Annual Report

2017-2018 Crop Year

Monitoring the Canadian Grain Handling and Transportation System

Government of Canada Gouvernement du Canada

Quorum Corporation

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

Cover Image: An aerial view of one of several recently commissioned inland grain terminals. This facility, located at Maymont, Saskatchewan, is illustrative of the newest high-throughput elevators now appearing across the prairies. Equipped with loop tracks that allow for the continuous loading of unit trains comprised of up to 150 hopper cars in under twelve hours, these new facilities exemplify the current state-of-the-art in grain handling efficiency.

Image courtesy of GrainsConnect Canada

Foreword

The following report details the performance of Canada's Grain Handling and Transportation System (GHTS) for the crop year ended 31 July 2018, and focuses on the various events, issues and trends manifest in the movement of Western Canadian grain during the past year. This is the eighteenth annual report submitted by Quorum Corporation in its capacity as the Monitor appointed under the Government of Canada's Grain Monitoring Program (GMP).

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

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

As in the past, each series builds on data collected by the Monitor from the industry's various stakeholders, and frames the discussion using year-over-year comparisons. To that end, activity in the 2017-18 crop year is largely gauged against that of the 2016-17 crop year. But the Grain Monitoring Program (GMP) was also intended to frame recent activity against the backdrop of a longer time series. Beginning with the 1999-2000 crop year – referred to as the GMP's "base" year – the Monitor has now assembled relatable data in a time series that extends through 19 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.grainmonitor.ca). Similarly, much of this same data can no longer be fully presented in many of the charts found throughout this report owing to space and legibility limitations. Where necessary, the Monitor has opted to graphically portray only a portion – often the last ten crop years – of the data. 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 2019

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Executive Summary

Western Canadian grain required an average of 45.8 days to move through the Grain Handling and Transportation System (GHTS) in the 2017-18 crop year. This proved to be 12.8% greater than the 40.6-day average reported a year earlier. This 5.2-day worsening was reflected in increases in all areas of GHTS activity, with the average amount of time grain spent in inventory at a country elevator increasing by 3.4 days, a 1.0-day increase in its storage time at terminal elevators, and another 0.8-day penalty from an increase in the railways' loaded transit time. But these increases were all symptomatic of broader issues at play in the provision of railway service. Unfortunately, they also came at a time when the GHTS was confronting a total grain supply of 80.6 million tonnes, the second largest on record. Furthermore, non-grain shipments were also at historic highs. The resultant demand on the railways' limited carrying capacity led many stakeholders to voice concern over the reduced priority that grain shipments might again be given. Such treatment, it was feared, could bring about the same kind of service problems encountered in the 2013-14 crop year.

Late in the 2016-17 crop year the average loaded-transit and car-cycle times associated with Western Canadian grain shipments had already begun to climb. This continued into the 2017-18 crop year, with year-to-date increases of 15% being typical by the close of the first quarter. The situation continued unabated into the second quarter and worsened in the third. At its peak in February 2018, the average loaded transit time on grain movements to Western Canadian ports had increased by 36.2%, reaching 7.9 days against 5.8 days a year earlier. A similar gain was observed for the average car cycle, which stood at 19.9 days as compared to the previous February's 14.6 days.

With the elongation of the railways' car cycle significantly constricting the available supply of railcars, the growing backlog of unfilled car orders soon led to burgeoning country elevator stocks and longer times in inventory. The downstream effects of delayed shipments presented corollary issues for terminals starved of inbound grain – especially along the west coast – which soon found themselves short of the grain they needed to load ships in a timely manner. This in turn led to port congestion and vessel delays.

Both CN and CP claimed that the slowdown was due largely to an unanticipated surge in traffic, a larger-than-expected crop and the debilitating effects of a cold and snowy winter. Each indicated that they were responding with the short-term deployment of more resources along with a longer-term investment in plant, equipment and personnel. Improvements in fluidity were noted through the latter part of the third quarter as CN and CP carried through on their commitments to correct the situation and reduce the traffic backlog.

HIGHLIGHTS FOR THE 2017-2018 CROP YEAR

Production and Supply

- Grain production decreased 1.2% to almost 72.0 million tonnes, the third largest crop recorded under the GMP.
    - Cereals comprised 53.6% of the crop; oilseeds 34.1%; and other commodities 12.4%.
    - Oilseed and special-crop production rose to a record 31.9 million tonnes.
- Carry-forward stocks increased 13.7% to 8.6 million tonnes.
- Carry-out stocks increased 14.6% to 9.8 million tonnes.
- Total grain supply (production and carry-forward) increased 0.2% to 80.6 million tonnes, the second largest on record.

Traffic and Movement

- Primary-elevator throughput decreased by a marginal 0.2%, to 45.5 million tonnes.
    - Represented 81.3% of all producer deliveries (primary and process elevators, as well as producer cars).
- Railway shipments increased 2.2% to 51.8 million tonnes, a GMP record.
    - Traffic to Western Canada totaled 40.1 million tonnes, down 0.4%.
    - Traffic to Eastern Canada totaled 3.1 million tonnes, down 6.0%.
    - Traffic to the United States and Mexico totaled 8.6 million tonnes, up 20.5%.
- Terminal-elevator throughput decreased 5.3% to 34.9 million tonnes.
    - Terminal unloads totaled 372,685 cars, down 6.7%.
    - CN / CP traffic share remained closely divided at 51.4% and 48.6% respectively.
- Truck traffic to the United States increased 6.0% to 2.4 million tonnes.

Infrastructure

- The number of country elevators increased 2.3% to 400.
    - Reflected the licensing of several smaller facilities.
    - Increase included three newly commissioned, loop-track equipped elevators in Saskatchewan.
        - Loop-track equipped elevators totaled 18 at the end of the crop year.
    - Storage capacity increased to 8.3 million tonnes, up 1.8%.
- Railway network increased by 3.8 route-miles to 17,279.9 route-miles.
    - CN abandoned 15.1 route-miles of its Alberta-based Coronado subdivision.
    - CP added 18.9 route-miles through completion of its new Belle Plaine subdivision in Saskatchewan.
- Hopper cars in service remained effectively unchanged, declining marginally to an annualized average of 23,965 cars.
    - Proportion of cars in active service reached 94.2% in November 2017.
        - Showed fewer cars held in storage or undergoing repair in advance of winter.
- The number of terminal elevators remained unchanged at 16.
    - Storage capacity remained unchanged at 2.5 million tonnes.

HIGHLIGHTS FOR THE 2017-2018 CROP YEAR (continued)

Commercial Relations

- Country elevator handling charges increased modestly.
  - Elevation rates increased 0.4%; dockage rates remained unchanged; and storage rates increased 3.1%.
- Railway freight rates showed seasonal variability with mixed changes. As at 31 July 2018:
  - CN rates to Vancouver had decreased 2.1%; Prince Rupert rates decreased 2.1%; and Thunder Bay rates decreased 10.7%.
  - CP rates to Vancouver had increased 10.5%; and Thunder Bay rates increased 5.0%.
  - Multiple-car block discounts remained unaltered; ranged from $4.00 per tonne to $8.00 per tonne.
  - Maximum Revenue Entitlement exceeded by $1.0 million for CN; and $1.5 million for CP.
- Terminal Country elevator handling charges moved marginally higher.
  - Elevation rates increased 0.1%; and storage rates increased 0.1%.
- Commercial Developments
  - India imposed tariff and non-tariff barriers against pulse imports.
  - Bill C-49, the Transportation Modernization Act, received Royal Assent.
  - GHTS moved to acquire next generation of hopper cars.
  - Fibreco Terminal Enhancement Project received approval.
  - Ray-Mont opened Prince Rupert transload facility.
  - Columbia Containers completed modernization of Vancouver transload facility
  - Hudson Bay Railway ordered to repair line to Churchill.
  - Wheat exports to Japan resumed.
  - CP settled labour problems.

