction in the output of oilseeds and other commodities. With total wheat, durum and barley production falling to 34.1 million tonnes from 44.7 million tonnes a year earlier, this sector accounted for 54.3% of total grain production. Oilseeds and other commodities, which represented 45.7% of the total output, slid to 28.7 million tonnes from 32.4 million tonnes.

The 10.5-million-tonne decrease in wheat, durum and barley production was led by a 21.8% decline in the amount of wheat harvested, which fell to 22.2 million tonnes from 28.4 million tonnes a year earlier. This was augmented by the effects of a 31.3% decline in barley production, which saw output fall to 6.7 million tonnes from 9.7 million tonnes the previous year. A 20.2% decrease for durum resulted in production slipping to 5.2 million tonnes from 6.5 million tonnes.

With almost 16.4 million tonnes of production, canola accounted for 56.9% of the 28.7 million tonnes of oilseeds and other commodities harvested in the 2014-15 crop year. Still, this denoted a 2.1-million-tonne decrease from the 18.5 million tonnes of canola produced a year earlier. This decline was enlarged by a 930,100-tonne decrease in oat production, which fell to 2.7 million tonnes from 3.6 million the year previous. A further 807,600 tonnes was lost as a result of decreases in dry peas, grain corn, rye and other commodities. This was partially offset by a combined 226,200-tonne increase in the output of flaxseed and soybeans.

Figure 2: Provincial Grain Production

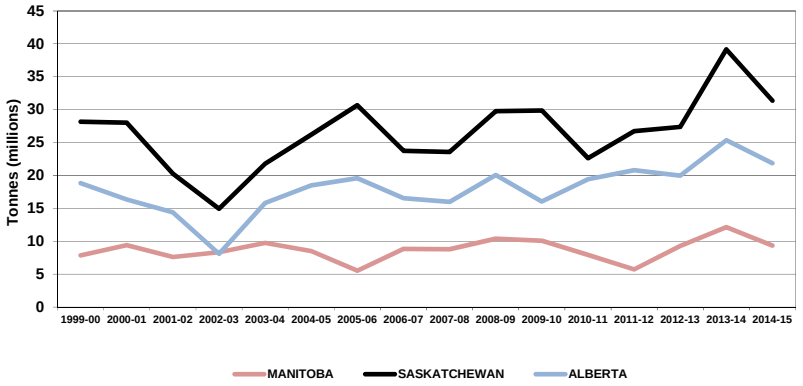
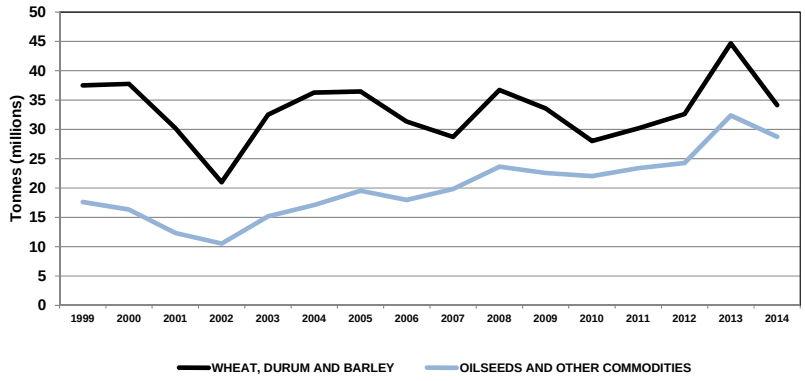


Figure 3: Grain Production – Major Commodity Groupings



Special Crops

As with most grains, special-crop production also declined in the 2014-15 crop year.[2] Total output for the sector amounted to almost 6.6 million tonnes, down 4.3% from the 6.9 million tonnes reported a year earlier. Decreased dry-pea and lentil production, the sector's two largest crops, were largely responsible for this reduction. In the case of dry peas, total production fell by 3.8%, to 3.8 million tonnes from 4.0 million tonnes a year earlier. This was augmented by a 12.1% decrease in the output of lentils, which declined to 2.0 million tonnes from 2.3 million tonnes. More modest tonnage losses for chickpeas and canary seed served to widen this decline. These were tempered by increases in the output of fababeans, mustard seed, dry beans 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.[3] These stocks tend to move in conjunction with changes in grain production, albeit on a lagging basis.

Totalling some 14.2 million tonnes, these stocks proved to be almost three times the 4.9 million tonnes that had been carried forward a year earlier. Much of the impetus for this 9.3-million-tonne increase came from the record-setting production of the 2013-14 crop year, which resulted in a ballooning of year-end stocks. When combined with 62.9 million tonnes of new production, the grain supply fell to 77.1 million tonnes, a 5.9% decrease from the previous crop year's record high of 81.9 million tonnes. [Table 1A-2]

Figure 4: Major Grain Production – 2014-15 Crop Year

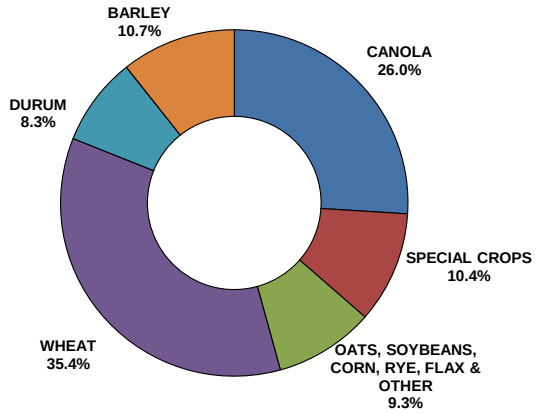
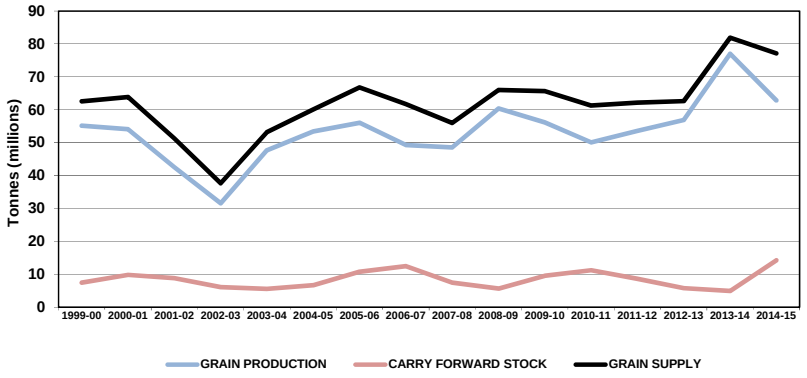


Figure 5: Western Canadian Grain Supply



2 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.

3 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.

With a 5.7-million-tonne increase in carry-forward stocks, Saskatchewan posted the most substantive gain. This was followed by Alberta, with a 2.5-million-tonne increase, along with a 1.1-million-tonne increase for Manitoba. Even British Columbia, with a 48,500-tonne gain, saw a five-fold increase in its carry-forward stocks. With the exception of rye, which posted a marginal decline of 3.6%, the carry-forward stocks for all major grain moved sharply higher.

Section 2: Traffic and Movement

Indicator Description	Table	1999-00	2012-13	2013-14	2014-15 Q1	Q2	Q3	Q4	YTD	% VAR
Country Elevator Throughput										
Grain Throughput (000 tonnes) – Primary Elevators	2A-1	32,493.9	34,278.7	40,676.0	11,779.2	9,178.9	11,028.2	10,382.8	42,369.2	2.2%
Railway Traffic										
Traffic to Western Canada										
Railway Shipments (000 tonnes) – All Grains	2B-1	26,439.2	29,606.8	34,837.3	10,967.3	8,864.2	8,650.9	9,907.4	38,389.8	9.8%
Railway Shipments (000 tonnes) – Hopper Cars	2B-1	25,664.6	28,422.5	33,827.6	10,766.1	8,589.7	8,327.2	9,649.5	37,332.4	10.4%
Railway Shipments (000 tonnes) – Non-Hopper Cars	2B-1	774.7	1,184.2	1,009.7	201.3	274.5	323.8	257.9	1,057.4	-5.8%
Special Crop Shipments (000 tonnes) – All Grains	2B-2	2,102.9	3,748.4	3,990.7	1,874.2	1,161.4	919.5	611.2	4,566.4	11.3%
Special Crop Shipments (000 tonnes) – Hopper Cars	2B-2	1,844.1	3,551.9	3,795.1	1,820.5	1,098.1	842.5	545.0	4,306.2	13.5%
Special Crop Shipments (000 tonnes) – Non-Hopper Cars	2B-2	258.7	196.5	195.5	53.8	63.3	77.0	66.2	260.2	-15.0%
Hopper Car Shipments (000 tonnes) – Origin Province	2B-3									
Hopper Car Shipments (000 tonnes) – Primary Commodities	2B-4	25,664.6	28,422.5	33,827.6	10,766.1	8,589.7	8,327.2	9,649.5	37,332.4	10.4%
Hopper Car Shipments (000 tonnes) – Detailed Breakdown	2B-5									
Hopper Car Shipments (000 tonnes) – Grain-Dependent Network	2B-6	8,685.9	8,222.4	9,784.4	3,284.7	2,602.0	2,270.3	2,914.2	11,071.2	13.2%
Hopper Car Shipments (000 tonnes) – Non-Grain-Dependent Network	2B-6	16,978.7	20,200.1	24,043.2	7,481.4	5,987.7	6,056.9	6,735.3	26,261.3	9.2%
Hopper Car Shipments (000 tonnes) – Class 1 Carriers	2B-7	23,573.5	27,331.3	32,662.8	10,267.3	8,234.6	8,087.7	9,404.6	35,994.2	10.2%
Hopper Car Shipments (000 tonnes) – Non-Class-1 Carriers	2B-7	2,091.0	1,091.3	1,164.8	498.7	355.2	239.5	244.9	1,338.3	14.9%
Traffic to Eastern Canada										
Railway Shipments (000 tonnes) – All Grains	2B-8	n/a	n/a	n/a	533.1	893.1	1,150.1	439.7	3,016.0	n/a
Railway Shipments (000 tonnes) – Hopper Cars	2B-8	n/a	n/a	n/a	342.0	653.5	935.6	267.2	2,198.3	n/a
Railway Shipments (000 tonnes) – Non-Hopper Cars	2B-8	n/a	n/a	n/a	191.1	239.6	214.5	172.5	817.8	n/a
Special Crop Shipments (000 tonnes) – All Grains	2B-9	n/a	n/a	n/a	139.1	178.6	192.4	90.5	600.6	n/a
Western Canadian Originated Traffic										
Railway Shipments (000 tonnes) – All Grains	2B-15	n/a	n/a	n/a	13,621.3	11,825.8	11,978.2	12,235.5	49,660.7	n/a
Railway Shipments (000 tonnes) - Canada	2B-15	n/a	n/a	n/a	11,648.9	9,913.1	9,939.8	10,466.4	41,968.2	n/a
Railway Shipments (000 tonnes) – United States	2B-15	n/a	n/a	n/a	1,912.1	1,869.8	1,991.1	1,729.6	7,502.6	n/a
Railway Shipments (000 tonnes) – Mexico	2B-15	n/a	n/a	n/a	60.2	42.9	47.3	39.5	189.9	n/a
Terminal Elevator Throughput										
Grain Throughput (000 tonnes) – All Commodities	2C-1	23,555.5	26,922.6	31,111.1	10,062.0	8,266.0	7,432.1	10,001.7	35,761.8	14.9%
Hopper Cars Unloaded (number) – All Carriers	2C-2	278,255	300,423	349,132	111,324	88,367	84,658	100,433	384,782	10.2%
Hopper Cars Unloaded (number) – CN	2C-2	144,800	153,751	181,461	56,896	44,949	45,349	49,817	197,011	8.6%
Hopper Cars Unloaded (number) – CP	2C-2	133,455	146,672	167,671	54,428	43,418	39,309	50,616	187,771	12.0%
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	n/a	2,289.6	757.2	896.1	880.7	680.1	3,214.1	40.4%
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, increased by 2.2% in the 2014-15 crop year. Total shipments for the period rose to 42.4 million tonnes from 40.7 million tonnes a year earlier. This increase was fuelled by comparatively stronger showings in each of the first three quarters, with a quarterly-throughput record of almost 11.8 million tonnes being set in the first. This reflected the heightened performance of the GHTS as a whole, which saw more grain moved through the system than at any point in the history of the GMP.

Almost 60% of the volume increase was linked to Saskatchewan, where primary-elevator shipments rose by 1.0 million tonnes, or 3.2%, to 21.0 million tonnes from 20.0 million tonnes a year earlier. An additional 698,400 tonnes was realized from a larger Alberta movement, where shipments rose by 4.9%, to 14.7 million tonnes from 14.0 million tonnes. A further 42,500 tonnes was derived from an 11.0% increase in grain shipments from British Columbia, which rose to 428,800 tonnes from 386,300 tonnes a year earlier. Detracting marginally from these gains was a 62,200-tonne reduction in volume for Manitoba, where shipments fell by 6.6%, to 6.2 million tonnes from 6.3 million tonnes. [Table 2A-1]

RAILWAY TRAFFIC

Railway grain shipments from western Canada totaled 49.7 million tonnes in the 2014-15 crop year. The vast majority of this tonnage, amounting to some 42.0 million tonnes, was directed to destinations within Canada itself, be it for export or domestic use. The largest portion, totalling 39.0 million tonnes, was shipped to points within western Canada, with the remaining 3.0 million tonnes directed to points in eastern Canada. A further 7.7 million tonnes of grain were shipped to the United States and Mexico. [Table 2B-15]

Figure 6: Primary Elevator Throughput

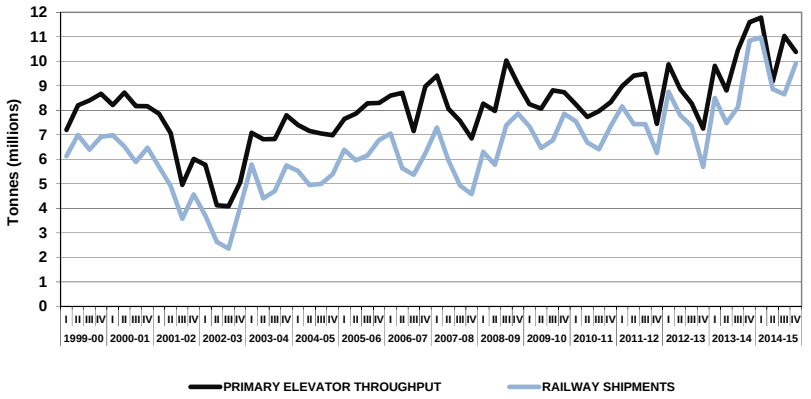
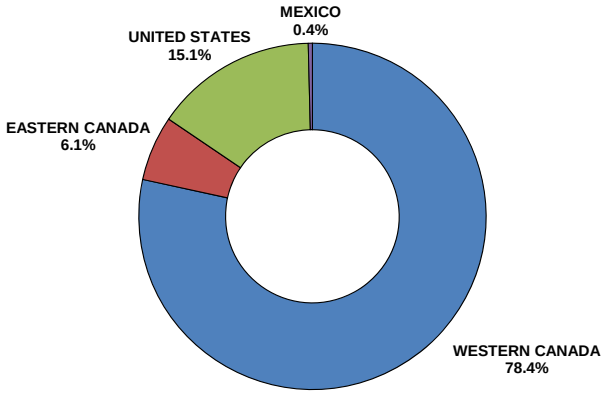


Figure 7: Western Canadian Railway Shipments – Destinations



Traffic to Western Canada

The amount of regulated grain moved by rail to western Canadian ports during the 2014-15 crop year reached a GMP record of 38.4 million tonnes, up 9.8% from the previous record of 34.8 million tonnes handled a year earlier. A further 562,300 tonnes were directed to points within western Canada itself (denoted as western domestic), which brought total shipments up to almost 39.0 million tonnes. [Table 2B-1]

As in past years, the vast majority of this traffic, some 37.9 million tonnes, moved in covered hopper cars. The remaining 1.1 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 2.8%.

Special crop shipments also rose, albeit by a somewhat greater 11.4%, to 4.6 million tonnes from 4.0 million tonnes a year earlier. Virtually all of this, 94.3%, moved in hopper cars, with shipments rising by 13.5%, to 4.3 million tonnes from 3.8 million tonnes. In comparison, non-hopper-car shipments (boxcars, containers and tankcars) declined by 15.0%, to 260,300 tonnes from 306,200 tonnes. [Table 2B-2]

Hopper Car Movements

Hopper-car shipments to the four ports in western Canada increased by 10.4% in the 2014-15 crop year, to 37.3 million tonnes from the 33.8 million tonnes handled a year earlier. This result was largely shaped by heavier shipments in the first three quarters. Moreover, the 10.8 million tonnes shipped in the first quarter set a new record for quarterly volume under the GMP.

This increase in volume was broadly based with all provinces posting year-over-year traffic gains. Accounting for almost half of the additional volume, Saskatchewan saw its total grain shipments climb by 9.8%, to 19.1 million tonnes from 17.4 million tonnes a year earlier. This was followed by Alberta, where a 6.8% increase resulted in total tonnage rising to 14.0

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

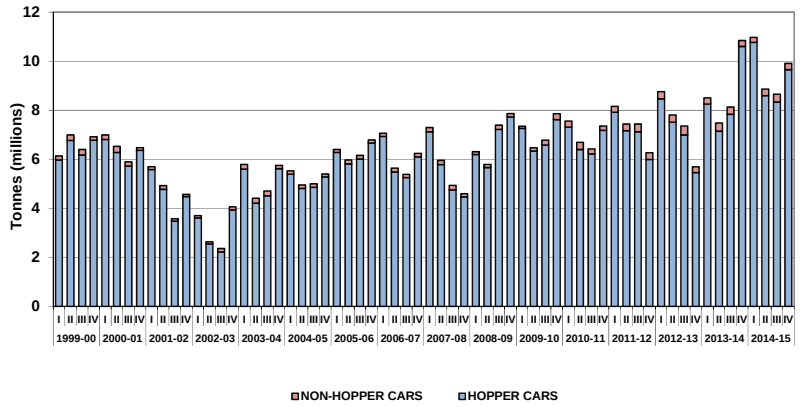
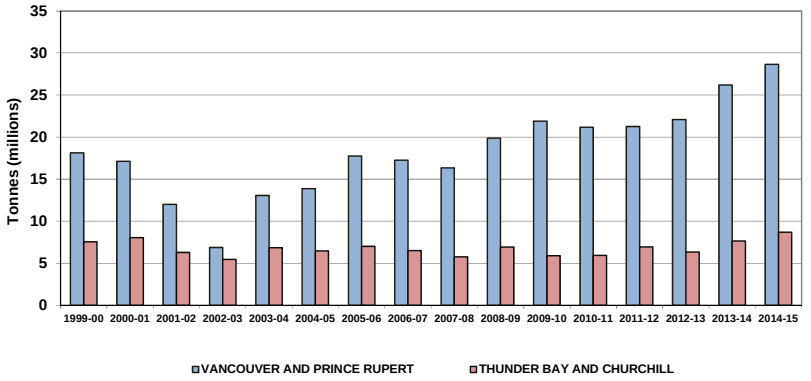


Figure 9: Railway Shipments – Western Gateways



million tonnes from 13.1 million tonnes. A 26.4% gain for Manitoba saw shipments from that province rise to 3.9 million tonnes from 3.1 million tonnes. These were furthered by a 31.7% increase in traffic from British Columbia, which rose to 362,400 tonnes from 275,100 tonnes. [Tables 2B-3 through 2B-5]

Destination Ports

The port of Vancouver remained the principal export destination for western Canadian grain in the 2014-15 crop year. Traffic to Vancouver increased by 12.0%, to 22.5 million tonnes from the 20.1 million tonnes directed there a year earlier. The port's share of railway shipments also increased, to 60.2% from 59.4%. Prince Rupert posted a marginal gain, with railway shipments rising by 0.7%, to almost 6.2 million tonnes from 6.1 million tonnes. However, the port saw its share of the overall movement slip to 16.5% from 18.1% the year previous. On a combined basis, these two ports handled 76.7% of the grain directed to western Canadian ports; a marginally smaller proportion than the 77.4% share they garnered a year earlier.

Despite this modest relative decline, the last several crop years has witnessed a gradual shift in favour of westbound grain shipments. Even so, overall shipments into Thunder Bay and Churchill increased by 1.1 million tonnes, or 13.7%. Much of this result was shaped by rail deliveries into Thunder Bay, which rose by 16.3%, to 8.2 million tonnes from 7.1 million tonnes a year earlier. The port's share of total railway hopper-car shipments increased marginally, to 22.0% from 20.9%. Detracting from this was a decrease in railway shipments into Churchill, which fell to 471,500 tonnes from 574,200 tonnes a year earlier. Churchill's traffic share also fell, to 1.3% from 1.7%.

