

Annual Report

2013-2014 Crop Year



Monitoring the Canadian Grain Handling and Transportation System



Government of Canada
Gouvernement du Canada



Quorum Corporation

Suite 701, 9707-110 Street
Edmonton, Alberta
T5K 2L9

Telephone: 780 / 447-2111
Fax: 780 / 451-8710

Website: www.quorumcorp.net
Email: info@quorumcorp.net

Members of the Quorum Corporation Advisory Board

Mark A. Hemmes
Chairman of the Advisory Board
President, Quorum Corporation
Edmonton, Alberta

J. Marcel Beaulieu
Director - Research and Analysis, Quorum Corporation
Sherwood Park, Alberta

Richard B. Boyd
Senior Vice President, Canadian National Railway Company (retired)
Kelowna, British Columbia

A. Bruce McFadden
Director - Research and Analysis, Quorum Corporation
Edmonton, Alberta

Shelley J. Thompson
President, SJT Solutions
Southey, Saskatchewan

Members of the Grain Monitoring Team

Mark Hemmes President

Marcel Beaulieu Director - Research and Analysis
Bruce McFadden Director - Research and Analysis
Vincent Roy Senior Technical Officer

ISBN - 978-0-9936969-0-9
Annual Report of the Grain Monitor: 2013-14 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 2014, and focuses on the various events, issues and trends manifest in the movement of Western Canadian grain during the past year. This is the fourteenth 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 quarterly and annual reports, the report that follows is structured around a number of measurement indicators. The close of the 2009-10 crop year saw the traditional five-group subdivision of these indicators changed, with their reorganization into a new six-group series, comprising:

- 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 2013-14 crop year is largely gauged against that of the 2012-13 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 15 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
March 2014

Table of Contents

Executive Summary	1
Section 1: Production and Supply	10
PRODUCTION AND SUPPLY	11
Section 2: Traffic and Movement	14
COUNTRY ELEVATOR THROUGHPUT	15
RAILWAY TRAFFIC	15
TERMINAL ELEVATOR THROUGHPUT.....	19
Section 3: Infrastructure	22
COUNTRY ELEVATOR INFRASTRUCTURE	23
RAILWAY INFRASTRUCTURE	26
TERMINAL ELEVATOR INFRASTRUCTURE.....	28
Section 4: Commercial Relations	30
TRUCKING RATES	31
COUNTRY ELEVATOR HANDLING CHARGES.....	31
RAILWAY FREIGHT RATES.....	32
TERMINAL ELEVATOR HANDLING CHARGES	34
COMMERCIAL DEVELOPMENTS	35
Section 5: System Efficiency and Performance.....	41
COUNTRY ELEVATOR OPERATIONS	42
RAILWAY OPERATIONS	44
TERMINAL ELEVATOR OPERATIONS.....	46
PORT OPERATIONS	49
SYSTEM PERFORMANCE	51
Section 6: Producer Impact	55
CALCULATION OF THE EXPORT BASIS	56
WHEAT AND DURUM.....	58
CANOLA AND YELLOW PEAS	61
PRODUCER CARS.....	64
Appendix 1: Program Background	67
Appendix 2: Commodity Guide	68
Appendix 3: Acknowledgements.....	69

Executive Summary

PRODUCTION AND SUPPLY

The 2013-14 crop year witnessed a record harvest, with western Canadian grain production increasing to 76.3 million tonnes. Not only did this mark a 34.2% gain over the previous crop year's 56.9-million-tonne crop, it also stood substantially above the previous Grain Monitoring Program (GMP) high of 60.4 million tonnes set just five years earlier. This unprecedented level of production was largely shaped by favourable weather conditions throughout the growing season, which allowed the crop to not only mature with minimal stress, but to also attain a good level of quality. When combined with 4.9 million tonnes of carry-forward stocks, the grain supply grew to an unprecedented 81.2 million tonnes. This embodied a 29.7% increase over the previous crop year's 62.6 million tonnes. The sheer size of the crop presented a number of challenges for the Grain Handling and Transportation System (GHTS) as a whole, not the least of which was its ability to effectively and efficiently provide for its movement.

TRAFFIC AND MOVEMENT

Despite the challenges faced by the GHTS through much of the first six months of the 2013-14 crop year, strong showings in the third and fourth quarters helped raise the system's total handlings for the crop year to record highs.

- Country elevator throughput, as gauged by all road and rail shipments from the primary elevators situated across western Canada, increased by 18.7%, to 40.7 million tonnes from 34.3 million tonnes a year earlier. This result was largely shaped by especially strong showings in the third and fourth quarters, with shipments in the latter rising to a GMP record of 11.6 million tonnes. Two-thirds of the overall increase was tied to Saskatchewan, which saw shipments rise by 25.7%. This was supported by a 25.5% increase in shipments from Manitoba along with an 8.0% increase in those from Alberta. Reduced shipments from British Columbia, which fell by 2.1%, detracted marginally from these gains.
 - The amount of grain moved by rail to western Canadian ports increased by 17.7%, rising to a GMP record of 34.8 million tonnes from 29.6 million tonnes a year earlier. As in past years, the vast majority of this traffic, some 33.8 million tonnes, moved in covered hopper cars. The remaining 1.0 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 18.3%, to 20.1 million tonnes from 17.0 million tonnes. Prince Rupert posted a slightly greater 19.5% increase, with total volume climbing to 6.1 million tonnes from 5.1 million tonnes. With a 21.1% increase in volume, Thunder Bay saw its total tonnage rise to 7.1 million tonnes from 5.8 million tonnes. This was supported by an increase in traffic to Churchill, which rose by 15.1%, to 574,200 tonnes from 498,900 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 15.6%, to 31.1 million tonnes from 26.9 million tonnes a year earlier. Vancouver accounted for 57.1% of this volume, with total marine shipments increasing by 13.8%, to 17.8 million tonnes from 15.6 million tonnes. Prince Rupert accounted for 19.0% and saw a 15.3% increase, with shipments rising to 5.9 million tonnes from 5.1 million tonnes. Thunder Bay accounted for 21.8% and witnessed an 18.1% increase in volume, with throughput rising to 6.8 million tonnes from 5.7 million tonnes. Churchill accounted for 2.0% and reported a 50.5% increase in its handlings, which rose to 636,000 tonnes from 422,600 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 2013-14 crop year.

- The total number of country elevators decreased by 5.1%, to 371 from 391 at the close of the previous crop year. This brought the accumulated loss since the beginning of the GMP to 633 facilities, or 63.0%. Much the same was true of the network's grain delivery points, which decreased by 4.7%, to 261 from 274. This was complemented by 478,400 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 that benchmarked in the GMP's base year.
- The scope of the western Canadian railway network stood unchanged during the 2013-14 crop year, encompassing a total of 17,600.2 route-miles. Although this denotes a reduction of 9.6% 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. There was also a shift in the balance between the Class 1 and non-Class-1 carriers as a result of the failure of the Kelowna Pacific Railway. This served to increase the infrastructure under Class 1 management to 15,011.5 route-miles, or 85.3%, and reduce that under the non-Class-1 carriers to 2,588.7 route-miles, or 14.7%.
- The 2013-14 crop year brought still more changes to the composition of the licensed terminal elevator network at Thunder Bay. The first involved the relicensing of the 231,030-tonne facility acquired by Richardson International from Viterra in May 2013. The second extended from an agreement between Parrish and Heimbecker Limited and Cargill Limited to jointly operate the latter's existing facility. With six terminal elevators, Thunder Bay laid claim to 40.0% of the system's facilities and 47.7% of its storage capacity. Although home to seven terminal elevators, Vancouver's share of the network's facilities and storage capacity slipped to 46.7% and 37.7% 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 that fell to 8.7% and 5.8% respectively.

COMMERCIAL RELATIONS

The 2013-14 crop year brought a variety of changes to the cost of many of the commercial services used to move grain through the GHTS.

- Single-car railway freight rates saw a mix of increases and decreases in the first quarter, which were followed by equally diverse pricing actions throughout the remainder of the crop year. Once again, these varied according to the corridor and carrier involved. The differing pricing actions taken by Canadian National (CN) and Canadian Pacific (CP) resulted in sharply contrasting year-end rate structures, with the single-car rates for CN showing comparatively modest net changes in the face of more substantive reductions by CP. By the close of the crop year, westbound movements over CN and CP had been reduced by 4.4% and 15.4% respectively. Eastbound pricing provided more contrast, with CN increasing its rates into Thunder Bay and Churchill by 3.0% and 5.0% respectively, while CP had cut its rates into Thunder Bay by 16.6%.
- Comparatively modest changes were noted in the per-tonne rates assessed by grain companies for a variety of primary elevator handling activities during the 2013-14 crop year. These ranged from a 1.0% decrease in the rates for storage to a 6.2% increase in those tied to elevation.
- There were only marginal changes to the rates assessed by the GHTS's terminal elevators for the receiving, elevating and loading out of grain in the 2013-14 crop year, with the composite price index rising by just 0.4%, to 150.0 from 149.4. Storage-charge increases for the period proved equally marginal, also increasing by 0.4%, with the composite price index rising to 180.1 from 179.4.
- While oil prices remained volatile, the commercial trucking rates associated with moving grain varied little through the 2013-14 crop year. As a result, the composite price index for short-haul trucking remained unchanged at 162.2.

Commercial Developments

Although the quantity and quality of the crop has always been a key factor in shaping the commercial activities surrounding the movement of grain, the sheer size of the crop harvested in the fall of 2013 was the dominant issue, and spotlighted renewed concerns over some of the weaknesses of the existing supply chain.

- Western Canadian farmers began harvesting a crop of unprecedented size in August 2013. Even so, few within the grain industry could have anticipated that production would stand a full 25% above the previous record of 60.4 million tonnes. As the final estimate began to crystallize, the industry began to confront the realities attached to the marketing of a 76.3-million-tonne crop. But foremost among the growing list of concerns was the fear that the GHTS would be incapable of adequately providing for its movement. As the scope of the challenge confronting the industry became apparent the system quickly became inundated with

grain. On-farm inventories were soon bulging with an unanticipated excess. Moreover, as elevator deliveries grew, the problem began to spread. Before long the country elevator system was beginning to congest, with many facilities forced to turn away producers for the simple lack of space. Central to the timely processing of any elevator's grain was the carrying capacity provided to it by the railways; without a matching railcar supply the system would soon become backlogged. By mid-September 2013 the demand for carrying capacity in the country was outpacing what was being supplied by a factor of 10%, leaving the equivalent of about 1,000 carloads of traffic going unremoved each week.¹ The effects of this were also beginning to spread, with terminal elevator stocks declining by as much as 20% from what had been carried in the same period a year earlier. More importantly, the number of vessels waiting to load at port had begun to climb. With the onset of winter, and more particularly during a five week stretch of record-setting cold in Manitoba and eastern Saskatchewan, the fluidity of railway operations was undermined still further. As these problems grew so too did the acrimony of shippers and farmers. By mid-January 2014 the complaints and concerns of producers and shippers with railway service spurred the government into pressing the railways for solutions.

- With the grain industry confronting a deteriorating situation through February, the federal government moved to address the issue. On 7 March 2014 the Minister of Transport announced that an Order in Council (OIC), issued under section 47(1) of the *Canada Transportation Act*, was being employed to define the minimum weekly grain volumes to be moved by CN and CP. In essence, the OIC directed that the railways increase their weekly volumes over a period of four weeks, until attaining a combined target of 1.0 million tonnes per week. Failure to comply with the provisions of the order carried potential penalties of up to \$100,000. While these actions were welcomed by the grain industry at large, both CN and CP characterized them as unnecessary intrusions into the workings of the transportation marketplace. Nevertheless, both railways indicated that they would strive to meet these targets even if they were being unfairly criticized in their efforts to cope with circumstances that extended beyond their control. This was followed on 26 March 2014 when the federal government announced that it was introducing legislation that would amend both the *Canada Transportation Act* and the *Canada Grain Act*, and bring forward a number of measures meant to get grain to market quickly and more efficiently. A key component in this legislation gave the Governor in Council the authority to set minimum grain transportation volumes based on the recommendations of the Ministers of Transport and Agriculture and Agri-Food, with potential penalties of up to \$100,000 if 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; enhance Service Level Agreements and the Canadian Transportation Agency's ability to award compensation; expand grain monitoring measures; and to address non-performance by the grain companies with respect to their contracts with producers.

¹ The number of railcars ordered serves as a proxy for the overall demand for carrying capacity. Those subsequently confirmed by the carriers (i.e., for which the carrier designates that a railcar will be supplied) serves as a stand-in for the available supply of carrying capacity. With an estimated 90% confirmation rate, approximately 10% of the orders placed proved to be beyond the servicing ability of the railways. These unconfirmed orders effectively denote a pent up, or unfilled, demand for railway carrying capacity.

- In October 2012 the federal government moved to implement a number of its budgetary measures with the introduction of Bill C-45, the *Jobs and Growth Act, 2012*, which included revisions to the *Canada Grain Act*. Among the more noteworthy of those revisions was the transfer of responsibility for inward weighing and inspection at terminal elevators from the Canadian Grain Commission (CGC) to the private sector. Although the CGC would no longer be the primary source of this data, the Act affirmed its oversight role in collecting this fundamental information regarding terminal elevator operations. To this end, the CGC convened an industry working group to develop the standards and information-gathering protocols that would be used in the future. This ultimately evolved into what the CGC called its Licensed Terminal Elevator Reporting Requirements, which was distributed to the industry in June 2013. The transfer of this responsibility, which resulted in terminal-elevator staff collecting and reporting on data previously collected by the CGC, produced some implementation challenges in the first quarter of the 2013-14 crop year. Regular users of the Monitor's reports need to be mindful that these changes in the approach to data collection had inevitable consequences for the measures assembled for terminal-elevator operations. While the data provided by the terminal-elevators is equivalent to that previously collected by the CGC, it is gathered from a variety of companies with diverse approaches to data collection. This, along with other changes in data reporting, may reduce the ability to relate some year-over-year comparisons of data.
- On 26 November 2013 CWB announced that it had reached an agreement to purchase the grain handling and port terminal assets of Soumat Inc., a division of Toronto-based Upper Lakes Group Inc. This marked the company's first material acquisition since the federal government removed its monopoly over the sale of wheat and barley, and was reorganized in 2012. In specific terms, the acquisition encompassed three commercial entities: Mission Terminal Inc.; Les Élévateurs des Trois-Rivières Ltée; and Services Maritimes Laviolette Inc. These commercial concerns would provide CWB with port facilities in Thunder Bay, Ontario, and Trois-Rivières, Quebec, along with a dock-services business in Trois-Rivières. This transaction denoted an important step in the process of transitioning itself into a private business. But this acquisition, which was finalized in late December 2013, soon appeared as a mere starting point for the development of an even larger network of strategic grain-handling assets for CWB-marketed grain. In January 2014 the company announced that it had bought a minority share in Prairie West Terminal (PWT), a farmer-owned grain handler shipping over 420,000 tonnes annually from five facilities in western Saskatchewan. Moreover, CWB officials soon let it be known that they were also in discussions with other parties for the acquisition of, or an equity interest in, still other facilities. The scope of this intent became evident just two months later when CWB announced that it planned to build a state-of-the-art grain elevator at Bloom, Manitoba. Targeted for completion in 2015, the CN-serviced facility would be composed of a 17,400-tonne workhouse with 16,500 tonnes of steel storage capacity. Plans for the construction of an even larger 42,000-tonne, CP-served facility, to be situated at Colonsay, Saskatchewan, came a month later. Following closely on the heels of the latter announcement was CWB's revelation that it had moved beyond taking a minority interest in PWT, and had actually entered into an agreement for the acquisition of all issued and outstanding shares in the company for \$43.2 million.
- The winter of 2013-14 proved to be one of the harshest in recent memory. Although always problematic for railways generally, a protracted period of deep cold proved particularly disruptive for carriers operating throughout western Canada and the northern United States. Typically such conditions necessitate the running of shorter trains which, in itself, requires the need for additional

locomotives and crews. Beyond taxing the railways' immediate physical and human resources, adapting to colder temperatures often carries safety-mandated reductions in train speed and employee productivity. All of this results in greater stress being placed on the network, which typically becomes congested. Such were the conditions that confronted both CN and CP and which did much to undermine their service offering in the second and third quarters. But Canadian railway operations were not the only ones affected by the harsh weather. American carriers operating in the northern tier of the United States were struggling under equally adverse conditions. Even so, farmers in western Canada sought to circumvent the problems they were facing at home, including trucking their grain south to American delivery points already beset by their own railway service problems. And while governments on both sides of the border were beginning to pressure the railways into addressing their service problems, a new complication emerged. Owing to the same harsh winter that had undermined railway operations, ice conditions on the Great Lakes and St. Lawrence Seaway were reported to be the worst in 20 years. By early March 2014 it was becoming apparent that this would lead to a delay in the opening of the seaway and, consequently, the port of Thunder Bay. This prompted the Canadian Shipowners Association to call on the federal government for the deployment of additional icebreakers in an effort to stave off potentially lengthy delays to shipping. Similar pleas for such action came from other interested parties, including the Western Grain Elevator Association and the Canadian National Railway Company. Although the government responded to these requests with the assignment of additional Coast Guard resources later in March, the ice cover proved so expansive and heavy that the first ship of the season did not arrive in Thunder Bay to take on a load until 21 April 2014, effectively delaying eastbound grain shipments through the seaway by about a month.

- The problems associated with moving grain did not just manifest itself in governmental action. Several shippers brought forward level-of-service complaints to the Canadian Transportation Agency. The first of these was launched by Louis Dreyfus Commodities Canada Ltd. on 14 April 2014, wherein the company alleged that CN had failed to provide it with the cars it was entitled to receive under a confidential contract. The Dreyfus complaint was the first in a longer list relating to railway service. The second came on 26 May 2014 when the Canadian Canola Growers Association launched a complaint against both CN and CP, alleging that both carriers had failed to provide its members with adequate service. This was followed on 12 June 2014 with a shipper action filed by Richardson International Limited, which alleged that CN had breached its statutory obligations to the company by failing to respect the car allocation commitments that the carrier had made to the complainant early in the 2013-14 crop year. A fourth complaint filed with the Agency on 20 June 2014 saw Viterra Inc. also allege that CN had failed to provide that shipper with the railcars it had been promised under the carrier's allocation plans. At the close of the 2013-14 crop year the Agency had yet to render a decision on any of these complaints. It is noteworthy that three of the grain-handling industry's largest shippers with near simultaneous timing, led in the search of redress for the railway service problems they experienced in the 2013-14 crop year.

SYSTEM EFFICIENCY AND PERFORMANCE

With the grain supply having risen to a record-breaking 81.2 million tonnes, the demand pressures brought to bear on the GHTS proved to be unprecedented. Even so, the GHTS moved to meet the challenge directly.

- Substantive improvements to the flow of grain in the latter half of the 2013-14 crop year served to reduce the average amount of time grain spent in the supply chain to a GMP low of 41.3 days. This marked a 10.6% reduction from the previous crop year's overall 46.2-day average. This result was mainly shaped by a 5.2-day decrease in the amount of time spent by grain in storage at a terminal elevator, which fell to an average of 9.1 days from the previous crop year's 14.3-day average. The decline was blunted, however, by a 0.4-day increase in the amount of time grain spent in inventory at a country elevator, which rose to an average of 26.9 days from 26.5 days. Although railway service proved particularly problematic in the first half of the crop year, the carriers' were ultimately able to shave a further 0.1 days from their loaded transit time, which fell to an average of 5.3 days from 5.4 days.
- Despite the GHTS posting one of the lowest "time-in-the-system" averages under the GMP in the first quarter, by the close of the period there already were indications that this was unlikely to endure. These indications, which first began to manifest themselves in a shortage of railcars for loading in the country, were soon beginning to engulf other parts of the system. Burgeoning country elevator stocks, along with declining terminal elevator stocks and an increasing number of ships waiting to load, particularly at the ports of Vancouver and Prince Rupert, were all symptomatic of constrained handling capacity. The problems that began to reveal themselves in the GHTS at the end of the first quarter only increased in the second. The movement of grain was further undermined by the onset of winter and the various problems that extreme weather brought to railway operations, the most predominant being the necessity of moving to shorter train lengths, which reduces the overall carrying capacity of the railways. With the situation deteriorating still further in the opening weeks of the third quarter, the federal government moved to implement a number of extraordinary corrective measures, not the least of which included defining the minimum weekly grain volumes that both CN and CP were to move. By the close of the third quarter, there were signs that these measures, along with the loosening of winter's grip on railway operations, were beginning to achieve their desired effect: the GHTS was regaining its fluidity and the backlog in traffic was starting to diminish. Owing to even more impressive gains in the fourth quarter, the supply chain was able to post a new record for the speed with which it was able to move grain through the system. Nevertheless, the difficulties encountered in the first half of the crop year again exposed the vulnerabilities of the grain supply chain. Beyond the system's struggles to accommodate a crop of such unprecedented size, it also had difficulty in matching the speed with which grain had previously been moved. Moreover, the difficulty associated with gathering grain in the country, moving it to port by rail, and getting it loaded onto waiting ships, suggests a capacity deficiency arising from an inadequate supply of railway resources.

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 2013-14 crop year, where falling grain prices had a significant negative impact on the producer's netback.