System Efficiency and Performance

- Country elevator operations adversely affected by railway service issues.
  - Capacity turnover ratio decreased 3.1% to 6.2 turns.
  - Average weekly stocks increased 13.4% to 3.6 million tonnes; reaches record high of 4.3 million tonnes in February 2018.
  - Average days-in-store increased 13.7% to 28.3 days; reflected larger stock levels in the face of railway service delays.
  - Stock-to-shipment ratio increased 16.7% to 4.2; reflected larger stock levels.
- Railway operations adversely impacted by increased workload and inadequate capacity in Western Canada.
  - Average car-cycle to Western Canada increased 11.6% to 15.7 days; average loaded transit time increased 15.3% to 6.0 days.
  - Average car-cycle to Eastern Canada increased 15.8% to 24.2 days; average loaded transit time increased 25.4% to 10.9 days.
  - Average car-cycle to United States increased 12.5% to 27.9 days; average loaded transit time increased 21.8% to 12.0 days.
  - Multiple-car block movement share in Western Canada increased to 84.1% from 83.9%.
    - Annual freight savings decreased 1.1% to an estimated $241.9 million.
- Terminal Elevator operations showed decreased activity owing to irregular railway grain deliveries.
  - Capacity turnover ratio decreased 11.7% to 18.9 turns.
  - Average weekly stocks increased 5.1% to 1.2 million tonnes.
  - Average days-in-store increased 9.5% to 11.5 days; reflected effects of irregular railway grain deliveries.
  - Out-of-car time decreased to 11.2% from 12.1%.

HIGHLIGHTS FOR THE 2017-2018 CROP YEAR (continued)

System Efficiency and Performance (continued)

- Port operations
  - Vessels calls decreased 7.9% to 883 ships.
  - Average vessel time in port decreased 2.9% to 10.0 days.
  - Net outlay for delayed vessels decreased 12.9% to $25.2 million.
    - Demurrage costs decreased 19.4% to $32.0 million; dispatch earnings decreased 36.8% to $6.8 million.
- System performance
  - Average time spent in the system increased 12.8% to 45.8 days.
    - Adversely impacted by railway service problems in the second and third quarters.

Producer Impact

- Producer Netback
  - 1CWRS wheat: Average price increased 0.9%; export basis decreased 3.0%; netback increased 2.5% to $233.57 per tonne.
  - 1CWA durum: Average price decreased 3.0%; export basis decreased 3.4%; netback decreased 2.9% to $255.74 per tonne.
  - 1 Canada canola: Average price increased 1.9%; export basis decreased 3.9%; netback increased 2.8% to $476.13 per tonne.
  - Large yellow peas: Average price decreased 11.1%; export basis decreased 8.2%; netback decreased 11.9% to $251.21 per tonne.
- Producer cars
  - Producer-car loading sites decreased 6.2% to 272; reflected closure of 18 sites served by CP.
  - Scheduled producer-car shipments decreased 31.5% to 3,778 carloads.
    - Lowest volume in over a decade.

Section 1: Production and Supply

Indicator Description	Table	1999-00	2015-16	2016-17	2017-18 Q1	Q2	Q3	Q4	YTD	% VAR
Western Canada Production and Supply										
Crop Production (000 tonnes)	1A-1	55,141.7	64,772.0	72,878.1	71,977.2				71,977.2	-1.2%
Carry Forward Stock (000 tonnes)	1A-2	7,418.2	9,162.6	7,543.9	8,574.0				8,574.0	13.7%
Grain Supply (000 tonnes)		62,559.9	73,934.6	80,422.0	80,551.2				80,551.2	0.2%
Crop Production (000 tonnes) – Special Crops	1A-3	3,936.7	6,379.5	8,727.3	7,382.2				7,382.2	-15.4%

DISCUSSION AND ANALYSIS

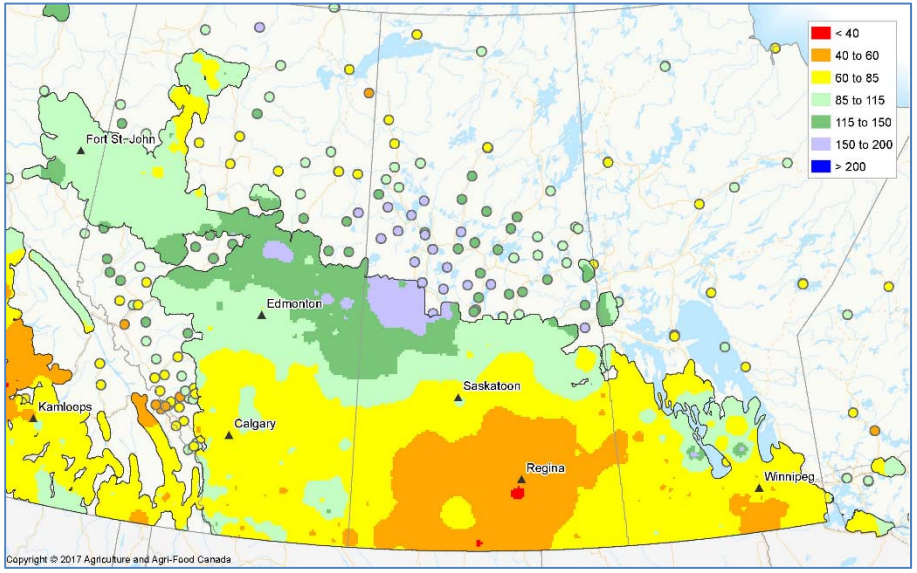
PRODUCTION AND SUPPLY
[See TABLES 1A-1 through 1A-3]

Western Canadian grain production fell to 72.0 million tonnes in the 2017-18 crop year, a 1.2% decrease from the previous crop year's 72.9 million-tonne crop. This marked the fifth consecutive growing season in which total production exceeded 60 million tonnes, and the third to have surpassed 70 million tonnes.

Much of the prairie grain belt enjoyed a promising start to the 2017 growing season, with seeding completed relatively early except in areas of Northern Alberta where the remnants of the 2016 crop had still to be harvested or plowed under. Adequate soil moisture soon led to reports of rapid plant germination throughout the region along with the potential for another bumper crop. However, a prolonged dry spell beginning in July 2017 quickly tempered these expectations. Fortunately, much of the ensuing drought damage was contained to the southern tier, with continuing warm, dry conditions allowing for an early start to the 2017 harvest. By the end of September, the cereal harvest was largely complete, and the canola and soybean harvests were progressing well. Favourable weather through October allowed producers to bin virtually all their crops in advance of the first meaningful snowfalls.

Although not as large as initially anticipated, the crop proved only moderately smaller in comparison to the previous year's harvest, and of generally good quality. Manitoba fared better than most, with an 11.5% increase in grain production against declines of 4.6% in Saskatchewan and 1.9% in Alberta. These variances did little to change their relative standings, with Saskatchewan accounting for just under half, 48.5%, of the total tonnage harvested, or 34.9 million tonnes; followed by Alberta with 33.4%, or 24.0 million tonnes; Manitoba with 17.7%, and a record 12.7 million tonnes; and British Columbia with 0.4%, or 305,700 tonnes.