Grain-Dependent and Non-Grain-Dependent Originations

The 2014-15 crop year saw the tonnage originated by the non-grain-dependent network increase by 9.2%, to 26.3 million tonnes from 24.0 million tonnes a year earlier. The amount of traffic originating at points

Figure 10: Hopper Car Shipments – Grain-Dependent Originations

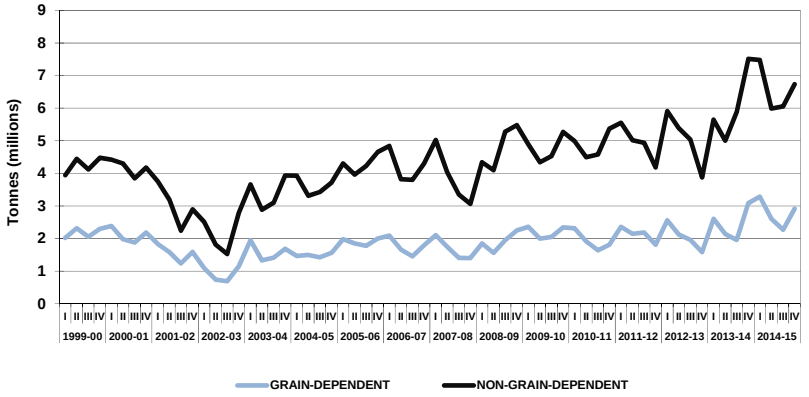
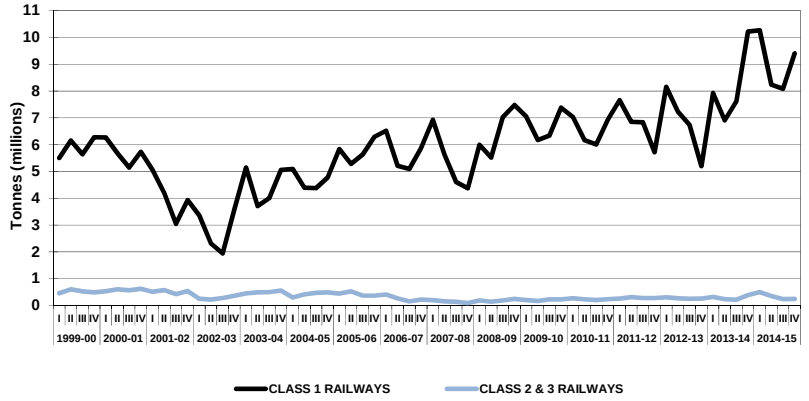


Figure 11: Hopper Car Shipments – Carrier Originations



on the grain-dependent network increased by a marginally greater 13.2%, to 11.1 million tonnes from 9.8 million tonnes.

Notwithstanding seasonal fluctuations, the non-grain-dependent network continues to garner a larger share of the overall traffic volume than it did a decade-and-a-half earlier. During the 2014-15 crop year, 70.3% of all the grain originated and destined to points 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 29.7% from 33.8% over the same span of time. [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. Class-1 carriers saw their originated tonnage increase by 10.2% in the 2014-15 crop year, to 36.0 million tonnes from 32.7 million tonnes a year earlier. At the same time, the tonnage originated by the non-Class-1 carriers rose by a somewhat greater 14.9%, to 1.3 million tonnes from 1.2 million tonnes.

Despite the emergence of several new shortline-railways in recent years, the traffic originated by non-Class-1 carriers has declined fairly significantly over the course of the GMP. For the 2014-15 crop year, their share of total originations amounted to just 3.6%, less than half 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, the loss was partially offset by a substantive increase in producer-car loading, which is estimated to account for about two-thirds of shortline grain originations. [Table 2B-7]

Traffic to Eastern Canada

The amount of regulated grain moved by rail to eastern Canada during the 2014-15 crop year totaled a little over 3.0 million tonnes, about one-twelfth of the tonnage directed to points in western Canada. Over two-thirds of this volume, amounting to almost 2.1 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 954,100 tonnes were directed to points within eastern Canada itself (denoted as eastern domestic). [Table 2B-8]

The majority of this traffic, totalling some 2.2 million tonnes, moved in covered hopper cars. The remaining 817,800 tonnes moved in other types of railway equipment. These latter movements represented a more substantive portion of the total volume than observed for western Canada, 27.1% versus 2.8% respectively.

Special crop shipments to eastern Canada totalled 600,600 tonnes. Unlike that directed to western Canadian destinations, these shipments took a much greater 19.9% share of the total volume. Only 97,500 tonnes of this moved in hopper cars. The vast majority of special crops, representing 83.8% of the total volume, moved as non-hopper-car shipments (boxcars, containers and tankcars). [Table 2B-9]

Hopper Car Movements

Hopper-car shipments from Saskatchewan, which accounted for almost two-thirds of the eastern Canadian volume, were the most prevalent. This was followed by Manitoba, which originated 35.8% of the shipments directed eastward, and Alberta, which supplied just 1.2% of the grain shipped. [Tables 2B-10 through 2B-12]

Destination Ports

In excess of 1.4 million tonnes of western Canadian grain were shipped by rail to ports in eastern Canada during the 2014-15 crop year. The majority of this, amounting to in excess of 1.3 million tonnes, were directed to the

ports of Montreal, Quebec City and Halifax (collectively identified as St. Lawrence Ports). Rail traffic destined to ports situated along the Lower Great Lakes accounted for just 71,700 tonnes. Eastern domestic traffic constituted a more substantive 790,200 tonnes.

Grain-Dependent and Non-Grain-Dependent Originations

Of the 2.2 million tonnes destined to eastern Canada, almost 1.5 million tonnes originated off of the non-grain-dependent network in western Canada. Traffic originating at points on the grain-dependent network proved to be about half this, amounting to 747,000 tonnes. With about two-thirds 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

Over 1.9 million tonnes, some 87.8% of the grain shipped to eastern Canada, originated on the lines of the Class-1 railways. The tonnage originated by the non-Class-1 carriers amounted to just 268,400, which represented a 12.2% share. These proportions differ significantly from the respective 96.4% and 3.6% 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 2014-15 crop year totaled just under 7.7 million tonnes. The vast majority of this, amounting to slightly in excess of 7.5 million tonnes, was destined to the United States, with just 189,900 tonnes earmarked for Mexico. [Table 2B-15]

The majority of the US-bound traffic, totalling some 6.1 million tonnes, moved in covered hopper cars. The remaining 1.4 million tonnes moved in other types of railway equipment. Even so, these latter movements represented 18.7% of the total volume. The majority of the traffic, almost 4.9 million tonnes, or 65.0%, originated in Saskatchewan. This was followed by 1.6 million tonnes sourced from Manitoba and another 1.0 million tonnes out of Alberta.

Almost 60% of these shipments, amounting to in excess of 4.4 million tonnes, related to the movement of canola, be it in the form of seed, meal or oil. Approximately half of this volume, 2.2 million tonnes, was directed to destination states in the US West, chiefly California. This was followed by states in the US Midwest, which received another 1.2 million tonnes in canola-related shipments.

On a broader basis, the US Midwest proved to be the largest market for western Canadian grain, taking in some 3.4 million tonnes. This was followed by destinations in the US West, with 2.6 million tonnes; the US South, with 858,800 tonnes; and the US northeast, with 642,800 tonnes. Special crops figured only marginally within this framework, with a total of only 99,600 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 2014-15 crop year only totaled 113,100 tonnes. The majority of this, amounting to 94,200 tonnes was destined to points in western Canada, with eastern Canadian destinations drawing in just 18,900 tonnes. The bulk of this traffic, some 78,600 tonnes, was comprised of non-mainstream commodities, chiefly corn and related products. Similarly, the majority of this traffic, amounting to 72,000 tonnes, was moved as non-hopper-car shipments. [Table 2B-19]

Loads on Wheels

The 2014-15 crop year saw the addition of a complementary traffic measure, designated as loads-on-wheels. This measure attempts to portray the number of loaded hopper cars in transit to their ultimate destinations at a specified moment in time; normally the Friday of any given week. These are then assembled as a weekly average for each month in the crop year. While this measure excludes private equipment largely destined to

the United States, it helps to gauge the relative amount of grain flowing through the GHTS during a particular period.

The 2014-15 crop year began with a weekly average of 14,043 cars being in transit during the month of August 2014. This diminished gradually through January 2015 before then rebounding, ultimately peaking at an average of 14,187 cars per week in April 2015. This pace tapered off sharply in the latter months of the crop year, falling to a low of 10,586 cars per week in July 2015. On average, the vast majority of the equipment under load, 81.4%, was being directed to destinations in western Canada. Another 13.4% was in use to serve markets in eastern Canada while the remaining 5.2% was bound for the US. [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, increased by 14.9% in the 2014-15 crop year, rising to rising to a GMP record of 35.8 million tonnes from 31.1 million tonnes a year earlier. This was reflected in stronger year-over-year showings in each of the four quarters. In fact, both the first and the fourth quarters saw shipments reach over 10.0 million tonnes for the first time in the history of the GMP. These gains marked a high-water mark for the GHTS, which benefited from a strong and steady inbound flow of railway hopper cars. [Table 2C-1]

Increased throughputs were noted at all ports except Churchill. The most significant tonnage continued to funnel its way through the west coast ports of Vancouver and Prince Rupert. For Vancouver, total marine shipments increased by 16.0%, to a GMP record of 20.6 million tonnes from 17.8 million tonnes a year earlier. This represented 57.6% of the system's total throughput. Prince Rupert posted a lesser gain, with shipments rising by 3.9%, to another GMP record of almost 6.2 million tonnes, from 5.9 million tonnes. When combined, the tonnage passing through these two west coast ports represented 74.8% of the overall total; down slightly from the 76.1% share garnered a year earlier.

Figure 12: Average Loads on Wheels by Destination Region

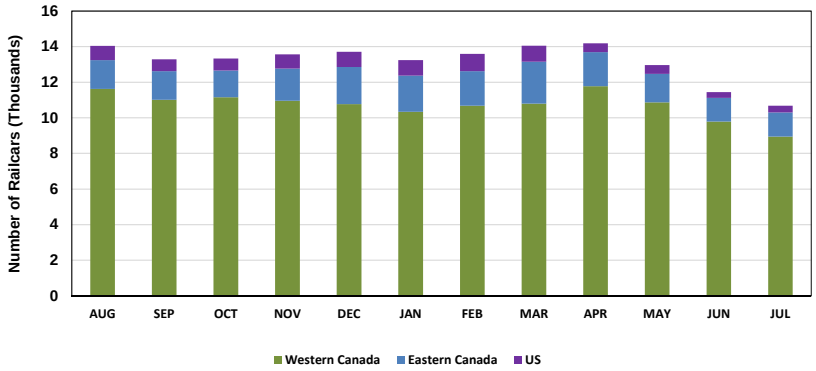
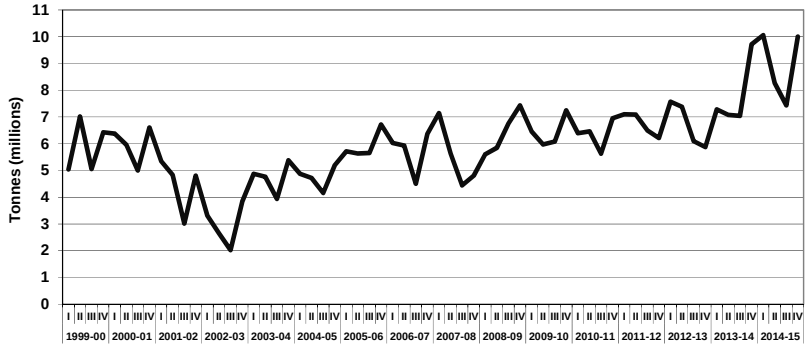


Figure 13: Terminal Elevator Throughput



Of course, the decrease posted by the west coast ports was reflected in an increase for the GHTS's other two ports. The combined share secured by the ports of Thunder Bay and Churchill in the 2014-15 crop year rose to 25.2% from 23.9% a year earlier. Much of this gain stemmed from the strong showing by Thunder Bay in the first half, which helped lift total port throughput for the year by 24.7%, to yet another GMP record of almost 8.5 million tonnes, from 6.8 million tonnes. This was tempered by 17.1% decrease for Churchill, where throughput fell to 527,400 tonnes from 636,000 tonnes.

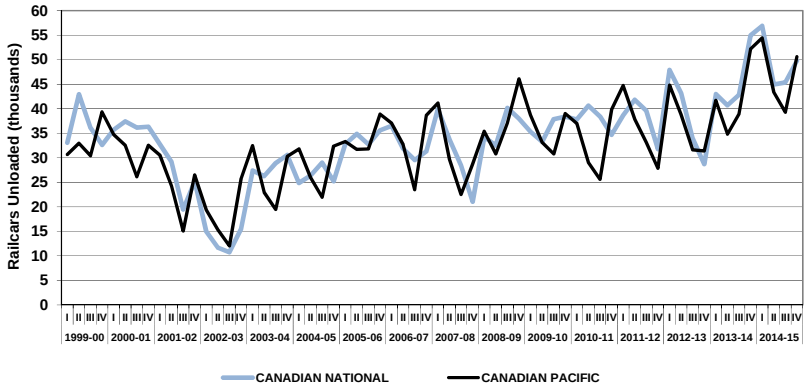
Terminal Elevator Unloads

The number of covered hopper cars unloaded at terminal elevators in western Canada during the 2014-15 crop year increased by 10.2%, rising to 384,782 cars from 349,132 cars a year earlier. Once again, these results were buoyed by strong showings in the first three quarters. The Canadian National Railway (CN) showed an overall gain of 8.6%, with the number of hopper cars unloaded rising to 197,011 from 181,461 a year earlier. In comparison, the Canadian Pacific Railway's (CP) handlings increased by a somewhat greater 12.0%, to 187,771 cars from 167,671 cars. Even so, CN retained its standing as the largest grain-handling railway in western Canada, with a share of 51.2% against 48.8% for CP. [Table 2C-2]

The majority of this traffic was funneled through the west coast ports of Vancouver and Prince Rupert. Traffic destined to Vancouver rose by 9.6%, with 221,420 cars unloaded versus 202,085 cars a year earlier. Both CN and CP posted traffic gains, with the former carrier's handlings into the port increasing by 16.7% against a 4.6% rise for CP. At the same time, CN's handlings into Prince Rupert rose by 2.9%, to 67,905 cars from 66,004 cars a year earlier.

The 2014-15 crop year also brought a significant increase in the amount of grain shipped to Thunder Bay, with total handlings rising by 20.2%, to 89,560 cars from 74,520 cars a year earlier. CN saw its handlings into the port climb by 1.5%, unloading 26,309 cars against 25,909 cars the year previous. CP posted a substantially greater gain of 30.1%, with its total shipments rising to 63,251 cars from 48,611. The increase in volumes

Figure 14: Terminal Elevator Unloads – Delivering Carrier



through Thunder Bay came about through a combined increase in durum volumes directed through Eastern Canadian ports and the utilization of terminal capacity to accommodate the unusually heavy volumes that moved through the crop year.

Shipments into Churchill fell by 9.6%, to 5,897 cars from 6,523 cars a year earlier.

TRUCK VOLUMES TO US DESTINATIONS

The 2014-15 crop year saw the addition of new measures relating to the movement of western Canadian grain into the United States by truck. Total shipments for the period were just over 3.2 million tonnes. However, this marked a 40.4% increase over the 2.3 million tonnes shipped a year earlier. [Tables 2D-1 through 2D-3]

The majority of the traffic, slightly in excess of 1.3 million tonnes, or 41.8%, originated in Saskatchewan. This was followed in turn by 938,800

tonnes that were sourced from Manitoba, 818,300 tonnes out of Alberta and another 114,100 tonnes from British Columbia. Although wheat, durum and barley constituted almost 1.2 million tonnes of the grain directed into the US by truck, the majority of the total tonnage, almost 2.1 million tonnes, encompassed a variety of other commodities. Chief among these were canola and canola-related products, along with oats and peas.

Almost two-thirds of the total volume, just over 2.0 million tonnes, was directed to the US Midwest. This was followed by destinations in the US West, with 968,800 tonnes; the US Northeast, with 142,800 tonnes; and the US South, with 78,900 tonnes.

Section 3: Infrastructure

Indicator Description	Table	1999-00	2012-13	2013-14	2014-15 Q1	Q2	Q3	Q4	YTD	% VAR
Country Elevator Infrastructure										
Delivery Points (number)	3A-1	626	274	261	261	262	262	262	262	0.4%
Elevator Capacity (000 tonnes)	3A-1	7,443.9	6,851.9	7,330.3	7,330.3	7,334.8	7,334.8	7,334.8	7,334.8	0.1%
Elevators (number) – Province	3A-1									
Elevators (number) – Railway Class	3A-2	917	391	371	371	370	370	370	370	-0.3%
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	245	236	236	236	236	235	235	-0.4%
Elevators Capable of MCB Loading (number) – Railway Line Class	3A-6									
Elevator Closures (number)	3A-7	130	29	31	0	7	0	0	7	-77.4%
Elevator Openings (number)	3A-8	43	34	11	0	6	0	0	6	-45.5%
Delivery Points (number) – Accounting for 80% of Deliveries	3A-9	217	89	95	n/a	n/a	n/a	n/a	n/a	n/a
Railway Infrastructure										
Railway Infrastructure (route-miles) – Total Network	3B-1	19,390.1	17,600.2	17,600.2	17,600.2	17,484.3	17,484.3	17,424.1	17,424.1	-1.0%
Railway Infrastructure (route-miles) – Class-1 Network	3B-1	14,503.0	14,907.3	15,011.5	15,011.5	14,895.6	14,895.6	14,835.4	14,835.4	-1.2%
Railway Infrastructure (route-miles) – Non-Class-1 Network	3B-1	4,887.1	2,692.9	2,588.7	2,588.7	2,588.7	2,588.7	2,588.7	2,588.7	0.0%
Railway Infrastructure (route-miles) – Non-Grain-Dependent Network	3B-1	14,513.5	14,135.6	14,135.6	14,135.6	14,135.6	14,135.6	14,135.6	14,135.6	0.0%
Railway Infrastructure (route-miles) – Grain-Dependent Network	3B-1	4,876.6	3,464.6	3,464.6	3,464.6	3,348.7	3,348.7	3,288.5	3,288.5	-5.0%
Railway Fleet Size (railcars) – Average Weekly	3B-2	n/a	n/a	n/a	22,124	22,366	23,707	23,756	22,997	n/a
Served Elevators (number)	3B-3	884	365	346	338	336	336	335	335	-3.2%
Served Elevators (number) – Class 1 Carriers	3B-3	797	340	322	314	313	313	312	312	-3.1%
Served Elevators (number) – Non-Class-1 Carriers	3B-3	87	25	24	24	23	23	23	23	-4.2%
Served Elevators (number) – Grain-Dependent Network	3B-3	371	114	108	106	105	105	104	104	-3.7%
Served Elevators (number) – Non-Grain-Dependent Network	3B-3	513	251	238	232	231	231	231	231	-2.9%
Served Elevator Capacity (000 tonnes)	3B-3	7,323.0	6,714.2	7,196.4	7,159.6	7,163.0	7,163.0	7,147.5	7,147.5	-0.7%
Served Elevator Capacity (000 tonnes) – Class 1 Carriers	3B-3	6,823.2	6,528.1	6,994.7	6,957.8	6,966.0	6,966.0	6,950.5	6,950.5	-0.6%
Served Elevator Capacity (000 tonnes) – Non-Class-1 Carriers	3B-3	499.7	186.2	201.7	201.7	197.1	197.1	197.1	197.1	-2.3%
Served Elevator Capacity (000 tonnes) – Grain-Dependent Network	3B-3	2,475.4	1,848.7	1,931.4	1,920.4	1,911.0	1,911.0	1,895.5	1,895.5	-1.9%
Served Elevator Capacity (000 tonnes) – Non-Grain-Dependent Network	3B-3	4,847.6	4,865.5	5,264.9	5,239.2	5,252.0	5,252.0	5,252.0	5,252.0	-0.2%
Terminal Elevator Infrastructure										
Terminal Elevators (number)	3C-1	15	15	15	15	17	17	17	17	13.3%
Terminal Elevator Storage Capacity (000 tonnes)	3C-1	2,678.6	2,213.0	2,403.2	2,403.2	2,423.2	2,423.2	2,423.2	2,423.2	0.8%

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 2013-14 crop year, that number had fallen by 63.0%, to 371, making this decline one of the most visible facets of the changes brought to the GHTS since the beginning of the GMP.[4] [Table 3A-1]

The 2014-15 crop year saw the net loss of just one other elevator from this network. This reduced the total number of elevators in western Canada to 370, and brought the accumulated loss since the beginning of the GMP to 634 facilities, or 63.1%. The marginal scope of the changes witnessed in recent years continues to suggest that grain-elevator rationalization has largely concluded, and that the network's overall size has effectively stabilized.

Much the same is 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 2013-14 crop year the scope of this network had been reduced by 61.9%, to 261 delivery points from the 685 that had been in place at the beginning of the GMP. The 2014-15 crop year actually saw this count increase, with the overall number rising by one to 262. This shaved the net reduction in delivery points during the GMP to 61.8%.

Provincial Distribution

At the close of the 2014-15 crop year, 189 of western Canada's licensed elevators were situated in Saskatchewan. These facilities constituted 51.1% of the system's active total; a proportion similar to that held by the province at the beginning of the GMP. This was followed by Manitoba and Alberta, whose corresponding 90 and 85 elevators accounted for shares of 24.3% and 23.0% respectively. The GHTS's remaining six facilities were divided between British Columbia, with five, and Ontario, with one.