- After undulating marginally in the opening months of the 2013-14 crop year, the export quotation for 1 CWRS wheat (13.5% protein) and 1CWA durum started drifting steadily downwards. Much of this decline reflected an increase in international grain supplies, with global production having then been expected to reach near-record highs. Although prices began to strengthen in the latter half of the crop year, the overall impact on the average price for both commodities remained modestly negative, with net declines of 0.5% for wheat and 4.8% for durum. More importantly, grain companies had begun to widen their basis levels in response to the growing shortage of delivery space in the country. This resulted in a significantly higher cost to the producer, with the export basis rising by 146.6% in the case of wheat, and a lesser 47.8% in the case of durum. After deducting the export basis, producers would have seen an estimated 29.1% decline in their financial return on 1CWRS wheat, which fell to an average of \$195.23 per tonne from \$275.27 per tonne a year earlier, as well as an estimated 25.1% reduction on that of 1CWA durum, which fell to an average of \$209.79 per tonne from \$280.25 per tonne in the same period.
- Canola witnessed a 22.1% price decline in the 2013-14 crop year, with the Vancouver cash price for 1 Canada canola falling to an average of \$507.30 per tonne from \$651.60 per tonne a year earlier. Much of the loss was tied to an expected increase in oilseed supplies, which was being fed not only by record production in Canada but larger than normal soybean harvests in the United States and Brazil. The negative impact of this price decline was compounded by an even more significant escalation in the export basis, which rose by 42.9%. As a result the producers' netback fell by 28.3%, to an average of \$426.54 per tonne from \$595.10 per tonne. Much the same forces were at work on yellow peas, where an oversupply precipitated a 16.9% reduction in the average price, which fell to \$326.12 per tonne from the previous crop year's \$392.50 per tonne. Unlike other commodities, the export basis for yellow peas remained largely unchanged, increasing by just 0.2%. As a result, the producers' netback for yellow peas saw the smallest relative decline, falling by 21.4%, to 244.88 per tonne from \$311.43 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 more significant changes observed in the 2013-14 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 only 362 of the original 709 left in service at the close of the 2012-13 crop year. The 2013-14 crop year saw

another 17 closures made by CN and CP, which reduced the number of sites to 345. As a result, the number of sites operated by the major railways fell to 211 while those tied to the shortlines remained unchanged at 134.

- The number of producer-cars scheduled for movement rose by 68.5% in the 2013-14 crop year, climbing to a record 15,603 carloads from 9,259 carloads a year earlier. 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 2013-14 crop year saw this share decline still further, to 73.4% from 84.2% a year earlier. On the other hand, shipments of oilseeds and other commodities continued to climb, encompassing 26.6% of scheduled producer-car movements against 15.8% the year previous. Owing to the service problems experienced in the 2013-14 crop year, there was a larger than normal shortfall between the number of producer-cars that had been scheduled for loading, and those actually spotted for loading.
-

Section 1: Production and Supply

Indicator Description	Table	1999-00	2011-12	2012-13	2013-14				YTD	% VAR
					Q1	Q2	Q3	Q4		
Production and Supply										
Crop Production (000 tonnes)	1A-1	55,141.7	53,543.9	56,882.1	76,340.2				76,340.2	34.2%
Carry Forward Stock (000 tonnes)	1A-2	7,418.2	8,627.9	5,733.5	4,889.9				4,889.9	-14.7%
Grain Supply (000 tonnes)		62,559.9	62,171.8	62,615.6	81,230.1				81,230.1	30.7%
Crop Production (000 tonnes) - Special Crops	1A-3	3,936.7	4,474.6	5,551.8	6,763.3				6,763.3	21.8%

PRODUCTION AND SUPPLY

The 2013-14 crop year witnessed a record harvest, with western Canadian grain production increasing to 76.3 million tonnes. Not only did this mark a 34.2% gain over the previous crop year’s 56.9-million-tonne crop, it also stood substantially above the previous GMP high of 60.4 million tonnes set just five years earlier. This unprecedented level of production was largely shaped by favourable weather conditions throughout the growing season, which allowed the crop not only to mature with minimal stress, but to also attain a suitable level of quality. [Table 1A-1]

The sheer size of the crop presented a number of challenges for the GHTS as a whole, not the least of which was the ability to effectively and efficiently provide for its movement. Against these concerns was the broader commercial backdrop that witnessed an increase in global grain production, which itself led to surplus supplies and declining market prices.

Provincial Distribution

The overall increase in prairie grain production was reflective of an expansion that reached across all provinces. Nowhere was this more evident than in Saskatchewan, which accounted for just over half of overall crop production and where output rose by 41.8%, to a record 38.8 million tonnes from 27.4 million tonnes a year earlier. The establishment of a new production record proved to be equally true for the other provinces as well. Alberta, which posted the next largest harvest, reaped 25.2 million tonnes against 20.0 million tonnes the previous crop year. Manitoba, with a gain of 28.8%, saw its production rise to 12.0 million tonnes from 9.3 million tonnes. Adding to this profusion was a 130,100-tonne increase for British Columbia, which lifted output by 45.9%, to 413,300 tonnes from 283,200 tonnes.

Figure 1: Precipitation Compared to Historical Distribution (1 April to 31 August 2013)

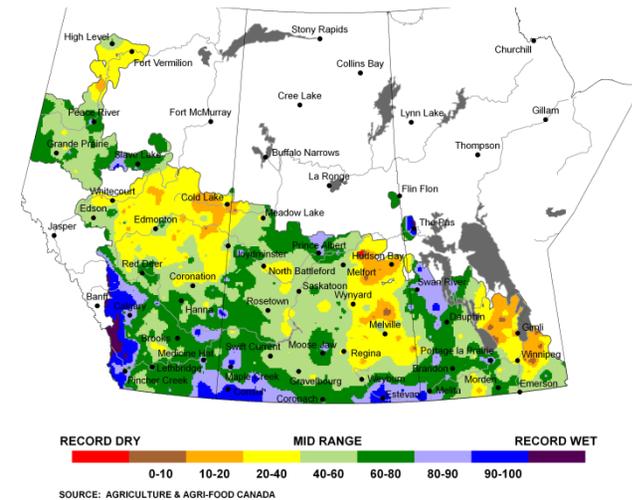
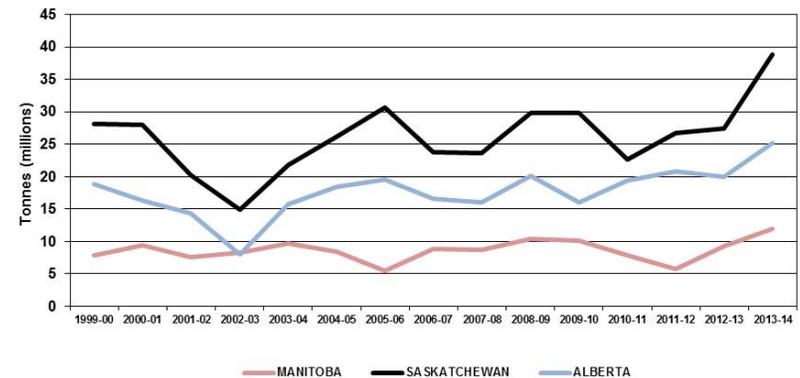


Figure 2: Provincial Grain Production



Commodity Distribution

The 2013 growing season saw substantive increases in the production of virtually all crops. The most significant gain was made by wheat, durum and barley, which collectively rose by 37.0% against a 30.5% increase in the output of oilseeds and other commodities. With total wheat, durum and barley production rising to 44.7 million tonnes from 32.6 million tonnes a year earlier, this sector accounted for 58.5% of total grain production. Oilseeds and other commodities rose to 31.7 million tonnes from 24.3 million tonnes, and represented 41.5% of the total output.

The 12.1-million-tonne increase in wheat, durum and barley production was led by a 38.7% increase in the amount of wheat harvested, which rose to 28.4 million tonnes from 20.5 million tonnes a year earlier. This was augmented by the effects of a 30.2% increase in barley production, which lifted output to 9.7 million tonnes from 7.5 million tonnes the previous year. A 40.6% increase for durum saw production rise to 6.5 million tonnes from 4.6 million tonnes.

With almost 17.9 million tonnes of production, canola accounted for 56.4% of the 31.7 million tonnes of oilseeds and other commodities harvested in the 2013-14 crop year. Moreover, this denoted a 4.1-million-tonne increase over the 13.8 million tonnes of canola produced a year earlier. This gain was bolstered by a 1.1-million-tonne increase in oat production, which rose to 3.6 million tonnes from 2.5 million the year previous. A further 2.2 million tonnes was derived from increases in other commodities, chiefly dry peas, soybeans and grain corn.

Special Crops

Along with the increased production of oilseeds and other commodities was a heightened output for special crops.² Total production for the sector amounted to almost 6.8 million tonnes, up 21.8% from the 5.6 million

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;

Figure 3: Grain Production - Major Commodity Groupings

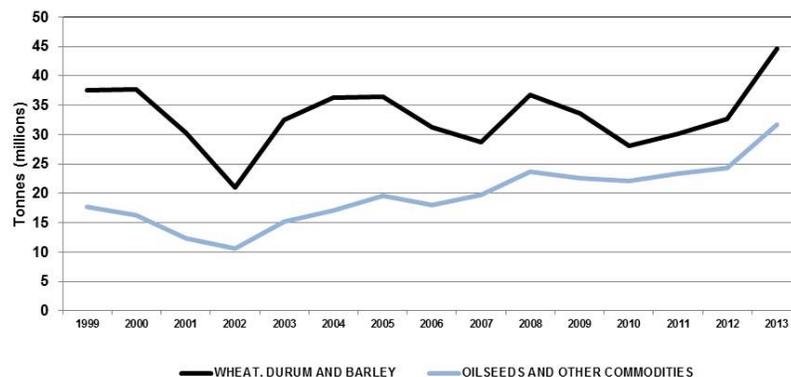
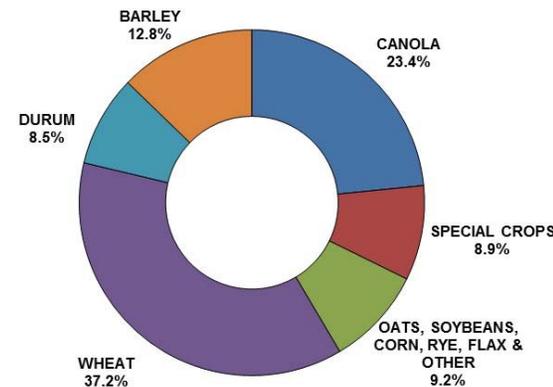


Figure 4: Major Grain Production - 2013-14 Crop Year



buckwheat; and fababeans. An often referenced subset of special crops, known as pulse crops, encompasses dry peas, lentils, chickpeas, dry beans and fababeans.

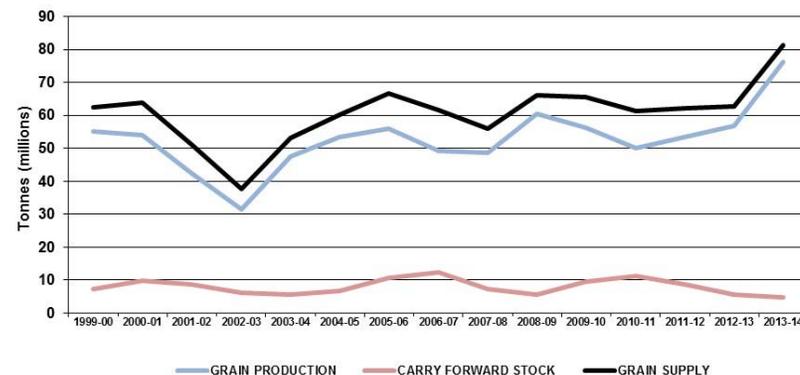
tonnes reported a year earlier. Increased dry-pea and lentil production, the sector's two largest crops, were chiefly responsible for this rise. In the case of dry peas, total production rose by 18.6%, to 3.8 million tonnes from 3.3 million tonnes a year earlier. This was augmented by an even greater 41.3% increase in the output of lentils, which rose to 2.2 million tonnes from 1.5 million tonnes. More modest tonnage gains for mustard seed and chickpeas helped bolster this expansion. Detracting from this were reductions in the output of canary 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. 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 lagged basis.

Totalling some 4.9 million tonnes, these stocks proved to be 14.7% less than the 5.7 million tonnes that had been carried forward a year earlier. Much of the impetus for this 843,600-tonne reduction came from the strong demand for Canadian export grain, which drew down year-end stocks. When combined with 76.3 million tonnes of new production, the grain supply grew to an unprecedented 81.2 million tonnes. This embodied a 29.7% increase over the previous crop year's 62.6 million tonnes. [Table 1A-2]

Figure 5: Western Canadian Grain Supply



With a 644,500-tonne reduction in carry-forward stocks, Alberta posted the most substantive decline. This was followed by Saskatchewan, with a 123,100-tonne drop, along with decreases of 44,700 for British Columbia and 31,300 tonnes for Manitoba. With the exception of canola and rye, the carry-over for all major grain stocks moved sharply lower.

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.

Section 2: Traffic and Movement

Indicator Description	Table	2013-14								
		1999-00	2011-12	2012-13	Q1	Q2	Q3	Q4	YTD	% VAR
Country Elevator Throughput										
Grain Throughput (000 tonnes) - Primary Elevators	2A-1	32,493.9	35,338.7	34,278.7	9,812.1	8,812.0	10,457.2	11,594.7	40,676.0	18.7%
Railway Traffic										
Railway Shipments (000 tonnes) - All Grains	2B-1	26,439.2	29,291.0	29,606.8	8,481.9	7,460.6	8,090.8	10,803.9	34,837.3	17.7%
Railway Shipments (000 tonnes) - Hopper Cars	2B-1	25,664.6	28,182.0	28,422.5	8,247.8	7,143.0	7,833.9	10,602.9	33,827.6	19.0%
Railway Shipments (000 tonnes) - Non-Hopper Cars	2B-1	774.7	1,109.0	1,184.2	234.2	317.7	256.9	201.0	1,009.7	-14.7%
Special Crop Shipments (000 tonnes) - All Grains	2B-2	2,102.9	2,641.6	3,748.4	1,346.6	770.8	718.5	1,154.9	3,990.7	6.5%
Special Crop Shipments (000 tonnes) - Hopper Cars	2B-2	1,844.1	2,494.6	3,551.9	1,295.6	718.7	680.6	1,100.3	3,795.1	6.8%
Special Crop Shipments (000 tonnes) - Non-Hopper Cars	2B-2	258.7	147.0	196.5	51.0	52.1	37.9	54.6	195.5	-0.5%
Hopper Car Shipments (000 tonnes) - Origin Province	2B-3									
Hopper Car Shipments (000 tonnes) - Primary Commodities	2B-4	25,664.6	28,182.0	28,422.5	8,247.8	7,143.0	7,834.0	10,602.9	33,827.6	19.0%
Hopper Car Shipments (000 tonnes) - Detailed Breakdown	2B-5									
Hopper Car Shipments (000 tonnes) - Grain-Dependent Network	2B-6	8,685.9	8,496.1	8,222.4	2,601.8	2,139.6	1,955.3	3,087.7	9,784.4	19.0%
Hopper Car Shipments (000 tonnes) - Non-Grain-Dependent Network	2B-6	16,978.7	19,685.9	20,200.1	5,646.0	5,003.3	5,878.7	7,515.2	24,043.2	19.0%
Hopper Car Shipments (000 tonnes) - Class 1 Carriers	2B-7	23,573.5	27,058.4	27,331.3	7,925.0	6,904.0	7,618.0	10,215.7	32,662.8	19.5%
Hopper Car Shipments (000 tonnes) - Non-Class-1 Carriers	2B-7	2,091.0	1,123.6	1,091.3	322.8	238.9	215.9	387.2	1,164.8	6.7%
Terminal Elevator Throughput										
Grain Throughput (000 tonnes) - All Commodities	2C-1	23,555.5	26,896.9	26,922.6	7,278.8	7,076.0	7,039.5	9,716.8	31,111.1	15.6%
Hopper Cars Unloaded (number) - All Carriers	2C-2	278,255	295,397	300,423	84,706	75,495	81,762	107,169	349,132	16.2%
Hopper Cars Unloaded (number) - CN	2C-2	144,800	151,790	153,751	42,997	40,687	42,831	54,946	181,461	18.0%
Hopper Cars Unloaded (number) - CP	2C-2	133,455	143,607	146,672	41,709	34,808	38,931	52,223	167,671	14.3%

COUNTRY ELEVATOR THROUGHPUT

Country elevator throughput, as gauged by all road and rail shipments from the primary elevators situated across western Canada, increased by 18.7% in the 2013-14 crop year. Total shipments for the period rose to 40.7 million tonnes from 34.3 million tonnes a year earlier. This increase was fuelled by especially strong showings in the third and fourth quarters, where GMP throughput records of first 10.5 million tonnes and then 11.6 million tonnes were set. These records were achieved as a result of the extraordinary measures taken to relieve the heavy congestion that had steadily undermined the GHTS's effectiveness since the end of the first quarter.

Almost two-thirds of the volume increase was linked to Saskatchewan, where primary-elevator shipments rose by 4.1 million tonnes, or 25.7%, to 20.0 million tonnes from 15.9 million tonnes a year earlier. An additional 1.3 million tonnes was realized from a larger Manitoba movement, where shipments rose by 25.5%, to 6.3 million tonnes from 5.0 million tonnes. A further 1.0 million tonnes was derived from an 8.0% increase in Alberta grain shipments, which rose to 14.0 million tonnes from 13.0 million tonnes a year earlier. Detracting marginally from these gains was an 8,200-tonne reduction in volume for British Columbia, where shipments slipped by 2.1%, to 386,300 tonnes from 394,500 tonnes. [Table 2A-1]

RAILWAY TRAFFIC

The amount of regulated grain moved by rail to western Canadian ports during the 2013-14 crop year reached a GMP record of 34.8 million tonnes, up 17.7% from the 29.6 million tonnes handled a year earlier. As in past years, the vast majority of this traffic, some 33.8 million tonnes, moved in covered hopper cars. The remaining 1.0 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 falling to 2.9% from 4.0% a year earlier. [Table 2B-1]

Figure 6: Primary Elevator Throughput

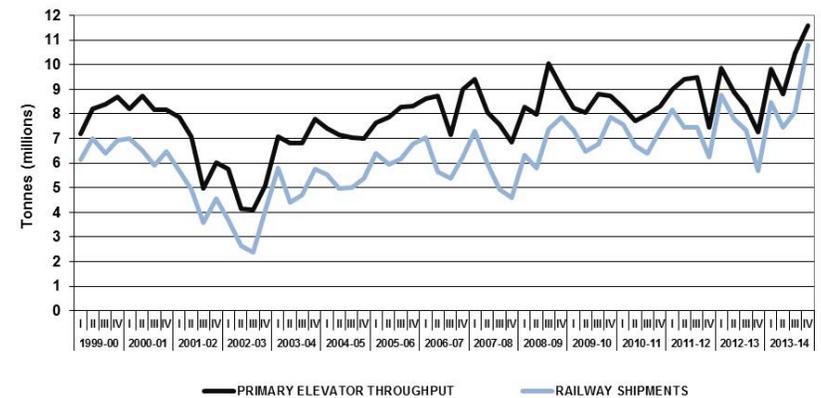
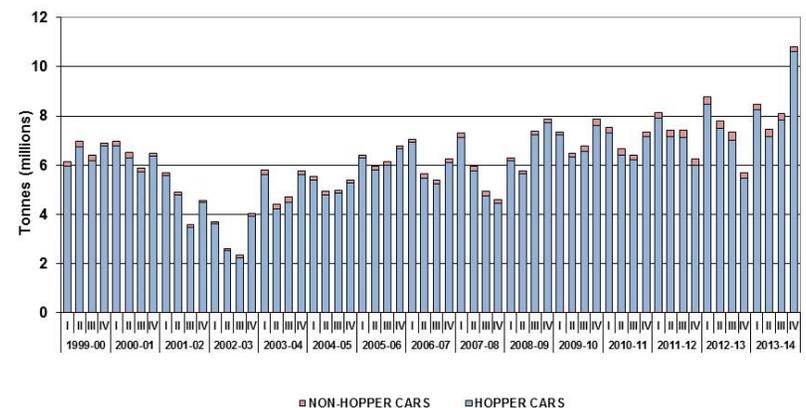


Figure 7: Railway Shipments - Hopper and Non-Hopper Cars



Special crop shipments also rose, albeit by a lesser 6.5%, to 4.0 million tonnes from 3.7 million tonnes. A 39.4% rebound in fourth-quarter shipments was largely responsible for shaping this result, as it served to more than offset the 2.9% decline that had been registered through the first nine months of the crop year. Virtually all of this, 95.1%, moved in hopper cars, with shipments rising by 6.8%, to 3.8 million tonnes from 3.6 million tonnes. Non-hopper-car shipments (boxcars, containers and tankcars) declined by a marginal 0.5%, to 195,500 tonnes from 196,500 tonnes. This resulted in their share of the overall movement falling to 4.9% from 5.2% a year earlier. [Table 2B-2]

Hopper Car Movements

Western Canadian hopper-car shipments increased by 19.0% in the 2013-14 crop year, to 33.8 million tonnes from the 28.4 million tonnes handled a year earlier. This result was heavily influenced by a sharp increase in third and fourth-quarter shipments, which served to more than offset the tonnage decline registered in the first half. Moreover, the 10.6 million tonnes shipped in the fourth quarter set a new record for quarterly volume under the GMP. The upturn witnessed in the second half was itself partly due to the federal government's passage of an Order-in-Council, which directed the railways to increase their combined grain handlings to a minimum of 1.0 million tonnes per-week in order to address the backlog of traffic that had been building since the beginning of the crop year.⁴ This, coupled with the arrival of more agreeable spring weather, spurred the railways into moving an unprecedented amount of grain in a comparatively short period.

This turnaround resulted in all provinces posting year-over-year traffic gains. Accounting for more than two-thirds of the additional volume, Saskatchewan saw its total grain shipments climb by 28.8%, to 17.4 million tonnes from 13.5 million tonnes a year earlier. This was followed by

⁴ The Order-in-Council was issued on 7 March 2014, the same week in which the backlogged unfilled demand for equipment surpassed 68,000 railcars.