Percent of Average Precipitation (1 April to 31 August 2017)



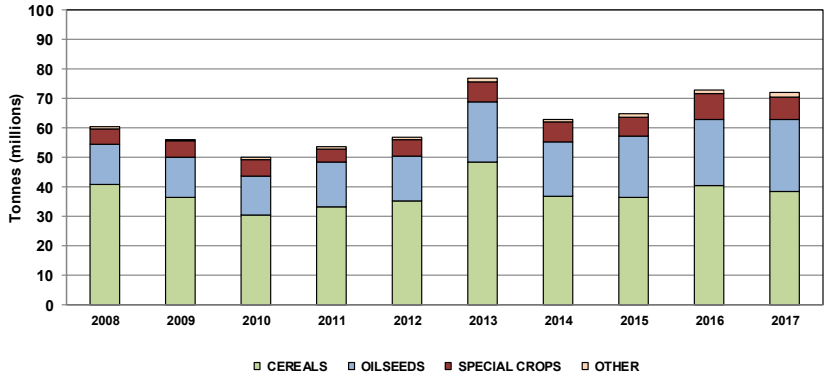
Changing Face of the Harvest

The most striking changes in production are to be found in both the quantity and mix of grains now harvested. While growing conditions have always resulted in significant swings in the size of the overall crop, until 2013 prairie grain production seldom reached beyond an average of 55.0 million tonnes annually. Moreover, it was not until 2013 that production sharply surpassed this benchmark level, to reach a record 77.0 million tonnes. In the wake of that historic harvest, the amount of grain drawn from prairie fields has repeatedly surpassed the earlier standard, to around 68.0 million tonnes annually. In fact, even this stands a full 5% below the 72.0 million tonnes harvested in the 2017-18 crop year. Such enlarged outputs, now deemed typical, reflect the higher yields being achieved through advancements in plant genetics and agronomic practices.

At the outset of the GMP, cereals constituted about three-quarters of all grains grown in Western Canada. By the 2017-18 crop year, however, these same commodities accounted for just over half, or 53.6%, of the 72.0 tonnes harvested. To be clear, the actual output of cereals did not decline during this period. In fact, production has deviated little from an average of nearly 40 million tonnes annually. Rather, its significance has simply diminished against the heightened output of other commodities.

There are two key aspects to this expansion: increased oilseed production; and increased pulse production. The combined output for these commodities reached a record 31.9 million tonnes in the 2017-18 crop year. By far, the most significant contributor to the overall gain has been the former, with combined canola, soybean and flaxseed harvests having increased by over 150%, to 24.5 million tonnes from the base year's 9.7 million tonnes. This was bolstered by a near doubling in the output of special crops, especially dry peas and lentils, which rose to 7.4 million tonnes from 3.9 million tonnes during the same period.

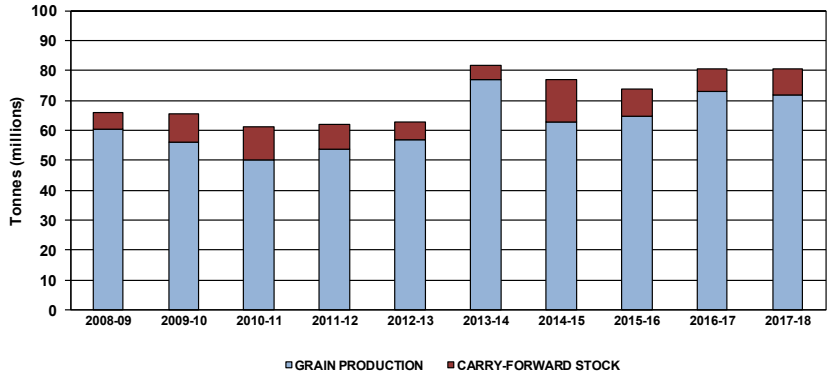
Grain Production - Principal Commodities
(Western Canada)



Increased Grain Supply and GHTS Workload

The amount of grain that the GHTS handles in any given crop year is not defined by production alone; it is also affected by the amount of grain held over in inventory from the previous crop year. These carry-forward stocks typically inflate current-year production values by another 15%.[1] With carry-forward stocks of 8.6 million tonnes the total grain supply reached close to 80.6 million tonnes in the 2017-18 crop year, an increase of 0.2% over the previous year's 80.4 million tonnes, and little removed from the 81.9-million-tonne record set just four years earlier. At the close of the 2017-18 crop year, an outstanding 9.8 million tonnes remained as carry-out stocks.

Grain Supply
(Western Canada)



Changes in both the size and makeup of today's crops has spurred the GHTS into adding new capacity. The most immediate manifestation of this has been in the establishment of extra storage, be it on individual farms or at country elevators. Moreover, it has inspired the retrofitting or

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

construction of several high-throughput facilities, each equipped with loop tracks that allow for the continuous loading of unit trains comprised of up to 150 hopper cars. These facilities represent the most efficient in grain handling today.

Similarly, there has also been investment in port storage and handling capacity. Richardson International, which operates several terminal elevators, almost doubled the capacity of its Vancouver Terminal following the completion of a three-year expansion program in 2016. More noteworthy still is G3's construction of the first all-new terminal facility in Vancouver in several decades, with completion slated for the latter half of 2019. Analogous modernization initiatives have also been undertaken at terminals operated by Parrish and Heimbecker, Fibreco and Columbia Containers.

While financial resources have clearly been directed into addressing the immediate physical needs of handling a larger crop, they have also been funnelled into new investments brought on by the surge in non-traditional crop production. Chief among these are the large investments made by Cargill, Louis Dreyfus and Richardson International in four domestic canola-crushing facilities.

New investment has not been confined to producers and grain companies alone. These same market forces have also been exerting pressure on the railways to invest in additional grain-handling capacity, the most visible facet being their recent orders for 2,000 new covered hopper cars. The carriers have also embarked on a variety of broader initiatives aimed at adding capacity, including: double-tracking and siding extensions; locomotive purchases; and new employee hirings. Much the same can be said of marine carriers, which have been commissioning larger ships in a parallel effort to improve the efficiency of their own operations.