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

Figure 15: Licensed Grain Elevators and Delivery Points

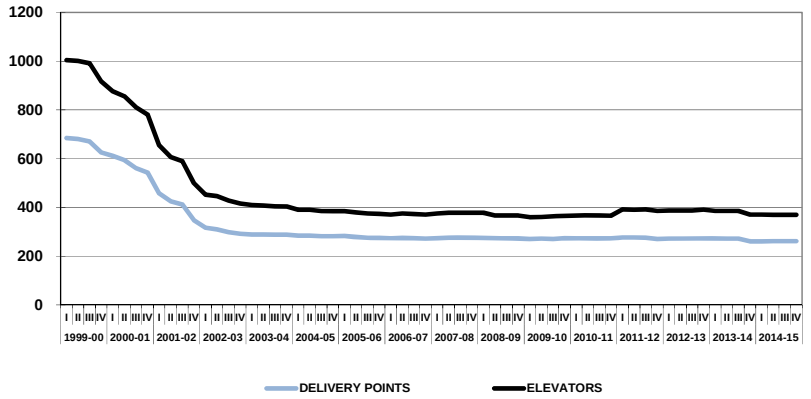
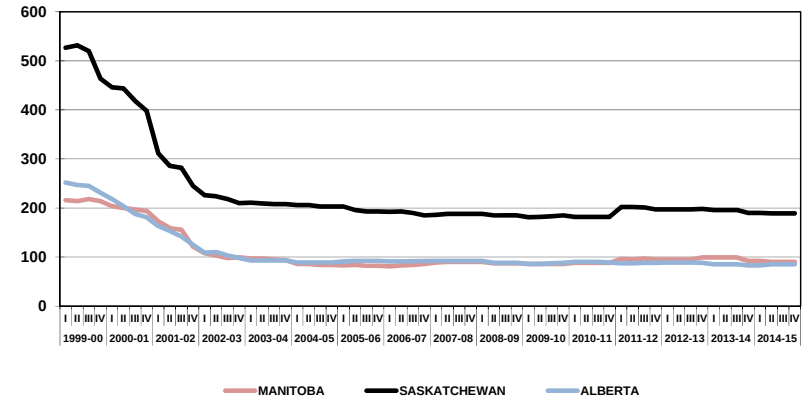


Figure 16: Licensed Grain Elevators – Provincial Distribution



Over the term of the GMP, Saskatchewan posted the greatest reduction in licensed elevation facilities, closing 338, or 64.1%, of its elevators. In comparative terms, the 167-elevator reduction in Alberta represented a slightly greater 66.3%. Manitoba followed with a 58.3%, or 126-elevator, 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 63.1% decline in the overall number of elevators, the network's storage capacity has actually risen 4.4% above the 7.0 million tonnes noted at the outset of the GMP. This differential reflects the character of the tactical transformation that had taken place: that the 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 2013-14 crop year, it had risen to somewhat over 7.3 million tonnes. The 2014-15 crop year saw another 4,500 tonnes of storage capacity added to the system. This marginal 0.1% increase left total storage capacity largely unchanged at 7.3 million tonnes, a value not far removed from the GMP's 7.5-million-tonne record high.

Figure 17: Change in Licensed Elevators and Storage Capacity

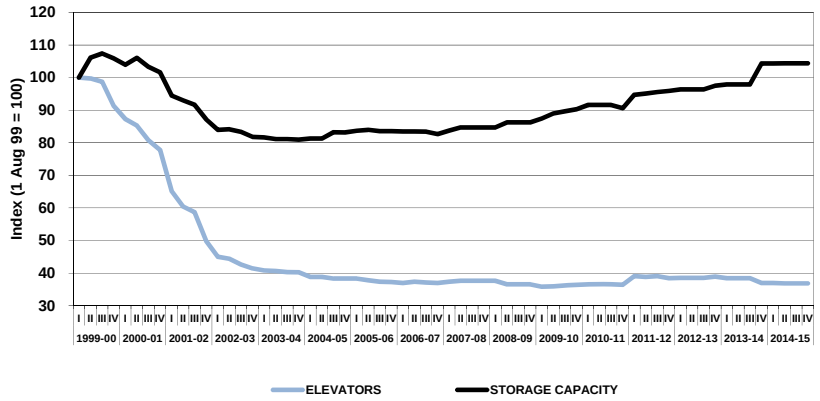
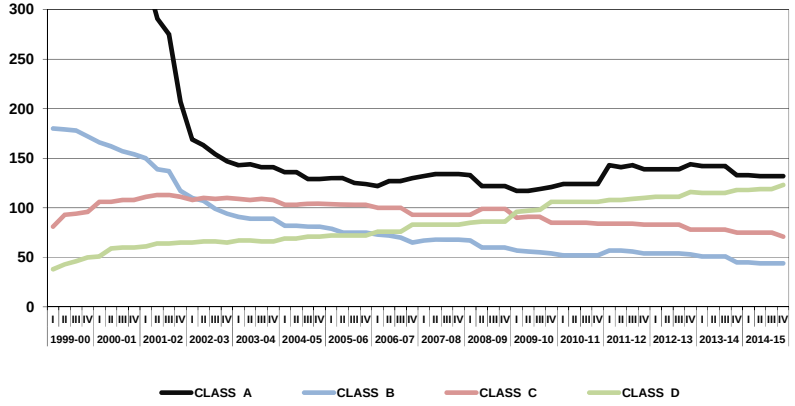


Figure 18: Licensed Elevators – Facility Class



Facility Class

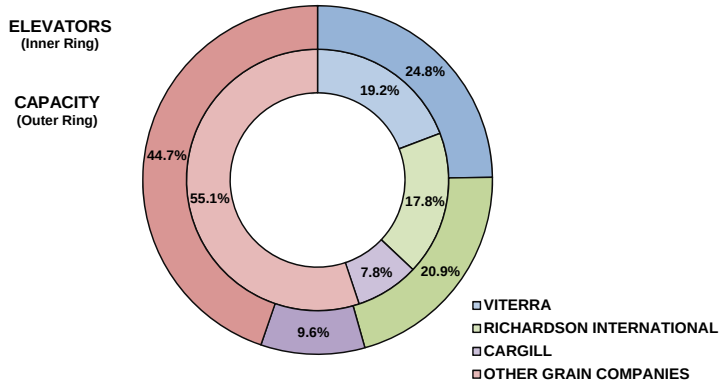
For comparative purposes, the GMP groups elevators into four classes. These classes are based on the loading capability of each facility, which is in turn defined by the number of railcar spots each possesses. Those with less than 25 car spots are deemed to be Class A facilities; those with 25-49, Class B; those with 50-99, Class C; and those with 100 or more, Class D.[5] 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 16 years the number of licensed Class A elevators has been reduced by 81.3%, to 132 from 705. This was complemented by a 75.6% reduction in the number of licensed Class B elevators, which fell to 44 from 180.

But these losses are now beginning to be augmented by reductions in the number of licensed Class C facilities, which has slipped by 12.3% from its base-year level, to 71 from 81. Now, only the largest high-throughput facilities, the licensed Class D elevators, have actually increased in number, effectively expanding more than threefold, to 123 from 38.

With the close of the 2014-15 crop year, these high-throughput facilities accounted for 52.4% of the system elevators and 81.0% of its storage capacity. Both of these shares stand significantly above their respective base-year values of 11.9% and 39.4%.

Figure 19: Licensed Elevators and Capacity



Grain Companies

For a number of 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 2014-15 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

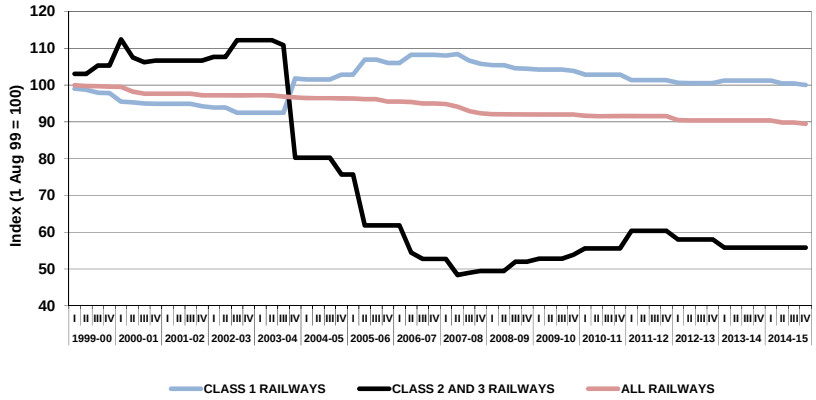
5 The facility classes employed here mirror the thresholds delineated by Canada's major railways at the beginning of the GMP for the receipt of discounts on grain shipped in multiple-car blocks. At that time, these thresholds involved shipments of 25, 50 or 100 railcars. First introduced in 1987, these 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.[6] 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 37.1% respectively.[7] 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. Moreover, the total number of facilities actually 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 actual addition of new elevators. The facilities of a number of companies, including those of Alliance Pulse Processors Inc., Simpson Seeds Inc. and Legumex-Walker Inc., figured prominently in this expansion since most – if not all – had previously been unlicensed. Nevertheless, there has been a 151.8% increase in the number of elevators operated by smaller grain companies, which has climbed to 141 from 56.

Despite this numerical shift, Viterra, Richardson International and Cargill remain the dominant handlers of grain in western Canada, accounting for approximately 75% of the annual export grain movement. This concentration is also reflected in the way grain is gathered into the system, with the vast majority of the tonnage collected at fewer than half of the GHTS's delivery points. In the 2013-14 crop year, the last for which statistics are available, 95 of the GHTS's 229 active delivery points took in 80% of the grain delivered. Although this 41.5% share is greater than the 33.5% recorded in the GMP's base year, it still suggests that deliveries remain highly concentrated within a smaller grain-gathering network. [Table 3A-9]

Figure 20: Change in Route-Miles – Railway Class



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.[8] Although the railway network has contracted, the reduction has proven

6 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.

7 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%.

8 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.

substantially less than that of the elevator system it serves. By the close of the 2013-14 crop year, the net reduction in western Canadian railway infrastructure amounted to just 9.6%, with the network's total mileage having been reduced to 17,600.2 route-miles. The largest share of this 1,868.0-route-mile reduction came from the abandonment of 1,490.1 route-miles of light-density, grain-dependent branch lines.[9] [Table 3B-1]

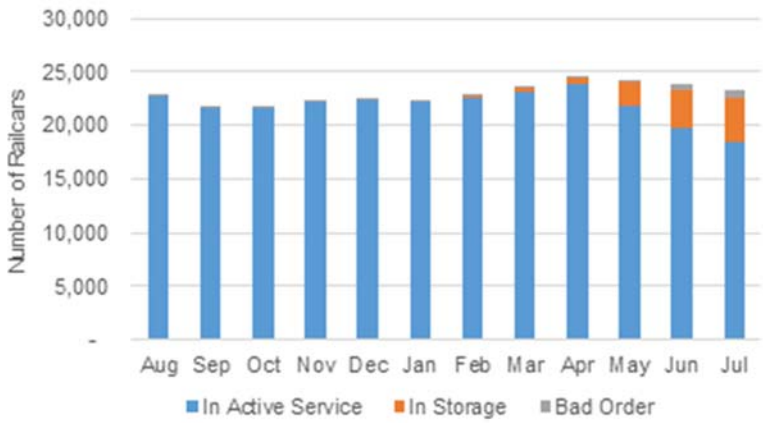
Modest changes to the railway network in western Canada were noted during the course of the 2014-15 crop year, which was reduced by 1.0%, to 17,424.1 route-miles. This 176.1-route-mile reduction was the result of several CP discontinuances, beginning with two segments of the carrier's Glenboro and Gravelbourg subdivisions in September 2014, which dispensed with 62.8 route-miles and 53.1 route-miles respectively. Another 60.2 route-miles were removed from the network when the carrier abandoned much of its Arcola subdivision in April 2015. As a result, the Class-1 railway network decreased by 1.2%, to 14,835.4 route-miles from 15,011.5 route-miles. The infrastructure tied to non-Class-1-carrier operations remained unchanged at 2,588.7 route-miles.

Fleet Size

The 2014-15 crop year saw the introduction of a new measure relating to the size of the hopper-car fleet employed by the railways in moving grain from western Canada. This number is subdivided into three categories: the number of cars in active use moving grain; the number of cars in storage; and the number of cars that have been "bad ordered" (removed from service for repair).

The 2014-15 crop year began with a very high percentage of the hopper-car fleet in active service. This was because the record carry-forward stocks from the preceding 2013-14 crop year continued to drive high volumes through what would typically be the lower-volume summer months. Consequently, the railways had all of their assets mobilized in an effort to move as much grain as possible.

Figure 21: Fleet Size and Status - 2014-15 Crop Year



Of the 22,862 hopper cars assigned to grain service in August 2014, 99.1% were actively being used to move grain. This high level of asset utilization carried through until May 2015 when both railways began storing equipment in response to a slump in traffic volume. The number of hopper cars in active service climbed between August 2014 and April 2015 when it reached a height of 23,756. From that point, the number of hopper cars in grain service began to decline, ultimately falling to 18,708 in July 2015. This represented 80.3% of the total number then assigned to grain service. [Table 3B-2]

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

Local Elevators

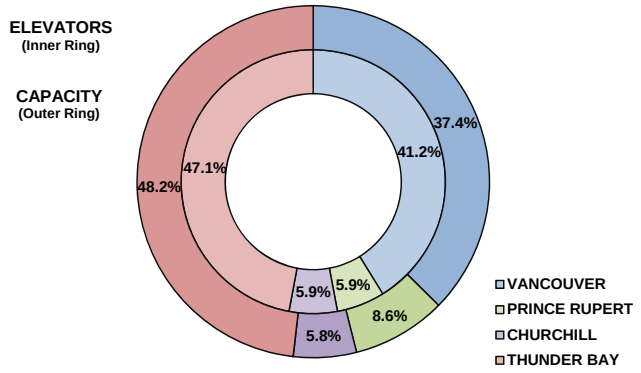
As previously outlined, the GHTS's elevator infrastructure has been transformed more substantively over the course of the last 16 years than has the railway network that services it. In broad terms, these facilities have decreased by 65.8% in number, to 335 from 979, while the associated storage capacity has increased by 3.1%, to somewhat in excess of 7.1 million tonnes from 6.9 million tonnes.[10]

These reductions, however, manifested themselves in noticeably different ways for the Class-1 and non-Class-1 railways. Through to the end of the 2014-15 crop year the decline in the number of elevators tied to each group proved roughly analogous, 65.2% against 72.0% respectively. Yet the change in associated storage capacities was noticeably different, with an increase of 7.7% for elevators local to Class-1 carriers set against a 58.7% 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 of their high-throughput elevators on the networks belonging to CN and CP.[11]

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 75.2% since the beginning of the GMP, to 104 from 420. For those situated along the non-grain-dependent network, the decline was 58.7%, with the number of elevators having fallen to 231 from 559. The change in associated storage capacity shows an even greater contrast, with that of the grain-dependent network falling by 23.8%, to 1.9 million tonnes, while that of the non-grain-dependent network actually increased by 18.1%, to almost 5.3 million tonnes. On the whole, these patterns clearly indicate that the elevators tied to the grain-dependent railway network have diminished at a noticeably faster pace.

Figure 22: Terminal Elevators – 2014-15 Crop Year



TERMINAL ELEVATOR INFRASTRUCTURE

The 2014-15 crop year saw the addition of two newly licensed terminal elevators, which lifted the total number of facilities within the network by 13.3%, to 17 from 15, and the associated storage capacity by 0.8%, effectively remaining unchanged at 2.4 million tonnes. This compares to a network of 14 elevators with 2.6 million tonnes of storage capacity benchmarked in the GMP's base year.[12] [Table 3C-1]

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

11 As at 31 July 2015 there were 194 high-throughput elevators served by rail. Of these, 184 were served by CN and CP.

12 Beyond the change in its physical scope, the network was affected by a number of changes in terminal ownership. Much of this was tied to the various corporate mergers and acquisitions made since the beginning of the GMP. Those having 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 subsequently rebranded itself as Viterra Inc.

From the outset of the GMP, Thunder Bay has been home to the majority of the GHTS's terminal-elevator assets. But the compound effects of a decade's worth of incremental change had steadily eroded its position. However, in February 2015 that position was strengthened with the licensing of two 10,000-tonne facilities: that of MobilEx Terminal Ltd.; and Thunder Bay Terminals Ltd. Although both terminals have physically existed since the late 1970s, their operations were largely centred on moving non-agricultural bulk products, such as coal and potash.

In view of these changes, Thunder Bay became home to eight licensed terminal elevators with an associated storage capacity of almost 1.2 million tonnes. This gave the port a 47.1% share of the system's elevators and a 48.2% share of its licensed storage capacity; both down modestly from the 50.0% shares benchmarked 16 years earlier.

Aside from Thunder Bay, there were no other changes to the makeup of the terminal elevator system in western Canada during the 2014-15 crop year. Even so, these changes had an impact on the relative standing accorded the other ports. Vancouver, which had seen its terminal elevators increase to seven from five over the course of the previous 16 years, now accounted for 41.2% 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 as a result of the evolution at Thunder Bay and Vancouver. Both still registered one terminal elevator apiece, and storage capacity shares of 8.6% and 5.8% respectively.

Section 4: Commercial Relations

Indicator Description	Table	1999-00	2012-13	2013-14	2014-15 Q1	Q2	Q3	Q4	YTD	% VAR
Trucking Rates										
Composite Freight Rate Index – Short-haul Trucking	4A-1	100.0	162.2	162.2	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	123.5	131.2	135.3	135.3	135.3	135.3	135.3	3.1%
Composite Rate Index – Dockage	4B-1	100.0	154.2	155.4	167.7	167.7	167.7	166.6	166.6	7.2%
Composite Rate Index – Storage	4B-1	100.0	189.9	188.0	185.0	185.0	186.3	186.3	186.3	-0.9%
Railway Freight Rates										
Composite Freight Rate Index – CN Vancouver	4C-1	100.0	135.1	129.1	135.6	135.6	130.6	141.3	141.3	9.5%
Composite Freight Rate Index – CP Vancouver	4C-1	100.0	140.3	118.7	132.5	140.0	137.1	145.2	145.2	22.3%
Composite Freight Rate Index – CN Thunder Bay	4C-1	100.0	141.4	145.6	145.6	145.6	145.6	151.6	151.6	4.1%
Composite Freight Rate Index – CP Thunder Bay	4C-1	100.0	143.9	120.0	136.1	142.6	140.1	151.1	151.1	25.9%
Effective Freight Rates ($ per tonne) – CTA Revenue Cap	4C-3	n/a	$33.99	$33.69	n/a	n/a	n/a	n/a	$35.57	5.6%
Terminal Elevator Handling Charges										
Composite Rate Index – Receiving, Elevating and Loading Out	4D-1	100.0	149.4	150.0	154.1	151.6	152.5	153.4	153.4	2.3%
Composite Rate Index – Storage	4D-1	100.0	179.4	180.1	181.5	181.3	181.3	183.6	183.6	2.0%

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. As a result, 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. As a result, the composite price index remained unchanged through the 2013-14 crop year. The published freight rates used to produce this price index were suspended in the wake of the various corporate acquisitions made during this period. As a result, the Monitor was unable to track the change in these rates during the 2014-15 crop year. [Table 4A-1]

COUNTRY ELEVATOR HANDLING CHARGES

The per-tonne rates assessed by grain companies for a variety of primary elevator handling activities are the primary drivers of corporate revenues. Comparatively, those assessed for the receiving, elevating and loading out of grain are the most costly for producers. These are in turn followed by the charges levied for the removal of dockage (cleaning) and storage. These rates vary widely according to 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

Figure 23: Change in Composite Freight Rates – Short-Haul Trucking

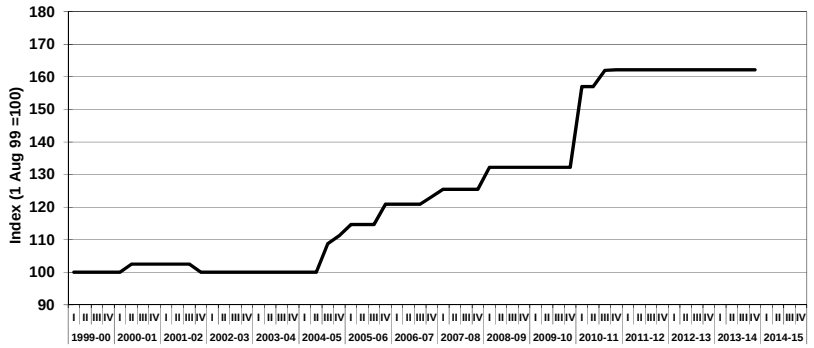
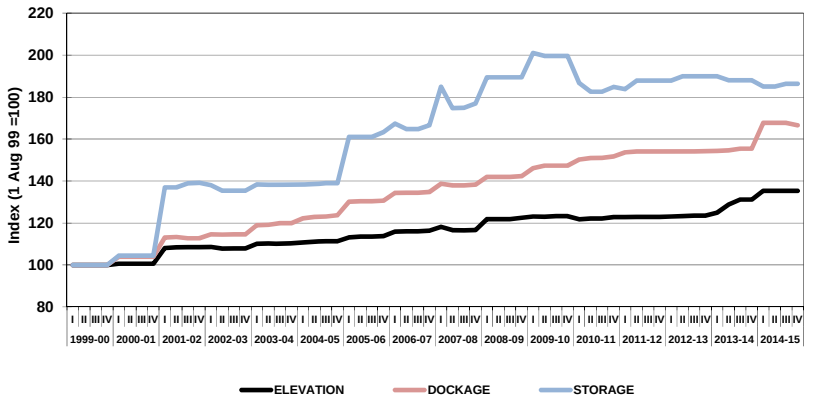


Figure 24: Change in Primary Elevator Handling Charges



rates for all of these services have risen considerably. The smallest increases have been in those tied to the receiving, elevating and loading out of grain. Through to the end of the 2013-14 crop year, these costs had risen by 31.2%. The 2014-15 crop year brought a further escalation in these rates, with first-quarter increases having raised the overall composite price index by 3.1%, to 135.3, where it remained for the balance of the year.