⁵ In 2007 the Government of Canada concluded new agreements with CN and CP for the operation of the government-owned fleet of covered hopper cars. A key provision in these

Alberta, where an 8.6% increase resulted in total tonnage rising to 13.1 million tonnes from 12.0 million tonnes. A 17.4% gain for Manitoba saw shipments from that province rise to 3.1 million tonnes from 2.7 million tonnes. These were furthered by a 9.3% increase in traffic from British Columbia, which rose to 275,100 tonnes from 251,800 tonnes. [Tables 2B-3 through 2B-5]

While the volume of grain directed into the GHTS is largely based on grain supply, its movement is constrained by the railways' available carrying capacity. The available supply of railway capacity remains a long standing point of contention between the major rail carriers and grain shippers. This is because railway capacity encompasses more than just the number of hopper cars allocated to moving grain, and reflects several other resource constraints, including the availability of motive power and crews.

Improved hopper-car utilization has allowed a smaller Canadian fleet to move a greater volume of grain. A 30% reduction in the average car cycle combined with a 3.5% increase in payload weights, much of which has been tied to the railway industry's use of larger hopper cars and an upgrading of the government-owned fleet, has resulted in the movement of greater volumes with fewer railcars.⁵

Notwithstanding these efficiency gains, the railways did not possess the resources needed for the movement of so large a crop. During meetings with various grain companies, both CN and CP suggested that in anticipation of a similarly sized crop their grain-handling capacity would differ little from what had been supplied in the 2012-13 crop year. Although the grain industry accepted this limitation, the number of railcars they ordered for loading on a weekly basis soon began to swell well beyond what the railways were capable of providing.

agreements was that both carriers physically refurbish the cars, and raise the maximum load limit to 286,000 pounds from 263,000 pounds. This helped to raise the average grain payload by some three tonnes, to about 89 tonnes from the 86 tonnes benchmarked in the base year.

Through the close of the third quarter, the railways were only confirming about 85% of the railcars that were being ordered by shippers.⁶ This meant that approximately 15% of these orders were going unfilled.⁷ Moreover, the carriers appeared to be falling nearly 15% short of these same commitments. However, significant gains were made later in the period and through to the end of the crop year.

Destination Ports

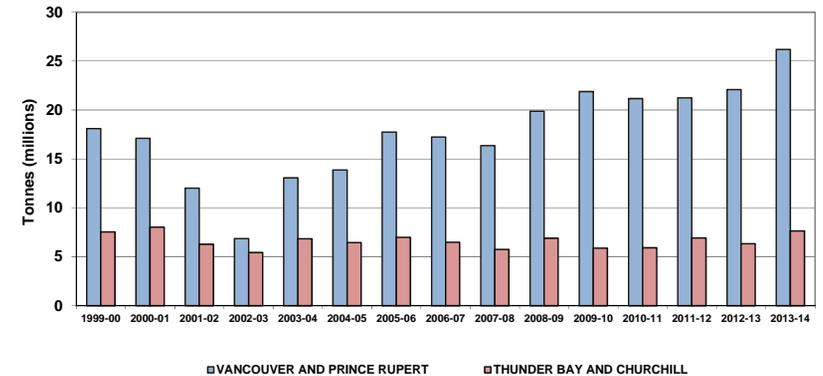
The port of Vancouver remained the principal export destination for western Canadian grain in the 2013-14 crop year. Traffic to Vancouver increased by 18.3%, to 20.1 million tonnes from the 17.0 million tonnes directed there a year earlier. Despite this, the port's share of railway shipments decreased marginally, falling to 59.4% from 59.7%. Prince Rupert posted a slightly greater gain, with railway shipments rising by 19.5%, to 6.1 million tonnes from 5.1 million tonnes. The port also took a marginally larger share of the overall movement as well, claiming 18.1% against 18.0% the year previous. On a combined basis, these two ports handled 77.4% of the grain directed to western Canadian ports, which represented a marginally lesser proportion of the total grain movement than the 77.7% 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. This became particularly pronounced in the second half of the 2012-13 crop year, and continued through the first three quarters of the present crop year. Even so, a sharp rise in eastbound shipments during the fourth quarter signaled at least a temporary interruption in this trend. Overall shipments into Thunder Bay and Churchill increased by 1.3 million tonnes, or 20.6%. Much of this result was shaped by rail deliveries into Thunder

⁶ A confirmed order is defined as the number of railcars the railway agrees to supply against the total number ordered by the shipper. An unconfirmed order (also known as an unfilled order) carries no such commitment, and represents the difference between the total number of railcars ordered by a shipper and those confirmed by the railway.

⁷ The number of railcars ordered serves as a proxy of the overall demand for railway carrying capacity. Those subsequently confirmed by the carriers (i.e., for which the carrier designates

Figure 8: Railway Hopper Car Shipments – Orientation



Bay, which rose by 21.1%, to 7.1 million tonnes from 5.8 million tonnes a year earlier. The port's share of total railway hopper-car shipments increased marginally, to 20.9% from 20.5%. Supporting this was an increase in railway shipments into Churchill, which rose to 574,200 tonnes from 498,900 tonnes a year earlier. However, Churchill's traffic-share fell to 1.7% from 1.8%.

that a railcar will be allocated) serves as a stand-in for the available supply of carrying capacity. The 85% confirmation rate estimated here suggests that at least 15% of the orders placed were beyond the servicing ability of the railways. These unconfirmed orders effectively denote a pent up, or unfilled, demand for railway carrying capacity.

Grain-Dependent and Non-Grain-Dependent Originations

The effect of both elevator and railway rationalization continues to manifest itself in changes to the railways' traffic mix. The 2013-14 crop year saw the tonnage originated by the non-grain-dependent network increase by 19.0%, to 24.0 million tonnes from 20.2 million tonnes a year earlier. Coincidentally, the amount of traffic originating at points on the grain-dependent network also increased by 19.0%, to 9.8 million tonnes from 8.2 million tonnes.

Notwithstanding seasonal fluctuations, the non-grain-dependent network continues to garner a larger share of the overall traffic volume. During the 2013-14 crop year, 71.1% of all the grain originated in western Canada was forwarded from points on the non-grain-dependent network. This value stands well 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 28.9% from 33.8% over the same span of time. [Table 2B-6]

Class 1 and Non-Class-1 Originations

The same structural influences have also been reflected in the grain volumes originated by the Class 1 and non-Class-1 railways. Nominally, the tonnage originated by the Class 1 carriers increased by 19.5% in the 2013-14 crop year, rising to 32.7 million tonnes from 27.3 million tonnes a year earlier. At the same time, the tonnage originated by the non-Class-1 carriers rose by a much lesser 6.7%, rising to 1.2 million tonnes from 1.1 million tonnes. It should be noted that this latter result was largely shaped by the constriction of its railcar supply, particularly in the third quarter, which limited the amount of grain that producers could load from points situated along these lines.

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. During the 2013-14 crop year, their share of total originations amounted to just 3.4%, less than half of the 8.1% share benchmarked in the GMP's base year. [Table 2B-7]

Figure 9: Hopper Car Shipments - Grain-Dependent Originations

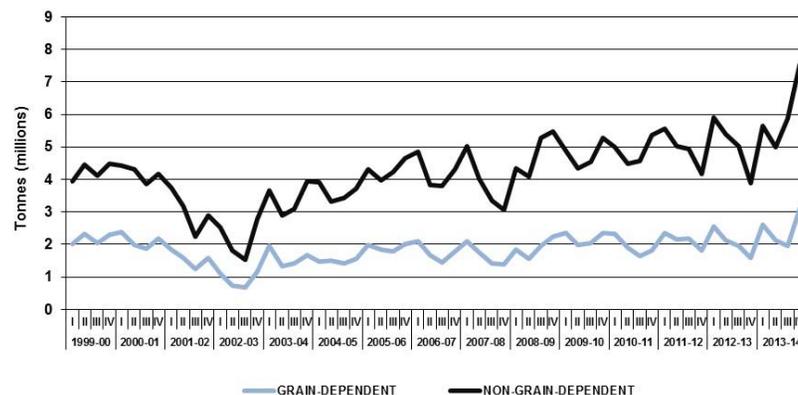
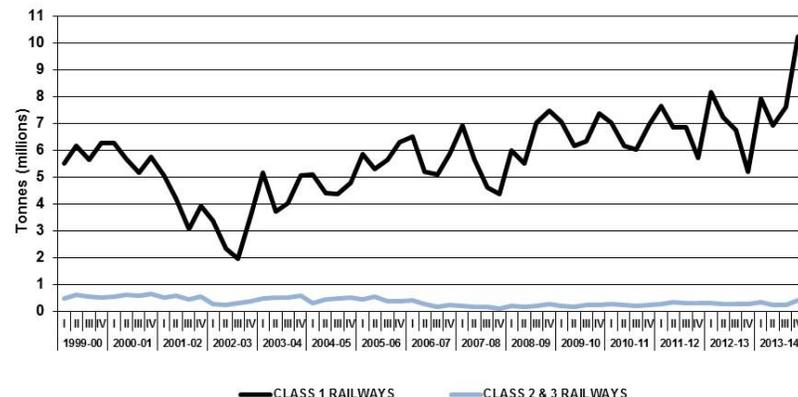


Figure 10: Hopper Car Shipments - Carrier Originations



Even so, the traffic originated by shortline railways has not fallen as sharply as the number of licensed elevators served by them, which were reduced by 70.7% in the same period. This is because increased producer-car loading helped to replace a significant portion of the traffic that had been lost following the closure of these elevators. In fact, producer-car loading has accounted for approximately two-thirds of the grain originated by these carriers in recent years. This proportion, which is about four times greater than the share producer cars garnered in the first year of the GMP, underscores that dependence.

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 15.6% in the 2013-14 crop year, rising to 31.1 million tonnes from 26.9 million tonnes a year earlier. Even so, it is worth noting that this gain was largely the product of a sharp rise in third and fourth quarter shipments, which respectively rose by 15.4% and 65.3% from the values reported a year earlier. These gains reflected the steady improvement in the flow of inbound of railway hopper cars in the latter half of the crop year. [Table 2C-1]

Increased throughputs were noted at all ports, with the most significant volumes continuing to funnel through the west coast ports of Vancouver and Prince Rupert. For Vancouver, total marine shipments increased by 13.8%, to 17.8 million tonnes from 15.6 million tonnes a year earlier. This represented 57.1% of the system's total throughput. Prince Rupert posted a lesser gain, with shipments rising by 15.3%, to 5.9 million tonnes from 5.1 million tonnes. When combined, the tonnage passing through these two west coast ports represented 76.1% of the overall total; down slightly from the 77.1% share garnered a year earlier.

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 2013-14 crop year rose to 23.9% from 22.9% a year earlier. Much of this gain stemmed from the virtual doubling of fourth-quarter shipments through Thunder Bay, which

Figure 11: Terminal Elevator Throughput

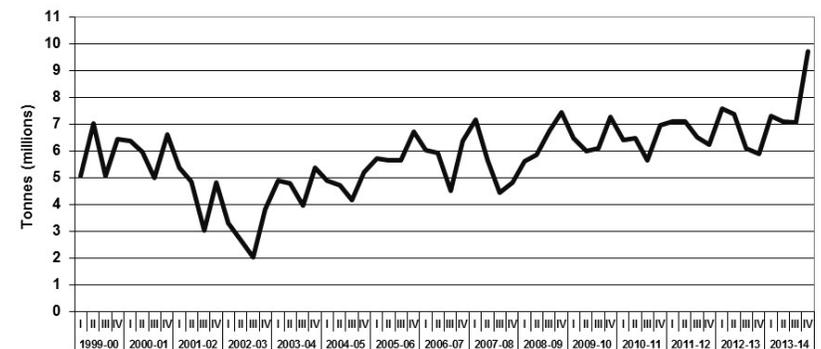
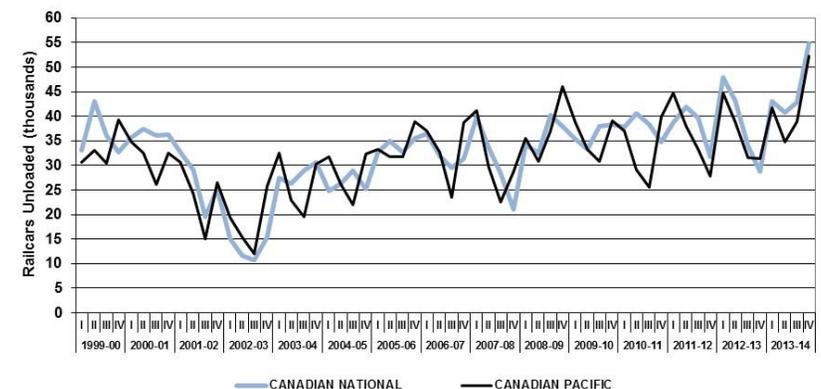


Figure 12: Terminal Elevator Unloads - Delivering Carrier



effectively lifted total port throughput for the year by 18.1%, to 6.8 million tonnes from 5.7 million tonnes. This was bolstered by a 50.5% increase for Churchill, where throughput rose to 636,000 tonnes from 422,600 tonnes.

Terminal Elevator Unloads

The number of covered hopper cars unloaded at terminal elevators in the 2013-14 crop year increased by 16.2%, rising to 349,132 cars from 300,423 cars a year earlier. Once again, these results were buoyed by strong showings in the third and fourth quarters, which offset earlier declines. CN showed an overall gain of 18.0%, with the number of hopper cars unloaded rising to 181,461 from 153,751 a year earlier. In comparison, CP's handlings increased by a somewhat lesser 14.3%, to 167,671 cars from 146,672 cars. As a result, CN retained its standing as the largest grain handling railway in western Canada, with a share of 52.0% against 48.0% for CP. [Table 2C-2]

Although the movement of grain was largely funneled through the west coast ports of Vancouver and Prince Rupert, comparable traffic increases were noted at all ports. Traffic destined to Vancouver rose by 16.3%, with 202,085 cars unloaded versus 173,795 cars a year earlier. Both CN and CP posted similar traffic gains, with the former carrier's handlings into the port increasing by 16.8% against a slightly lesser 15.9% rise for CP. At the same time, CN's handlings into Prince Rupert rose by 16.6%, to 66,004 cars from 56,618 cars a year earlier.

The 2013-14 crop year also brought a significant increase in the amount of grain shipped to Thunder Bay, with total handlings rising by 15.8%, to 74,520 cars from 64,352 cars a year earlier.⁸ CN saw its handlings into the port climb by 26.9%, unloading 25,909 cars against 20,419 cars the year previous. CP posted a noticeably lesser gain of 10.6%, with its total shipments rising to 48,611 cars from 43,933. Shipments into Churchill climbed by 15.3%, to 6,523 cars from 5,658 cars a year earlier.

⁸ This increase came despite heavy ice cover on the Great Lakes and St. Lawrence Seaway, which delayed its opening to navigation for the 2014 shipping season by approximately one month.

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 2012-13 crop year, that number had fallen by 61.1%, to 391, making this decline one of the most visible facets of the changes brought to the GHTS since the beginning of the GMP.⁹ [Table 3A-1]

The 2013-14 crop year saw the loss of another 20 elevators from the network. This reduced the total number of elevators in western Canada to 371, and brought the accumulated loss since the beginning of the GMP to 633 facilities, or 63.0%. 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 2012-13 crop year the scope of this network had been reduced by 60.0%, to 274 delivery points from the 685 that had been in place at the beginning of the GMP. This count was again reduced in the 2013-14 crop year, with the overall number falling by 13 to 261. This brought the net reduction in delivery points during the GMP to 61.9%.

Provincial Distribution

At the close of the 2013-14 crop year, 190 of western Canada’s licensed elevators were situated in Saskatchewan. These facilities constituted 51.2% 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 92 and 83 elevators accounted for shares of 24.8% and 22.4% respectively. The GHTS’s remaining six facilities were divided between British Columbia, with five, and Ontario, with one.

⁹ The reduction in licensed elevators cited here reflects the net change arising from various elevator openings and closures.

Figure 13: Licensed Grain Elevators and Delivery Points

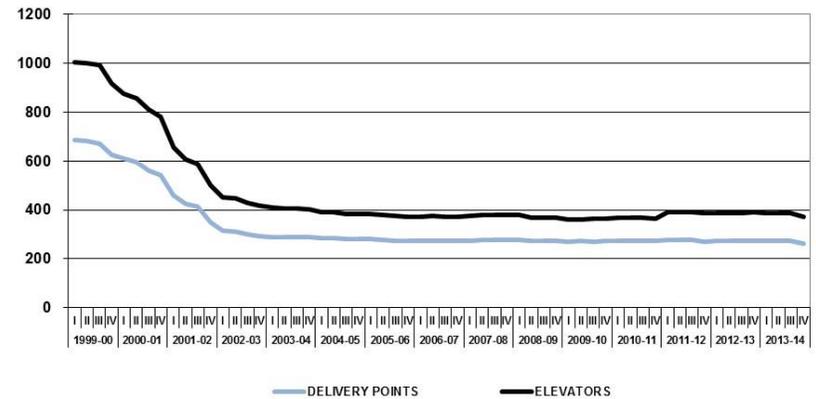
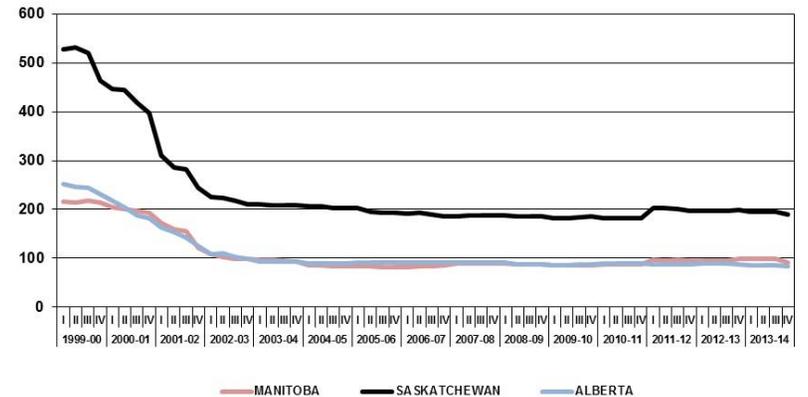


Figure 14: Licensed Grain Elevators - Provincial Distribution



Over the term of the GMP, Saskatchewan posted the greatest reduction in licensed elevation facilities, closing 337, or 63.9%, of its elevators. In comparative terms, the 169-elevator reduction in Alberta represented a slightly greater 67.1%. Manitoba followed with a 57.4%, or 124-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 63.0% decline in the overall number of elevators, the network's storage capacity has actually risen 4.3% above the 7.0 million tonnes noted at the outset of the GMP. This differential reflects the character of the strategic 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. 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 2012-13 crop year, it had risen to somewhat less than 6.9 million tonnes. The 2013-14 crop year saw another 478,400 tonnes of storage capacity added to the system. This 7.0% increase lifted total storage capacity to slightly more than 7.3 million tonnes, a value not far removed from the GMP's 7.5-million-tonne record high.

Figure 15: Change in Licensed Elevators and Storage Capacity

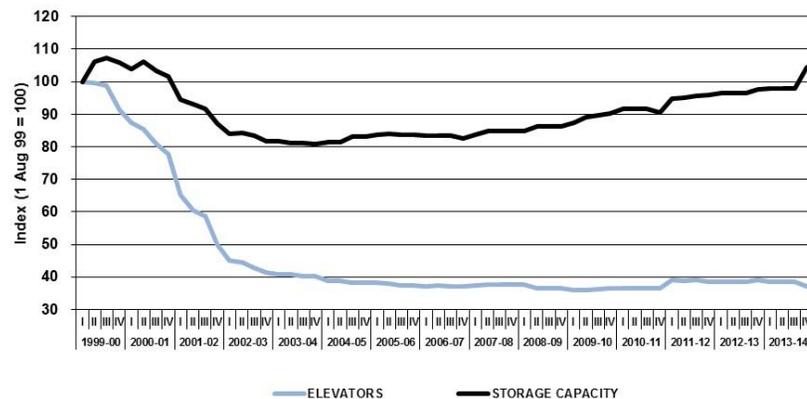
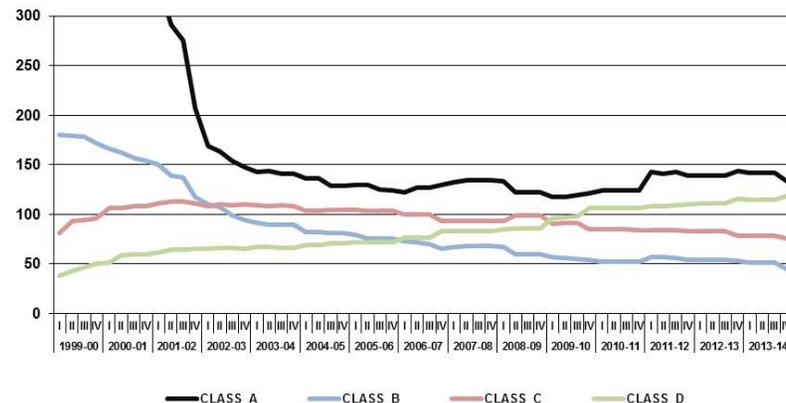


Figure 16: Licensed Elevators - Facility Class



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.¹⁰ In addition, the GMP deems Class C and D facilities to be high-throughput elevators given their ability to load railcars in larger numbers.

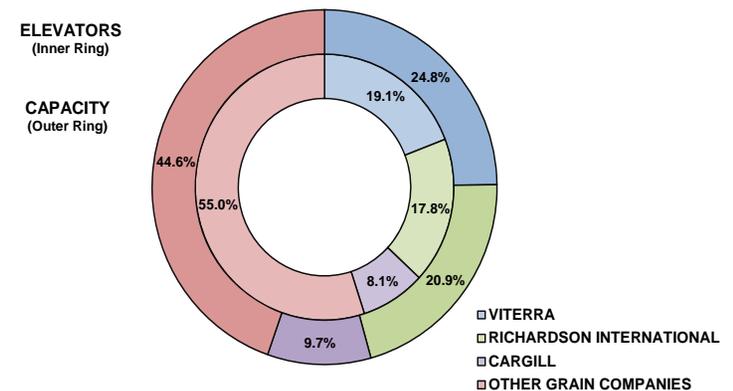
Within this framework, the composition of the elevator network can be seen to have changed significantly since the beginning of the GMP. The most striking aspect of this has been the decline in the number of smaller elevators. Over the course of the last 15 years the number of licensed Class A elevators has been reduced by 81.1%, to 133 from 705. This was complemented by a 75.0% reduction in the number of licensed Class B elevators, which fell to 45 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 7.4% from its base-year level, to 75 from 81. Now, only the larger grouping of high-throughput facilities, the licensed Class D elevators, have increased in number, effectively expanding threefold, to 118 from 38.