Section 2: Traffic and Movement

Indicator Description	Table	1999-00	2015-16	2016-17	2017-18 Q1	Q2	Q3	Q4	YTD	% VAR
Country Elevator Throughput										
Grain Throughput (000 tonnes) – Primary Elevators	2A-1	32,493.9	42,380.8	45,642.8	11,697.1	11,990.0	10,281.7	11,580.6	45,549.4	-0.2%
Railway Traffic										
Traffic to Western Canada										
Railway Shipments (000 tonnes) – Ports Only	2B-1	26,439.2	37,956.9	39,651.2	10,696.6	9,642.7	9,141.3	9,782.5	39,263.1	-1.0%
Railway Shipments (000 tonnes) – Western Domestic	2B-1	n/a	540.2	615.6	173.9	202.7	245.2	220.6	842.5	36.9%
Traffic to Western Canada (Ports Only)										
Railway Shipments (000 tonnes) – All Grains	2B-1	26,439.2	37,956.9	39,651.2	10,696.6	9,642.7	9,141.3	9,782.5	39,263.1	-1.0%
Railway Shipments (000 tonnes) – Hopper Cars	2B-1	25,664.6	36,680.6	38,084.3	10,319.5	9,173.2	8,634.5	9,224.7	37,351.9	-1.9%
Railway Shipments (000 tonnes) – Non-Hopper Cars	2B-1	774.7	1,276.3	1,567.0	377.1	469.5	506.8	577.8	1,911.2	22.0%
Special Crop Shipments (000 tonnes) – All Grains	2B-2	2,102.9	4,738.0	5,810.3	1,288.2	547.3	880.3	960.7	3,676.5	-36.7%
Special Crop Shipments (000 tonnes) – Hopper Cars	2B-2	1,844.1	4,485.8	5,495.2	1,199.3	448.7	774.6	868.2	3,290.9	-40.1%
Special Crop Shipments (000 tonnes) – Non-Hopper Cars	2B-2	258.7	252.2	315.1	88.8	98.6	105.6	92.5	385.6	22.4%
Hopper Car Shipments (000 tonnes) – Origin Province	2B-3									
Hopper Car Shipments (000 tonnes) – Primary Commodities	2B-4	25,664.6	36,680.6	38,084.3	10,319.5	9,173.2	8,634.5	9,224.7	37,351.9	-1.9%
Hopper Car Shipments (000 tonnes) – Detailed Breakdown	2B-5									
Hopper Car Shipments (000 tonnes) – Grain-Dependent Network	2B-6	8,685.9	10,807.3	10,385.9	3,174.9	2,687.6	2,403.8	2,703.7	10,970.0	5.6%
Hopper Car Shipments (000 tonnes) – Non-Grain-Dependent Network	2B-6	16,978.7	25,873.3	27,698.3	7,144.5	6,485.7	6,230.7	6,520.9	26,381.9	-4.8%
Hopper Car Shipments (000 tonnes) – Class 1 Carriers	2B-7	23,573.5	35,789.2	37,365.3	10,110.1	9,019.3	8,529.2	9,052.3	36,710.8	-1.8%
Hopper Car Shipments (000 tonnes) – Non-Class-1 Carriers	2B-7	2,091.0	891.4	718.9	209.4	153.9	105.3	172.4	641.1	-10.8%
Traffic to Eastern Canada										
Railway Shipments (000 tonnes) – All Grains	2B-8	n/a	2,796.8	3,294.3	632.1	1,010.0	881.3	571.9	3,095.4	-6.0%
Railway Shipments (000 tonnes) – Hopper Cars	2B-8	n/a	1,980.9	2,455.1	376.9	778.7	720.1	399.4	2,275.2	-7.3%
Railway Shipments (000 tonnes) – Non-Hopper Cars	2B-8	n/a	815.9	839.2	255.2	231.3	161.2	172.5	820.2	-2.3%
Special Crop Shipments (000 tonnes) – All Grains	2B-9	n/a	546.7	582.9	156.7	153.5	109.6	82.2	501.9	-13.9%
Western Canadian Originated Traffic										
Railway Shipments (000 tonnes) – All Grains	2B-15	n/a	48,317.7	50,733.3	13,559.4	13,096.2	12,436.4	12,752.0	51,844.1	2.2%
Railway Shipments (000 tonnes) - Canada	2B-15	n/a	41,293.9	43,561.1	11,502.6	10,855.5	10,267.8	10,575.1	43,201.0	-0.8%
Railway Shipments (000 tonnes) – United States	2B-15	n/a	6,759.3	6,881.6	1,969.6	2,159.3	2,066.2	2,076.7	8,271.9	20.2%
Railway Shipments (000 tonnes) – Mexico	2B-15	n/a	264.5	290.6	87.1	81.5	102.4	100.3	371.2	27.8%
Terminal Elevator Throughput										
Grain Throughput (000 tonnes) – All Commodities	2C-1	23,555.5	35,587.6	36,835.7	9,225.2	8,830.4	7,800.7	9,019.4	34,875.7	-5.3%
Hopper Cars Unloaded (number) – All Carriers	2C-2	278,255	380,306	399,540	100,694	100,376	78,251	93,364	372,685	-6.7%
Hopper Cars Unloaded (number) – CN	2C-2	144,800	188,753	201,313	48,958	52,467	43,600	46,665	191,690	-4.8%
Hopper Cars Unloaded (number) – CP	2C-2	133,455	191,553	198,227	51,736	47,909	34,651	46,699	180,995	-8.7%
Truck Volumes to US Destinations										
Truck Shipments to US (000 tonnes) – Destination Region / Origin Province	2D-1									
Truck Shipments to US (000 tonnes) – Origin Province / Commodity	2D-2	n/a	2,287.1	2,269.7	616.1	564.5	636.2	588.4	2,405.3	6.0%
Truck Shipments to US (000 tonnes) – Destination Region / Commodity	2D-3									

DISCUSSION AND ANALYSIS

COUNTRY ELEVATOR THROUGHPUT
[See TABLE 2A-1]

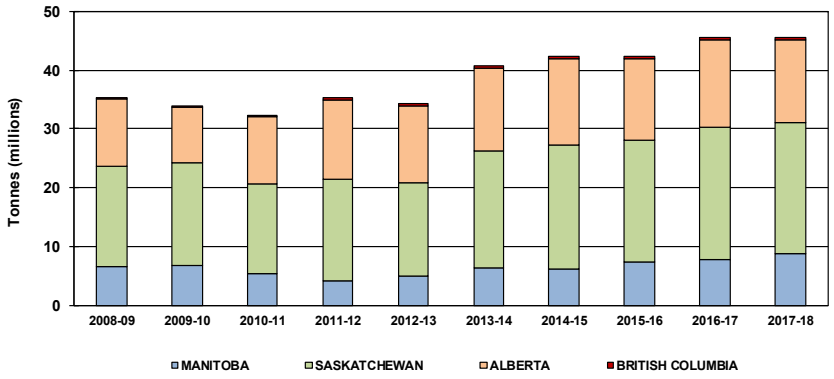
Country elevator throughput, as gauged by all road and rail shipments from the primary elevators situated across Western Canada, fell by 0.2% in the 2017-18 crop year, to 45.5 million tonnes. This marked the first reduction, albeit a marginal one, in GHTS activity in five years. Even so, the amount of grain accepted into the system remained elevated, surpassing that of almost every previous year in the annals of the GMP.

Primary-elevator shipments from Manitoba increased by 1.0 million tonnes, or 13.1%. Offsetting this increase were reductions in the throughput for Saskatchewan, 0.3 million tonnes, down 1.4%; Alberta, 0.7 million tonnes, down 4.8%; and British Columbia, 0.1 million tonnes, down 19.4%. Despite these tonnage shifts, the proportion accorded to shipments from each province has remained largely unchanged. Manitoba held a 19.1% share; Saskatchewan, 49.1%; Alberta, 31.1%; and British Columbia, 0.6%. These values are not far removed from those benchmarked in the GMP's base year.