The rates associated with the removal of dockage have increased at a somewhat faster pace. Through to the end of the 2013-14 crop year, these rates had already increased by 55.4%. Additional rate adjustments in the 2014-15 crop year resulted in the composite price index rising by a further 7.2%, to 166.6.

The most substantive rate escalations observed thus far have related 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, rising by 88.0% through to the end of the 2013-14 crop year.[13] Rate reductions posted by Manitoba facilities were chiefly responsible for a modest 0.9% decline in the composite price index, which fell to 186.3 by the end of the crop year. [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 pricing that presented differentials based on the commodity, type of railcar, destination and period in which the traffic was to be moved. [Table 4C-1]

13 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 25: CN Single-Car Freight Rates – Primary Corridors

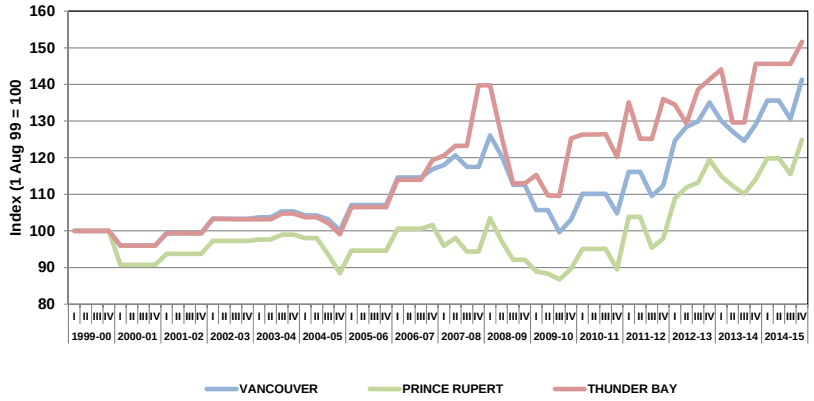
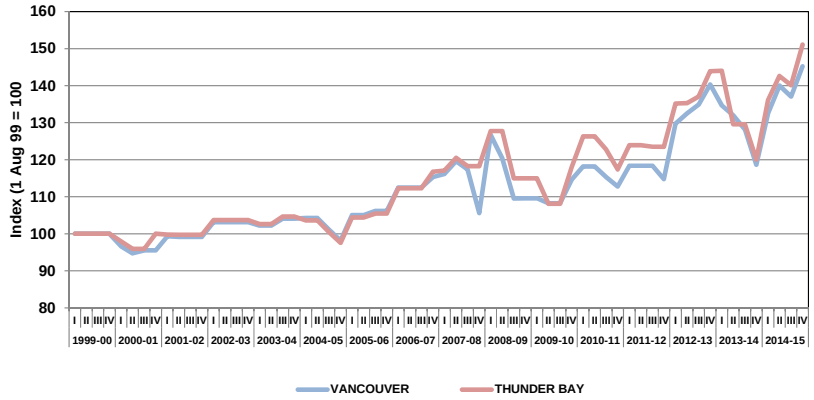


Figure 26: CP Single-Car Freight Rates – Primary Corridors



CN's initial pricing actions resulted in its westbound rates into Vancouver and Prince Rupert being raised by an average of 5.0%. In contrast, the carrier's single-car rates into Thunder Bay and Churchill were left unchanged. No further pricing action was taken until the beginning of the third quarter when CN reduced its single-car freight rates into both Vancouver and Prince Rupert by 3.6%. The single-car rates in all four corridors remained unchanged through June 2015, at which point they were again raised: by 8.2% in the Vancouver and Prince Rupert corridors; 4.1% in the Thunder Bay corridor; and 4.4% in the Churchill corridor.

By comparison, CP appeared to have instituted much greater increases at the beginning of the 2014-15 crop year than CN had. However, owing to the depth to which CP had reduced its rates towards the close of the previous year, these escalations appeared more substantive: by 11.6% in the Vancouver corridor; and by 13.4% in the Thunder Bay corridor. Both were followed by second-quarter increases, with the single-car rates into Vancouver elevated by 5.7%, while those into Thunder Bay were raised by a lesser 4.8%. Although rollbacks of 2.1% and 1.8% respectively were posted late in the third quarter, these rates were again increased towards the latter half of the fourth quarter: by 5.9% in the Vancouver corridor and 7.9% 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 16 years provides some insight into their evolution. At the close of the 2014-15 crop year, the single-car rates applicable on the movement of grain to the jointly served port of Vancouver had risen by about 43.3% 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 16.0%. In comparison, the rate increases imposed in the Thunder Bay and Churchill corridors proved more substantive, amounting to 51.4% and 48.4% respectively.

Taken altogether, however, these increases were in general keeping with the broader 33.2% escalation in the Canadian Transportation Agency's Volume-Related Composite Price Index, 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 incentives have been a central force in the rationalization of the western Canadian elevator system and in the expansion of high-throughput facilities.

These freight discounts remained unchanged throughout the 2014-15 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 cars. [Table 4C-2]

Maximum Revenue Entitlement

Under the federal government's Maximum Revenue Entitlement (MRE), established in 2000, the revenues that CN and CP are entitled to earn in any given crop year from the movement of regulated grain cannot exceed a legislated maximum of $348.0 million and $362.9 million respectively. But 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.[14]

For the 2014-15 crop year, the MRE for CN and CP were set at $738.2 million and $721.9 million respectively, or $1,460.1 million on a combined basis.[15] This marked the fourth consecutive instance since the MRE was introduced that the carriers' combined revenue entitlement actually reached over $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 $745.1 million and $724.0 million respectively, or $1,469.1 million on a combined basis. These determinations resulted in both carriers exceeding their maximum entitlement: by $6.9 million in the case of CN; and by $2.1 million in the case of CP.[16] Even so, total carrier revenues stood just 0.6% above the legally prescribed limit. The narrowness of this differential continues to point to the railways' proficiency in maximizing their revenues within the current regulatory framework.

TERMINAL ELEVATOR HANDLING CHARGES

The rates posted for the receiving, elevating and loading out of grain nominally represent the highest level assessed by the terminal elevator operators. As with other 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 2013-14 crop year these ranged from a low of about $9.79 per tonne on wheat delivered at Thunder Bay, to a high of $16.51 per tonne on oats shipped to Vancouver.

Figure 27: Maximum Revenue Entitlement – Compliance

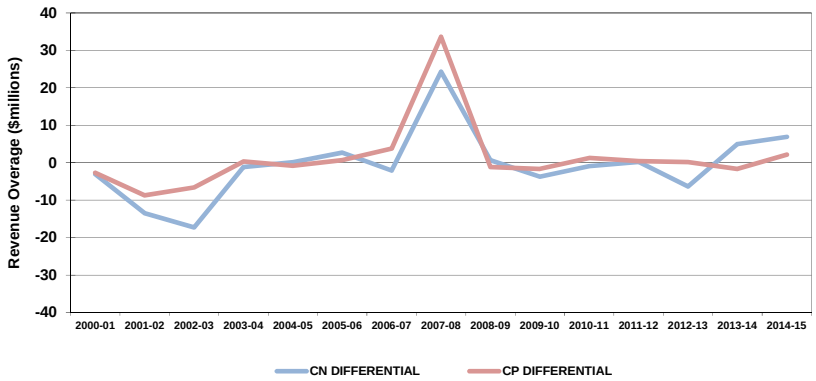
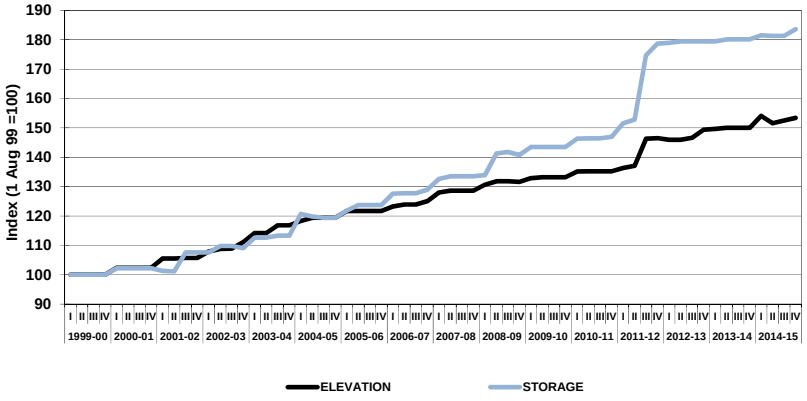


Figure 28: Change in Terminal Elevator Handling Charges



14 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 2014-15 crop year, the Agency determined the value of the VRCPI to be 1.3322, which represented a year-over-year decrease of 5.0%. See Canadian Transportation Agency Decision Number 374-R-2015, dated 2 December 2015, and which supplanted the Agency's original determination as set out in 150-R-2014, dated 25 April 2014.

15 See Canadian Transportation Agency Decision Number 400-R-2015 dated 29 December 2015.

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

The 2014-15 crop year brought a number of change to these rates. The most substantive were at Vancouver and Thunder Bay, which posted average increases of 5.0% and 3.1% respectively over the course of the crop year. These, coupled with marginal changes at Prince Rupert and Churchill, led to a 2.3% increase in the composite price index, which rose to 153.4 from 150.0. [Table 4D-1]

As with the cost of elevation, the daily charge for storage also varied widely, ranging 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 Churchill. Here too, changes to the storage rates assessed at Vancouver, Prince Rupert and Thunder Bay led to a 2.0% increase in the composite price index, which rose to 183.6 from 180.1.

COMMERCIAL DEVELOPMENTS

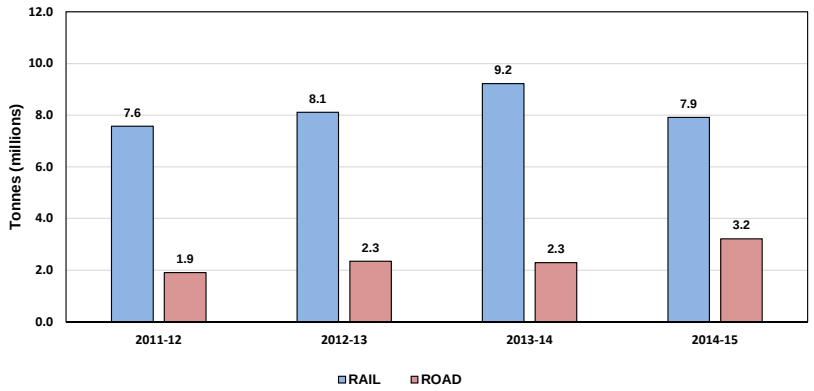
Grain Shipments to the United States by Road

Recent reports of an increase in the transborder truck movement of grain into the United States prompted the Monitor to examine the issue more closely using Statistics Canada data on road and rail movements.[17] This analysis reveals that while total grain shipments to the US have increased by 17.4% since the 2011-12 crop year, to 11.1 million tonnes from 9.5 million tonnes, the proportion accorded to truck movements has ballooned from 25.2% to 40.6%. Much of the gain is tied to the increased use of trucking in moving wheat, durum and barley into the US.

Before the removal of the CWB single desk marketing at the beginning of the 2012-13 crop year, wheat, durum and barley largely moved into the United States by rail under comparatively large CWB-controlled sales. Trucking had a very limited role to play in the logistics associated with these sales. To be sure, the transborder movement by truck of CWB-controlled grains in the 2011-12 crop year amounted to just 411,000 tonnes. For the most part, trucking centred on the movement of non-CWB-controlled commodities, such as canola and oats, with almost 1.5 million tonnes having been moved to the US in the 2011-12 crop year.

Since then, producers have had the ability to sell any grain directly into the American market, which has enabled them to employ trucks more frequently in making deliveries to US-located elevators and processors. In the 2014-15 crop year, almost 1.2 million tonnes of wheat, durum and barley were moved by truck into the US market; 743,600 tonnes more than the 411,000 tonnes handled in the last year of the CWB's monopoly. In comparison, the volume of non-CWB-controlled commodities rose by a notably lesser 564,000 tonnes, to almost 2.1 million tonnes from 1.5 million tonnes.

Figure 29: Grain Shipments to the USA



17 The data obtained from Statistics Canada is drawn from its Canadian International Merchandise Trade (CIMT) statistics, which is actually sourced from import statistics produced by United States Dept. of Customs and Border Protection. Owing to the limited historical scope of the data now being collected on railway movements into the US under the GMP, this analysis employs CIMT data for grain shipments by road as well as rail. A comparison of both data sets shows these statistics to be consistent, with acceptable differences between them (less than 1%).

Figure 30: Distribution of US-Destined Grain - 2014-15 Crop Year (millions of tonnes)

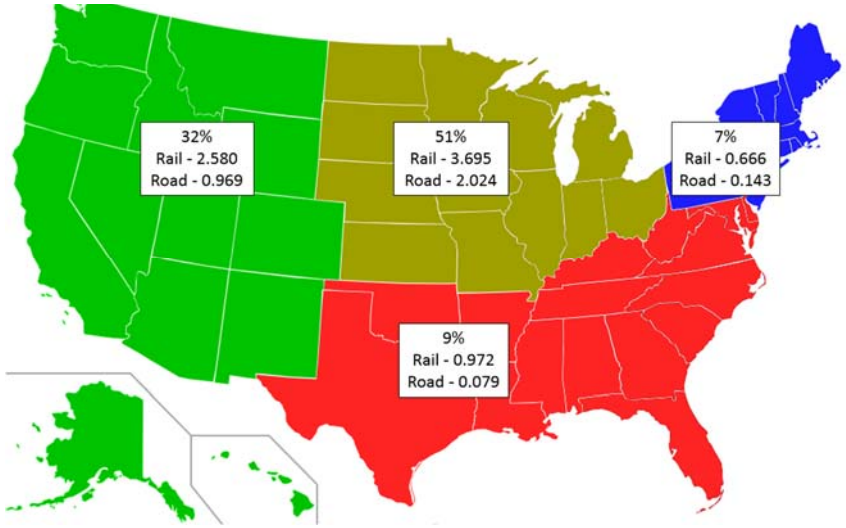


Figure 31: Monthly Grain Shipments by Truck

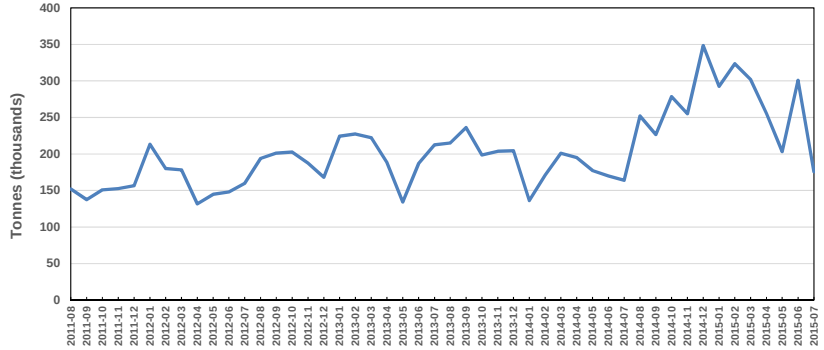
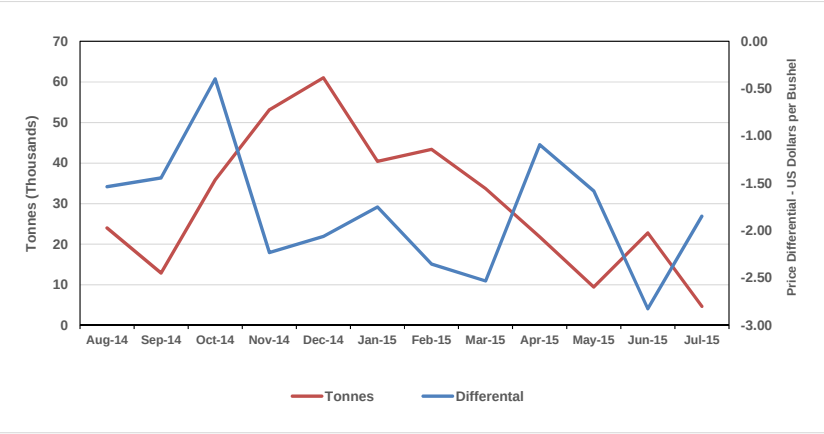


Figure 32: 2014-15 Durum Truck Movements and Price Differentials



There are a number of reasons as to why a shipper may choose to use road rather than rail in moving grain to market. In general, trucks are favoured for shipments involving comparatively short distances, where the economics are more favourable. The converse is true for long-haul movements, with the economics of rail often having the advantage. Long-haul trucking becomes a viable alternative to rail only when shippers feel that the railway's service offering cannot meet their immediate transportation needs. In most instances, disruptions to railway service, such as those that arise out of network congestion, spur shippers into using long-haul trucking in an effort to circumvent these temporary problems.

Even so, rail remains the primary mode of transport for grain moving into the US. In the last year of the CWB's monopoly, rail accounted for three-quarters of the 9.5 million tonnes of grain that were shipped from western Canada to destinations in the US. In fact, the annual tonnage moved by rail between the 2011-12 and 2014-15 crop years has not changed

significantly, rising by just 4.6%, to 7.9 million tonnes from 7.6 million tonnes. Much of this gain is tied to heightened movement of grains other than wheat, durum and barley.

The tonnage moved by rail into the US easily exceeded that moved by road in each of the country's four major geographic regions, but was particularly dominant in the more distant South and Northeast markets. These margins narrowed more substantially in the West and Midwest regions, where trucking played a larger role in the transportation mix. Nowhere was this more evident than in the Midwest, which received just over half of the total tonnage directed into the US from western Canada during the 2014-15 crop year. More than a third, 35.4%, of the 5.7 million tonnes of grain shipped into the region during the last crop year was delivered by truck.

Not surprisingly, much of the grain directed into the Midwest was destined to the adjacent border states of North Dakota and Minnesota. Combined, these two states took in almost 2.8 million tonnes of western Canadian grain. Approximately 1.6 million tonnes of this, or 56.9%, was delivered by truck. More noteworthy still was the fact that North Dakota took the lion's share, with 1.1 million tonnes in Canadian grain deliveries having been made by truck.[18] Owing to the shorter hauls involved, much of this was drawn from origins in nearby Saskatchewan and Manitoba, with Alberta playing a tertiary sourcing role.

Although the volume of grain shipped by truck into the US has been progressively increasing over the past four years, it increased noticeably in the 2014-15 crop year. Moreover, the share accorded to these shipments rose substantially, increasing to 40.6% from 24.8% a year earlier. The limited shift in modal usage during the 2011-12 through 2013-14 crop years suggests that the loss of the CWB's monopoly had little material impact on the transborder movement of grain. Rather, the evidence hints at one particularly powerful motivator: grain prices.

While grain prices in Canada and the US are both shaped by the same global market forces, they also reflect more localized influences. These can include such things as the relative demand for a particular grain, available elevator space, transportation capacity and the comparative value of the currency itself. All things being equal, there should be comparatively little difference in the elevators' driveway price for a particular grain within a localized area, even if located on opposite sides of the Canada-US border.

However, when local market conditions lead to a divergence of prices, the resulting price differential can lead to arbitrage opportunities. Such were the circumstances in the 2014-15 crop year when the appearance of transborder price differentials promised better financial returns for Canadian wheat and durum producers who chose to deliver into the American market. These are temporary manifestations, with the price differential both appearing and disappearing quite quickly. A producer wishing to avail himself of such an opportunity needs to affect a speedy sale; a need better addressed through the use of short-haul road rather than rail transportation.

To this end, Canadian producers used trucks to ship an additional 514,300 tonnes of wheat and durum into the US market than they did in the 2013-14 crop year. The vast majority of this was again directed into the border states of Montana, North Dakota and Minnesota. With beneficial price differentials nearing $3.00US per bushel, the majority of this incremental volume, totalling about 307,900 tonnes, was comprised of durum.[19] This was supported by another 206,400 tonnes of wheat, which carried substantially less lucrative price differentials that barely reached $1.00US per bushel.

18 While this represented 81.3% of North Dakota's total inbound grain tonnage, a larger proportion was given over to deliveries in Montana, which saw 95.8% of its inbound Canadian grain tonnage brought in by truck.

19 The analysis of differential pricing looked at the driveway price offered by grain companies delivered to US elevators versus prices offered at Canadian elevators. US pricing information is drawn from the USDA-NASS database while Canadian pricing information is drawn from the CWB/G3 daily market advisory. Prices are converted to a per-bushel basis, converted to US dollars using the Bank of Canada's daily exchange rate, and averaged to produce a monthly composite. A negative differential indicates a preference towards US deliveries.