With the close of the 2013-14 crop year, these high-throughput facilities accounted for 52.0% of the system elevators and 80.9% of its storage capacity. Both of these shares stand significantly above their respective base-year values of 11.9% and 39.4%.

¹⁰ 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

Figure 17: 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 2013-14 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

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.¹¹ The next deepest cut, 49.2%, was posted by Cargill Limited. This was followed in turn by Richardson International and Paterson Grain, which saw reductions of 37.1% and 34.0% respectively.¹² Rounding out the field was Parrish and Heimbecker, which posted a 19.2% 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. A number of companies, including Alliance Pulse Processors Inc., Simpson Seeds Inc. and Legumex-Walker Inc., figure prominently in this expansion since most – if not all – of their facilities had previously been unlicensed. Nevertheless, there has been a 148.2% increase in the number of elevators operated by smaller grain companies, which has climbed to 139 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 95 of the GHTS's 229 active delivery points took in 80% of the grain delivered. Although this

11 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.

12 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%.

13 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,

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]

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.¹³ Although the railway network has contracted, the reduction has proven substantially less than that of the elevator system it serves. By the close of the 2012-13 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 overall. 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.¹⁴ [Table 3B-1]

Few changes to the railway network in western Canada were noted during the course of the 2013-14 crop year, which still encompassed 17,600.2 route-miles. Owing to the financial failure of the Kelowna Pacific Railway, which resulted in CN reassuming control of the line, the Class 1 railway network increased by 0.7%, to 15,011.5 route-miles from 14,907.3 route-miles. Correspondingly, the infrastructure tied to non-Class-1-carrier

regional railways such as the former BC Rail; and Class 3, shortline entities such as the Great Western Railway.

14 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.

operations decreased by 3.9%, to 2,588.7 route-miles from 2,692.9 route-miles.

Local Elevators

As previously outlined, the GHTS's elevator infrastructure has been transformed more substantively over the course of the last 15 years than has the railway network that services it. In broad terms, these facilities have decreased by 64.7% in number, to 346 from 979, while the associated storage capacity has increased by 3.8%, to 7.2 million tonnes from 6.9 million tonnes.¹⁵

These reductions, however, manifested themselves in noticeably different ways for the Class 1 and non-Class 1 railways. Through to the end of the 2013-14 crop year the decline in the number of elevators tied to each group proved roughly analogous, 64.1% against 70.7% respectively. Yet the change in associated storage capacities was noticeably different, with an increase of 8.3% for elevators local to Class 1 carriers set against a 57.7% 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.¹⁶

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 74.3% since the beginning of the GMP, to 108 from 420. For those situated along the non-grain-dependent network, the decline was 57.4%, with the number of elevators having fallen to 238 from 559. The change in associated storage capacity shows an even greater contrast, with that of the grain-dependent network falling by 22.3%, to 1.9 million tonnes, while

¹⁵ The reductions cited here relate only to the facilities directly served by rail.

Figure 18: Change in Route-Miles - Railway Class

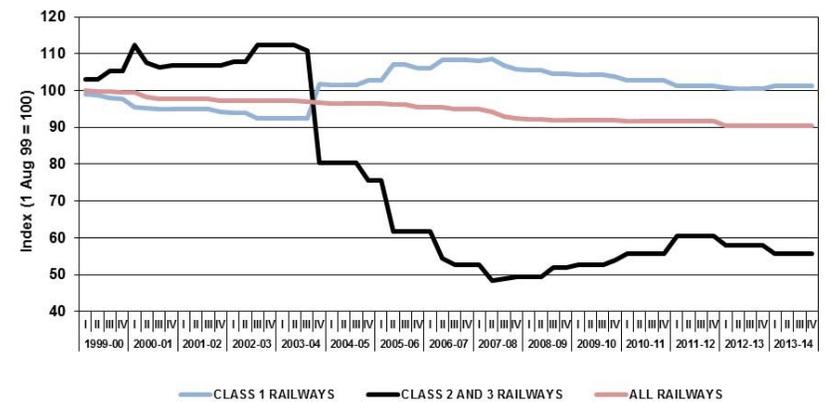
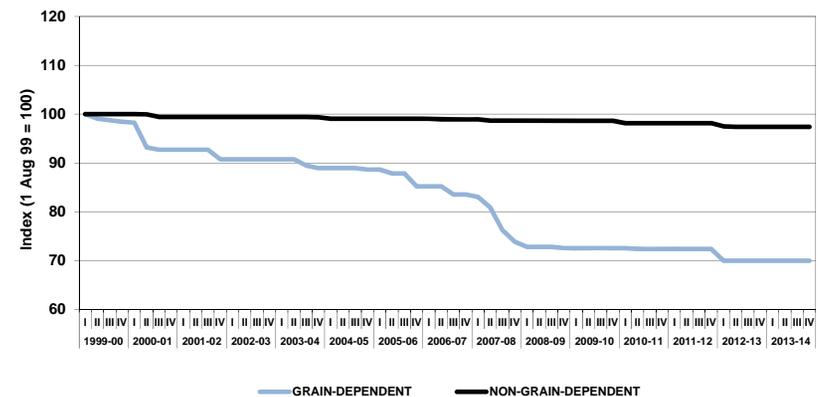


Figure 19: Change in Route-Miles - Railway Network



¹⁶ As at 31 July 2014 there were 192 high-throughput elevators served by rail. Of these, 184 were served by CN and CP.

that of the non-grain-dependent network actually increased by 18.4%, 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.

TERMINAL ELEVATOR INFRASTRUCTURE

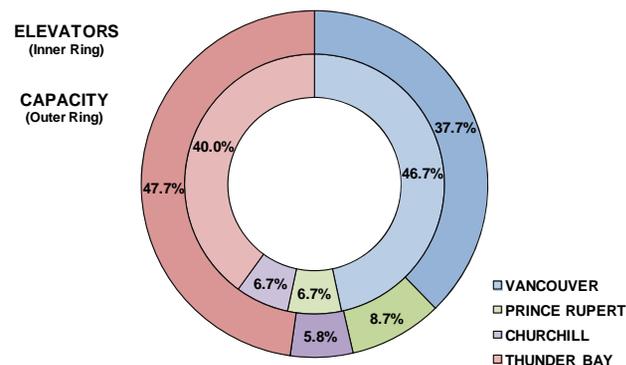
The opening months of the 2013-14 crop year brought additional changes to the licensed terminal elevator network. While remaining at 15 facilities, there was an 8.6% increase in storage capacity, to 2.4 million tonnes from 2.2 million tonnes. This compares to a network of 14 elevators with 2.6 million tonnes of storage capacity benchmarked in the GMP's base year.¹⁷ [Table 3C-1]

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. As the 2012-13 crop year neared its close, that position was weakened still further with the de-licensing of the Viterra C facility.¹⁸ This terminal elevator, which had sat largely idle since 2001, was transferred along with other Viterra assets to Richardson International under the terms of an agreement made with Glencore International PLC in advance of the latter's takeover of Viterra in December 2012.¹⁹ Following its necessary rehabilitation, Richardson International relicensed this facility towards the close of the first quarter, restoring its former 231,030 tonnes of storage capacity.

17 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.

18 At the time of its de-licensing, the storage capacity of the Viterra C terminal was formally listed as being only 800 tonnes. Until downgraded a year earlier, this facility had been licensed with 231,030 tonnes of storage capacity.

Figure 20: Terminal Elevators - 2013-14 Crop Year



Concurrent with this, Cargill Limited and Parrish and Heimbecker Limited (P&H) announced that they had signed an agreement calling for the joint operation of the existing Cargill terminal in Thunder Bay. The new venture, which was licensed as Superior Elevator ULC on 1 August 2013, provided both companies with an opportunity to combine their commercial activities under one roof, thus improving efficiency and promoting cost reduction. And while P&H's 40,800-tonne facility was de-licensed at the same time, the company retained the right to direct commodities not handled by the new joint venture there in future.

19 At the beginning of the GMP this 231,030-tonne terminal elevator was operated by United Grain Growers Limited, but has remained largely inactive since the company was merged with Agricore Cooperative to form Agricore United (AU) in 2001. Ownership of the facility passed to Saskatchewan Wheat Pool following that company's acquisition of AU in 2007, with its subsequent rebranding as Viterra Inc. Concurrent with its planned takeover of Viterra, Glencore International PLC announced in March 2012 that it had entered into an agreement with Richardson International for the sale of certain Viterra assets, including the Viterra C terminal elevator. The finalization of this sale on 1 May 2013 gave Richardson International full ownership of the facility, which was de-licensed that same day.

An equally noteworthy change came at the close of December 2013 when CWB Ltd. took ownership of Mission Terminal Inc., which operated a 137,740-tonne facility in Thunder Bay. The takeover, which came as a result of the CWB's purchase of the grain handling and port terminal assets from Soumat Inc., a division of Toronto-based Upper Lakes Group Inc., marked the first significant asset purchase by the company since losing its monopoly at the beginning of the 2012-13 crop year.

In view of these changes, Thunder Bay remained home to six licensed terminal elevators, but its associated storage capacity increased by 19.9%, to 1.1 million tonnes. This gave the port a 40.0% share of the system's elevators and a 47.7% share of its licensed storage capacity; both down from the 50.0% shares benchmarked 15 years earlier.

Aside from Thunder Bay, there were no other changes to the makeup of the terminal elevator system in western Canada during the 2013-14 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 15 years, now accounted for 46.7% of the system's facilities and 37.7% 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 8.7% and 5.8% respectively.

Section 4: Commercial Relations

Indicator Description	Table	2013-14								
		1999-00	2011-12	2012-13	Q1	Q2	Q3	Q4	YTD	% VAR
Trucking Rates										
Composite Freight Rate Index - Short-haul Trucking	4A-1	100.0	162.2	162.2	162.2	162.2	162.2	162.2	162.2	0.0%
Country Elevators Handling Charges										
Composite Rate Index - Receiving, Elevating and Loading Out	4B-1	100.0	122.9	123.5	124.9	128.8	131.2	131.2	131.2	6.2%
Composite Rate Index - Dockage	4B-1	100.0	154.1	154.2	154.4	154.6	155.4	155.4	155.4	0.7%
Composite Rate Index - Storage	4B-1	100.0	187.8	189.9	189.9	188.0	188.0	188.0	188.0	-1.0%
Railway Freight Rates										
Composite Freight Rate Index - CN Vancouver	4C-1	100.0	112.4	135.1	130.1	127.1	124.6	129.1	129.1	-4.4%
Composite Freight Rate Index - CP Vancouver	4C-1	100.0	114.8	140.3	134.7	132.0	128.2	118.7	118.7	-15.4%
Composite Freight Rate Index - CN Thunder Bay	4C-1	100.0	136.0	141.4	144.1	129.6	129.6	145.6	145.6	3.0%
Composite Freight Rate Index - CP Thunder Bay	4C-1	100.0	123.5	143.9	144.0	129.6	129.6	120.0	120.0	-16.6%
Effective Freight Rates (\$ per tonne) - CTA Revenue Cap	4C-3	n/a	\$31.37	\$33.99	n/a	n/a	n/a	n/a	\$33.69	-0.9%
Terminal Elevator Handling Charges										
Composite Rate Index - Receiving, Elevating and Loading Out	4D-1	100.0	146.5	149.4	149.6	150.0	150.0	150.0	150.0	0.4%
Composite Rate Index - Storage	4D-1	100.0	178.7	179.4	179.4	180.1	180.1	180.1	180.1	0.4%

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.²⁰

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. Although fuel prices remained volatile throughout the ensuing 2011-12 and 2012-13 crop years, trucking rates varied little. Much the same was observed in the 2013-14 crop year. As a result, the composite price index remained unchanged for a fourteenth consecutive quarter, at 162.2. [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.

²⁰ The market price for West-Texas-Intermediate crude fell from a high of \$133 US per barrel in June 2008 to a low of just \$40 US per barrel by February 2009.

Figure 21: Change in Composite Freight Rates - Short-Haul Trucking

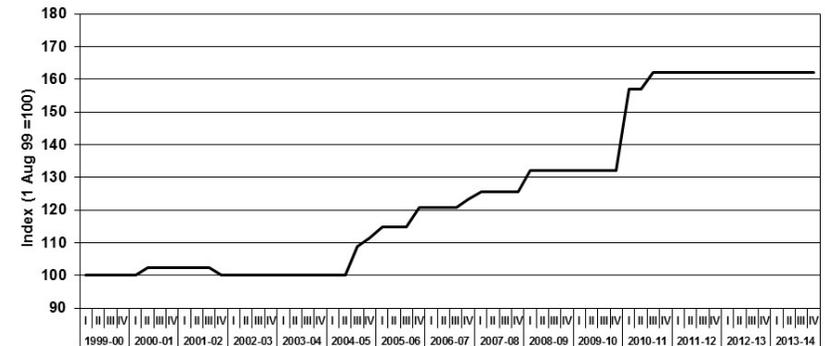
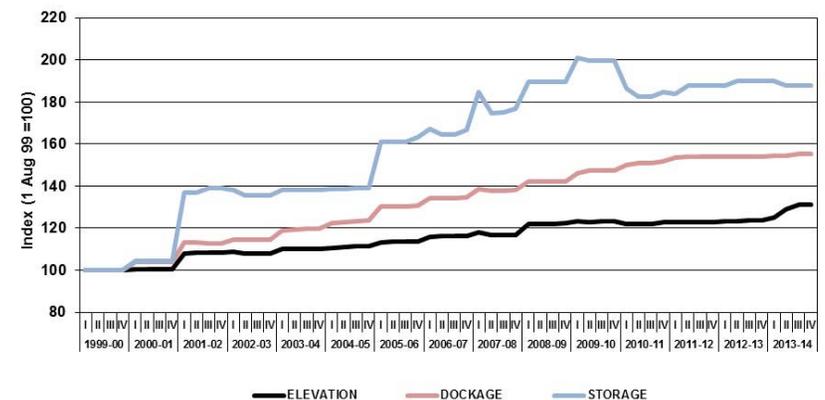


Figure 22: Change in Primary Elevator Handling Charges



Given the wide variety of tariff rates, the GMP necessarily uses a composite price index to track changes in them. Since the beginning of the GMP, the rates for 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 2012-13 crop year, these costs had risen by 23.5%. The 2013-14 crop year brought a further escalation in these rates, with third-quarter increases raising the overall composite price index by 6.2%, to 131.2.

The rates associated with the removal of dockage have increased at a somewhat faster pace. Through to the end of the 2012-13 crop year, these rates had already increased by 54.2%. Minor changes in the current crop year resulted in the composite price index rising by 0.7%, to 155.4.

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 89.9% through to the end of the 2012-13 crop year.²¹ Rate reductions in Manitoba during the second quarter were chiefly responsible for a 1.0% decline in the composite price index, which fell to 188.0, and remained unchanged through 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]

21 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 23: CN Single-Car Freight Rates - Primary Corridors

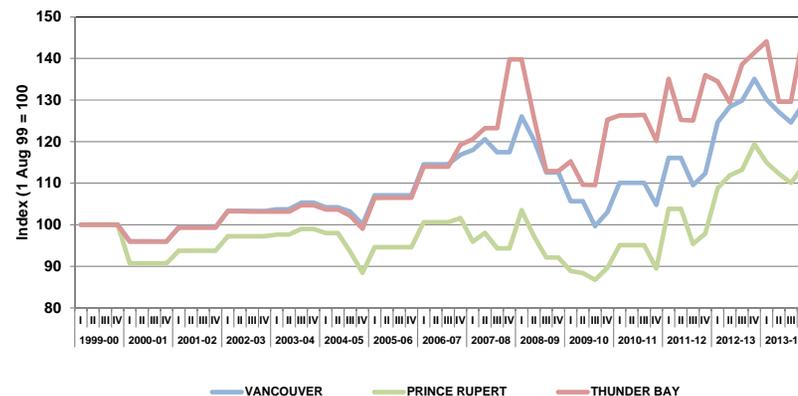
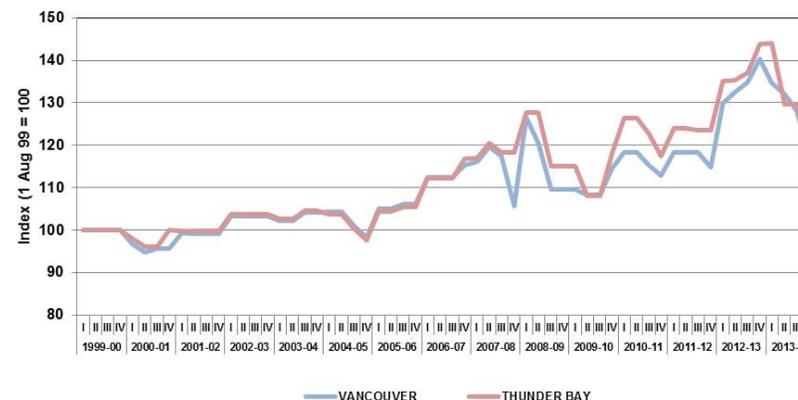


Figure 24: CP Single-Car Freight Rates - Primary Corridors



While the Canadian Transportation Agency established a 1.8% reduction in the Volume-Related Composite Price Index for the 2013-14 crop year, both CN and CP answered with a mix of increases as well as decreases to their single-car freight rates at the outset of the new crop year.²²

CN's initial pricing actions resulted in its eastbound rates into Thunder Bay and Churchill being raised by an average of 1.9% and 4.1% respectively. In contrast, the carrier's single-car rates into Vancouver and Prince Rupert, which were initially extended into the new crop year, were decreased by an average of 3.7% in September. These were followed early in the second quarter by reductions to the single-car freight rates in all four corridors: 2.3% in the Vancouver corridor; 2.0% in the Prince Rupert corridor; 10.1% in the Thunder Bay corridor; and 10.0% in the Churchill corridor. The third quarter saw a further 2.0% reduction applied against its westbound rates, while the carrier's rates into Thunder Bay and Churchill remained unaltered. The fourth quarter saw westbound rates into Vancouver and Prince Rupert raised by 3.6% and 3.1% respectively, while eastbound rates into Thunder Bay and Churchill were increased more substantively, by 12.3% and 12.0% respectively.

This directional differentiation was equally evident in the pricing actions taken by CP at the beginning of the crop year, which effectively held the single-car rates on movements into Thunder Bay unchanged while reducing those into Vancouver by 4.0%. Both were followed by second-quarter reductions, with the single-car rates into Thunder Bay cut by 10.1%, while those into Vancouver were culled by a much lesser 2.0%. As was the case with CN, CP also reduced its westbound rates in the third quarter, cutting its rates into Vancouver by 2.9%, while holding those into Thunder Bay unchanged. These actions were followed by still further rate cuts in the fourth quarter, when the carrier implemented an across-the-board reduction of 7.4%.

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 changes in the face of substantive

reductions by CP. Nevertheless, an examination of the pricing changes enacted since the beginning of the GMP provides some insight into the focus of today's single-car freight rates, which give an advantage to westbound movements. At the close of the 2013-14 crop year, the single-car rates applicable on the movement of grain to the jointly served port of Vancouver had risen by an average of 23.9% since the beginning of the GMP. The CN-served port of Prince Rupert, which benefited from a change to the rate structure more than a decade ago, posted an overall increase of just 14.1%. In comparison, the single-car rates into Thunder Bay and Churchill showed more substantive gains of 32.8% and 45.5% respectively. Taken altogether, however, these increases are in keeping with the 26.9% gain in revenues that were allowed by the Canadian Transportation Agency under the Maximum Revenue Entitlement (revenue cap).

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. More importantly, there can be little doubt that this has 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 2013-14 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]

²² See Canadian Transportation Decision Number 161-R-2013 dated 30 April 2013.

Maximum Revenue Entitlement

Under the federal government's Maximum Revenue Entitlement (MRE), 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.²³ 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.²⁴ For the 2013-14 crop year, the MRE for CN and CP were set at \$667.1 million and \$625.3 million respectively, or \$1,292.4 million on a combined basis.²⁵ This marked the third consecutive instance since the MRE was introduced

that the carriers' revenue entitlement actually reached above the \$1.0-billion threshold. [Table 4C-3]

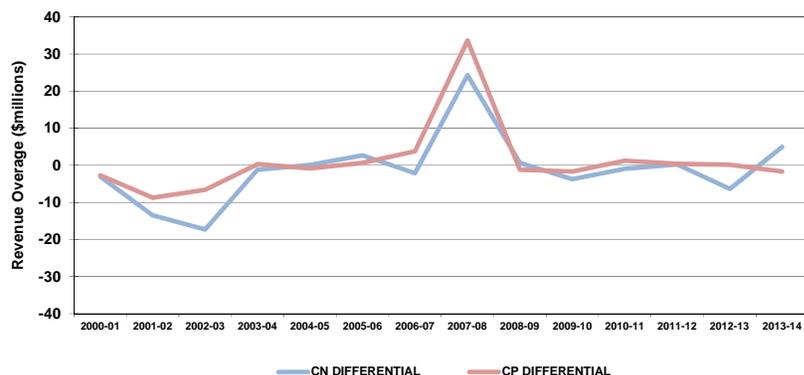
At the same time, the Agency determined that the statutory revenues derived from the movement of regulated grain by CN and CP amounted to \$672.1 million and \$623.6 million respectively, or \$1,295.7 million on a combined basis. These determinations produced dissimilar results for the carriers: \$5.0 million more than allowed in the case of CN against \$1.7 million less than allowed for CP. Even so, total carrier revenues stood less than 0.3% 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 most substantive 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 2012-13 crop year these ranged from a low of about \$9.79 per tonne on wheat delivered at Thunder Bay, to a high of \$16.50 per tonne on oats shipped to Churchill.