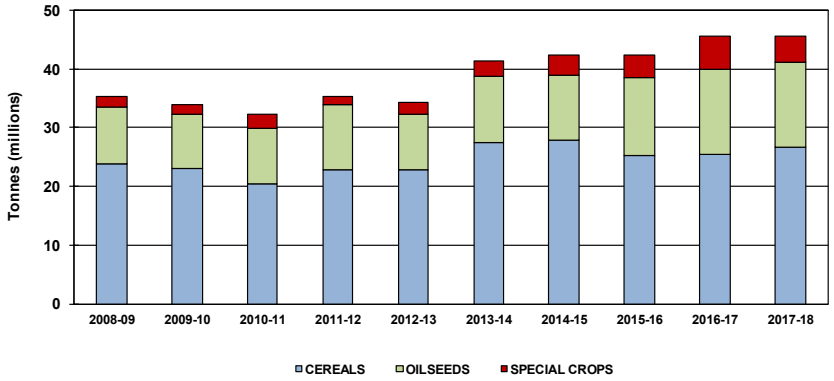
Cereals accounted for most of the grain shipped through the primary elevator network, with their share increasing to 58.8% from 55.8% a year earlier. This proportional gain was largely due to a decline in the throughput of special crops, which were adversely impacted by the imposition of foreign trade and non-trade barriers. Cereal shipments rose by 5.1%, to 26.8 million tonnes from 25.5 million tonnes. Conversely, oilseeds and special crops shipments declined by 6.9%, to an aggregated 18.8 million tonnes from 20.2 million tonnes the previous year.

Notwithstanding this compositional change, primary-elevator throughput provides the first physical signal to industry stakeholders of the attendant workload to be borne by the GHTS's railways and terminal elevators. Given a marginal decrease of 0.2%, the projected workload appeared roughly comparable to what had been handled in the 2016-17 crop year.

Primary Elevator Throughput - Originating Province



Primary Elevator Throughput - Principal Commodities



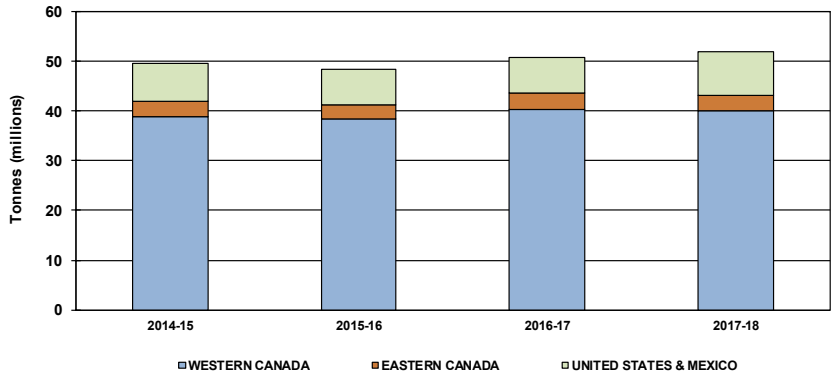
RAILWAY TRAFFIC
[See TABLES 2B-1 through 2B-20]

Although primary elevators are the principal gateway used in moving grain through the GHTS, grain also enters the system by way of process elevators and producer-car loading sites. Producer deliveries to all of these facilities totaled 56.0 million tonnes in the 2017-18 crop year, 3.3% less than the record 57.9 million tonnes tendered a year earlier.[2] Ultimately, all of this grain is loaded into railcars or trucks for movement to destinations located throughout the system.[3]

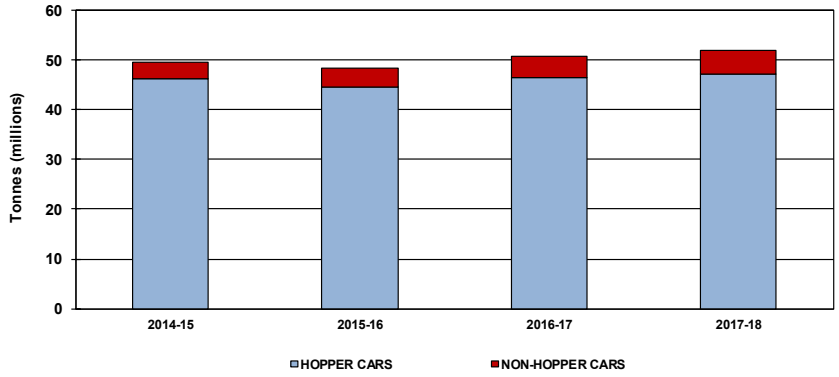
Railway grain shipments from Western Canada totaled 51.8 million tonnes in the 2017-18 crop year, up 2.2% from the previous crop year's 50.7 million tonnes. Just over 43.2 million tonnes of this traffic, or 83.3%, was directed to destinations within Canada itself, be it for export or domestic use. Traffic to destinations in Western Canada – represented heavily by the ports of Vancouver, Prince Rupert and Thunder Bay – accounted for much of this volume, 40.1 million tonnes. These same shipments also significantly overshadowed the 3.1 million tonnes directed to Eastern Canada. The remaining 8.6 million tonnes, or 16.7%, were destined to the United States and Mexico.

Just over 47.3 million tonnes of the traffic originated in Western Canada, or 91.2%, moved to its destination in covered hopper cars. The remaining 4.5 million tonnes moved in some other form of railway equipment, including boxcars and containers for bulk and bagged grain products, and tankcars for liquids such as canola oil. It is worth noting that while these latter movements represented only 8.8% of total railway shipments in the 2017-18 crop year, its share has been climbing steadily from the 6.9% benchmarked just three years earlier. Much of this gain is traceable to an increase in canola oil shipments.

Railway Grain Shipments - Principal Destinations



Railway Grain Shipments - Hopper and Non-Hopper Cars



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

3 Until passage of Bill C-49, which revised the list of grains specified in Schedule II of the *Canada Transportation Act*, not all railway grain traffic – but especially soybeans – was captured in the traffic statistics provided to the Monitor. With this structural deficiency in the reporting of railway grain volumes having been addressed, greater confidence can now be ascribed to the completeness of the traffic statistics presented throughout this report.

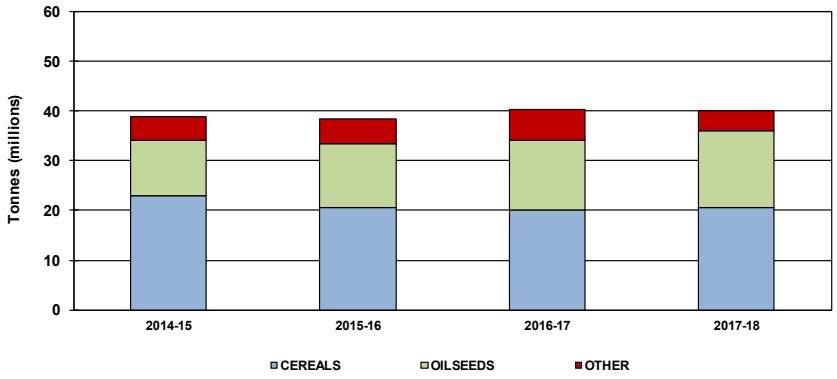
Traffic to Western Canada
[See Tables 2B-1 through 2B-7]

Much of the 40.1 million tonnes of grain moved by rail to points in Western Canada during the 2017-18 crop year were directed to one of its three ports: Vancouver; Prince Rupert; and Thunder Bay. These shipments amounted to just under 39.3 million tonnes, a reduction of 1.0% from the 39.7 million tonnes handled a year earlier. Another 842,500 tonnes were directed to points outside of the ports themselves, denoted as Western Domestic destinations. These shipments swelled substantially in the preceding twelve months, up 36.9% from 615,600 tonnes the previous year.