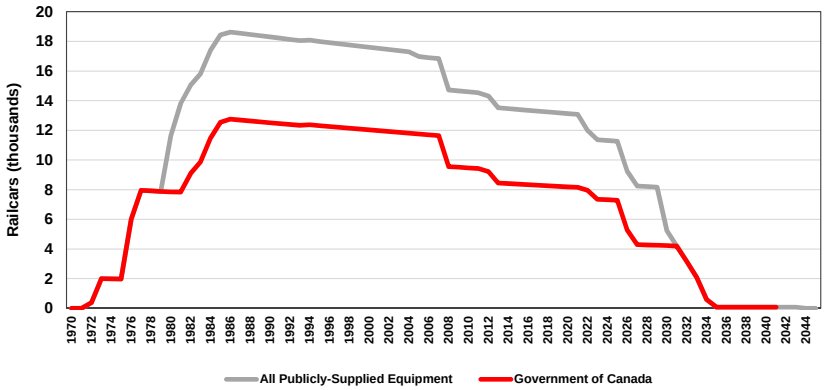
Aging of the Hopper-Car Fleet

For much of the past four decades, the principal assets used in the movement of western Canadian grain have been the cylindrical covered hopper cars supplied by the federal government, two provincial governments and the Canadian Wheat Board (CWB). But that role has gradually diminished in the face of attrition, increasing grain volumes and the growing need to supplement these cars with additional equipment, much of which is railway and privately owned. Even so, stakeholders are cognizant of the fact that the publicly-supplied fleet is approaching the end of its economic life, and have raised concerns over the efforts being taken to provide for their replacement. While the aging of this fleet is not an immediate concern to the GHTS, it is clearly an emerging one.

Between 1972 and 1994, the federal government spent approximately $590M to purchase some 13,500 covered hopper cars for use in the movement of western Canadian grain. These, and another 6,000 publicly-supplied covered-hopper cars, were essentially provided to CN and CP free of charge for this purpose.[20] And while both railway companies supplemented these cars with their own equipment in order to meet prevailing market demands, the public fleet remained the principal asset employed in moving grain through the GHTS.

By the early 2000s, however, these cars had already passed the midway point in their expected economic lives, deemed to be about 40 years. Moreover, they were becoming increasingly obsolete as the railway industry invested in railcars capable of carrying heavier loads. Constructed largely of steel with a capacity of 4,550 cubic feet, and a maximum gross weight of 263,000 pounds, these railcars were considered outdated in comparison to the newest generation of covered-hopper cars,

Figure 33: Year-End Estimate of Publicly-Supplied Hopper Cars



which had a capacity of at least 5150 cubic feet and a maximum gross weight of 286,000 pounds.

After considering the possible sale of these cars, the federal government decided that it would maintain its ownership and enter into new operating agreements for their use with CN and CP. These operating agreements, which were established in 2007 under an initial ten-year term, attempted to address some of the cars' commercial limitations. In general terms, the agreements required CN and CP to physically upgrade the cars to a higher standard. This involved raising the railcars' carrying capacity to 286,000 pounds along with certain mandated repairs that would add ten years to their service lives.[21] About this same time, the owners of other publicly-

20 The federal government's fleet of 13,500 covered hopper cars was supplemented by another 2,000 cars owned by the CWB; 2,000 cars administered by the CWB on leases paid by the federal government; 1,000 cars owned by the government of Alberta, and 1,000 cars owned by the Saskatchewan Grain Car Corporation. Combined, a total of 19,500 covered hopper cars were provided to assist the railways in moving western Canadian grain. Owing to the assembly of this fleet over a 20-year time horizon, not all of these 19,500 railcars were in service at any one time. With ongoing losses from attrition, the serviceable fleet is estimated to have peaked at slightly in excess of 18,600 railcars at the close of 1986.

21 Originally, these hopper cars were expected to have a 40-year service life. Refurbishment of the railcars would allow them to be used in interline service beyond this point, and extend their service life to 50 years.

supplied hopper cars also embarked on upgrading programs of their own, most notably the Government of Saskatchewan and the CWB, in 2006 and 2009 respectively.[22]

But not all off these cars would be upgraded. In the case of the federal fleet, CN and CP committed to upgrade all steel hopper cars built after 1974 under a five-year rehabilitation program. This meant that the 2,000 cars built prior to 1975, along with the remnants of some 2,424 aluminum cars built between 1975 and 1977, would be earmarked for destruction. Also to be withdrawn from service were those cars too heavily damaged to be repaired economically. At the close of 2014, Transport Canada reported that only 8,410 of the nearly 13,500 hopper cars furnished to these two carriers remained in service.

While other publicly-supplied fleets did not sustain such age-related losses, a number of cars were also withdrawn from service. This included 250 cars that were returned following the expiry of their leases with the CWB in 2005. At the same time, new commercial agreements with CN and CP were altering the long-standing arrangements that had governed the use of these cars. When the Government of Saskatchewan decided to give priority to leasing its equipment to the province's shortline railways in 2011, the remainder of the almost 500 cars previously assigned to CN were gradually turned over to the Last Mountain Railway. Similarly, CP began turning back all of the cars it had been leasing from the CWB in 2014. Of the almost 5,100 non-federal hopper cars estimated to still be in service at the close of 2014, about 3,100 remained with CN and CP.

By its own accounts, the railways had a combined fleet of almost 23,300 cars in grain service at the close of the 2014-15 crop year. Comprised within this were an estimated 8,400 federal hoppers along with some 3,000 hoppers supplied to them through the CWB and other governments. This implies that CN and CP were supplementing this equipment with nearly 11,900 cars of their own.[23] While the railways have always contributed some equipment to the mix, this proportion suggests that there has been a substantial shift in the overall composition of the fleet used to move western Canadian grain; from one almost entirely comprised of publicly-supplied equipment to one in which they constituted about half.

Although the upgrading of the publicly-supplied fleet enhanced the overall utility of the cars themselves, it also deferred the need for their replacement by another ten years. An important facet of the new operating agreements between CN, CP and the federal government was that it shifted the onus for replacing the federal cars from the government to the railways. In the wake of the various reductions already cited, both CN and CP moved to replace at least a portion of these cars with a blend of existing and new equipment.

Notwithstanding the commercial considerations that might lead to other unexpected reductions, attrition will continue to reduce the number of publicly-supplied hopper cars now in circulation. The pace of this decline is expected to accelerate noticeably in 2022, when the Alberta government's fleet reaches the end of its economic life. A more significant reduction will follow between 2025 and 2027 when the remainder of the federal hopper cars bought in the mid-1970s are slated for retirement, which will decrease their active number to an estimated 4,300. Over the course of the following decade, virtually all of these cars will have reached the end of their economic lives, and be withdrawn from service.

To date, the data suggests that CN and CP have been backfilling the decline occasioned by the equipment losses previously noted. Replacement of the current federal fleet would entail an estimated expenditure of $840 million.[24] Were all publicly-supplied cars to be replaced, the industry

22 A notable exception was the Government of Alberta, which chose not to refurbish its fleet. As a result, its cars remain less desirable, with a lower carrying capacity and a 40-year economic life.

23 Although privately-owned equipment is known to play a role in moving western Canadian grain, there are no publicly-available statistics by which to gage their number. Accordingly, these are omitted.

24 This estimate is based on a current replacement cost of approximately $100,000 per railcar.

would face an investment in excess of $1.4 billion. It is worth noting that the North American demand for hopper cars – be it for the movement of grain or other commodities – increased considerably in recent years because of the growth in shipments of sand for hydraulic fracking. Although the pressures arising from this reportedly abated greatly in 2015, leasing rates along with the backlog in orders for new equipment remained comparatively high.

Government Lifts Minimum Volume Requirements for Railways

In the face of mounting shipper displeasure with railway service in the opening months of 2014 the federal government took the extraordinary step of issuing an Order in Council (OIC) on 7 March 2014 under section 47(1) of the *Canada Transportation Act*, which set a minimum weekly volume of grain to be moved by CN and CP. In essence, the OIC directed that the railways ultimately provide for the movement of a combined 1.0 million tonnes of grain per week in order to reduce a mounting backlog.[25]

As winter began to give way to spring there were signs that the backlog of grain was beginning to move. By the close of the 2013-14 crop year country elevator stocks had begun to fall, railway shipments were rising; and west coast terminal elevator inventories were increasing. Moreover, there was a steady decrease in the number of ships waiting to load at port as the GHTS oversaw the movement of a record 10.8 million tonnes of grain in the fourth quarter.

Even so, there was still in excess of 14.2 million tonnes of grain left to move from the previous crop year. Confronted with such carry-forward stocks, along with the growing prospects for a larger-than normal new crop, the government opted to renew the OIC through to 29 November 2014, increasing the minimum threshold for each carrier from 500,000 tonnes per week to 536,000 tonnes per week. With the onset of winter the government then chose to renew the OIC for a second time, although it progressively reduced the weekly thresholds through December 2014 to 200,000 tonnes per carrier, before then gradually rising them to 465,000 tonnes per carrier by the last week of March 2015.

On 28 March 2015, however, the government announced that the OIC would not be renewed for a third time. Citing the robust volume record already witnessed through the first half of the crop year, the Ministers of Transport and Agriculture and Agri-Food both indicated that the OIC had served its intended purpose, and that it would be allowed to lapse.

Government Agrees to Commercialization of CWB

On 15 April 2015 the Minister of Agriculture and Agri-Food announced that, pursuant to the *Marketing Freedom for Grain Farmers Act*, the Government of Canada had approved in principal, a deal struck between the Canadian Wheat Board (CWB) and G3 Global Grain Group (G3), a joint venture between Bunge Canada and SALIC Canada Limited. The deal, which would see G3 invest $250 million to acquire a controlling 50.1% interest in CWB, and the remaining 49.9% to be held in trust for the benefit of western farmers having delivered grain to the CWB from August 1, 2013 onward. This denoted a major step in the company's plan to develop a coast-to-coast grain-handling enterprise. Finalization of this agreement, which

25 The government later introduced Bill C-30, the *Fair Rail for Grain Farmers Act*, which ultimately amended both the *Canada Transportation Act* and the *Canada Grain Act* in order to bring forward a number of measures aimed at getting grain to market quickly and more efficiently. One of the key provisions of the legislation, which received Royal Assent on 29 May 2014, provided a grain-specific parallel to the actions already undertaken by the government: it gave the Governor in Council the authority to set minimum grain transportation volumes in extraordinary circumstances, with potential penalties of up to $100,000 in the event that the carriers failed to comply. Other facets involved creating the regulatory authority needed to: extend interswitching distances in Saskatchewan, Alberta and Manitoba to 160 kilometres as a means of increasing the level of competition between railways; enhancing the operational requirements of Service Level Agreements and the ability of the Canadian Transportation Agency to award compensation; expanding measures under the Grain Monitoring Program, supported by amendments to the Transportation Information Regulations; and addressing non-performance by the grain companies with respect to their contracts with producers.

came on 30 July 2015, effectively completed the legislative initiative launched by the federal government in 2011.[26]

Since the removal of the CWB's monopoly at the beginning of the 2012-13 crop year, the recast CWB had been engaged in an effort 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. In addition, the CWB also embarked on the construction of four new state-of-the-art elevator facilities in Manitoba and Saskatchewan.

While the sale would ultimately see the CWB name phased out and replaced with the G3 brand, still other corporate expansion initiatives were being explored. On 2 June 2015 G3 announced that it was joining with Western Stevedoring Company Limited to examine the feasibility of building an export grain terminal on the Lynnterm West Gate site in North Vancouver. The study denoted another step in the new entity's quest to create a coast-to-coast Canadian grain operation that built on the footprint arising out of its intended merger of existing CWB and Bunge assets.

AGT Food and Ingredients Inc. Makes Strategic Acquisitions

On 14 April 2015 West Central Road and Rail Ltd. announced that it, along with subsidiary Goals Marketing Inc., had entered into an asset-purchase agreement with Alliance Pulse Processors Inc., a subsidiary of AGT Food and Ingredients Inc., for substantially all of the company's assets. The agreement effectively covered all of WCRR's producer-car loading facilities in Eston, Laporte, Lucky Lake, Beechy and Dinsmore, Saskatchewan, along with most of its other assets for the storing, receiving, loading and merchandising of grains, pulses, oilseeds and special crops.

Alliance indicated that it would continue to use these facilities to strengthening its bulk-sourcing abilities for lentils, peas, durum wheat and other specialty crops and grains. The transaction, estimated to be worth $22 million, was subsequently approved by WCRR shareholders some five weeks later and ultimately finalized on 2 June 2015.

Just prior to the completion of this transaction, Alliance's parent, AGT Food and Ingredients Inc., announced that it would also be expanding its facility in Minot, North Dakota. While this announcement signaled a deferral of its previously cited plans to expand capacity in Western Canada, it also indicated that the company was making strategic investments aimed at better positioning itself for future growth.

Canada Transportation Act Review Panel Concludes Consultations

After receiving more than 200 written submissions and conducting hundreds of additional in-person meetings, the Canada Transportation Act review panel concluded the public-consultation phase of its examination on 30 June 2015. The panel's focus would now shift towards the analysis of the information gathered along with the formulation of recommendations. The panel's report was to be submitted to the federal minister of transport before the end of 2015.

Canadian Transportation Agency Finds Level-of-Service Obligations Breached

The problems that manifest themselves in the movement of grain during the 2013-14 crop year saw several shippers file level-of-service complaints with the Canadian Transportation Agency. These included complaints from three of Canada's largest grain handlers: Louis Dreyfus Commodities Canada Ltd.; Richardson International Limited; and Viterra Inc. Effectively, all of these complaints alleged that CN had breached its level-of-service obligations by failing to provide the shipper with a sufficient number of railcars to meet their commercial needs.

26 This initiative was launched with the passage of Bill C-18, the *Marketing Freedom for Grain Farmers Act*, which received Royal Assent on 15 December 2011. The Bill provided for the removal of the monopoly held by the former Canadian Wheat Board over the sale of wheat and barley at the beginning of the 2012-13 crop year. It also required the commercialization or dissolution of the recast CWB by 2017.

In general terms, each complainant argued that CN had failed to provide it with the cars it was entitled to receive under either a confidential contract or an allocation commitment made by the carrier.[27] Although each case acknowledged the unusual circumstances that led to the rationing of equipment during this period, the Agency found that the shippers' service requests had been reasonable under the circumstances. Moreover, while shippers consistently received even less equipment than they had been repeatedly told to expect by CN, the Agency found that the carrier was unable to establish justifiable reasons for the repeated service failures. As such, the Agency found that CN had breached its level-of-service obligations in all three instances. In so finding, the Agency also ordered the carrier to make up the allocation shortfalls owing to each shipper by providing them with a weekly supplement of hopper cars until the obligations had been fully discharged.

27 See Canadian Transportation Agency Letter Decision Numbers: 2014-10-03; 2015-05-20 RIL; and 2015-05-20 Viterra.

Section 5: System Efficiency and Performance

Indicator Description	Table	1999-00	2012-13	2013-14	2014-15 Q1	Q2	Q3	Q4	YTD	% VAR
Country Elevator Operations										
Average Elevator Capacity Turnover Ratio	5A-1	4.8	5.8	6.8	1.8	1.4	1.7	1.6	6.6	-2.9%
Average Weekly Elevator Stock Level (000 tonnes)	5A-2	3,699.3	2,489.6	3,084.4	2,688.6	3,143.2	3,405.9	2,727.9	2,993.7	-2.9%
Average Days-in-Store (days)	5A-3	41.7	26.5	26.9	21.0	30.6	28.0	23.7	25.5	-5.2%
Average Weekly Stock-to-Shipment Ratio – Grain	5A-4	6.2	3.9	4.1	3.0	4.2	4.6	3.4	3.8	-7.3%
Railway Operations										
Movements to Western Canada										
Railway Car Cycle (days) – Empty Movement	5B-1	10.7	7.5	6.7	6.0	6.8	7.2	7.6	6.9	3.0%
Railway Car Cycle (days) – Loaded Movement	5B-1	9.2	6.5	6.4	6.4	7.6	7.4	6.4	6.8	6.3%
Railway Car Cycle (days) – Total Movement	5B-1	19.9	14.0	13.0	12.4	14.4	14.6	14.0	13.7	5.6%
Railway Car Cycle (days) – Non-Special Crops	5B-2	19.3	13.9	12.8	12.1	14.1	14.1	13.7	13.5	5.0%
Railway Car Cycle (days) – Special Crops	5B-3	25.8	15.8	15.3	13.9	16.6	18.8	17.8	16.0	4.8%
Railway Loaded Transit Time (days)	5B-4	7.8	5.4	5.3	5.4	6.3	6.1	5.3	5.8	8.5%
Movements to Eastern Canada										
Railway Car Cycle (days) – Empty Movement	5B-5	n/a	n/a	n/a	8.5	9.4	9.1	9.0	9.1	n/a
Railway Car Cycle (days) – Loaded Movement	5B-5	n/a	n/a	n/a	14.4	15.9	13.5	14.2	14.3	n/a
Railway Car Cycle (days) – Total Movement	5B-5	n/a	n/a	n/a	22.9	25.3	22.6	23.2	23.4	n/a
Railway Loaded Transit Time (days)	5B-8	n/a	n/a	n/a	13.0	12.9	11.9	12.6	12.4	n/a
Movements to the United States										
Railway Car Cycle (days) – Empty Movement	5B-9	n/a	n/a	n/a	11.6	10.4	11.3	14.6	11.2	n/a
Railway Car Cycle (days) – Loaded Movement	5B-9	n/a	n/a	n/a	19.7	20.7	19.1	14.1	19.3	n/a
Railway Car Cycle (days) – Total Movement	5B-9	n/a	n/a	n/a	31.3	31.1	30.4	28.7	30.5	n/a
Railway Loaded Transit Time (days)	5B-12	n/a	n/a	n/a	14.2	14.6	13.4	12.6	13.8	n/a
Traffic to Western Canada										
Hopper Car Grain Volumes (000 tonnes) – Non-Incentive	5B-13	12,718.7	6,488.9	6,672.6	2,007.3	1,563.7	1,200.1	1,212.0	5,983.1	-10.3%
Hopper Car Grain Volumes (000 tonnes) – Incentive	5B-13	12,945.9	21,933.7	27,155.1	8,891.7	7,175.3	7,256.1	8,548.9	31,872.0	17.4%
Hopper Car Grain Volumes ($ millions) – Incentive Discount Value	5B-14	$31.1	$155.5	$200.6	$65.9	$53.4	$54.6	$64.2	$238.1	18.7%
Traffic Density (tonnes per route mile) – Total Network	5B-15	330.4	403.6	480.5	619.3	499.8	483.6	560.2	540.8	12.6%
Terminal Elevator Operations										
Average Terminal Elevator Capacity Turnover Ratio	5C-1	9.1	11.1	13.5	n/a	n/a	n/a	n/a	17.1	26.7%
Average Weekly Terminal Elevator Stock Level (000 tonnes)	5C-2	1,216.2	1,139.6	890.6	1,181.2	1,358.5	1,492.5	1,072.5	1,281.8	39.1%
Average Days-in-Store – Operating Season (days)	5C-3	18.6	14.3	9.1	10.9	12.0	10.9	8.3	10.7	20.2%
Average Weekly Out-of-Car Time	5C-5	n/a	n/a	n/a	14.6%	18.8%	20.7%	13.8%	17.1%	n/a
Port Operations										
Average Vessel Time in Port (days)	5D-1	4.3	9.7	12.5	9.5	9.5	13.9	9.1	10.2	-18.4%
Average Vessel Time in Port (days) – Waiting	5D-1	1.9	4.8	7.5	4.9	3.6	6.3	3.8	4.6	-38.7%
Average Vessel Time in Port (days) – Loading	5D-1	2.4	4.9	5.0	4.6	5.9	7.6	5.3	5.6	12.0%
System Performance										
Total Time in Supply Chain (days)	5E-1	68.1	46.2	41.1	37.3	48.9	45.0	37.3	42.0	2.2%

COUNTRY ELEVATOR OPERATIONS

The net effect of changes in primary elevator throughput and storage capacity is reflected in the system's capacity-turnover ratio. Despite a 2.2% increase in primary-elevator throughput, the turnover ratio for the 2014-15 crop year fell by 2.9%, to 6.6 turns from the 6.8 turns reported a year earlier. Much of this reduction was attributable to the 7.1% rise in storage capacity posted in the last quarter of the previous crop year. [Table 5A-1]

Reduced turnover ratios were reported for Manitoba and Saskatchewan. Manitoba reported the most substantive decline, with its ratio falling by 14.3%, to 4.8 turns from 5.6 turns. This was followed by Saskatchewan, which posted a reduction of 1.6%, with its ratio slipping to 6.2 turns from 6.3 turns a year earlier. Alberta saw its ratio remain unchanged at 8.5 turns. British Columbia, the only province to report a gain, saw its ratio rise by 11.7%, to 10.5 turns from 9.4 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. What is more, even with a marginal 1.0% increase in the system's associated storage capacity, today's stocks typically stand well below the 3.7-million-tonne average benchmarked at the beginning of the GMP, seldom exceeding 3.0 million tonnes. This was not the case throughout much of the 2014-15 crop year, as average primary elevator inventories climbed steadily beyond this threshold for a second consecutive year: from 2.7 million tonnes in the first quarter; to 3.1 million tonnes in the second; and to 3.4 million tonnes in the third. It was not until the fourth quarter that stocks again fell below the 3.0-million-tonne

Figure 34: Primary Elevator Capacity Turnover Ratio

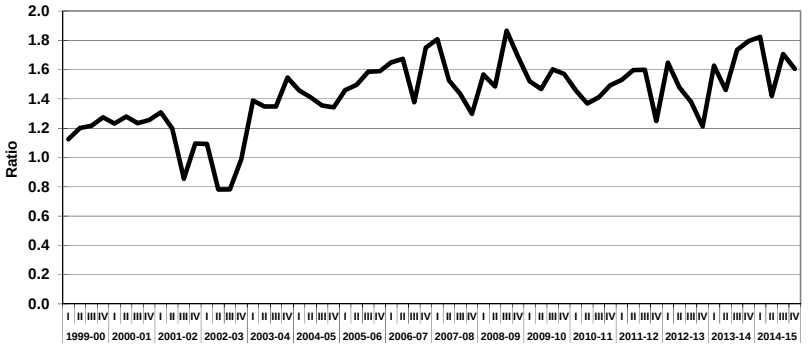
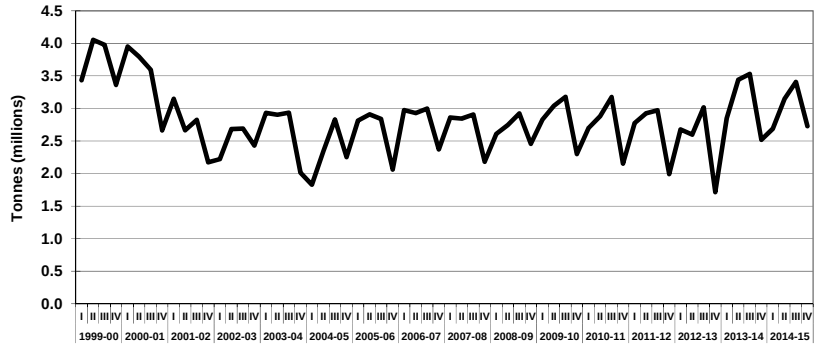


Figure 35: Average Weekly Stock Levels



level, to 2.7 million tonnes. As a result, the overall average for the crop year fell by 2.9%, to a little below 3.0 million tonnes from 3.1 million tonnes a year earlier. Even so, much of the buildup was tied to the production of yet another large crop, and the broader efforts undertaken in getting it to market. [Table 5A-2]

Just as the average stock level has moved generally lower since the beginning of the GMP, so too has the average amount of time spent by grain in inventory. 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 the decrease in time grain spends in store.