The 2013-14 crop year brought little change to these rates. The exceptions were at Vancouver and Prince Rupert, where marginal increases for the majority of commodities lead to a 0.4% rise in the composite price index, which rose to 150.0 from 149.4. [Table 4D-1]

Figure 25: Revenue Cap Compliance



23 The maximums cited here are expressed in constant 2000 dollars, and were developed using an estimated annual movement of 12.4 million tonnes for CN and 13.9 million tonnes for CP, with average haulage distances of 1,045 miles and 897 miles respectively.

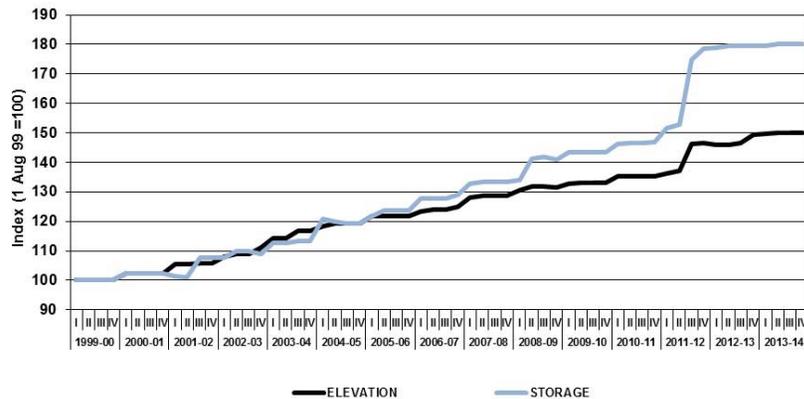
24 The Volume-Related Composite Price Index (VRCPI), which provides for an inflationary adjustment to carrier revenues, is determined by the Canadian Transportation Agency in advance

of each crop year. For the 2013-14 crop year, the Agency determined the value of the VRCPI to be 1.2691, which represented a year-over-year decrease of 1.8%. See Canadian Transportation Agency Decision Numbers 161-R-2013, dated 30 April 2013.

25 See Canadian Transportation Agency Decision Number 451-R-2014 dated 18 December 2014.

As with the cost of elevation, the daily charge for storage also varied widely, ranging from a common low of about \$0.08 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 and Prince Rupert lead to a 0.4% increase in the composite price index, which rose to 180.1 from 179.4.

Figure 26: Change in Terminal Elevator Handling Charges



As the final estimate started to crystallize, the industry began to confront the realities attached to the marketing of a 76.3-million-tonne crop. Compounding this was carry-forward stocks of 4.9 million tonnes that lifted the overall grain supply to 81.2 million tonnes. With the international marketplace seemingly already awash in grain, this left many worried about further erosion in grain prices. But foremost among the growing list of concerns was the fear that the GHTS would be incapable of adequately providing for the movement of such a large crop. Rather than being focused on moving the entire crop, the majority of stakeholders hoped that the system would have sufficient capacity to handle a sizeable portion of the added production, thereby avoiding the buildup of an unwieldy level of carry-out stocks at year end.

As the scope of the challenge confronting the industry became apparent the system quickly became overwhelmed with the volume of grain. On-farm inventories were soon bulging with an unanticipated excess, which gave way to the broad use of temporary storage options. Moreover, as elevator deliveries grew, the problem began to spread. Before long the

COMMERCIAL DEVELOPMENTS

Giant Crop Confronts Grain Handling and Transportation System

Following a late start to the growing season, the summer of 2013 provided ideal growing conditions. Western Canadian farmers began harvesting a crop of unprecedented size in August. Reports of substantially greater yields and a potential bumper crop had begun to circulate in the late summer. Even so, few within the grain industry could have anticipated that production would stand a full 25% above the previous record of 60.4 million tonnes set in the 2008-09 crop year.

country elevator system was beginning to congest, with many facilities forced to turn away producers for the simple lack of space. Central to the timely processing of any elevator's grain was the carrying capacity provided to it by the railways; without a matching railcar supply the system would soon become backlogged.

By mid-September 2013 the demand for carrying capacity in the country was outpacing what was being supplied by a factor of 10%, leaving the equivalent of about 1,000 carloads of traffic going unmoved each week. The effects of this were also beginning to spread, with terminal elevator stocks declining by as much as 20% from what had been carried in the same period a year earlier. More importantly, the number of vessels waiting to load at port had begun to climb. By the close of the first quarter the majority of these indicators had only worsened: country elevators stocks rose to 3.5 million tonnes; uncommitted railcar orders topped 15,000; and the number of ships waiting to load at west-coast ports was approaching 20.

For its part, the carrying capacity supplied by the railways proved roughly equivalent to that supplied during the same period a year earlier. Owing in large measure to low carry-over stocks, the total number of hopper-car shipments during the first quarter actually declined by 2.6% from that handled the previous year. Even so, this served to fuel the ire of the grain industry at large because railway representatives were indicating that their operations were ill prepared to deal with the movement of a crop that was proving much larger than normal. Moreover, the railways had been striving to enhance the productivity of their existing operations; increasing equipment velocity while reducing locomotives, railcars and human resources.

The situation was made all the worse given the urgency to sell grain in a market already characterized by declining prices. The pressure exerted by farmers trying to effect delivery sooner rather than later only compounded the system's growing problem with congestion. Confronted with the increasingly difficult task of delivering their grain, many producers turned to enhancing the storage capacity of their farms. But the demand for new

storage bins soon exceeded the readily available supply. As a result, farmers moved to store a significant portion of their crop on the ground, an option that carried with it the heightened threat for spoilage. For those who had not contracted for the delivery of their grain, market conditions continued to eat away at the value of the crop they had stored. Compounding the issue of eroding market prices, the grain companies had now begun to widen their basis levels, cutting even further into the producers' potential returns. Even those who had signed delivery contracts were seeing these deliveries deferred to much later in the season.

The situation was made no better when a CN freight train derailed near Gainford, Alberta, in mid-October 2013, closing the carrier's principle artery to the west coast for four days. This was aggravated by a second CN derailment just 50 miles west of Gainford, at Peers, Alberta, in the opening days of November 2013. With the onset of winter, and more particularly during a five-week stretch of record-setting cold in Manitoba and eastern Saskatchewan, the fluidity of railway operations was undermined still further. By the close of the second quarter country elevator stocks had risen to 3.7 million tonnes; uncommitted railcar orders had ballooned to over 50,000; and the number of ships waiting to load at west-coast ports had topped 40.

As the backlog of grain continued to mount so too did the frustration among shippers and farmers. Moreover, by mid-January 2014 their displeasure with railway service was beginning to register with the federal government. In response, the Minister of Agriculture and Agri-Food convened an urgent meeting of stakeholders in Winnipeg to discuss the situation and press the railways for immediate action. By the end of February however, the railways had still not brought forward a plan.

Government Moves to Address Grain-Handling Problems

Trucks loaded with grain are seen lining up in the driveway to an elevator located on the outskirts of Winnipeg, Manitoba, awaiting their turn at delivering a small portion the 2013-14 crop year's record-breaking harvest.

With the grain industry confronting a deteriorating situation through February, the federal government took an extraordinary step aimed at addressing the issue and preserving Canada's reputation as a reliable supplier of grain to world markets. On 7 March 2014 the Minister of Transport announced that an Order in Council (OIC), issued under section 47(1) of the *Canada Transportation Act*, was being employed to define the minimum weekly grain volumes to be moved by CN and CP.

In essence, the OIC directed that the railways increase their weekly volumes over a period of four weeks, until attaining a combined target of 1.0 million tonnes per week. Failure to comply with the provisions of the order carried potential penalties of up to \$100,000.

While these actions were welcomed by the grain industry at large, both CN and CP characterized them as unnecessary intrusions into the workings of the transportation marketplace. Nevertheless, both railways indicated that they would strive to meet these targets even if they believed they were being unfairly criticized in their efforts to cope with circumstances that extended beyond their control, specifically the harvesting of an unprecedentedly large crop coupled with one of the harshest winters experienced in half a century. Both railways argued that stakeholders needed to move away from unproductive finger-pointing and engage in a more collaborative effort aimed at developing sound commercial solutions to the challenges of moving so much grain.

Against this backdrop the federal government announced on 26 March 2014 that it was introducing legislation that would further respond to the challenges confronting the GHTS. Introduced in the House of Commons as Bill C-30, the *Fair Rail for Grain Farmers Act*, the legislation would amend both the *Canada Transportation Act* and the *Canada Grain Act*, and bring forward a number of measures meant to get grain to market quickly and more efficiently.

The key component in this legislation, which received Royal Assent on 29 May 2014, gave the Governor in Council the authority to set minimum grain transportation volumes based on recommendations received from

the Ministers of Transport and Agriculture and Agri-Food, 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 Service Level Agreements and the ability of the Canadian Transportation Agency to award compensation; expanding measures under the Grain Monitoring Program; and addressing non-performance by the grain companies with respect to their contracts with producers.

All the while there were signs that the situation was beginning to improve. By the close of the third quarter 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 in Vancouver and Prince Rupert. Even more significant improvements were made in the fourth quarter, with the GHTS expediting the movement of a record 10.8 million tonnes of grain.

Changes to the Collection of Canadian Grain Commission Data

In October 2012 the federal government moved to implement a number of its budgetary measures with the introduction of Bill C-45, the *Jobs and Growth Act, 2012*, in the House of Commons. The bill, which received Royal Assent on 14 December 2012, also included revisions to the *Canada Grain Act*. These amendments marked the first substantive changes to the Act in more than forty years, and were aimed at modernizing and streamlining the operations of the Canadian Grain Commission (CGC), eliminating any unnecessary or redundant services, and reducing the regulatory burden on the grain industry.

Among the more noteworthy revisions to the *Canada Grain Act* was the transfer of responsibility for inward weighing and inspection at terminal elevators from the CGC to the private sector. Although the CGC would no longer be the primary source of this data, the Act affirmed its oversight role in collecting this fundamental information regarding terminal elevator operations.

To this end, the CGC convened an industry working group to develop the standards and information-gathering protocols that would be used in the future. This ultimately evolved into what the CGC called its Licensed Terminal Elevator Reporting Requirements, which was distributed to the industry in June 2013. The transfer of this responsibility, which resulted in terminal-elevator staff collecting and reporting on data previously collected by the CGC, produced some implementation challenges in the first quarter of the 2013-14 crop year.

Regular users of the Monitor's reports need to be mindful that these changes in the approach to data collection had inevitable consequences for the measures assembled for terminal-elevator operations. While the data provided by the terminal-elevators is equivalent to that previously collected by the CGC, it is gathered from a variety of companies with diverse approaches to data collection. This, along with other changes in data reporting, has reduced the reliability of some year-over-year comparisons. By way of example, much of the data pertaining to terminal operations in Vancouver and Prince Rupert has been superseded by single values for the Pacific Seaboard, which is not directly comparable.

CWB Begins Establishing Grain-Handling Network

On 26 November 2013 CWB - formerly the Canadian Wheat Board - announced that it had reached an agreement to purchase the grain handling and port terminal assets of Soumat Inc., a division of Toronto-based Upper Lakes Group Inc. This marked the company's first material acquisition since the federal government removed its monopoly over the sale of wheat and barley, and was reorganized in 2012. Before then, the CWB did not own any grain-handling facilities, effectively employing a variety of grain companies as agents, who used their own assets to handle grain on its behalf.

26 As part of the legislation stripping the Canadian Wheat Board of its monopoly, often referred to as its single desk, Ottawa gave the recast CWB until 2017 to become a privately-run company.

In specific terms, the acquisition encompassed three commercial entities: Mission Terminal Inc. (MTI), Les Élévateurs des Trois-Rivières Ltée, and Services Maritimes Laviolette Inc. These commercial concerns would provide CWB with port facilities in Thunder Bay, Ontario, and Trois-Rivières, Quebec, along with a dock-services business in Trois-Rivières. This transaction denoted an important step in the process of transitioning itself into a private business.²⁶ In strategic terms, the acquisition provided for a vertical integration of the company, bolstering its east-coast presence as well as its ability to service offshore customers. In equal measure, it also allowed CWB to cement its long-standing relationships with all three companies, as well as the producer-car shippers integral to their operations.

MTI, which sources and markets a variety of grains for customers around the globe, operates a primary elevator at Alexander, Manitoba, in addition to its namesake terminal elevator in Thunder Bay, Ontario. The latter facility, which has a licensed storage capacity of 137,740 tonnes, handles approximately 1.5 million tonnes annually. The company also has an equity stake in three producer-car loading facilities situated in Manitoba and Saskatchewan. Similarly, MTI has a commercial interest in five shortline railways operating throughout this same geographic area, including: the Great Western Railway; the Great Sandhills Railway, Boundary Trail Railway, the Lake Line Railway; and the Long Creek Railway.

Les Élévateurs des Trois-Rivières Ltée, located at Trois-Rivières, Quebec, is a receiving, storage and loading facility capable of storing 109,000 tonnes of grain, along with another 78,000 tonnes of alumina and 20,000 tonnes of coke. It can receive grain by ocean ship, laker, rail or truck and is one of the few facilities able to unload vessels of up to Panamax size. Services Maritimes Laviolette, also located in Trois-Rivières, Quebec, offers stevedoring and other related services.

In the interim, a Board of Directors appointed by the Governor in Council was chosen to oversee its operations.

But this acquisition, which was finalized in late December 2013, soon appeared as a mere starting point for the development of an even larger network of strategic grain-handling assets for CWB-marketed grain. In January 2014 the company announced that it had bought a minority share in Prairie West Terminal (PWT), a farmer-owned grain handler shipping over 420,000 tonnes annually from five facilities in western Saskatchewan. Combined with the small stake it had already inherited through its purchase of MTI a month earlier, CWB was increasing its total interest in PWT to 12.1%. Moreover, CWB officials soon let it be known that they were also in discussions with other parties for the acquisition of, or an equity interest in, still other facilities.

Although it was becoming clear that the company was moving to develop its own asset base, there appeared little indication that CWB had any immediate plans to dispense with the grain-handling agreements that it had established with various grain companies in 2012. CWB signalled that it fully intended to maintain these agreements while building its own facility network.

The scope of this intent became evident just two months later when CWB announced that it planned to build a state-of-the-art grain elevator just west of Portage la Prairie, at Bloom, Manitoba. Targeted for completion in 2015, the CN-serviced facility would be composed of a 17,400-tonne workhouse with 16,500 tonnes of steel storage capacity. In addition, the facility would feature a 130-railcar loop track to facilitate the more efficient loading of unit trains. Plans for the construction of an even larger 42,000-tonne, CP-served facility, to be situated east of Saskatoon, at Colonsay, Saskatchewan, came a month later. The combined cost for both facilities was estimated at between \$50 and \$60 million,

Following closely on the heels of the latter construction announcement was CWB's revelation that it had moved beyond taking a minority interest in PWT, and had actually entered into an agreement for the acquisition of all issued and outstanding shares in the company for \$43.2 million. This purchase was ultimately finalized in early June 2014.

Harsh Winter Adds to Grain-Handling Problems

The winter of 2013-14 proved to be one of the harshest in recent memory. Although always problematic for railways generally, a protracted period of deep cold proved particularly disruptive for carriers operating throughout western Canada and the northern United States. While a heavy buildup of snow and ice can often require the concerted effort of numerous employees in freeing buried equipment, clearing track and getting frozen switches to work again, it is the impact of extreme cold on a train's air brake system that presents the biggest challenge to railway operations. Typically this necessitates the running of shorter trains which, in itself, requires the need for additional locomotives and crews.

Beyond taxing the railways' immediate physical and human resources, adapting to colder temperatures often carries safety-related reductions in train speed and employee productivity. All of this results in greater stress being placed on the network, which typically becomes congested. The longer a system is burdened under such conditions, the more acute these problems become.

Such were the conditions that confronted both CN and CP and which did much to undermine their service offering in the second and third quarters. But Canadian railway operations were not the only ones affected by the harsh weather. American carriers operating in the northern tier of the United States were struggling under equally adverse conditions. Even so, farmers in western Canada sought to circumvent the problems they were facing at home, including trucking their grain south to American delivery points already beset by their own railway service problems. The BNSF Railway, whose operations extend through several border states from Chicago to Seattle, found itself the focus of much of this shipper fury. So too did CP, which has fairly extensive operations through the US Midwest. Moreover, complaints over deteriorating rail service, particularly from the grain industry, were drawing political fire.

Under this mounting criticism, BNSF announced that it would be taking corrective action, including the commitment of over \$1.0 billion US in its

2014 capital budget towards projects aimed at enhancing the capacity of its northern corridor. While much of this was specifically tied to double-tracking sections of its mainline and constructing new sidings, the carrier stated that it would also be augmenting its locomotive and grain-hopper fleets, and adding to its personnel roster. Even so, in late June 2014 American regulators ordered both BNSF and CP to submit plans outlining the steps that each railway would take to address the backlog of grain car orders on their networks.

And while governments on both sides of the border were beginning to pressure the railways into addressing their service problems, a new complication emerged. Owing to the same harsh winter that had undermined railway operations, ice conditions on the Great Lakes and St. Lawrence Seaway were reported to be the worst in 20 years. By early March 2014 it was becoming apparent that this would lead to a delay in the opening of the seaway and, consequently, the port of Thunder Bay. This prompted the Canadian Shipowners Association to call on the federal government for the deployment of additional icebreakers in an effort to stave off potentially lengthy delays to shipping. Similar pleas for such action came from other interested parties, including the Western Grain Elevator Association and the Canadian National Railway Company.

Although the government responded to these requests with the assignment of additional Coast Guard resources later in March, the ice cover proved so expansive and heavy that the first ship of the season did not arrive in Thunder Bay to take on a load until 21 April 2014. This effectively delayed eastbound grain shipments through the seaway by about a month. Grain terminals were reported to be at or near capacity by the time the first vessels arrived in port.

Once the port was opened to regular shipping, heavier volumes of grain began moving through Thunder Bay and the St. Lawrence Seaway. Although total shipments for the 2013-14 crop year fell 1.3% shy of the GMP's 6.9-million-tonne record, the fourth quarter's throughput reached a record 3.2 million tonnes.

Shippers Launch Level-of-Service Complaints

The problems associated with moving grain did not just manifest itself in governmental action. Several shippers brought forward level-of-service complaints to the Canadian Transportation Agency. The first of these was launched by Louis Dreyfus Commodities Canada Ltd. on 14 April 2014, wherein the company alleged that CN had failed to provide it with the cars it was entitled to receive under a confidential contract. An interim order issued by the Agency on 2 May 2014 sided with the complainant and directed CN to supply it with the cars prescribed under this agreement pending a final determination in the case.

The second case was initiated on 26 May 2014 when the Canadian Canola Growers Association launched a complaint against both CN and CP, alleging that both carriers had failed to provide its members with adequate service. This was followed on 12 June 2014 with a shipper action filed by Richardson International Limited, which alleged that CN had breached its statutory obligations to the company by failing to respect the car allocation commitments that the carrier had made to the complainant early in the 2013-14 crop year. A fourth complaint filed with the Agency on 20 June 2014 saw Viterra Inc. also allege that CN had failed to provide that shipper with the railcars it had been promised under the carrier's allocation plans.

At the close of the 2013-14 crop year the Agency had yet to render a final decision on any of these complaints. It is noteworthy that three of the grain-handling industry's largest shippers with near simultaneous timing, led the way in the attempt to seek redress for the railway service problems they experienced in the 2013-14 crop year.