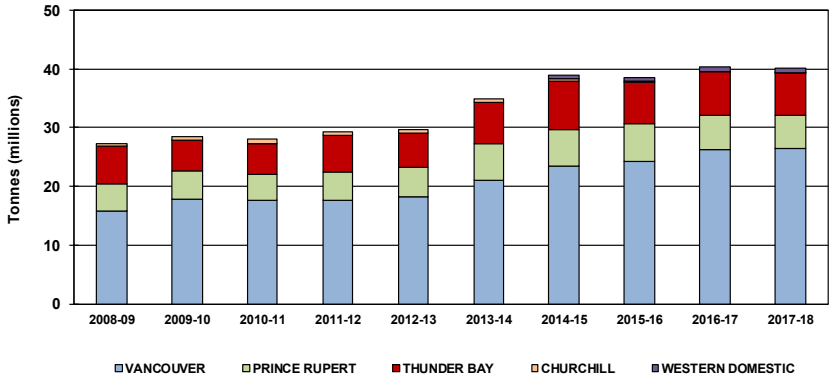
As the largest element in the movement of grain to points in Western Canada, cereals represented just over half of all railway traffic, totalling 20.5 million tonnes in the 2017-18 crop year. This was followed by oilseeds at 15.4 million tonnes, and other commodities at 4.1 million tonnes. Both cereals and oilseeds posted year-over-year volume increases, amounting to 2.2% and 9.6% respectively. Other commodities, which chiefly encompass special-crop shipments, fell by 32.0%. This decline, which reflected the struggles faced by the Canadian pulse industry in dealing with recently imposed foreign trade obstacles, marked the first serious reversal in a growth pattern reaching back several years. This also resulted in a 4.8-percentage-point loss in movement share, which fell to 10.3% from 15.1% a year earlier.

Of all the ports in Western Canada, Vancouver continues to be the preferred destination for railway grain shipments. This is due not only to the ready access it provides to Asia-Pacific markets, but because of its favourable economics and year-round operations. During the 2017-18 crop year, Vancouver received 26.4 million tonnes of inbound grain, an increase of 0.3% over the previous year's 26.3-million-tonne handle. This denoted 65.8% of all railway shipments destined to points in Western Canada. Prince Rupert, which represents an additional west-coast outlet for this traffic, received 5.6 million tonnes of grain, down 4.0% from the 5.9 million tonnes handled a year earlier. This resulted in the port's share slipping to

Railway Grain Shipments - Main Commodities
(Western Canada)



Railway Grain Shipments - Main Destinations
(Western Canada)



14.0% from 14.6%. Together, these two ports accounted for 79.8% of the grain directed into Western Canada; down marginally from the 79.9% share seen just a year earlier.

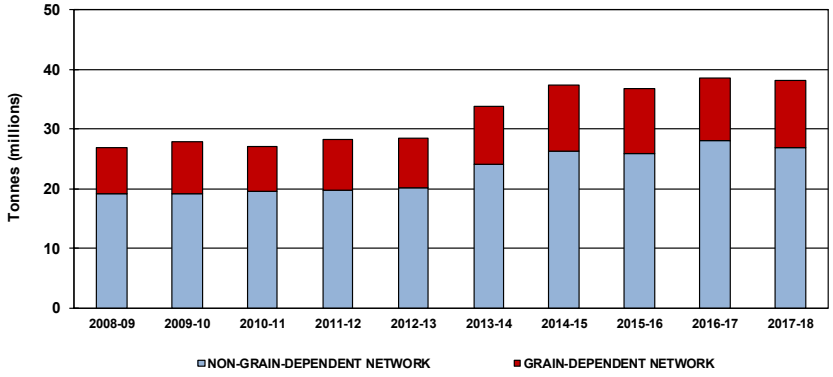
Thunder Bay also saw its share of the total tonnage decline to 18.1% from 18.6%. This decrease reflected a 3.0% reduction in rail deliveries, which fell to 7.2 million tonnes from 7.5 million tonnes a year earlier. Owing to the closure of the port of Churchill, there were no rail shipments to this destination in the 2017-18 crop year. Railway grain shipments to non-port destinations – designated as Western Domestic – accounted for just 2.1% of all traffic. However, this proved noticeably greater than the 1.5% share garnered a year earlier, buoyed in large measure by a 36.6% increase in tonnage, which rose to 842,500 tonnes from 615,600 tonnes.

Covered Hopper Car Shipments

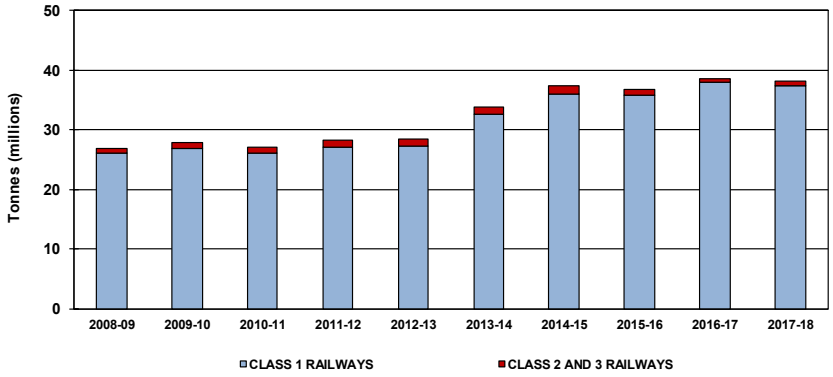
Covered hopper cars remain the primary means by which grain is conveyed to destinations within Western Canada. Of the 40.1 million tonnes shipped during the 2017-18 crop year, 38.1 million tonnes – or 95.0% – moved in covered hopper cars; just 2.0 million tonnes of grain and grain-related products moved in other forms of railway equipment, including boxcars, tankcars and containers.

Covered-hopper-car shipments continue to originate primarily on the non-grain-dependent railway network. Of the 38.1 million tonnes that were directed to destinations in Western Canada, only 11.3 million tonnes, or 29.6%, was sourced from points on grain-dependent branchlines. The concentration for Class-1 originations is even greater, with just 667,100 tonnes, or 1.8%, originated with the smaller Class 2 and 3 carriers (commonly referred to as shortlines). It is worth noting that both minority shares have continued to lose ground over the last decade. These declines largely reflect the combined impacts of elevator and railway rationalization.

Hopper-Car Shipments - Branchline Originations
(Western Canada)



Hopper-Car Shipments - Carrier Originations
(Western Canada)



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

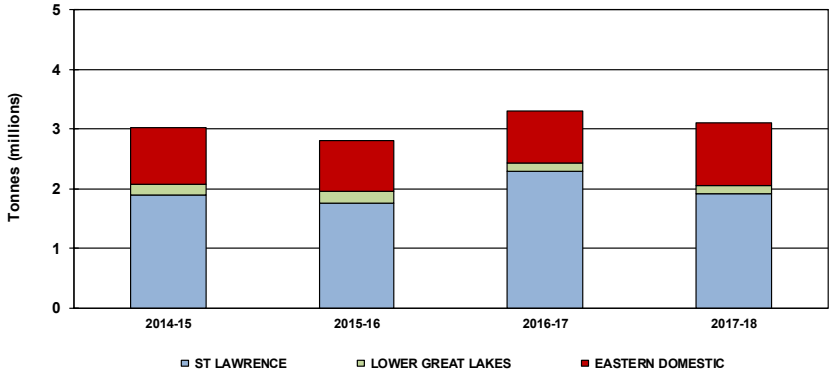
The movement of grain into Eastern Canada represents a fraction of what is directed into Western Canada. During the 2017-18 crop year, these railway shipments amounted to a little under 3.1 million tonnes, a drop of 6.0% from the 3.3 million tonnes shipped a year earlier. Comparatively, this amounted to less than one-twelfth of the tonnage directed into Western Canada. Close to two-thirds of this traffic, over 2.0 million tonnes, were shipped to the ports that extend from the Lower Great Lakes through the Gulf of St. Lawrence, and on to Halifax. Another 1.1 million tonnes were directed to inland points, designated as Eastern Domestic destinations.