In step with the rise in quarterly grain inventories was the time spent by grain in inventory, which rose from an average of 21.0 days in the first quarter, and to a more lengthy average of 30.6 days in the second, before declining to an average of 28.0 days in the third, and finally to 23.7 days in the fourth. Even so, the comparatively lower quarterly averages proved instrumental in reducing the 2014-15 crop year's overall average, which fell by 5.2%, to 25.5 days from 26.9 days a year earlier. Reductions in the average days-in-store for all provinces except Alberta, which remained unchanged, figured in 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 around a value of 4.0. As such, the inventory on hand at the close of any given week typically exceeded that required for shipment in the next by a

Figure 36: Average Days in Store

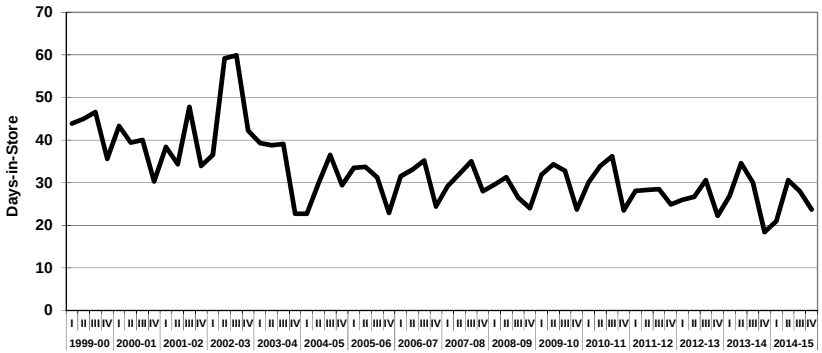
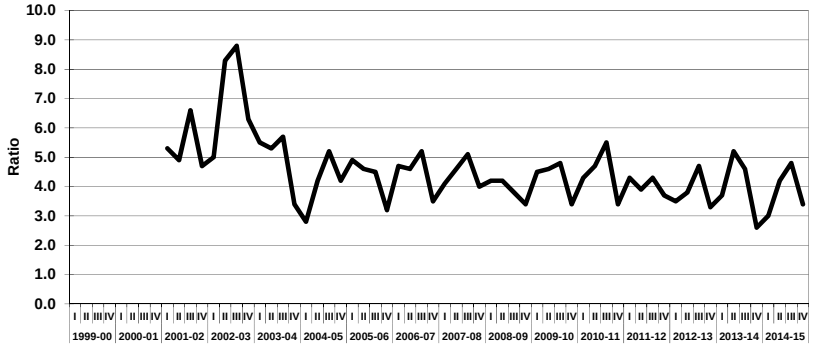


Figure 37: Primary Elevators – Stock-to-Shipment Ratio



factor of at least four.[28] 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 pattern was repeated yet again during the 2014-15 crop year. From the first quarter's initial average of 3.0, the stock-to-shipment ratio moved substantially higher, reaching a peak of 4.6 in the third quarter. Ultimately, this slipped down to a value of 3.4 in the fourth quarter. Even so, the overall average for the crop year decreased by 7.3%, with the ratio falling to 3.8 from 4.1 a year earlier. As already stated, many of these fluctuations tracked those in country elevator inventories as well as storage times.

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 2014-15 crop year this task required an average of 13.7 days to complete when moving to a point in western Canada, a 5.6% increase from the 13.0-day average recorded a year earlier. Much of this overall increase was attributable to an 8.7% rise in the Vancouver corridor, which saw its average increase to 14.6 days from 13.4 days a year earlier. To a degree, this was countered by marginal decreases in the Prince Rupert and Thunder Bay corridors. In the case of the Prince Rupert corridor, the average declined by 1.3%, to 12.4 days from 12.5 days. The reduction in the Thunder Bay corridor proved a lesser 0.5%, with the average slipping to 12.6 days from 12.7 days a year earlier. Movements in the Churchill corridor, which were concentrated in the first quarter, averaged a more lengthy 20.5 days. [Table 5B-1]

28 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 38: Average Railway Car Cycle

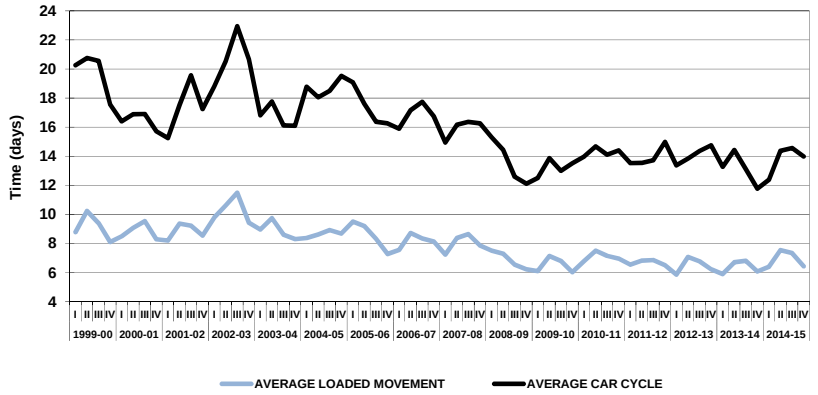
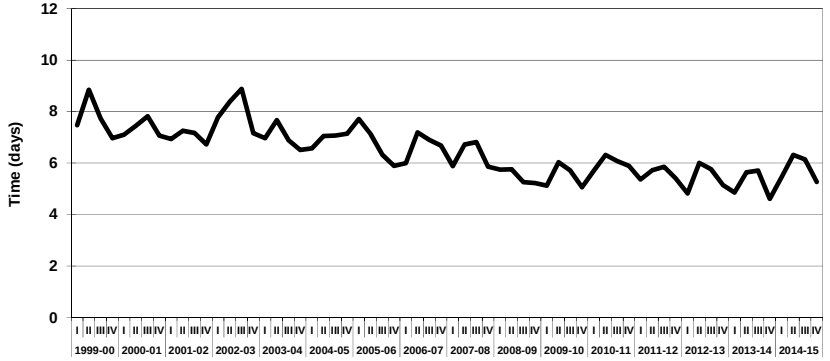


Figure 39: Average Loaded Transit Time



The overall rise in the average car cycle came from increases in both the loaded as well as empty portions of the movement. In the case of the former, this was lengthened by 6.3%, to an average of 6.8 days from 6.4 days a year earlier. This was enlarged by a 3.0% increase in the empty portion of the movement, which rose to an average of 6.9 days from 6.7 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 increase, with the average rising 5.0%, to 13.5 days from 12.8 days a year earlier. A lesser increase was noted for the car cycle tied to special crops, which rose by 4.8%, to an average of 16.0 days from 15.3 days. Comparatively, the average for special crops proved to be 18.5% 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 broader rise in the overall car cycle for the 2014-15 crop year, the railways posted an 8.5% increase in its loaded transit time, which climbed to an average of 5.8 days from 5.3 days a year earlier. It is important to note that with the close of the 2013-14 crop year, 2.5 days had already been shed from the 7.8-day average benchmarked in the base year.

The variability in the underlying distribution, as measured by the coefficient of variation, also rose, to 34.1% from 30.4%.[29] This indicates that the time taken in moving a loaded hopper car between any two points remained highly erratic. [Table 5B-4]

Eastern Canada and US Car Cycles and Loaded Transit Times

While the car-cycle and loaded-transit time statistics for movements in western Canada have the most relevance to the GMP, recent changes to the program resulted in parallel measures for grain shipments into eastern Canada and the United States being added. These show that the car cycle into eastern Canada averaged 23.4 days while that associated with movements into the US registered an even longer 30.5-day average. [Tables 5B-5 through 5B-12]

Distance was 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, 27.8 days. Conversely, movements into the more distant South, Northeast and West produced progressively greater averages of 38.3 days, 39.5 days and 42.1 days respectively.

In equal measure, the average loaded-transit times into eastern Canada and the US show substantially greater values than that observed for western Canada, with averages of 12.4 days and 13.8 days respectively.

Multiple-Car Blocks

During the 2014-15 crop year, a total of 31.9 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 an increase of 17.4% over the 27.2 million tonnes that were moved in such blocks the previous crop year. [Table 5B-13]

29 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.

The proportion of railway traffic moving in multiple-car blocks remains quite substantial. In fact, 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 fluctuate around the 80% mark for several crop years. However, the 2014-15 crop year saw a noticeable jump, with 84.2% of the grain shipped moving in blocks of 50 or more cars.

At the same time, the annual value of the discounts earned by grain shippers – estimated as a gross savings in railway freight charges – increased six fold, rising to an estimated $200.6 million in the 2013-14 crop year from $31.1 million in the GMP's base year. Much of this expansion, however, was the product of more substantive increases in the per-tonne discounts than it was of the traffic base.

Owing to the increased tonnage moving under these discounted freight rates in the 2014-15 crop year, the earned value of the discounts rose by 18.7%, to an estimated $238.1 million from $200.6 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 steady rise in the average earned discount, which reached an estimated $7.47 per tonne against $7.39 per tonne a year earlier. [Table 5B-14]

TERMINAL ELEVATOR OPERATIONS

Owing to the increase in throughput for the 2014-15 crop year, the terminal elevator system's capacity-turnover ratio rose by 26.7%, to a record-setting 17.1 turns from 13.5 turns a year earlier.[30] With the exception of Churchill, all ports in western Canada reported significant increases, establishing new GMP records in the process. The largest gain

Figure 40: Railway Traffic Moving Under Incentive

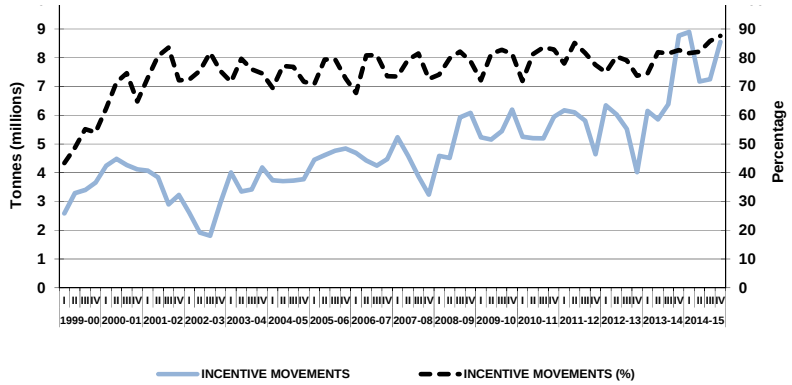
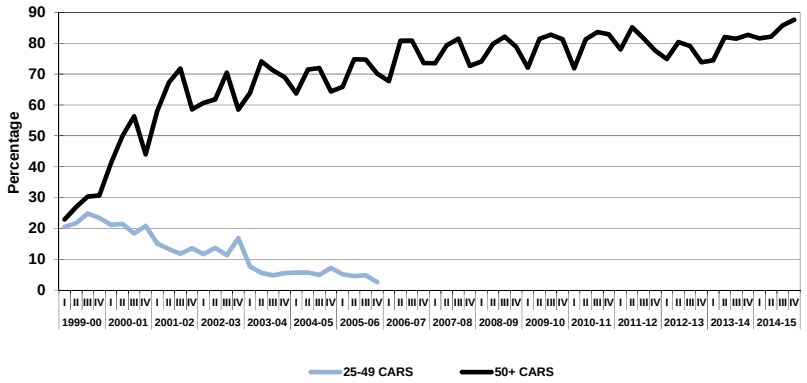


Figure 41: Composition of Multiple-Car-Block Movements



30 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.

posted among the west coast ports was at Vancouver, where the ratio rose by 52.1%, to a GMP record of 29.2 turns from 19.2 turns the year before. This was followed by a 3.9% gain for Prince Rupert, where the number of turns rose to 29.4 from 28.3. The eastern gateways of Thunder Bay and Churchill posted decidedly mixed results. In the case of Thunder Bay, the capacity-turnover ratio rose by 13.8%, to 6.6 turns from 5.8 turns a year earlier. Churchill reported a reduction of 15.6% in its ratio, which fell to 3.8 turns from 4.5 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 fairly consistent relationship with the system's overall handlings, typically encompassing from 20% to 25% of the quarterly throughput. Following a year in which average grain inventories had been drawn down to as little as 769,800 tonnes, the 2014-15 crop year's steadier inbound rail movement helped to replenish these stocks substantially. The first quarter's average rose to almost 1.2 million tonnes. This rebound continued into the second and third quarters, with stocks rising to an average of 1.4 million tonnes and 1.5 million tonnes respectively. It was only in the fourth quarter that terminal stocks began to decrease, falling to an average of 1.1 million tonnes. With this recovery, the overall average for the entire crop year stood 39.1% above what had been reported a year earlier, with 1.3 million tonnes standing against 890,600 tonnes respectively.

This increase reflected those experienced not only along the Pacific Seaboard but at Thunder Bay and Churchill as well. Stocks held at the west coast ports of Vancouver and Prince Rupert accounted for 51.1% of total terminal stocks, and climbed by 31.3%, to an average of 655,100 tonnes from 488,100 tonnes a year earlier. An even greater 54.8% increase was reported by Thunder Bay, with stocks rising to an average of 573,000 tonnes from 353,200. The increase at Churchill proved more modest, increasing by just 2.7%, to an average of 53,700 tonnes from 49,300 tonnes. [Table 5C-2]

Figure 42: Average Terminal Elevator Capacity Turnover Ratio

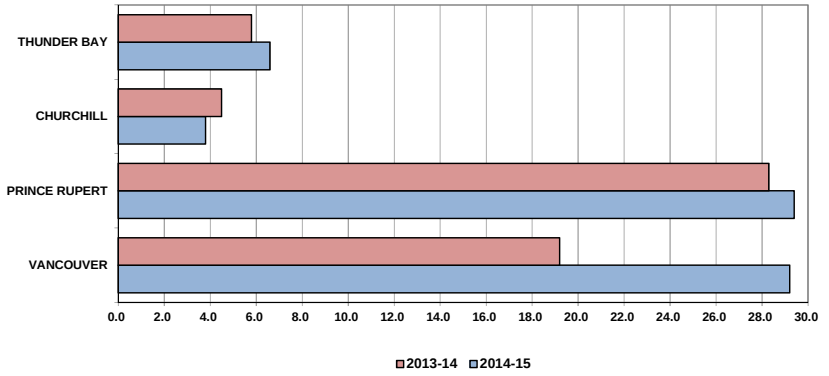
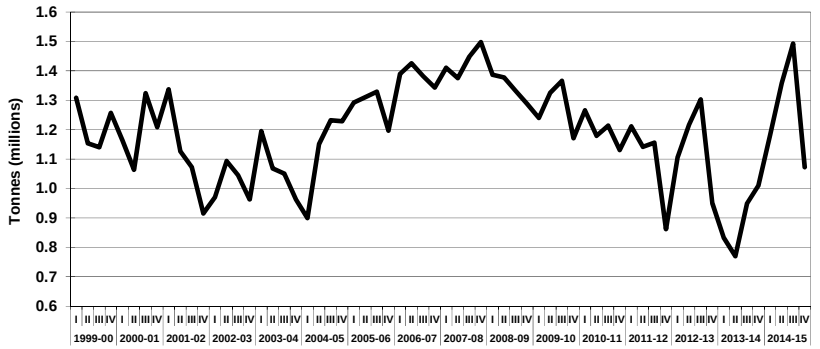


Figure 43: Terminal Elevators – Average Weekly Stocks



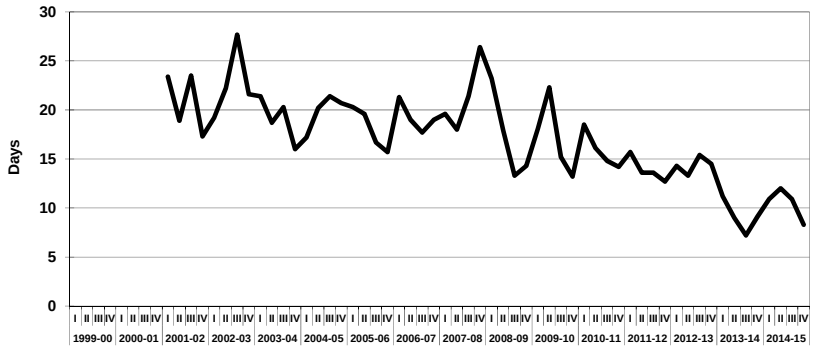
As in past years, wheat constituted the largest single commodity held in inventory, accounting for 50.3% of total stocks. Wheat inventories climbed by 34.1%, to an average of 644,800 tonnes from 480,700 tonnes a year earlier. Canola stocks ranked second largest, with its average of 245,800 tonnes having increased by 55.4% from 155,900 tonnes a year earlier. This was complemented by equally hefty increases in the stocks of other commodities: durum, 18.8%; flaxseed, 43.0%; peas, 59.6%; oats, 68.6%; rye, 87.5%; lentils, 104.1%; and soybeans, 247.6%. [Table 5C-2]

Days in Store

Along with the increase in terminal stocks came an increase in the amount of time grain spent in inventory, with the average number of days-in-store rising by 20.2%, to 10.7 days from the GMP record low of 9.1 days a year earlier. Much of the impetus for this came from increases along the Pacific Seaboard and at Thunder Bay. For the Pacific Seaboard, this meant that the number of days-in-store rose by 11.5%, to an average of 8.7 days from 7.7 days a year earlier.[31] For Thunder Bay the increase amounted to a more substantive 29.3%, with the average rising to 17.2 days from 12.9 days. An 8.6% reduction at Churchill helped to blunt some of this, with the average falling to 14.8 days from 18.3 days a year earlier. [Table 5C-3]

The overall increase in storage time reflected those posted by a number of individual commodities. For the most sizeable of these stockpiles, wheat, the increase amounted to 16.2%, with storage time rising to an average of 11.5 days from 10.0 days a year earlier. Canola, which ranked second in terms of inventory tonnage, saw a more substantive 24.1% rise, with storage time climbing to an average of 7.2 days from 6.0 days. This was supported by increases of 29.2% for peas and 178.5% for oats. Running counter to all of this was third-ranked durum, which posted a reduction of 4.5%, with its average time in storage falling to 12.6 days from 13.1 days.

Figure 44: Terminal Elevators – Average Days-in-Store



Additional reductions were noted for flaxseed and barley, which fell by 6.5% and 16.7% respectively.

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 the course of any particular week.[32]

31 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.