Section 5: System Efficiency and Performance

Indicator Description	Table	2013-14								
		1999-00	2011-12	2012-13	Q1	Q2	Q3	Q4	YTD	% VAR
Country Elevator Operations										
Average Elevator Capacity Turnover Ratio	5A-1	4.8	6.0	5.8	1.7	1.5	1.8	1.8	6.8	17.2%
Average Weekly Elevator Stock Level (000 tonnes)	5A-2	3,699.3	2,660.8	2,489.6	2,849.4	3,440.7	3,527.7	2,517.2	3,087.9	24.0%
Average Days-in-Store (days)	5A-3	41.7	27.6	26.5	26.8	34.6	30.0	18.4	26.9	1.5%
Average Weekly Stock-to-Shipment Ratio - Grain	5A-4	6.2	4.1	3.9	3.7	5.2	4.6	2.6	4.1	5.1%
Railway Operations										
Railway Car Cycle (days) - Empty Movement	5B-1	10.7	7.2	7.5	7.4	7.7	6.3	5.7	6.7	-11.7%
Railway Car Cycle (days) - Loaded Movement	5B-1	9.2	6.7	6.5	5.9	6.7	6.8	6.1	6.4	-2.2%
Railway Car Cycle (days) - Total Movement	5B-1	19.9	13.9	14.0	13.3	14.4	13.1	11.8	13.0	-7.3%
Railway Car Cycle (days) - Non-Special Crops	5B-2	19.3	13.8	13.9	12.9	14.3	13.0	11.7	12.8	-7.6%
Railway Car Cycle (days) - Special Crops	5B-3	25.8	16.3	15.8	16.2	17.0	16.0	12.8	15.3	-3.4%
Railway Transit Times (days)	5B-4	7.8	5.6	5.4	4.9	5.6	5.7	5.1	5.3	-2.7%
Hopper Car Grain Volumes (000 tonnes) - Non-Incentive	5B-5	12,718.7	5,455.6	6,488.9	2,099.3	1,287.4	1,450.3	1,835.6	6,672.6	2.8%
Hopper Car Grain Volumes (000 tonnes) - Incentive	5B-5	12,945.9	22,726.3	21,933.7	6,148.5	5,855.6	6,383.7	8,767.3	27,155.1	23.8%
Hopper Car Grain Volumes (\$ millions) - Incentive Discount Value	5B-6	\$31.1	\$154.6	\$155.5	\$44.3	\$43.3	\$48.0	\$65.0	\$200.6	29.0%
Traffic Density (tonnes per route mile) - Grain-Dependent Network	5B-7	442.5	592.4	593.3	751.0	617.6	564.4	891.2	706.0	19.0%
Traffic Density (tonnes per route mile) - Non-Grain-Dependent Network	5B-7	292.5	345.5	357.2	399.4	354.0	415.9	531.7	425.2	19.1%
Traffic Density (tonnes per route mile) - Total Network	5B-7	330.4	395.1	403.6	468.6	405.8	445.1	602.4	480.5	19.0%
Terminal Elevator Operations										
Average Terminal Elevator Capacity Turnover Ratio	5C-1	9.1	11.1	11.1	n/a	n/a	n/a	n/a	13.5	21.6%
Average Weekly Terminal Elevator Stock Level (000 tonnes)	5C-2	1,216.2	1,091.6	1,139.6	833.0	769.8	949.6	1,010.2	890.6	-21.8%
Average Days-in-Store - Operating Season (days)	5C-3	18.6	13.9	14.3	11.2	9.0	7.2	9.1	9.1	-36.4%
Port Operations										
Average Vessel Time in Port (days)	5D-1	4.3	6.6	9.7	7.8	11.9	24.6	9.8	12.5	28.9%
Average Vessel Time in Port (days) - Waiting	5D-1	1.9	3.0	4.8	3.7	6.5	17.1	5.7	7.5	56.3%
Average Vessel Time in Port (days) - Loading	5D-1	2.4	3.6	4.9	4.1	5.4	7.5	4.1	5.0	2.0%
System Performance										
Total Time in Supply Chain (days)	5E-1	68.1	47.1	46.2	42.9	49.2	42.9	31.2	41.3	-10.6%

COUNTRY ELEVATOR OPERATIONS

The net effect of changes in primary elevator throughput and storage capacity is reflected in the system's capacity-turnover ratio. Echoing an 18.7% increase in primary-elevator throughput, the turnover ratio for the 2013-14 crop year rose by 17.2%, to 6.8 turns from the 5.8 turns reported a year earlier. Much of this gain was again tied to the sharp rise in third and fourth-quarter grain shipments. [Table 5A-1]

Increased turnover ratios were reported by all provinces. Manitoba reported the most substantive increase, with its ratio rising by 30.2%, to 5.6 turns from 4.3 turns. This was followed by Saskatchewan, which posted a gain of 26.0%, with its ratio rising to 6.3 turns from 5.0 turns a year earlier. British Columbia, which posted an increase of 17.5%, saw its ratio rise to 9.4 turns from 8.0 turns. Alberta reported the smallest gain, with its ratio rising by a much lesser 4.9%, to 8.5 turns from 8.1 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 grain inventories. What is more, even with a marginal 0.9% 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 2013-14 crop year, as average primary elevator inventories climbed steadily beyond this threshold: to 2.8 million tonnes in the first quarter; 3.4 million tonnes in the second; and 3.5 million tonnes in the third. It was not until the fourth quarter that stocks again fell below the 3.0-million-tonne level, to 2.5 million tonnes. As a result, the overall average for the crop year rose by 24.0%, to 3.1 million tonnes from 2.5 million tonnes a year earlier. While much of this rise was tied to the record

Figure 27: Primary Elevator Capacity Turnover Ratio

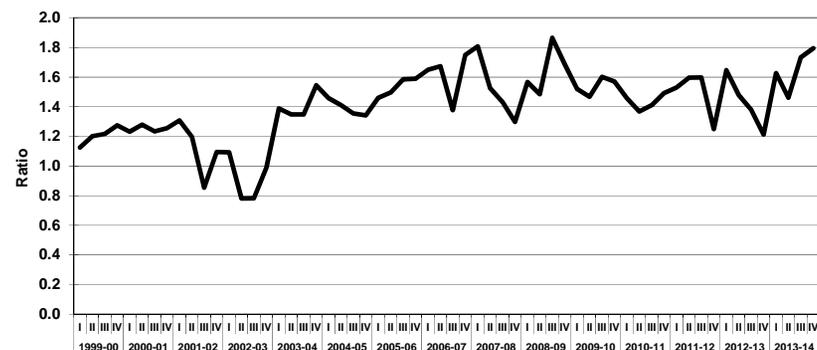
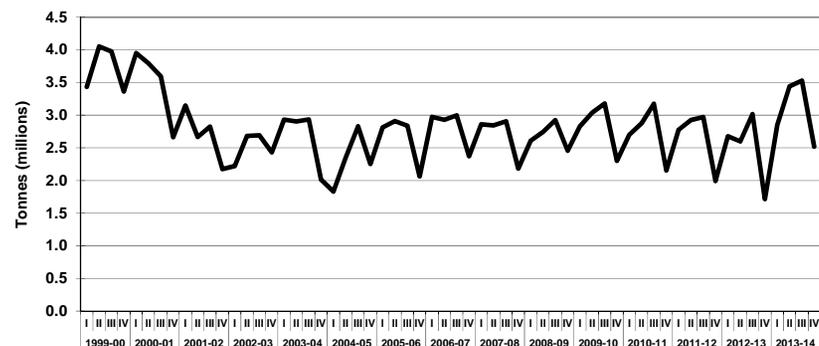


Figure 28: Average Weekly Stock Levels



harvest, it also reflected the buildup occasioned by the inability of the grain companies to secure the railcars necessary for its movement through much of the crop year. [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 largely fluctuated around the 30-day mark for several years, and well below the GMP's base-year average of 41.7 days. Although this contributed significantly to improving the speed with which grain moves through the GHTS, such was not the case in the opening months of the 2013-14 crop year.

In step with the rise in grain inventories was the time spent by grain in inventory, which rose to an average of 26.8 days in the first quarter, and a more lengthy average of 34.6 days in the second, before declining to an average of 30.0 days in the third, and finally to a record GMP low of 18.4 days in the fourth. This decline in the fourth-quarter average proved instrumental in containing an increase in the 2013-14 crop year's overall average, which rose by just 1.5%, to 26.9 days from 26.5 days a year earlier. Much of this upward pressure came from Manitoba, where the overall average rose by 20.5%, to 37.1 days from 30.8 days. [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 factor of at least four.²⁷ 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]

²⁷ 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 29: Average Days in Store

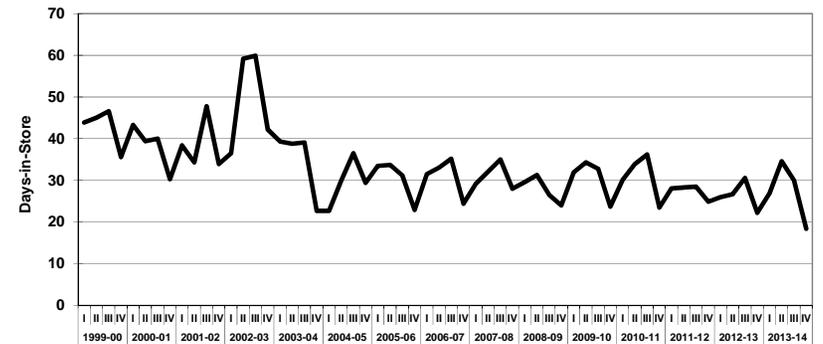
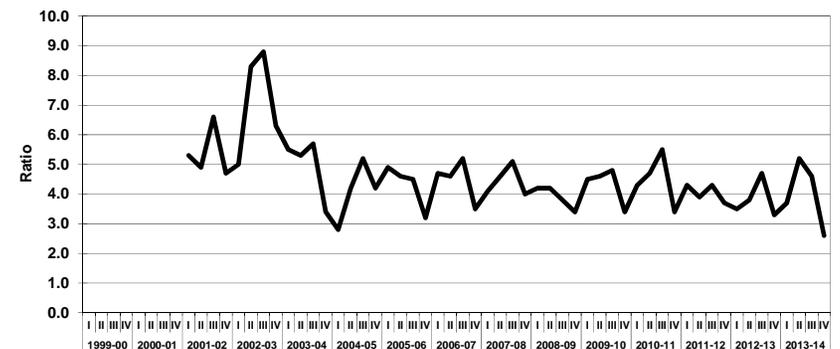


Figure 30: Primary Elevators - Stock-to-Shipment Ratio



This pattern was repeated yet again during the 2013-14 crop year. From the first quarter's initial average of 3.7, the stock-to-shipment ratio moved substantially higher, ultimately reaching a peak of 5.2.²⁸ However, the third quarter saw the average cut back to 4.6 along with a further reduction to 2.6 in the fourth. Even so, the overall average for the crop year increased by 5.1%, with the ratio rising to 4.1 from 3.9 a year earlier. While much of the escalation noted in the first half was tied to the broader buildup in country elevator inventories, it also reflected, at least in part, the problems tied to securing the railcars necessary to move it. In equal measure, the ratio's subsequent decline also reflected the inroads made through the supplying of more railcars to elevators in the latter half of the crop year.

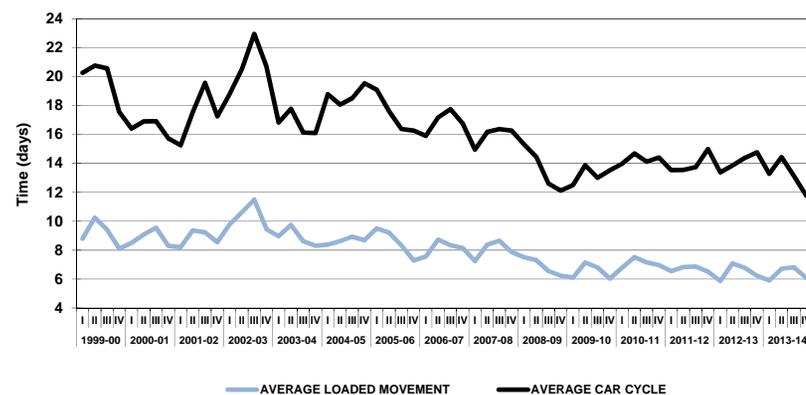
RAILWAY OPERATIONS

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 a designated port in western Canada, and then returning the empty railcar back to the prairies for reloading. During the 2013-14 crop year this task required an average of 13.0 days to complete, a 7.3% reduction from the 14.0-day average recorded a year earlier.

Much of this overall decrease was attributable to sharp year-over-year reductions in the third and fourth quarter averages, which fell by 8.6% and 20.2% respectively. These results served to counter the increase that had been observed in the second quarter. Moreover, these reductions extended to all corridors, which helped shape the broader improvement. Movements in the Vancouver corridor showed the deepest decline, with an 8.4% reduction lowering the average to 13.4 days from 14.6 days a year earlier. This was supported by a 7.0% decrease in the Thunder Bay corridor, where the average car cycle fell to 12.7 days from 13.6 days. Adding to this was the Prince Rupert corridor, where a 5.9% decrease resulted in the average car cycle falling to 12.5 days from 13.3 days. [Table 5B-1]

²⁸ The 5.2 ratio attained in the second quarter marked the highest witnessed for the period since the 2003-04 crop year, when it stood at 5.3. Since then, the quarterly average has only reached above a value of 5.2 twice.

Figure 31: Average Railway Car Cycle



The overall decrease in the average car cycle came from reductions in the empty as well as loaded portions of the movement. In the case of the former, this declined by 11.7%, to an average of 6.7 days from 7.5 days a year earlier. This was supported by a 2.2% decrease in the loaded portion of the movement, which fell to an average of 6.4 days from 6.5 days a year earlier.

There were even greater contrasts in the results posted by CN and CP, with CN reporting a 2.5% decrease in its average cycle against a 12.5% decrease for CP. Much of the decrease noted for CN was attributable to a 6.1% reduction in the empty portion of its car cycle. This was tempered by a marginal 0.8% increase in the loaded portion. In comparison, CP's reduced average was driven by decreases for both portions of the car cycle, with a 15.3% decline in the empty portion coupled with an 8.4% decrease in the loaded portion. It must be noted, however, that the overall reduction for

CP was shaped in large measure by a shift in the carrier’s traffic mix, which saw a substantive increase in the amount of Alberta-originated grain directed to Vancouver in the latter half of the crop year.²⁹

Owing to the relative weighting of non-special crops in the overall traffic mix, the car cycle tied to these commodities showed a similar decline, with the average falling 7.6%, to 12.8 days from 13.9 days a year earlier. A lesser decline was noted for the car cycle tied to special crops, which fell by 3.4%, to an average of 15.3 days from 15.8 days. Comparatively, the average for special crops proved to be 19.5% greater than that of non-special crops. On the whole, these results continued to point to a structural disadvantage being given to the movement of 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. With the close of the 2012-13 crop year, 2.4 days had been shed from the 7.8-day average benchmarked in the base year. In keeping with the broader reduction in the overall car cycle, the railways posted a 2.7% reduction in its loaded transit time, which fell to an average of 5.3 days from 5.4 days a year earlier. The variability in the underlying distribution, as measured by the coefficient of variation, also fell, by 1.7%, to 30.4% from 30.9%.³⁰ Despite this, it continued to

Figure 32: Average Loaded Transit Time

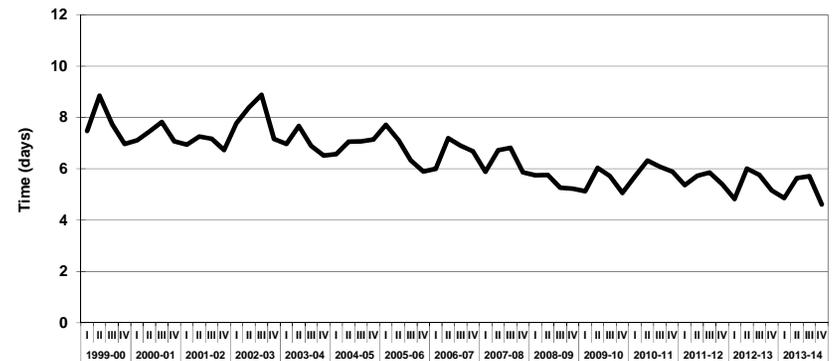
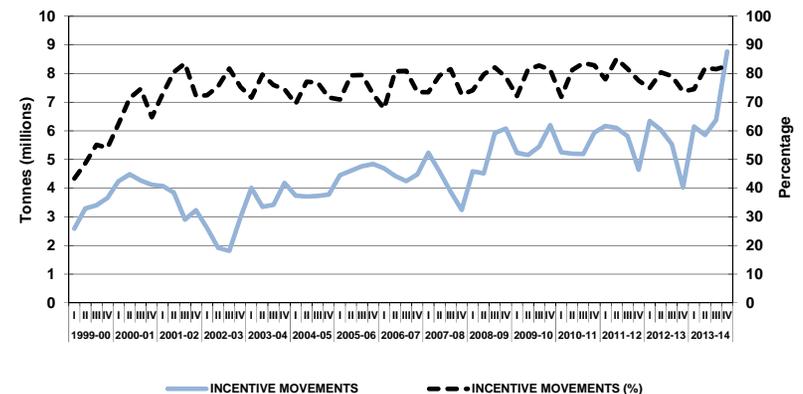


Figure 33: Railway Traffic Moving Under Incentive



29 CP tends to draw moderately more grain from Alberta for movement to Vancouver than it does from Saskatchewan. Although somewhat seasonal, the latter half of the crop year saw Alberta originate 24.3% more traffic than did Saskatchewan. Given the shorter distance to tidewater, this helped reduce the carrier’s average car-cycle in the Vancouver corridor.

30 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.

indicate that the time taken in moving a loaded hopper car between any two points remained highly erratic. [Table 5B-4]

Multiple-Car Blocks

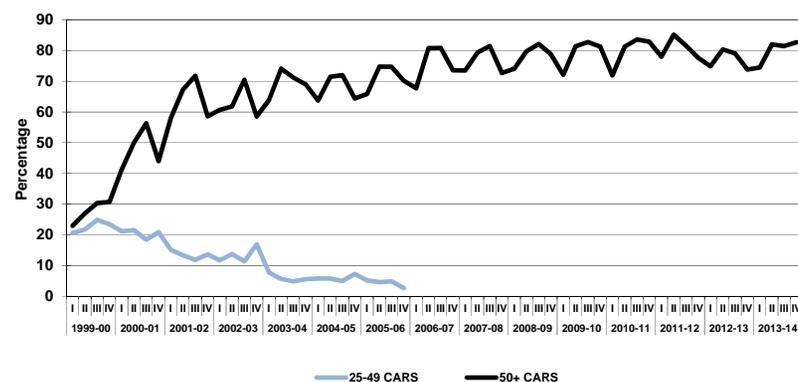
During the 2013-14 crop year, 27.2 million tonnes of grain moved in the multiple-car blocks that offered discounted freight rates. This denoted a gain of 23.8% over the 21.9 million tonnes that were moved in such blocks a year earlier. [Table 5B-5]

The proportion of railway traffic moving in multiple-car blocks remains substantial. Since the 2005-06 crop year, approximately 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 drift around this mark for several crop years. The 2013-14 crop year proved little different, with 80.3% of the grain shipped being 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 fivefold, rising to an estimated \$154.6 million in the 2012-13 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.

In addition to a 23.8% increase in the tonnage moving under these discounted freight rates in the 2013-14 crop year, the earned value of these discounts rose by 29.0%, to an estimated \$200.6 million from \$155.5 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 has also been reflected in a steadily rising average

Figure 34: Composition of Multiple-Car Block Movements



earned discount, which reached an estimated \$7.39 per tonne against \$7.09 per tonne a year earlier. [Table 5B-6]

TERMINAL ELEVATOR OPERATIONS

Owing to the increase in throughput for the 2013-14 crop year, the terminal elevator system's capacity-turnover ratio rose by 21.6%, to a record-setting 13.5 turns from 11.1 turns a year earlier.³¹ All four ports in western Canada reported significant increases, with the majority reaching new GMP records. The largest gain posted among the west coast ports was at Vancouver, where the ratio rose by 23.1%, to a GMP record of 19.2 turns from 15.6 turns the year before. This was followed by a 15.5% gain for Prince Rupert, where the number of turns rose to 28.3 from 24.5. The eastern gateways of Thunder Bay and Churchill posted equally solid gains. In the case of Thunder Bay, the capacity-turnover ratio rose by 16.0%, to 5.8 turns from 5.0 turns a year earlier. Churchill reported an even more

31 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 Vancouver and Thunder Bay, 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.

impressive 50.0% increase in its ratio, which climbed to 4.5 turns from 3.0 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. However, in the face of dwindling stocks from the 2012-13 crop year, grain inventories at the beginning of the 2013-14 crop year were being drawn down significantly. As a result, the first quarter’s average weekly stock level fell 24.7% below the 1.1 million tonnes recorded in the same period a year earlier. This continued into the second quarter, with stocks falling to an average of 769,800 tonnes, a record low for any quarter under the GMP. It was only in the third quarter that terminal stocks began to rebound, rising to an average of 949,600 tonnes. The fourth quarter saw inventories rise still further, to reach just above 1.0 million tonnes. Despite this partial recovery, the overall average for the entire crop year stood 21.8% below what had been reported a year earlier, with 890,600 tonnes standing against 1.1 million tonnes respectively.