Consistent with traffic routed to destinations in Western Canada, much of the traffic headed to points in Eastern Canada, almost 2.3 million tonnes, moved in covered hopper cars. The remaining 820,200 tonnes moved in other types of railway equipment. These latter movements represented a more substantive 26.5% of the regional total than the 5.0% they constituted in Western Canada.

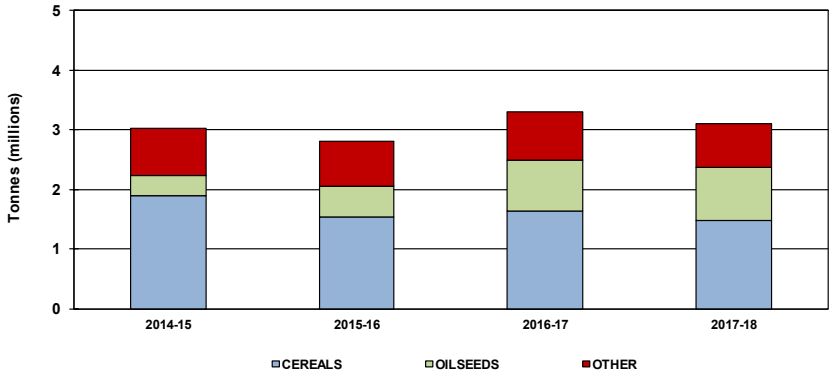
Similarly, cereals also embodied the largest traffic segment on eastbound movements, although volume fell by 9.7%, to 1.5 million tonnes from 1.6 million tonnes a year earlier. This was followed by oilseeds, which accounted for 905,700 tonnes, but proved 4.5% greater than the previous crop year's 866,800 tonnes. A further 718,600 tonnes was tied to other commodities, which fell 1.0% from 798,200 tonnes.

Special-crop shipments to Eastern Canada, which encompassed most other commodities, totalled 501,900 tonnes, down 13.9% from the 582,900 tonnes directed there the previous year. Like those headed to Western Canadian destinations, these shipments denoted only a modest share of the overall volume, 16.2%. Only 147,000 tonnes of this moved in covered hopper cars. Most special crops, representing 70.7% of the total volume, moved as non-hopper-car shipments (in either boxcars, tankcars or containers).

Railway Grain Shipments - Main Destinations
(Eastern Canada)



Railway Grain Shipments - Main Commodities
(Eastern Canada)



Covered Hopper Car Shipments

Most of the grain moving to Eastern Canada in covered hopper cars was sourced from points on the non-grain-dependent railway network in Western Canada. During the 2017-18 crop year this amounted to 1.8 million tonnes, down 1.3% from that originated a year earlier. Traffic originating at points on the grain-dependent network fell by a much greater 24.9%, to 473,300 tonnes from 630,400 tonnes. With 79.2% of the tonnage attributable to non-grain-dependent originations, the division is only moderately different from the 70.4% observed with respect to traffic destined to points in Western Canada.

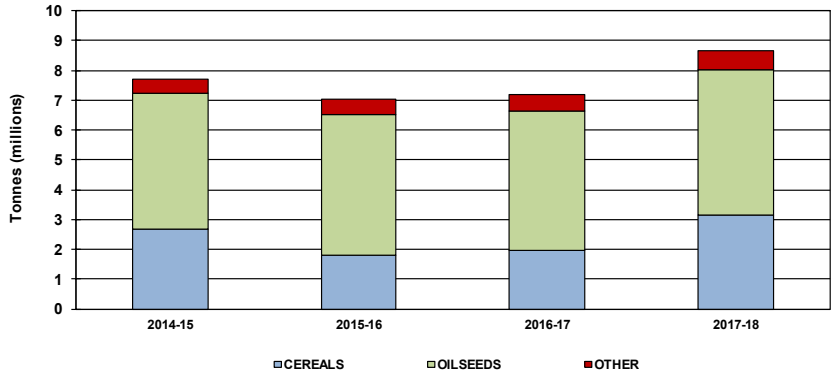
Similarly, almost 2.2 million tonnes, or 96.0% of the grain shipped to Eastern Canada in covered hopper cars, originated on the lines of the major Class-1 railways. The tonnage originated by non-Class-1 carriers, which amounted to 91,700 tonnes, accounted for just 4.0%. These proportions are also consistent with the shares observed for traffic destined to points within Western Canada.

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

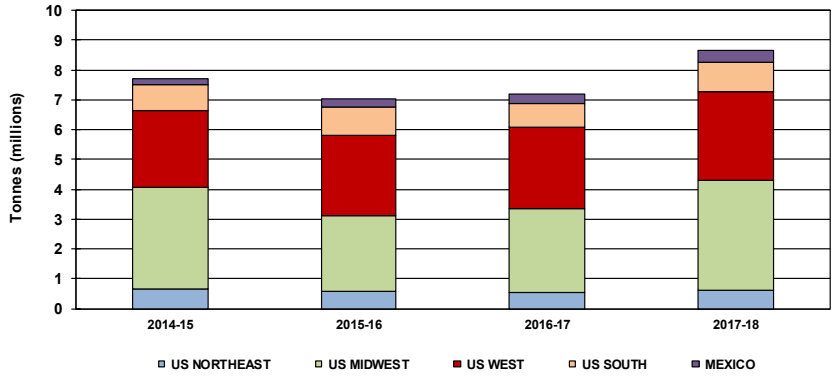
The amount of grain moved by rail to the United States and Mexico during the 2017-18 crop year totaled 8.6 million tonnes. This marked a 20.5% increase over the 7.2 million tonnes directed into these markets a year earlier. Slightly less than 8.3 million tonnes of this was destined to the United States, up 20.2% from the 6.9 million tonnes handled the previous year. Although just 371,200 tonnes were earmarked for Mexico, shipments to that country rose more sharply, by 27.7%. Much of the overall tonnage increase was attributable to a larger movement of cereal grains, especially wheat and durum.

Some 6.7 million tonnes of US-bound traffic moved in covered hopper cars in the 2017-18 crop year. This represented a gain of 27.3 % over the 5.2 million tonnes handled a year earlier. Another 1.6 million tonnes moved in other types of railway equipment, which proved 2.1% less than the 1.7 million tonnes shipped the previous year.

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



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



More than half of US-bound shipments, amounting to just over 4.6 million tonnes, were tied to the movement of canola and canola-related products, be it in the form of seed, meal or oil. Approximately half of this volume, 2.4 million tonnes, was directed to states in the US West, chiefly California. This was followed by another 1.2 million tonnes that moved into the Midwest, 630,900 tonnes into the South, and 341,300 tonnes into the Northeast. Cereals and other commodities accounted for a lesser 44.2% of the total tonnage.