32 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 the majority of grains actually fell from those posted a year earlier, although most retained a value above 1.0. Wheat was typical, with its average ratio falling by 18.8%, to 1.6 from 2.0 a year earlier. Durum, barley, canola and flaxseed all displayed similar reductions, with annualized average ratios of 2.8, 1.4, 1.2 and 0.9 respectively. The contrarian proved to be peas, which, with a ratio of 1.8, actually rose by 48.7%. 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]

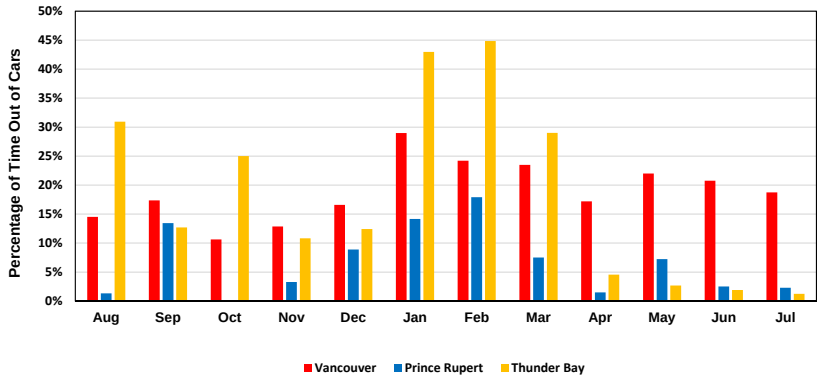
For the most part, the ratios posted by Thunder Bay stood well above a value of 2.0. This included wheat, which, even with a reduction of 29.1%, posted an annualized average ratio of 2.4. The ratios tied to other commodities, including oats, durum, flaxseed and canola, rose sharply, taking values of 2.5, 2.6, 2.9 and 4.2 respectively. Churchill's ratio values were noticeably lower than those of Thunder Bay: rising by 4.3% in the case of wheat to 1.9; and declining by 73.9% to 0.7 in the case of durum.

Port Terminal Out-of-Car Time

Another newly-added GMP measure gauges the proportion of time that port terminals had no railcars to unload against the total time the terminals were staffed and operating in a given week. This measure provides an indication of just how effectively the terminals' overall unloading ability is being utilized during a given period.[33] [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

Figure 45: Port Terminal Out-of-Car Time – 2014-15 Crop Year



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 ranged from a monthly low of 10.6% in October 2014 to a high of 29.0% in January. This impact was much less at Prince Rupert where, owing to its single-terminal operation, the highest proportion of out-of-car time reached was much lower, at 17.9% in February 2015. Outside of the winter months, this proportion seldom exceeded 5%. This demonstrated a very effective use of the facility's capacity.

The out-of-car time measure was developed with the intention of pairing it with one that quantified the amount of time cars were held out from the

33 The port terminals in Vancouver, Prince Rupert and Thunder Bay were requested to provide data for this measure on a weekly basis. However, it was not until October 2014 that the data stream became consistent. Consequently, the measures generated between August and October are incomplete.

terminals at the latter's request. This measure would provide an indication of time lost for the unloading of railcars as a result of terminal actions. The data for this would be obtained from the railways, which record the amount of time cars are held in a status referred to as "constructive placement." However, this measure remains under development.

PORT OPERATIONS

A total of 973 vessels called for grain at western Canadian ports during the 2014-15 crop year. This represented a 12.5% increase over the 865 ships that arrived for loading a year earlier. Nominally, the largest gain was made by Thunder Bay, where 377 vessels called compared to 312 a year earlier. This was supported by a 49-ship increase at Vancouver, which reported 453 vessels calling against the previous crop year's 404. Detracting from this were the lesser number of vessels that loaded at Prince Rupert and Churchill, which reported year-over-year reductions of five and one respectively.

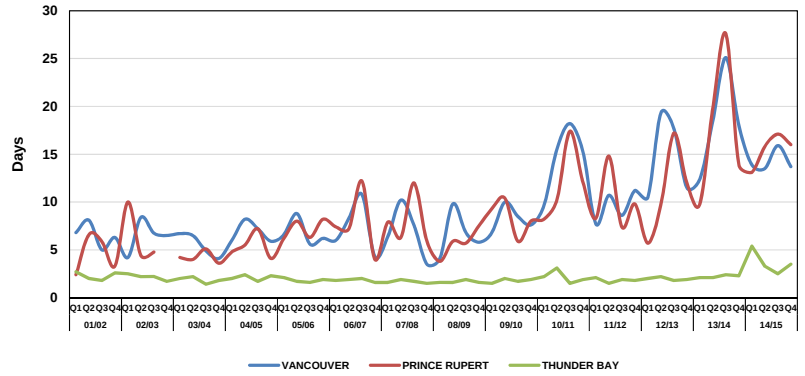
Average Vessel Time in Port

The amount of time spent by vessels in port decreased by 18.4% in the 2014-15 crop year, falling to an average of 10.2 days from the 12.5-day average posted a year earlier. A 38.7% decrease in the amount of time vessels spent waiting to load, which fell to an average of 4.6 days from 7.5 days a year earlier, was the chief driver in the overall reduction.[34] This was partially countered by a 12.0% increase in the amount of time vessels actually spent loading, which rose to an average of 5.6 days from 5.0 days. [Table 5D-1]

Not all ports reported a reduction in the average amount of time vessels spent in port. In fact, only the west-coast ports of Vancouver and Prince Rupert reported reductions. For Vancouver, the average fell by 24.5%, to 14.2 days from 18.8 days a year earlier. Prince Rupert posted a lesser decrease of 18.5%, with its average declining to 15.0 days from 18.4 days. These reductions were countered by increases at Thunder Bay and Churchill. Thunder Bay posted the most significant increase, 77.3%, with its average rising to a record GMP high of 3.9 days from 2.2 days a year earlier, predominantly caused by the higher volumes that moved through the port.[35] Churchill followed with 25.5% increase, with its average time-in-port rising to 6.4 days from 5.1 day.

However, these single-year values effectively mask the broader shifts that have been observed. Over the course of the last five years, the amount of time vessels spend in port – particularly at the west-coast ports of Vancouver and Prince Rupert – has become an issue of mounting concern for many GHTS stakeholders. During the first ten years of the GMP, this

Figure 46: Average Vessel Time in Port – Western Ports



34 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.

35 Thunder Bay generally posts the lowest average for time spent by vessels in port. This lower average stems chiefly from the greater regularity with which vessels move through the St. Lawrence Seaway, the port's ample storage capacity, smaller vessel cargoes and the limited delays incurred by vessels waiting to berth.

typically amounted to under 9 days. But a sharp rise in the 2010-11 crop year saw the average climb to over 13 days. While the next year saw some moderation, the average rose steadily higher through the 2013-14 crop year, to over 18 days. Even with the 2014-15 crop year's average dipping to under 15 days, it still proved substantially greater than that recorded during the first ten years of the GMP.

Concurrent with the number of vessels waiting are the physical demands that these ships place on the port, particularly in Vancouver. The most significant concern to port authorities is the disproportionate use of the port's available achorages in support of waiting vessels. Of the seven grain terminals situated in the Vancouver area, six are located inside Burrard Inlet. The nine berths tied to these facilities represent about a quarter of the total situated around the port at its various marine-shipping facilities. But there are only 6 anchorages within the harbour and 18 in nearby English Bay to accommodate all of the ocean vessels waiting to berth at these facilities.

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.[36] Since then, the vessel line-up has risen steadily higher, ultimately reaching an all-time high of 38 ships in the 2013-14 crop year. Much the same happened at Prince Rupert, where, during the same crop year, the vessel line-up reached a height of 14 ships. As a consequence, there have been 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 2014-15 crop year saw a general reduction in the number ships lined up to load grain, the daily average remained over 20. This was still double what had been typically observed in the first ten years of the GMP.

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

Figure 47: Average Vessels in Port – Vancouver and Prince Rupert

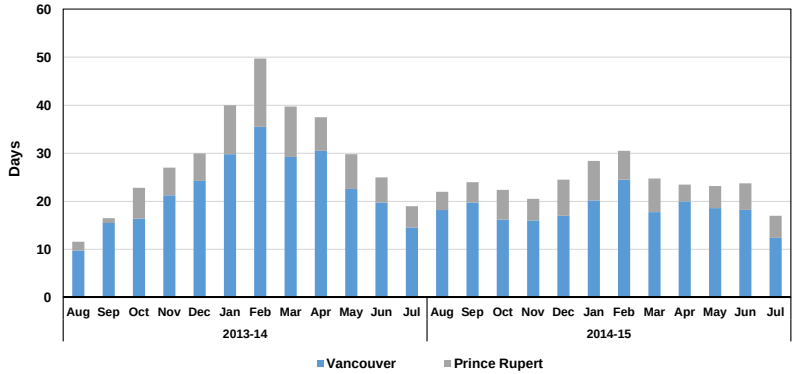
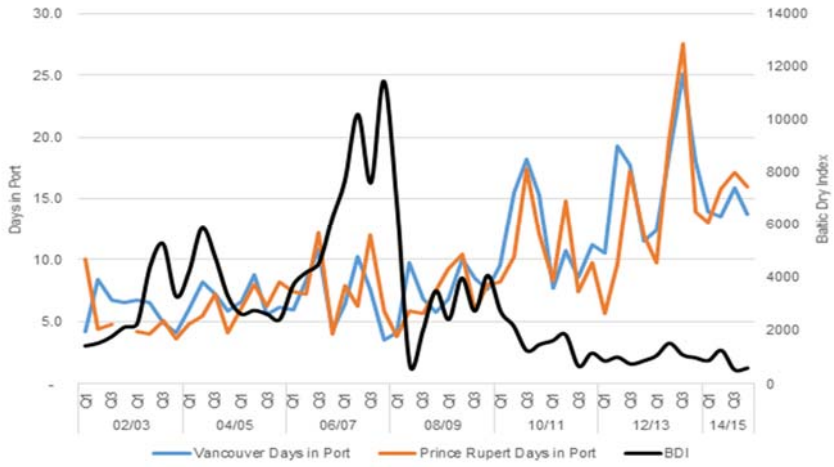


Figure 48: Baltic Dry Index and Vessel Time-in-Port
(BDI data sourced from Capital Maritime Markets)



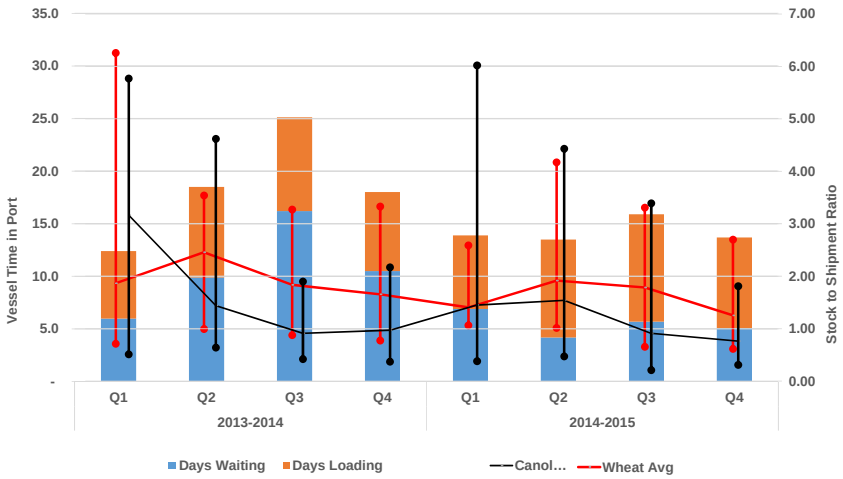
Higher vessel counts lead to increased costs and potential congestion in and around the affected harbour. In the case of Vancouver, when all anchorage spots are taken, vessels are compelled to anchor along the east coast of Vancouver Island, a day's sailing away. Not only does this require additional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

An analysis of this issue suggests a number of possible causes, although no single one can be definitively identified. Those causes range from the record low cost of ocean frieght, an insuffiecient supply of grain in port to accommodate the demands of the vessels waiting to load, ocean vessels arriving earlier than planned and/ or the increasing size of vessels loading at the port that casuses longer loading times.

The first of these is tied to a correlation between vessel time in port and the cost of ocean freight, which has has been driven down dramatically since the onset of 2008's financial crisis. The resultant over-supply in bulk ocean-carrying capacity was reflected in a virtual collapse in ocean freight rates, with the Baltic Dry Index (BDI) dropping by a factor of 90% in the past year. Moreover, the BDI fell to a level from which it has still yet to show any meaningful recovery.[37] Today, ocean carriers reportedly generate barely enough revenue to cover their variable costs. With new vessels continuing to enter the marketplace at a pace that exceeds the salvaging rate of older ones, the over-supply in ocean-carrying capacity is likely to persist for some time to come. This is widely expected to perpetuate the abnormally low ocean freight rates that have been witnessed in recent years.

The measure used by the GMP to indicate whether sufficient stocks are in position at port for a vessel that is ready to load is the stock-to-shipment ratio. An analysis of the data from the two most recent crop years suggests that there is a correlation between the stock-to-shipment ratio and the time vessels spend in port. This analysis centred on wheat and canola as, combined, they account for the majority of the grain moved through the ports of Vancouver and Prince Rupert.

Figure 49: Average Vessel Time-in-Port and Stock-to-Shipment Ratios
(High, Low, Average)



A stock-to-shipment ratio that falls below 1.0 indicates that insufficient quantities of the needed grain were on hand to meet the immediate vessel demand. The more frequent the instance of a stock-to-shipment ratio falling below a value of 1.0, the more often ships will have to wait for the required stocks to become available. Conversely, when the ratio stands comfortably above this benchmark, there is less likelihood that ships will

37 The Baltic Dry Index is a price index of ocean freight rates based on a composite of daily rate quotes for 24 shipping routes. The information presented in the accompanying chart is drawn from publicly available secondary sources.

have to wait. This relationship is reflected in the comparative change in the stock-to-shipment ratios and the amount of time vessels are waiting and loading during the 2013-14 and 2014-15 crop years.

It is likely that both of these forces have played some role in increasing the amount of time vessels spend in port. The examination undertaken suggests three possible reasons: that the excess supply of bulk ocean-carrying capacity has driven ocean freight prices down to such a low point that chartering additional vessels provides terminal operators with greater logistical flexibility in scheduling ship loadings; that the over-supply of capacity may also be resulting in vessels arriving at port earlier than required; and that there is insufficient grain in position at a port owing to a deficiency in the planning, coordination or allocation of the inbound rail movement so as to satisfy the specific demand of expected vessels.

Although each in some way probably had an impact on vessel time in ports, it would be difficult to isolate a single definitive cause. What is clearer is that a "new normal" is being established as terminal operators look to have one vessel at berth and at least one waiting at anchor in order to ensure optimal ship-loading performance. With nine active berths at the grain terminals in Vancouver, this would suggest that some 18 vessels will either be loading or waiting at any given point in time in order to provide for such optimization.

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 48,400 tonnes (up 28%) respectively by the 2014-15 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-

Figure 50: Multiple Berthing Vessels

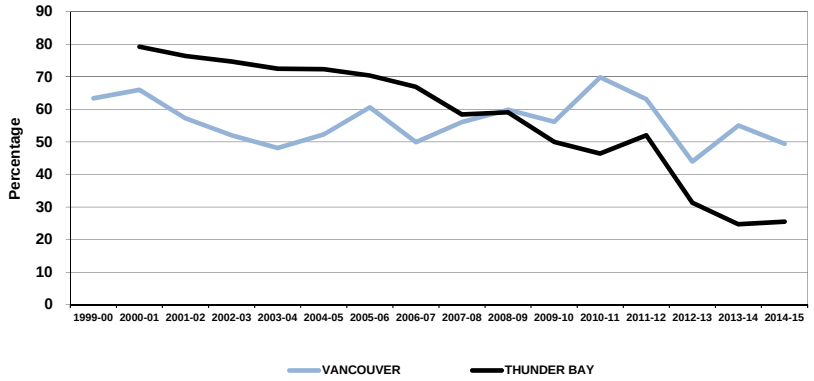
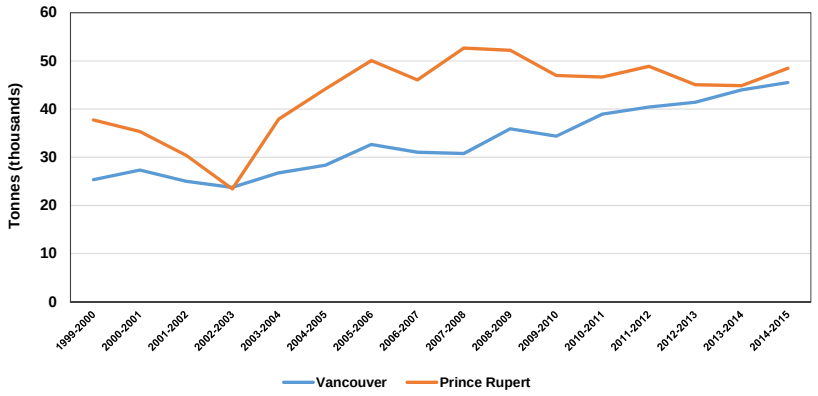


Figure 51: Average Load per Vessel



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 16 years. The nature of sales programs along with the commodities exported 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. Regardless of the cause of this increase, it necessitates either a longer timeframe for loading at terminal elevators or faster loading capacity at those elevators and necessarily inbound rail movement. To that end, most West Coast terminals are undergoing extensive upgrades and even more are in the planning stage. As noted above, this could also affect the length of time vessels must remain in port.

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 56.9% from 61.3% a year earlier. Moreover, there was a marked decline in the number of ships that remained in port for an uncommonly lengthy period of time, with the proportion of vessels spending 16 or more days in port falling to 26.0% from 35.8% a year earlier. Even so, almost all of these latter delays were associated with ships calling at Vancouver and Prince Rupert, which indicated that west-coast exports were the most affected. [Table 5D-2]

Distribution of Berths per Vessel

A moderately fewer number of vessels needed to berth more than once during the 2014-15 crop year. At Vancouver, the proportion of vessels needing to berth two or more times fell to 49.4% from 55.0% 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 rose, to 25.5% from 24.7% a year earlier. This value ranks well below the 79.2% benchmarked for the port in the 2000-01 crop year, and marks but a marginal reversal of the decline that has been evident since the beginning of the GMP. [Table 5D-3]

Demurrage and Dispatch

Members of the WGEA reported 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. For the fifth consecutive year, these two elements combined to produce a negative value, and a net outflow of $35.5 million versus $54.4 million a year earlier. [Table 5D-4]

This improvement was primarily shaped by a sharp reduction in demurrage costs, which fell to $44.2 million from $61.1 million the year previous. The most significant monetary contributor to this was a 27.6% decrease in the demurrage costs incurred along the Pacific Seaboard, which fell to $32.2 million from $44.5 million a year earlier. This was enlarged by another 27.6% decrease in the demurrage for Churchill, Thunder Bay and points along the St. Lawrence Seaway, which fell to $12.0 million from $16.6 million a year earlier. This was supplemented by heightened dispatch earnings, particularly along the Pacific Seaboard, which rose by 30.9%, to $8.7 million from $6.6 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

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.

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.

provided data for their terminals at Thunder Bay and Vancouver.[40] [Table 5D-8]

Total reported terminal revenues for the 2014-15 crop year increased sharply, rising by 22.4% to $536.9 million from $438.5 million a year earlier. This result was shaped by two inputs: an 18.4% increase at Vancouver, which saw revenues increase to $424.5 million from $358.6 million; and a 40.7% increase at Thunder Bay, where terminal revenues climbed to $112.4 million from $79.9 million.

SYSTEM PERFORMANCE

The supply chain model provides a useful framework by which to examine the speed with which grain moves through the GHTS. For the 2013-14 crop year, it was observed that this process required an average of 41.1 days; the lowest annualized value yet observed under the GMP. Reductions in the supply chain's principal components – time in storage at a country elevator, time in transit as a railway shipment, and time in inventory at a terminal elevator – were all instrumental in shaping this 27.0-day improvement over the base-year average of 68.1 days.

Although the overall average fell still further in the first quarter of the 2014-15 crop year, to 37.3 days, it rose to a height of 48.9 days in the second, before then falling back to 45.0 days in the third, and then 37.3 days in the fourth. This reduced the overall average for the crop year to 42.0 days, a 2.2% increase over the 41.1-day average observed a year earlier. The result was mainly shaped by a 1.8-day increase in the amount of time spent by grain in storage at a terminal elevator, which rose to 10.7 days from the previous crop year's 8.9-day average. A further 0.5 days were added as a result of an increase in the railways' loaded transit time, which rose to an average of 5.8 days from 5.3 days. These increases were, however, tempered by a 1.4-day reduction in the amount of time grain spent in inventory at a country elevator, which fell to an average of 25.5 days from 26.9 days. [Table 5E-1]

Figure 52: 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	
2011-12	27.6	5.6	13.9	47.1	-38.3%
2012-13	26.5	5.4	14.3	46.2	
2013-14	26.9	5.3	8.9	41.1	
2014-15	25.5	5.8	10.7	42.0	

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

Despite the overall increase, the 2014-15 crop year's annual average of 42.0 days still ranked as the second lowest reported under the GMP. A few observations on this performance follows:

- While grain production fell to 62.9 million tonnes, above-average carry-forward stocks of 14.2 million tonnes from the previous crop year helped produce the second largest grain supply witnessed under the GMP. This presented the GHTS with a second consecutive year of logistical challenges. Notwithstanding the fact that the global market remained awash in grain, Canadian grain shippers continued to pursue aggressive sales programs. As such, concerns over the GHTS's ability to effectively and efficiently provide for the movement of another above-average crop persisted, particularly in the face of the commercial pressures brought on by a further decline in market prices.