This decline reflected those experienced along the Pacific Seaboard and at Thunder Bay. Stocks held at the west coast ports of Vancouver and Prince Rupert accounted for 54.8% of total terminal stocks, and declined by 26.7%, to an average of 488,100 tonnes from 665,800 tonnes a year earlier. An 18.0% reduction was reported by Thunder Bay, with stocks falling to an average of 353,200 from 430,600 tonnes. The exception was Churchill, where stocks increased by 14.1%, to an average of 49,300 tonnes from 43,200 tonnes. [Table 5C-2]

As in past years, wheat again constituted the largest single commodity held in inventory, accounting for 54.0% of total stocks. Even so, wheat inventories fell by 7.8%, to an average of 480,700 tonnes from 521,400 tonnes a year earlier. This was complemented by even more substantive reductions in the stocks of other commodities: peas, 10.3%; canola, 14.6%; durum, 32.4%; flaxseed, 37.9%; oats, 63.6%; barley, 65.5%; and rye, 75.0%. [Table 5C-2]

Figure 35: Average Terminal Elevator Capacity Turnover

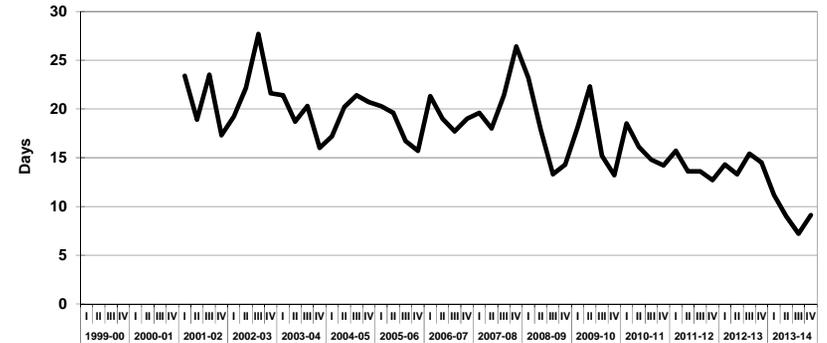
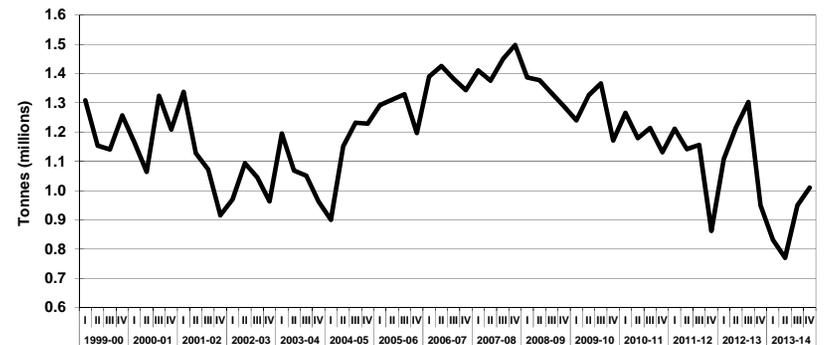


Figure 36: Terminal Elevators – Average Weekly Stocks



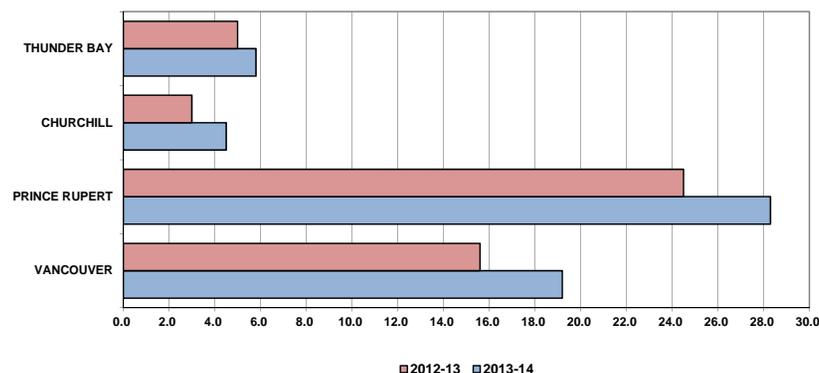
Days in Store

Along with the decline in terminal stocks was a decrease in the amount of time grain spent in inventory, with the average number of days-in-store falling by 36.4%, to a GMP record low of 9.1 days, from 14.3 days a year earlier. Much of the impetus for this came from reductions along the Pacific Seaboard and at Thunder Bay, both of which reported averages at record, or near-record, lows. The number of days-in-store for the Pacific Seaboard stood at an average of 7.7 days. This value, however, cannot be compared directly to those of Vancouver and Prince Rupert, which, until the 2013-14 crop year, had been reported individually.³² Even so, it is lower than the 12.4-day and 11.4-day values respectively reported by Vancouver and Prince Rupert a year earlier. This was supported by a 37.1% decrease at Thunder Bay, which saw its average fall to 12.9 days from 20.5 days. Partially blunting these decreases was a 38.6% increase at Churchill, where the average rose to 18.3 days from 13.2 days a year earlier. [Table 5C-3]

The overall reduction in storage times reflected those posted by the majority of individual commodities, many of which also fell to record, or near-record, low levels. For the most sizeable of these stockpiles, wheat, the decrease amounted to 27.5%, with storage time falling to an average of 10.0 days from 13.8 days a year earlier. Durum, which ranked second in terms of inventory tonnage, saw a more substantive 38.8% reduction, with storage time falling to an average of 13.1 days from 21.4 days. Third-ranked canola posted a reduction of 32.6%, with its average time in storage falling to 6.0 days from 8.9 days. This was supported by decreases of 41.6% for flaxseed, 65.5% for barley, and 66.0% for oats.

³² 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. Any direct comparison with the data gathered under the GMP for previous crop years is no longer possible.

Figure 37: Terminal Elevators - Average Days-in-Store



Stock-to-Shipment Ratios

Whether sufficient stocks were on hand to meet demand can best be gauged by the average weekly stock-to-shipment ratios. This measure provides an indication of how terminal stock levels related to the volume of grain loaded onto ships during the course of any particular week.³³

Here too, data specific to Vancouver and Prince Rupert is no longer being published. Rather, these port-specific values are now being aggregated into a single value for the Pacific Seaboard at large. As a result, any comparison to the data gathered for previous crop years is no longer possible. What can be said is that the average ratio for most grains moving through these west coast ports stood comfortably at, or above, a value of 2.0. The exceptions to this were canola, peas and flaxseed, which posted

³³ 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.

average ratios of 1.6, 1.2 and 1.5 respectively. 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 also stood well above a value of 2.0. This included wheat, which posted a reduction of 41.2% to 3.4, and durum, which fell by a lesser 30.9% to 2.1. Churchill's ratio values were consistent with those of Thunder Bay, but moved substantially higher: by 32.9%, to 1.9, in the case of wheat; and by 206.9%, to 2.6 in the case of durum.

PORT OPERATIONS

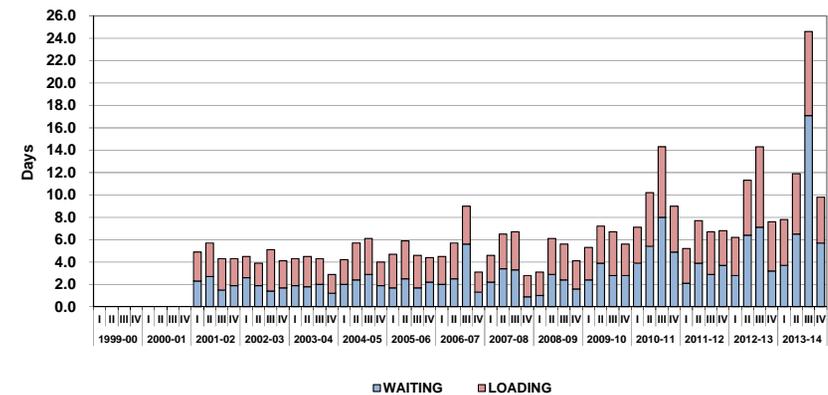
A total of 865 vessels called for grain at western Canadian ports during the 2013-14 crop year. This represented a 10.3% increase over the 784 ships that arrived for loading a year earlier. Increases were reported by all ports, with a surge in fourth-quarter vessel calls accounting for a substantial portion of the overall rise. Nominally, the largest gain was made by Thunder Bay, where 312 vessels called compared to 278 a year earlier. This was supported by a 27-ship increase at Vancouver, which reported 404 vessels calling against the previous crop year's 377. These were supported by a greater number of vessels loadings at Prince Rupert and Churchill as well, which reported year-over-year gains of 18 and two respectively.

Average Vessel Time in Port

The amount of time spent by vessels in port increased by 28.9% in the 2013-14 crop year, climbing to an average of 12.5 days from the 9.7-day average posted a year earlier. A 56.3% increase in the amount of time vessels spent waiting to load, which rose to an average of 7.5 days from 4.8 days a year earlier, was the chief driver in the overall escalation.³⁴ This was supported by a 2.0% increase in the amount of time vessels actually

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.

Figure 38: Average Vessel Time in Port



spent loading, which rose to an average of 5.0 days from 4.9 days. [Table 5D-1]

All ports reported year-over-year increases in the average amount of time vessels spent in port. The increases tied to the west-coast ports of Vancouver and Prince Rupert proved the most alarming. For Vancouver, the average rose by 25.3%, to 18.8 days from 15.0 days a year earlier. Prince Rupert posted a far more substantive 57.3% increase, with its average climbing to 18.4 days from 11.7 days. Adding to this upward pressure was the increase posted by Churchill, where the average rose by 50.0%, to 5.1 days from 3.4 days. Thunder Bay posted a much lesser 10.0% gain, with its average time-in-port rising to 2.2 days from 2.0 days a year earlier.³⁵

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, and the limited delays incurred by vessels waiting to berth.

However, these values effectively mask the height to which the underlying quarterly averages actually ascended. During the first quarter a ship spent an average of 7.8 days in port; by the second, it had risen to 11.9 days; and by the third, to a GMP record of 24.6 days. These values reflect the unprecedented difficulties experienced by the GHTS in getting grain to export position in the middle six months of the crop year. A dramatic improvement in performance during the last three months of the crop year helped reduce the fourth quarter's average to a much lower 9.8 days.

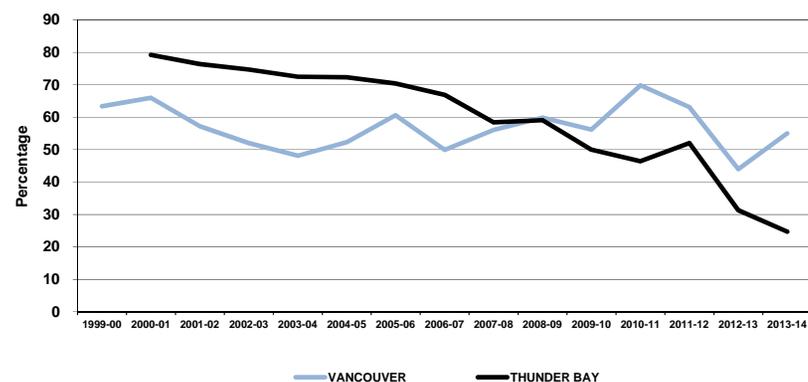
Distribution of Vessel Time in Port

In keeping with the added time taken by ships in port, the proportion of ships spending more than five days in port also rose, to 61.3% from 54.4% a year earlier. Moreover, there was a rise 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 rising to 35.8% from 24.6% a year earlier. All of these delays were associated with ships calling at Vancouver and Prince Rupert. These statistics provide yet another indication of the fact that the export movement of grain was not keeping pace with the demand embodied by vessels arriving at port throughout much of the 2013-14 crop year. Moreover, these delays have progressively worsened since the 2010-11 crop year, suggesting the cause is of a more structural, rather than isolated, nature. [Table 5D-2]

Distribution of Berths per Vessel

There were some noteworthy shifts in the number of vessels needing to berth more than once during the 2013-14 crop year. At Vancouver, the proportion of vessels needing to berth two or more times increased to 55.0% from 44.0% 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 fell noticeably, to 24.7% from 31.3% a year earlier. This value ranks well below the 79.2% benchmarked for the port in the 2000-01 crop year, and marks a

Figure 39: Multiple Berthing Vessels



further continuation 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.³⁶ This is intended to provide some indication of the effectiveness with which grain flowed through western Canadian ports. For the fourth consecutive year, these two elements combined to produce a negative value and a loss of \$54.4 million versus a loss of \$17.1 million a year earlier. [Table 5D-4]

This deterioration was primarily shaped by a sharp rise in demurrage costs, which rose to \$61.1 million from \$22.6 million the previous year. The most significant monetary contributor to this was a 123.1% increase in the demurrage costs incurred along the Pacific Seaboard, which rose to

36 Note should be made of the fact that data relating to vessel demurrage and dispatch is 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.

\$44.5 million from \$19.9 million a year earlier. This was enlarged by a 533.6% increase in the demurrage for Churchill, Thunder Bay and points along the St. Lawrence Seaway, which rose to \$16.6 million from \$2.6 million a year earlier. While on the whole these increases show that vessel delays had a broad monetary impact, much of it was centred on west coast activity.

Terminal Revenues

The GMP includes a provision for an annual reporting of terminal elevator revenues. The WGEA and its members developed a method of reporting total terminal revenues using a number of key financial measures, and provided data for their terminals at Thunder Bay and Vancouver.³⁷ [Table 5D-8]

Total reported terminal revenues for the 2013-14 crop year increased marginally, rising by 0.5% to \$438.5 million from \$436.2 million a year earlier. This result was shaped by two inputs: a 1.7% increase at Vancouver, which saw revenues increase to \$358.6 million from \$352.8 million; and a 4.2% decrease at Thunder Bay, where terminal revenues fell to \$79.9 million from \$83.4 million.

SYSTEM PERFORMANCE

The supply chain model provides a useful framework by which to examine the speed with which grain moves through the GHTS. For the 2012-13 crop year, it was observed that this process required an average of 46.2 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 21.9-day improvement over the base-year average of 68.1 days.

³⁷ It should be noted that the terminal revenue data used here is un-audited.

³⁸ Deliveries to port started slowly in the 2013-14 crop year owing to a shortage of stocks in the country. But by week 6, as the fall harvest was accumulating, the movement of grain had begun to exceed seasonal norms. Owing to a major derailment on the CN mainline to Vancouver

Although the overall average fell still further in the first quarter of the 2013-14 crop year, to 42.9 days, it rose sharply in the second, attaining a height of 49.2 days, before then falling back to 42.9 days in the third, and a record-shattering 31.2 days in the fourth. This reduced the overall average for the crop year to 41.3 days, establishing a new record low for the GMP. The result was mainly shaped by a 5.2-day decrease in the amount of time spent by grain in storage at a terminal elevator, which fell to 9.1 days from the previous crop year's 14.3-day average. This reduction, however, was blunted by a 0.4-day increase in the amount of time grain spent in inventory at a country elevator, which rose to an average of 26.9 days from 26.5 days. Although the preceding averages were shaped by problems with railway service, the carriers' average loaded transit time actually declined by 0.1 days, to 5.3 days from 5.4 days. [Table 5E-1]

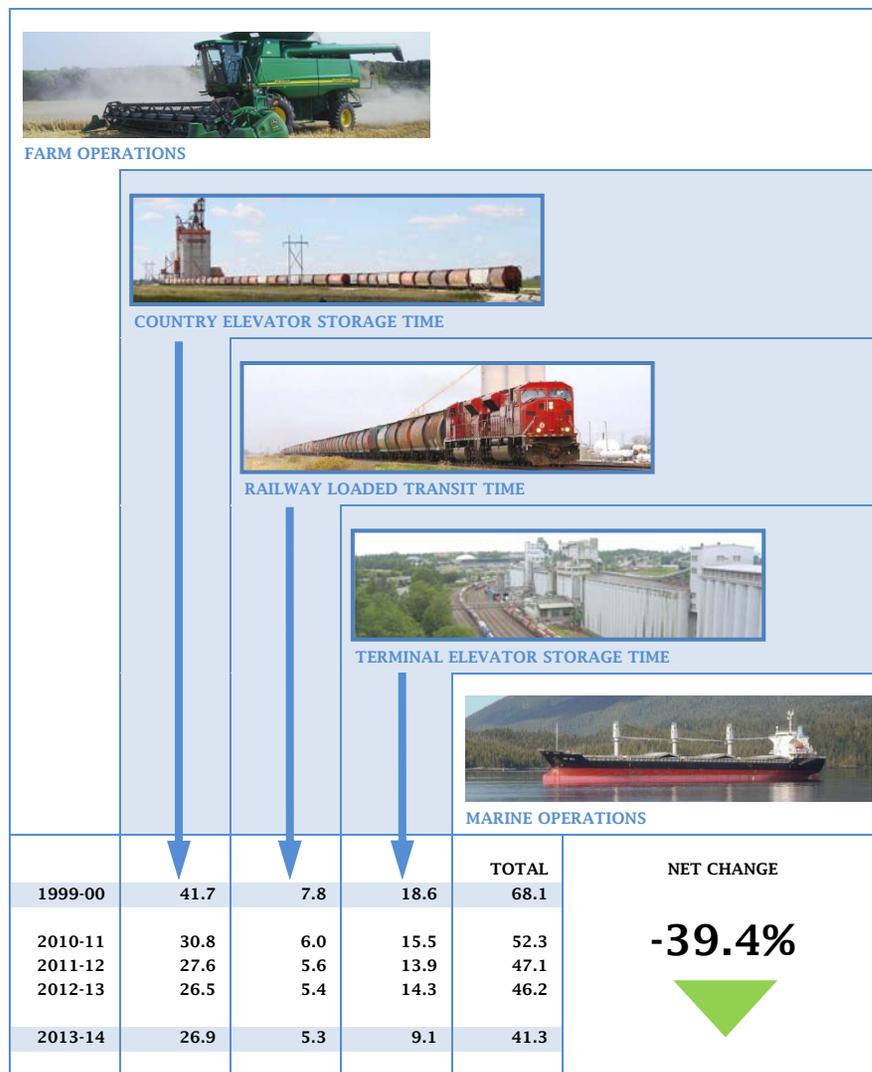
Despite the fact that the first quarter's average ranked among the lowest reported during the GMP, by the close of the period there were already indications that this was unlikely to endure. The burdens of this record harvest meant that the GHTS would be unable to move all of the grain offered within the crop year. This was compounded by a deterioration in system performance that manifested itself in late October when the supply of grain reaching export position began to decline rapidly.³⁸ With stocks in the country elevator system rapidly increasing, the decrease in the amount of grain moving to port position soon resulted in dwindling terminal stocks and an increase in the number of vessels waiting to load at port.

The extension of these difficulties into the third quarter prompted the federal government into taking actions that had an immediate impact on GHTS performance. A few observations in regard to this performance follow:

in mid-October, volumes began to slump in week 12. And while there was a slight recovery in traffic volumes during the weeks that followed, by week 18 the system's weekly volumes had fallen to 80% of its five-year average. A recovery to seasonal norms was not realized until week 30.

- First, grain production shattered the previous record, reaching 76.3 million tonnes. Along with carry-forward stocks of 4.9 million tonnes, this effectively raised the grain supply to an extraordinary 81.2 million tonnes. This proved to be 20% larger than anything witnessed in the GMP’s 14-year history, and constituted an enormous challenge to the GHTS as a whole.
- Second, by the close of the first quarter there were indications that the GHTS’s carrying capacity was not adequate to the task presented. These indications, which first began to manifest themselves in a shortage of railcars for loading in the country, were soon beginning to engulf other parts of the system. Burgeoning country elevator stocks, along with declining terminal elevator stocks and an increasing number of ships waiting to load, particularly at the ports of Vancouver and Prince Rupert, were all symptomatic of constrained handling capacity.
- The problems that beset the GHTS in the first quarter only increased in the second. The movement of grain was further undermined by the onset of winter and the various problems that extreme weather brought to railway operations³⁹, the most predominant being the necessity of moving to shorter train lengths, which reduces the overall carrying capacity of the railways. In part, this led to the railways being unable to carry through on the rail capacity that they themselves had committed to providing, which constricted the flow of grain still further. By the close of January 2014 the situation was becoming acute, with farmers and shippers all denouncing the level of service they were receiving from the railways. Moreover, these complaints were now being directed to the Government of Canada with demands for some form of corrective action.
- Finally, with the situation deteriorating still further in the opening weeks of the third quarter, the federal government moved to implement a number of extraordinary corrective measures. Chief

Figure 40: Days Spent Moving Through the GHTS Supply Chain



39 Temperatures in Manitoba and eastern parts of Saskatchewan were notably colder, particularly between weeks 19 and 23. Environment Canada statistics show that the average weekly minimum temperature in Winnipeg during this period ranged from 5.4 degrees to 10.8

degrees below the five-year average for the same period. Temperatures in Alberta and the western portion of Saskatchewan were reported to be at seasonal norms.

among these was an Order in Council defining the minimum weekly grain volumes that both CN and CP were to move. By the close of the third quarter, there were signs that these measures, along with the loosening of winter's grip on railway operations, were beginning to achieve their desired effect: the GHTS was regaining its fluidity and the backlog in traffic was starting to diminish. Owing to the even more impressive gains made over the course of the next three months, the supply chain posted new records for the speed with which it was able to move grain through the system, both for the fourth quarter as well as the 2013-14 crop year as a whole.

- These difficulties again exposed the vulnerabilities of the grain supply chain. Beyond the system's struggles to accommodate a crop of such unprecedented size, it also had difficulty in matching the speed with which grain had previously been moved, specifically in the second and third quarters. Moreover, the difficulty associated with gathering grain in the country, moving it to port by rail, and getting it loaded onto waiting ships, suggests a capacity deficiency arising from an inadequate supply of railway resources. Whether owing to a lack of locomotives, rolling stock or people, the evidence would suggest that North American railways have repeatedly had difficulty in servicing their customers when confronting a sharp rise in traffic volume, derailments, or harsh weather conditions. While much of this is beyond the railways' control, there are many stakeholders who maintain that the reduction in physical and human resources arising from their quest to improve productivity may have also undermined their ability to maintain service levels when challenged.⁴⁰

40 Over the course of the last three decades, all North American railways have strived to enhance their operational efficiency by sharply reducing their total costs. Much of this effort has focused on improving the utilization of their various assets. By way of example, since installing a new chief executive officer in 2012, CP has embarked on an aggressive cost-cutting program. In that time, the railway has reduced the number of its locomotives from 1,710 to

1,651; its rolling stock fleet from 58,100 railcars to 47,600 railcars; and the average number of its employees from 16,097 to 15,011. Source: Securities and Exchange Commission filings, Form 40-F, Canadian Pacific Railway Company, for fiscal years 2011, 2012, and 2013.

Section 6: Producer Impact

Indicator Description	Table	1999-00	2011-12	2012-13	2013-14				YTD	% VAR
					Q1	Q2	Q3	Q4		
Export Basis										
ICWRS Wheat (\$ per tonne) - Original Methodology	6A-10A	\$54.58	\$74.75	n/a						
ICWRS Wheat (\$ per tonne) - Revised Methodology (1)	6A-10A	n/a	n/a	\$53.49					\$131.89	146.6%
ICWA Durum (\$ per tonne) - Original Methodology	6A-10B	\$67.63	\$97.24	n/a						
ICWA Durum (\$ per tonne) - Revised Methodology (1)	6A-10B	n/a	n/a	\$108.47					\$160.30	47.8%
1 Canada Canola (\$ per tonne)	6A-10C	\$52.51	\$54.16	\$56.50					\$80.76	42.9%
Canadian Large Yellow Peas - No. 2 or Better (\$ per tonne)	6A-10D	\$54.76	\$92.64	\$81.07					\$81.24	0.2%
Producer Cars										
Producer-Car-Loading Sites (number) - Class 1 Carriers	6B-1	415	234	228	228	211	211	211	211	-7.5%
Producer-Car-Loading Sites (number) - Class 2 and 3 Carriers	6B-1	122	134	136	136	136	136	136	136	0.0%
Producer-Car-Loading Sites (number) - All Carriers	6B-1	537	368	364	364	347	347	347	347	-4.7%
Producer-Cars Scheduled (number) - Covered Hopper Cars	6B-2	3,441	14,341	9,259	2,206	4,658	6,641	2,098	15,603	68.5%

(1) The methodology used to calculate the export basis in the 2012-13 and 2013-14 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 involved in the calculation of 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.

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

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.