- However, the railways, which were still contending with the aftermath of the previous crop year's record crop, remained well arrayed to deal with the prolonged movement of larger-than-normal volumes. In fact, through the opening months of the 2014-15 crop year the railways continued to move grain at a record pace.

- Aiding in all of this was the fact that the railways did not have to struggle with such oppressive weather as was experienced in the winter of 2013-14. Railway grain shipments continued to track above those observed for the same period a year earlier until the fourth quarter. To be sure, hopper-car shipments of export grain to the four ports in western Canada rose by 9.8%, to a GMP record of 38.4 million tonnes. Ultimately, this performance led the federal government to lift the Order in Council that had imposed minimum weekly grain volumes for both CN and CP. Gone too was much of the farmer and shipper displeasure over railway service that had so tainted the industry's commercial relationships a year earlier.

- Finally, the fluidity with which grain moved through the GHTS during the 2014-15 crop year was indicative of the efficiencies that could be realized with the proper deployment of resources and effort. This was evident in the establishment of new volume records for country-elevator throughput, railway shipments and terminal-elevator throughput.

Section 6: Producer Impact

Indicator Description	Table	1999-00	2012-13	2013-14	2014-15 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	$53.49	$132.41					$124.20	-6.2%
1CWA Durum ($ per tonne) – Original Methodology	6A-10B	$67.63	n/a	n/a						
1CWA Durum ($ per tonne) – Revised Methodology (1)	6A-10B	n/a	$108.47	$160.82					$206.35	28.3%
1 Canada Canola ($ per tonne)	6A-10C	$52.51	$56.50	$80.76					$69.22	-14.3%
Canadian Large Yellow Peas – No. 2 or Better ($ per tonne)	6A-10D	$54.76	$81.07	$81.24					$108.51	33.6%
Producer Cars										
Producer-Car-Loading Sites (number) – Class 1 Carriers	6B-1	415	228	211	196	196	179	179	179	-15.2%
Producer-Car-Loading Sites (number) – Class 2 and 3 Carriers	6B-1	122	135	135	135	135	135	135	135	0.0%
Producer-Car-Loading Sites (number) – All Carriers	6B-1	537	363	346	331	331	314	314	314	-9.2%
Producer-Cars Scheduled (number) – Covered Hopper Cars	6B-2	3,441	9,259	15,603	3,298	2,047	2,644	1,878	9,867	-36.8%

(1) The methodology used to calculate the export basis in the 2012-13 through 2014-15 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.[41] 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.[42] 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.

41 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).

42 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.	The price for 1 Canada Canola is 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	For 1 Canada Western Red Spring Wheat and 1 Canada Western Amber Durum, a price differential – or spread – is calculated between the weighted average of the West Coast and St. Lawrence export quotations and the average Saskatchewan producer spot price (as reported by AAFC). The average Saskatchewan producer spot price encompasses all grades and, therefore, provides an imperfect comparison to the export quotations. Readers should consider this when attempting to draw conclusions from the data.	For 1 Canada Canola, a price differential – or spread – is calculated between the weighted Vancouver cash price and the weighted average spot price in each of the nine regions. 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.[3] The amounts depicted reflects 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) – 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

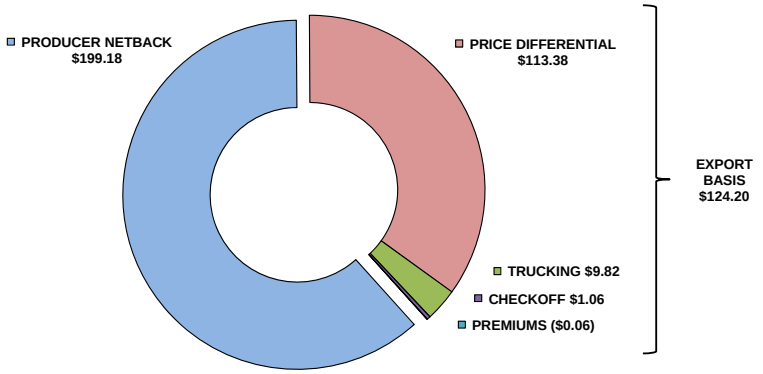
In its earlier reports, the Monitor described how increased commodity prices had largely been responsible for the improvement in the per-tonne returns accruing to producers of wheat and durum. Even in those years when the export basis fell, the financial gain derived from the reduction could not compare 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 2014-15 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 53: Producer Netback – 1CWRS Wheat



1CWRS WHEAT

The financial return to farmers of 1CWRS wheat amounted to an estimated $199.18 per tonne in the 2014-15 crop year. This was 2.3% more than the $194.71 reported for the 2013-14 crop year. Much of this improvement, however, was attributable to a reduction in the export basis rather than to an increase 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).[43] Although prices fluctuated throughout the 2014-15 crop year, the overall average remained largely unchanged, decreasing by just 1.1%, to $323.38 per tonne from $327.12 per tonne a year earlier.

43 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.

The decline reflected an increase in international supplies, with global wheat production having reached a record high. Much of this was tied to increased wheat production in key exporting regions, including Black Sea countries, the European Union and Argentina. Lower Canadian supplies coupled with a weaker Canadian dollar also 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 of the 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 limited three-year time horizon of the new methodology these costs have more than doubled. Following a year that saw these direct costs jump to $132.94 per tonne from $54.29 per tonne, the new crop year brought a modicum of relief. These costs were estimated to have fallen by 6.5% in the 2014-15 crop year, to an average of $124.26 per tonne from the $132.94-per-tonne mean cited a year earlier. The largest cost element within this framework is represented by the price differential, which accounted for an average of $113.38 per tonne, or 85.3% 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 2014-15 crop year, comprised about 7.9% of total direct costs.[44] As opposed to the price differential, the cost of trucking can still be traced back over much of the last 16 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 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. However, as the industry moved to an open-market

44 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 for the purpose of providing continuity.

environment, these benefits virtually disappeared. More specifically, the new environment saw trucking premiums slashed while the CWB's roughly $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.[45] 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 crop year saw this cut still further, with the average falling to just $0.53 per tonne. The 2014-15 crop year produced an even steeper decline, with the average premium falling to the lowest level recorded under the GMP, just $0.06 per tonne. This served to offset less than 0.1% of the associated direct costs.

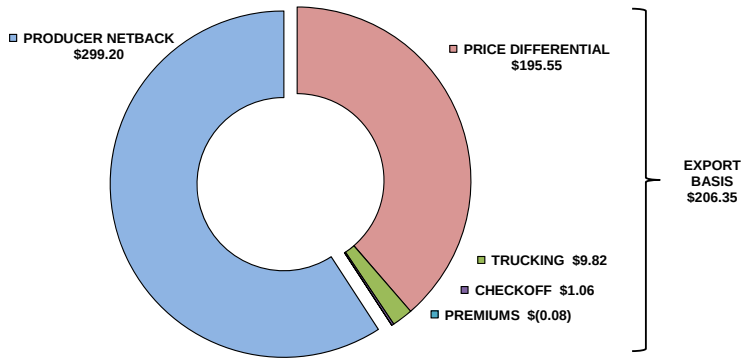
1CWA DURUM

The financial return to farmers of 1CWA durum amounted to an estimated $299.20 per tonne in the 2014-15 crop year. This was 43.0% greater than the $209.27 per tonne reported for the 2013-14 crop year. As opposed to 1CWRS wheat, much of this gain was attributable to stronger prices. [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 climb steadily higher over the course of the 2014-15 crop year. By the close of the period, the average had risen to $505.55 per tonne, 36.6% above the $370.09-per-tonne average recorded for the previous crop year.

Figure 54: Producer Netback – 1CWA Durum



Reduced global supplies proved to be the chief driver in this price rise. Although many producing regions reported smaller durum harvests the dominant market issue related to quality, with excessive rains at harvest having contributed to the downgrading of crops, particularly in the European Union. Similar problems were experienced in North America as well, although not to the same degree. Canadian production itself fell by a factor of 20%. All of this served to raise prices sharply higher through November 2014, before then tapering off.

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

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 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 already cited, the GMP cannot place the direct costs associated with 1CWA durum within a longer-term historical context. Nevertheless, these costs virtually doubled over the course of the last three crop years. From the 2012-13 crop year's average of $109.25 per tonne, these initially rose by 47.3%, to $160.91 per tonne. The 2014-15 crop year saw an additional 28.3% increase, with the average climbing to $206.43 per tonne. The largest cost element within this framework is represented by the price differential, which accounted for an average of $195.55 per tonne, or 94.7% 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 2014-15 crop year, comprised about 4.8% of total direct costs. As opposed to the price differential, the cost of trucking can still be traced back over much of the last 16 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 just $1.06 per tonne, and accounted for just 0.5% 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 crop year when the average fell to just $0.09 per tonne. The 2014-15 crop year saw this slip to $0.08 per tonne, which represented an offset of well under a 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 16 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 also risen over this 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. Such was the case in each of the last two crop years as lower prices reduced these returns yet again: first to an average of $426.54 per tonne in the 2013-14 crop year; and then to a marginally lesser average of $419.05 per tonne in the 2014-15 crop year.

Vancouver Cash Price

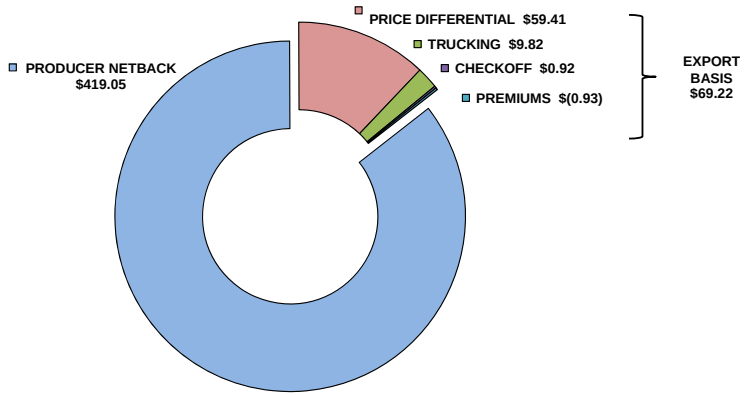
As with other grains, higher market prices proved instrumental in improving the netback to producers of 1 Canada canola. To be sure, the price of canola has fluctuated significantly since the beginning of the GMP. From its base-year benchmark of $291.61 per tonne, the Vancouver cash price moved considerably higher, ultimately attaining a GMP record of $651.60 per tonne in the 2012-13 crop year. Much of this was tied to a growing export demand as well as the advent of new crushing capacity in western Canada. Despite strong domestic and foreign demand, prices fell substantially in the 2013-14 crop year due to record production in Canada as well as bountiful soybean harvests in the United States and Brazil. Although these forces moderated somewhat in the 2014-15 crop year, the average Vancouver cash price slipped another 3.8%, to $488.27 per tonne from $507.30 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. Moreover, it took a sharp reversal in direction during the 2014-15 crop year, with the export basis falling by 14.3% from the previous crop year's record high, to an average of $69.22 per tonne from $80.76 per tonne.

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

Figure 55: Producer Netback – 1 Canada Canola



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.

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 have been progressively rising. However, much of the ensuing increase came in the 2013-14 crop year, when these direct costs jumped to $81.64 per tonne from $57.49 per tonne. The 2014-15 crop year saw a substantive reduction in these direct costs, which fell by 14.1% to $70.15 per tonne.

Much of this decline came from a reduction in the price differential, which itself reflected a better balance between canola supplies and the prevailing demand. The 2014-15 crop year saw the price differential fall by 16.2%, to an average of $59.41 per tonne from $70.90 per tonne a year earlier. This

represented 84.7% 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 16 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 2014-15 crop year than it did in the base year, 14.0% versus 10.8% respectively. The remaining direct costs, which accounted for just 1.3% of the overall total, were derived from a provincial check-off that is applied as a means of funding the Canola Growers Association.

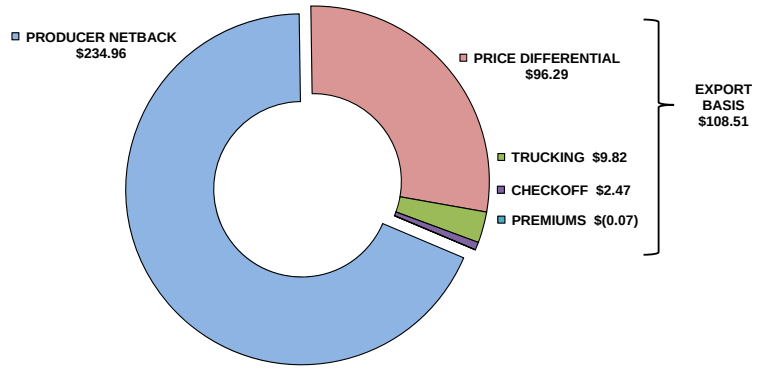
Export Basis – Financial Benefits

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 16 years, the average trucking premium paid on canola has fallen to $0.93 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 1.3% 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. 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

Figure 56: Producer Netback – Large Yellow Peas



tonne in the 2011-12 crop year. Ensuing price reductions were largely responsible for its subsequent decline in the next two crop years, with the producer's netback falling to $244.88 per tonne in the 2013-14 crop year. The 2014-15 crop year saw yet another decrease, with the producer's netback slipping to $234.96 per tonne, although this was chiefly the product of a sharp rise in the export basis rather than a modest upturn in price.

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 2014-15 crop year witnessed a modest price rebound, with

a 5.3% increase lifting the average to $343.47 per tonne. Much of this increase stemmed from a tightening of global supplies, occasioned largely by a decline in Indian production in the face of steady Asian demand.

Export Basis

Over the course of the GMP's first 15 year the export basis for large yellow peas has progressively risen, 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 beginning to drift lower over the ensuing five crop years. The 2014-15 crop year brought a reversal of this decline, with the export basis rising by 33.6%, to an average of $108.51 per tonne from $81.24 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

Over the course of the last 16 years the direct costs associated with large yellow peas rose by 97.6%, to $108.58 per tonne in the 2014-15 crop year from $54.94 in the base year. The majority of this increase was derived from a virtual doubling of the price differential, which climbed to $96.29 per tonne from $48.23 per tonne. But this escalation incorporated significant fluctuations as a result of prevailing market conditions, with values that ranged from as little as $44.56 per tonne in the 2005-06 crop year to as much as $96.29 per tonne in the 2014-15 crop year. Even so, these fluctuations did little to alter its contribution to direct costs, with the price differential accounting for a marginally greater 88.7% share against 87.8% in the base year.

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 2014-15 crop year. On a comparative basis, this element accounted for 9.0% of the direct costs, against a somewhat greater 10.8% in the base year. The remaining 2.3% 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 2014-15 crop year, these premiums averaged $0.07 per tonne, and shielded less than 0.1% 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 15 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 2013-14 crop year, only 346 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 its serviced sites by 67.2%, to 211 from 644. Conversely, those operated by the smaller Class 2 and 3 carriers more than doubled, to 135 from 65. The 2014-15 crop year brought the closure of another 32 sites, with the overall total falling by 9.2%, to 314 from 346. As all of these closures were made by the major railways, their number was reduced by 15.2%, to 179 from 211. Of the 32 sites closed, 23 were situated along the CN network, and nine along that of CP. [Table 6B-1]

Regionally, Manitoba and Alberta 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 33.9% during the same interval. And while the overall number of producer-car loading sites has declined sharply, the reduction has also been somewhat irregular. Although the largest cuts came in the first few years of the GMP, a significant secondary reduction was posted in the 2009-10 crop year. The 32 sites closed the 2014-15 crop year mark the deepest single-year reductions made in the last five years.

Producer-Car Shipments

Despite the general reduction in loading sites, producer-car shipments have risen significantly. Over the course of the GMP's first 15 years these shipments more than quadrupled, 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. Such was again the case in the 2014-15 crop year, when shipments fell to 9,867 carloads. The 36.8% reduction in scheduled producer cars was simply the product of far fewer applications, and amplified by its comparison to the atypical 2013-14 crop year. More

Figure 57: Producer Car Loading Sites

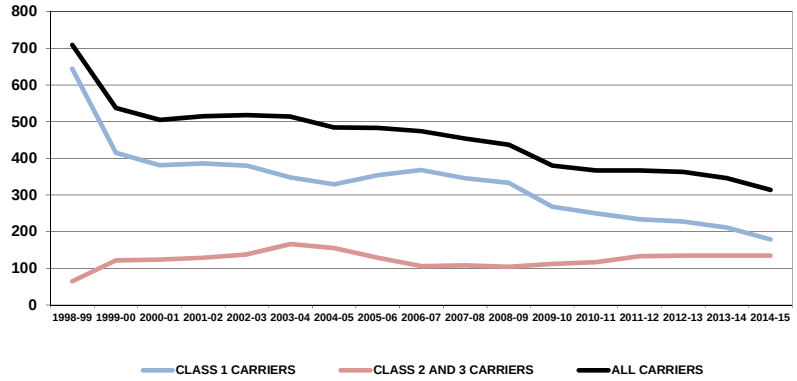
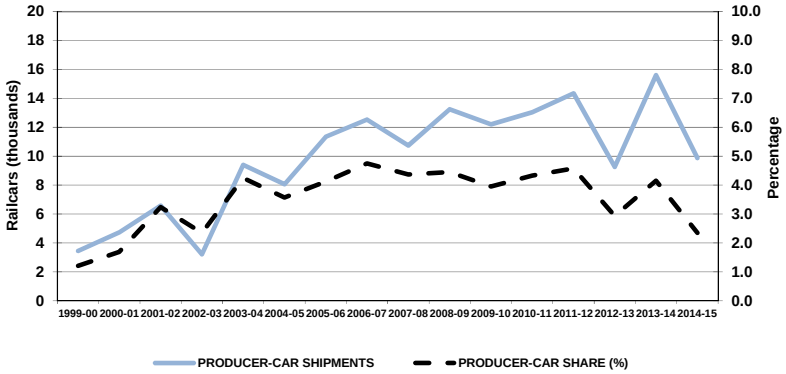


Figure 58: Producer-Car Shipments



specifically, when confronted with congested elevators across much of the prairies in the previous 2013-14 crop year, farmers turned towards producer-car loading as an alternative. This resulted in applications for over 21,000 cars; an unprecedented number under the GMP.

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 of the traffic moved. The 2014-15 crop year saw this share decline still further, to 63.3% from 73.4% a year earlier. On the other hand, shipments of oilseeds and other commodities continued to increase, with a 36.7% share against 26.6% a year earlier. Much of this gain appeared tied to a strong demand for oats moving into the United States along with a growing propensity to use producer cars in shipping special crops.

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.

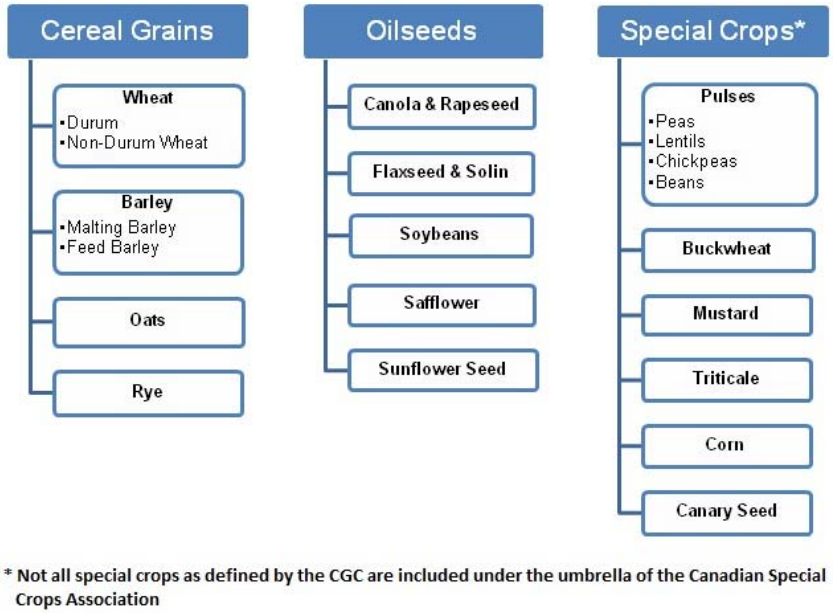
- Series 4 – Commercial Relations: Measurements relating to the rates applicable on various grain-handling and transportation services.

- 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 Federation of Agriculture
Alberta Transportation
Alliance Grain Terminal Ltd.
Alliance Pulse Processors Inc.
Battle River Railway
BC Maritime Employers Association
Big Sky Rail Corp.
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
Chamber of Shipping of British Columbia
CMI Terminals
CWB
Fife Lake Railway Ltd.
Gardiner Dam Terminal
Government of British Columbia
Grain Growers of Canada
Great Sandhills Terminal
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
Mission Terminal Inc.
Mobile Grain Ltd.
National Farmers Union
North West Terminal Ltd.
OmniTRAX Canada, Inc.
Parrish & Heimbecker Ltd.
Paterson Grain
Port Metro Vancouver
Port of Churchill
Port of Thunder Bay
Prairie West Terminal
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
South West Terminal
Statistics Canada
Stewart Southern Railway
Transport Canada
Viterra Inc.
West Central Road and Rail Ltd.
Western Barley Growers Association
Western Canadian Wheat Growers Association
Western Grain By-Products Storage Ltd.
Western Grain Elevator Association