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.	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.
Price Differential	For 1 Canada Western Red Spring 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).	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.	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.
<p>1) - ICE Futures Canada (formerly the Winnipeg Commodity Exchange) collects Vancouver cash prices and spot prices at selected country elevator locations daily.</p> <p>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.</p> <p>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.</p>		

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, durum, canola, and yellow peas. Even in those years when the export basis fell, the financial gain derived from the reduction proved far less than that gained from better grain prices. But the escalation in grain prices has been highly erratic.

In the first four years of the GMP, grain prices moved steadily higher. This, however, was followed by a three-year decline beginning in the 2003-04 crop year. But prices began to rally yet again in the 2006-07 crop year. The ensuing appreciation in price lifted producer returns to their highest levels the following year. This long-established pattern of rising and falling prices would be repeated yet again over the course of the next four years, although with greater severity owing to the financial crisis that gripped the world in 2008. Nevertheless, by the close of the 2012-13 crop year, grain prices had rebounded substantially.

Along with 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 were 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 reliable time series for wheat and durum that extended back to the beginning of the GMP.

1CWRS WHEAT

The financial return to farmers of 1CWRS wheat amounted to an estimated \$195.23 per tonne in the 2013-14 crop year. This was 29.1% less than the \$275.27 reported for the 2012-13 crop year. Much of this reduction, however, was attributable to an increase in the export basis rather than a decrease in grain prices. [Table 6A-10A]

Export Quotation

Since the 2012-13 crop year the GMP has used a tonnage-based weighted average export quotation as the principal barometer for the price of 1CWRS wheat (13.5% protein).⁴³ Although prices undulated marginally in the opening months of the 2013-14 crop year, they ultimately started drifting downwards, reaching a low midway through the second quarter that averaged \$314.22 per tonne. From this point, however, prices began to strengthen. By the close of the 2013-14 crop year, the average had rebounded to \$327.12 per tonne. This proved to be marginally below the \$328.76-per-tonne average recorded a year earlier.

The early price decline reflected an increase in international supplies, with global wheat production anticipated to reach near-record highs. Much of this was tied to expectations of increased wheat production within key exporting regions, including Black Sea countries, the European Union, Australia and Argentina. However, prices soon began to rally, fuelled in large measure by dryness in the American winter-wheat area, and escalating tensions between Russia and Ukraine that gave rise to concerns over a possible slowing of exports from that region.

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.

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. This differential effectively 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.

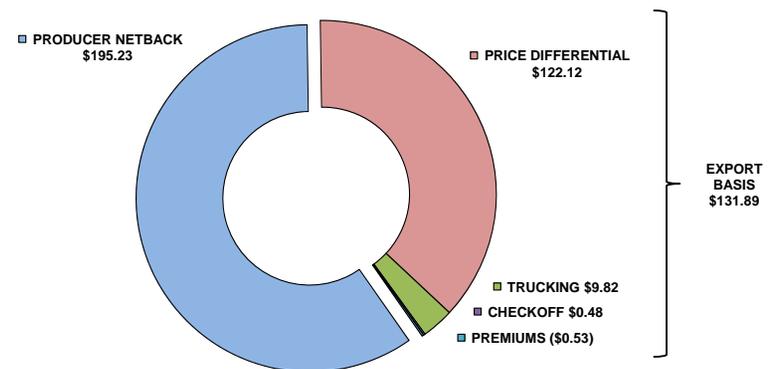
The second component encompasses all of the financial benefits accruing to producers from the receipt of any offset to these expenses. For the most part, this now relates only to the trucking premiums farmers receive from the grain companies for choosing to deliver grain to them. As a result of the move to open-market operations, the transportation-savings benefit that had been passed back to producers 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, these costs were estimated to have risen by 143.9% in the 2013-14 crop year, to an average of \$132.42 per tonne from \$54.29 per tonne a year earlier. The largest cost element within this framework is represented by the price differential, which accounted for an average of \$122.12 per tonne, or 92.2% of the total.

This was followed by the costs associated with trucking wheat from the farm gate to a local elevator. This cost, which is estimated to have

Figure 41: Producer Netback – 1CWRS Wheat



averaged \$9.82 per tonne in the 2013-14 crop year, comprised about 7.4% of total direct costs. As opposed to the price differential, the cost of trucking can still be traced back over the last 15 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 just \$0.48 per tonne, and accounted for just 0.4% of the overall total.

Export Basis – Financial Benefits

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

to a mere \$0.80 per tonne in the 2012-13 crop year, a reduction of 92.2% from the \$10.24 per tonne reported a year earlier.

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.⁴⁴ Moreover, they were of significant value, reaching an average of \$8.17 per tonne in the 2011-12 crop year against \$2.32 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 \$0.80. The 2013-14 crop year saw this cut still further, with the average premium falling to just \$0.53 per tonne. This served to offset only 0.4% of the associated direct costs.

1CWA DURUM

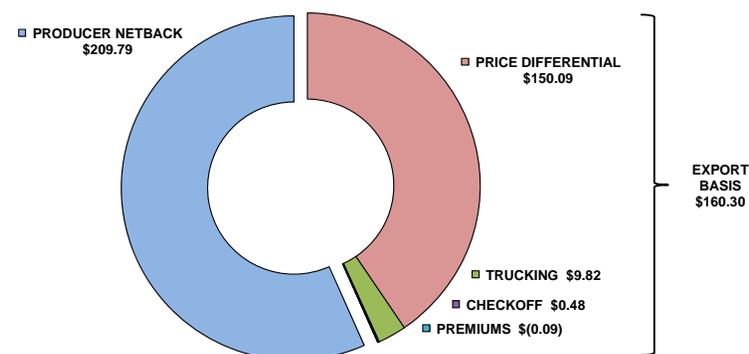
The financial return to farmers of 1CWA durum amounted to an estimated \$209.79 per tonne in the 2013-14 crop year. This was 25.1% less than the \$280.25 per tonne reported for the 2012-13 crop year. As was the case with 1CWRS wheat, much of this reduction was attributable to an increase in the export basis rather than to a decrease in the price of grain. [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 drift steadily lower over the course of the 2013-14 crop year. By the close of the 2013-14 crop year, the average had slipped to \$370.09 per tonne, 4.8% below the \$388.72-per-tonne average recorded for the previous crop year.

⁴⁴ 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,

Figure 42: Producer Netback - 1CWA Durum



Durum prices were influenced by the same forces that had initially pushed wheat prices lower: an increase in global supplies occasioned by good production levels in Europe and the United States. Canada's record harvest only served to augment these supplies and undermine prices still further.

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.

or even the absorption of trucking costs are also employed. The GMP does not attempt to evaluate these other benefits.

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 were estimated to have risen by 46.8% in the 2013-14 crop year, to an average of \$160.39 per tonne from \$109.25 per tonne a year earlier. The largest cost element within this framework is represented by the price differential, which accounted for an average of \$150.09 per tonne, or 93.6% of the total.

This was followed by the costs associated with trucking wheat from the farm gate to a local elevator. This cost, which is estimated to have averaged \$9.82 per tonne in the 2013-14 crop year, comprised about 6.1% of total direct costs. As opposed to the price differential, the cost of trucking can still be traced back over the last 15 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 just \$0.48 per tonne, and accounted for just 0.3% of the overall total.

Export Basis - Financial Benefits

In past years, the direct costs cited above were typically offset by two financial benefits that accrued to producers. These came in the form of any trucking premium that may have been received directly from a grain company, as well as their indirect share in the transportation savings realized by the CWB. 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. The 2013-14 crop year produced an equally dramatic 88.5% reduction, with the average falling to \$0.09 per tonne. This represented an offset to direct costs of just 0.1%.

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 loss of the CWB's monopoly. As a result, the monitor has been able to carry forward with the time series begun 15 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 remains the prevailing price that has had the most 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 \$503.29 per tonne in the 2007-08 crop year. This proved short-lived as a subsequent decline in canola prices undercut these gains, reducing the farmer's netback to \$374.46 per tonne by the 2009-10 crop year. Although a resurgence in canola prices helped steadily lift the producer's netback to a GMP record of \$595.10 per tonne in the 2012-13 crop year, lower prices in the 2013-14 crop year had a negative impact on these returns. The average netback to producers fell by an estimated \$168.56 per tonne, or 28.3%, to \$426.54 per tonne.

Vancouver Cash Price

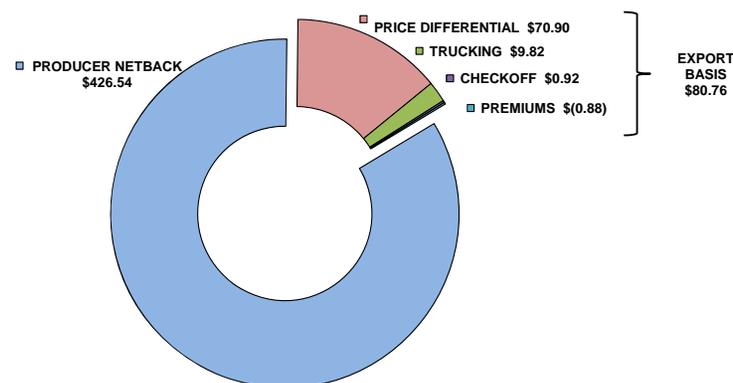
As with other grains, higher market prices have proven to be instrumental in improving the netback to producers of 1 Canada canola. To be sure, the price of canola has fluctuated significantly since the beginning of the GMP. From its base-year benchmark of \$291.61 per tonne, the Vancouver cash price has 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 largely to record production in Canada as well as larger than normal soybean harvests in the United States and Brazil. These forces resulted in the average Vancouver cash price falling by 22.1%, to \$507.30 per tonne from \$651.60 per tonne a year earlier.

Export Basis

While the export basis for 1 Canada canola has risen by 53.8% over the course of the last 15 years, to an average of \$80.76 in the 2013-14 crop year from \$52.51 per tonne in the GMP's base year, much of the increase was registered in the last crop year. However, this net gain tends to obscure the fluctuations that have occurred during this same period. To be sure, the export basis for canola stood marginally below its base-year value throughout the majority of this period.

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

Figure 43: Producer Netback - 1 Canada Canola



Export Basis - Direct Costs

The direct costs tied to 1 Canada canola moved generally lower in the initial years of the GMP, ultimately reaching a low of \$41.31 per tonne in the 2004-05 crop year before then beginning to rise. Even so, by the 2012-13 crop year, total direct costs still stood only marginally above the \$54.99-per-tonne value benchmarked in the base year. The 2013-14 crop year, however, saw these direct costs rise by 42.0%, to \$81.64 per tonne from the \$57.49 per tonne reported a year earlier.

Much of the force behind this comes from an increase in the price differential, which itself largely reflects a surplus of canola supplies in the face of the prevailing demand. The 2013-14 crop year saw the price differential rise by 51.7%, to an average of \$70.90 per tonne from \$46.75 per tonne a year earlier. This represented 86.8% 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 climbed by 65.3% in the last 15 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 2013-14 crop year than it did in the base year, 15.9% versus 10.8% respectively. The remaining direct costs, which accounted for just 1.1% 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. Over the course of the last 15 years, the average trucking premium paid on canola has fallen to \$0.88 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 1.1% 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 tonne in the 2011-12 crop year. Ensuing price reductions were largely responsible for its decline over the next two crop years, with the

Figure 44: Producer Netback - Large Yellow Peas



producer's netback slipping to \$311.43 per tonne in the 2012-13 crop year and then to \$244.88 per tonne in the 2013-14 crop year.

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.

The last two crop years, however, have witnessed a 20% decline in price, with the average dealer's closing price slipping to \$392.50 per tonne in the 2012-13 crop year, and then to \$326.12 in the 2013-14 crop year. Much of this reduction stemmed from an increase in supplies, not only as a result of record Canadian production, but also from heightened production in key markets such as India.

Export Basis

The export basis for large yellow peas has risen over the course of the GMP, from a base-year value of \$54.76 to as much \$101.57 per tonne in the 2008-09 crop year. Even so, this rise has been somewhat erratic, with lower values having been posted in each of the four ensuing crop years. The 2013-14 proved little different in this regard with the export basis rising by just 0.2%, to an average of \$81.24 per tonne from \$81.07 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 15 years the direct costs associated with large yellow peas has risen by 48.0%, to \$81.31 per tonne in the 2013-14 crop year from \$54.94 in the base year. The majority of this increase was derived from a 42.9% increase in the price differential, which climbed to \$68.92 per tonne from \$48.23 per tonne over the same period. But this escalation was also characterized by significant fluctuations as a result of prevailing market conditions, taking values that ranged from as little as \$44.56 per tonne in the 2005-06 crop year to as much as \$91.46 per tonne in the 2008-09 crop year. These same forces were responsible for lower values in each of the next five crop years. Even so, these gyrations did little to alter the relationship with direct costs, with the price differential falling only marginally, to an 84.8% share of direct costs from 87.8% share 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 2013-14 crop year. On a comparative basis, this element accounted for 12.1% of the direct costs, against a somewhat lesser 10.8% in the base year. The remaining 3.2% 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

Trucking premiums are even less commonly used to encourage the delivery of large yellow peas than they are 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 2013-14 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 being abandoned by CN or CP, establishing shortline railways that then became an integral element in their broader grain-handling operations. Regardless of the approach employed, the aim is 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 14 years of the GMP the number of producer-car loading sites situated across western Canada was reduced by almost a half. With the close of the 2012-13 crop year, only 364 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 64.6%, to 228 from 644. Conversely, those operated by the smaller Class 2 and 3 carriers increased by 109.2%, to 136 from 65. The 2013-14 crop year brought the closure of another 17 sites in the second quarter, which reduced the overall total by 4.7%, to 347 from 364. As all of these closures were made by the major railways, their number was reduced by 7.5%, to 211 from 228. Of the 17 sites closed, 12 were situated along the CN network, and five along that of CP. [Table 6B-1]

Regionally, Manitoba and Alberta posted the largest attrition rates, with the number of producer loading sites declining by 69.5% and 66.8% respectively. The rate of decline in Saskatchewan was substantially less, with the number of sites having fallen by only 29.7% during the same interval. And while the overall number of producer loading sites has declined sharply, the reduction has also been somewhat irregular, with the largest cuts having come in the first few years of the GMP, and a significant secondary reduction in the 2009-10 crop year.

Producer Car Shipments

Despite the general reduction in loading sites, producer-car shipments have risen significantly. Over the course of the GMP’s first 13 years these shipments more than quadrupled, increasing to a high of 14,341 carloads in the 2011-12 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 the case in the 2012-13 crop year, where shipments fell to 9,259 carloads. Much of this downturn, however, may well have

Figure 45: Producer Car Loading Sites

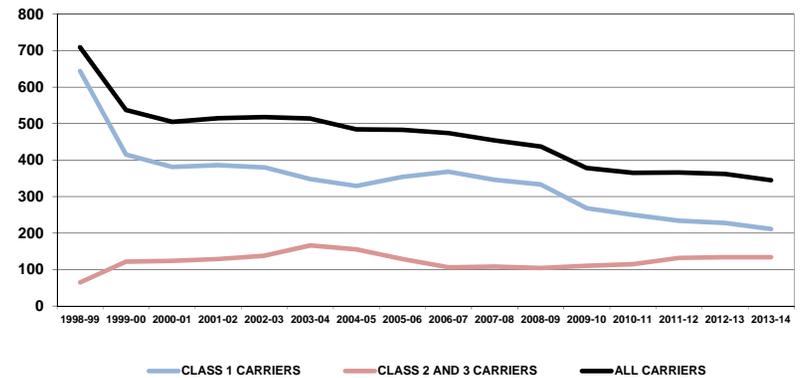
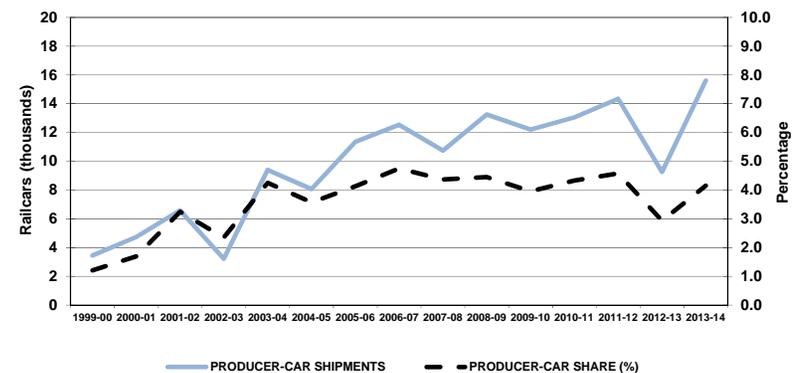


Figure 46: Producer-Car Shipments



been tied to the uncertainty that accompanied the loss of the CWB's monopoly over the marketing of wheat and barley.

Even so, the number of producer cars scheduled for movement in the 2013-14 crop year rebounded sharply in each of the first three quarters before declining modestly in the fourth. As a result, total shipments for movement in the crop year rose by 68.5%, to a GMP record of 15,603 carloads. This surpassed the previous high of 14,341 carloads, set in the 2011-12 crop year, by 8.8%. While this in part reflected the forging of new marketing arrangements for their grain, it also underscored the practical financial considerations inherent in trying to move so large a crop in a declining market.

However, the total number of requests for producer cars actually surged to 21,189 during the 2013-14 crop year, largely as a result of producers' inability to access other shipping options. While 2,478 of these requests were ultimately cancelled or withdrawn, another 3,108 outstanding requests were eventually rolled over into the program for the 2014-15 crop year.

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 2013-14 crop year saw this share decline still further, to 73.4% from 84.2% a year earlier. On the other hand, shipments of oilseeds and other commodities continued to climb, with 4,150 carloads moved against a much lesser 1,464 a year earlier. Moreover, these shipments encompassed a much greater share of total producer-car movements, accounting for 26.6% compared to 15.8% the year previous. Much of this gain appears attributable to the authority now held by the CWB in handling these commodities, and which provided producers with a much needed marketer for their shipments.

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.

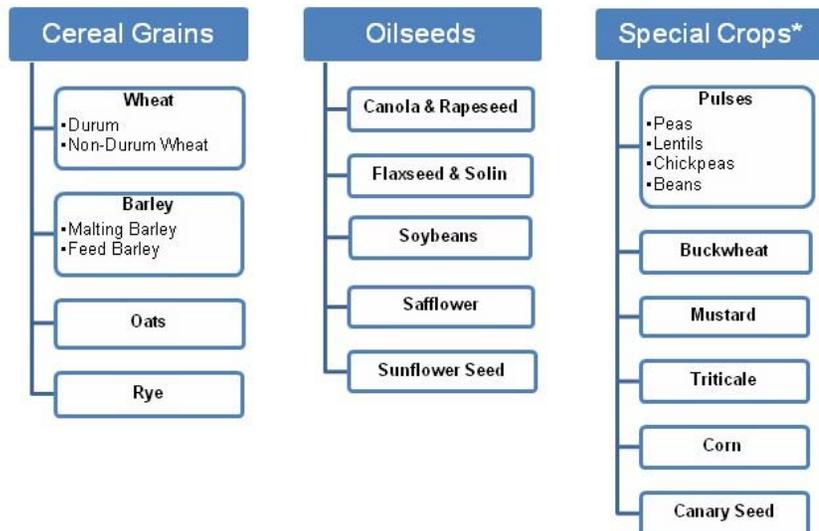
In a larger sense, these reforms were expected to alter the commercial relations that have traditionally existed between the primary participants in the GHTS: producers; the Canadian Wheat Board; grain companies; railway companies; and port terminal operators. Using a broad series of indicators, the 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 the four western ports; and by vessel from terminal elevators at the ports.
- 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, as well as the activities of the Canadian Wheat Board in the adoption of more commercially oriented policies and practices.
- 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	CWB	Paterson Grain
Agriculture and Agri-Food Canada	Fife Lake Railway Ltd.	Port Metro Vancouver
Alberta Agriculture, Food and Rural Development	Gardiner Dam Terminal	Port of Churchill
Alberta Federation of Agriculture	Government of British Columbia	Port of Thunder Bay
Alberta Transportation	Grain Growers of Canada	Prairie West Terminal
Alliance Grain Terminal Ltd.	Great Sandhills Terminal	Prince Rupert Grain Ltd.
Alliance Pulse Processors Inc.	Great Western Railway Ltd.	Prince Rupert Port Authority
Battle River Railway	ICE Futures Canada, Inc.	Pulse Canada
BC Maritime Employers Association	Inland Terminal Association of Canada	Red Coat Road and Rail Ltd.
Big Sky Rail Corp.	Keystone Agricultural Producers	Richardson Pioneer Ltd.
Boundary Trail Railway Company Inc.	Kinder Morgan Canada	Saskatchewan Agriculture
Canadian Canola Growers Association	Lake Line Railroad Inc.	Saskatchewan Highways and Infrastructure
Canadian Grain Commission	Last Mountain Railway	Saskatchewan Association of Rural Municipalities
Canadian Maritime Chamber of Commerce	Lethbridge Inland Terminal Ltd.	South West Terminal
Canadian National Railway	Long Creek Railroad	Statistics Canada
Canadian Pacific Railway	Louis Dreyfus Canada Ltd.	Stewart Southern Railway
Canadian Ship Owners Association	Manitoba Agriculture, Food and Rural Development	Transport Canada
Canadian Special Crops Association	Manitoba Infrastructure and Transportation	Viterra Inc.
Canadian Transportation Agency	Mission Terminal Inc.	West Central Road and Rail Ltd.
Cando Contracting Ltd.	Mobile Grain Ltd.	Western Barley Growers Association
Canola Council of Canada	National Farmers Union	Western Canadian Wheat Growers Association
Cargill Limited	North West Terminal Ltd.	Western Grain By-Products Storage Ltd.
Chamber of Shipping of British Columbia	OmniTRAX Canada, Inc.	Western Grain Elevator Association
CMI Terminal	Parrish & Heimbecker Ltd.	Weyburn Inland Terminal Ltd.