On a broader basis, the US Midwest proved to be the largest market for Western Canadian grain, drawing in 3.7 million tonnes. This was closely followed by destinations in the US West, with 3.0 million tonnes; the US South, with 986,800 tonnes; and the US northeast, with 611,300 tonnes. Special crops figured marginally within this framework, with a total of only 53,900 tonnes being shipped to US destinations.

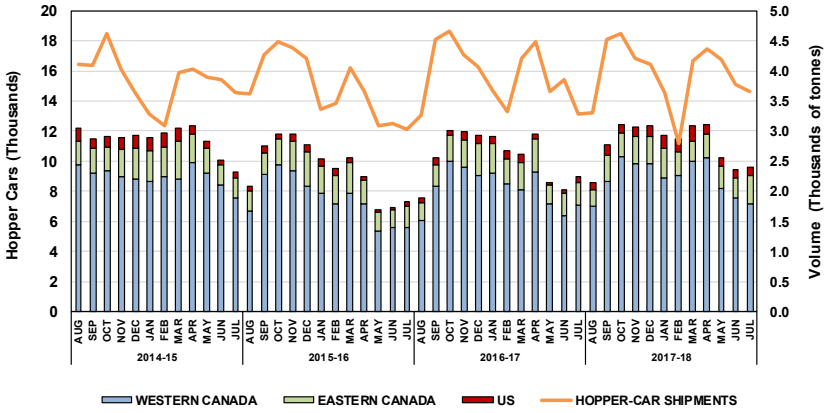
Grain imported into Canada by rail from the United States during the 2017-18 crop year totaled only 440,400 tonnes. However, this marked a 128.4% increase over the 192,900 tonnes shipped a year earlier. The largest portion, amounting to 308,200 tonnes, was destined to points in Western Canada, with Eastern Canadian destinations drawing in just 132,200 tonnes. The bulk of this traffic, 337,500 tonnes, was comprised of soybean related products.

Loads on Wheels
[See Table 2B-20]

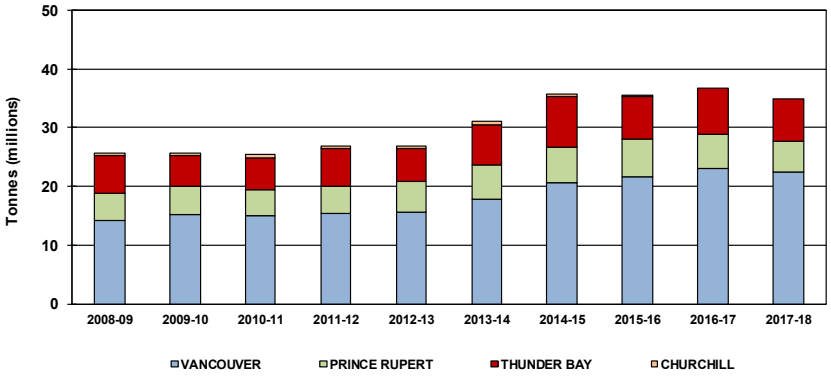
The pace at which grain traffic moves through the GHTS can be gauged by examining the number of loaded hopper cars in transit at specified moments in time; normally the Friday of any given week.[4] The 2017-18 crop year began with a weekly in-transit average of 8,540 cars for the month of August 2017. This increased gradually through the first quarter, ultimately reaching a weekly average of 12,453 cars in October 2017. The average remained at about this level through April 2018, before then declining sharply, and ultimately falling to 9,454 cars in June 2018. This

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

Loads on Wheels



Terminal Elevator Throughput - Port
(Western Canada)



meant that during any given week of the 2017-18 crop year, an average of 11,119 loaded cars were in transit to their destinations. This proved 8.4% greater than the 10,254-car average recorded a year earlier. The broader characteristics proved consistent with other traffic measures: the heaviest movement period extended from the late fall through the early spring, with 79.6% of the equipment directed to destinations in Western Canada, 14.2% to markets in Eastern Canada, and 6.1% to those in the United States.

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

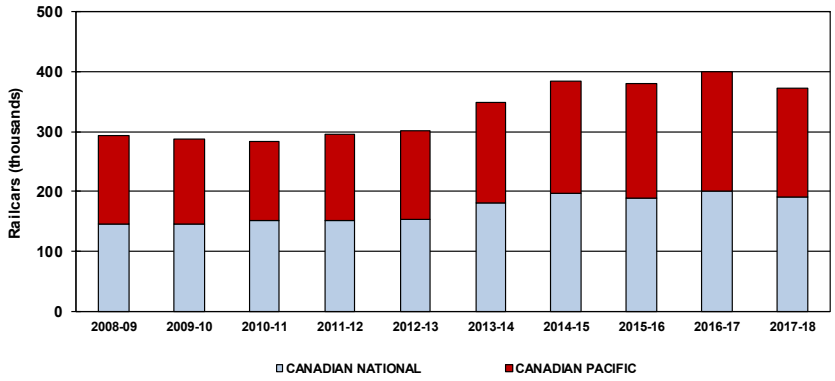
Ultimately, a large portion of the traffic handled by the railway system was directed to the various terminal elevators and bulk loading facilities located at the three open ports in Western Canada. Port throughput, as gauged by the amount of grain shipped through these facilities, decreased by 5.3% in the 2017-18 crop year, falling to 34.9 million tonnes from the GMP record of 36.8 million tonnes set a year earlier.

The most significant grain volumes continued to move through the west-coast ports of Vancouver and Prince Rupert, which account for about four-fifths of the total handle. For Vancouver, total terminal elevator throughput decreased by 2.3%, to 22.5 million tonnes from the GMP record of 23.0 million tonnes a year earlier. Prince Rupert posted a decline of 13.9%, with terminal shipments falling to 5.1 million tonnes from 5.9 million tonnes. Combined, the tonnage passing through these two west-coast ports represented 79.1% of the overall total; up slightly from the 78.6% share seen a year earlier. This gain can be traced to a weaker showing by Thunder Bay, which reported a 7.7% decrease, and saw throughput fall to 7.3 million tonnes from the previous crop year's 7.9 million tonnes.

Terminal Elevator Unloads

Carrier activity is reflected in the number of covered hopper cars unloaded at Western Canadian terminals. The total number of railcars unloaded during the 2017-18 crop year decreased by 6.7%, falling to 372,685 cars from 399,540 cars a year earlier. The division between handling carriers was, again, almost evenly divided. The Canadian National Railway (CN) unloaded 191,690 hopper cars, a reduction of 4.8% from the 201,313 cars

Terminal Elevator Unloads - Carrier
(Western Canada)



delivered a year earlier. In comparison, the Canadian Pacific Railway's (CP) handlings decreased by a more substantive 8.7%, to 180,995 cars from 198,227 cars. This made CN the largest grain-handling railway in Western Canada, with a share of 51.4% against 48.6% for CP.

EXPORT CONTAINER TRAFFIC
[See TABLE 2C-3]

For well over a century, grain exiting Canada through its major ports has been reliant on bulk carriers to reach offshore markets. However, with the advent of modern shipping containers, an increasingly larger share of Canada's export grain is moving by container. Moreover, this growth is being facilitated by new transloading facilities, which allows grain carried to port by railway hopper cars to be efficiently reloaded into a series of containers for individual shipment overseas.

Having secured data centred on overall port-loading activity in Montreal, Vancouver and Prince Rupert, the GMP can now gauge the volume of grain

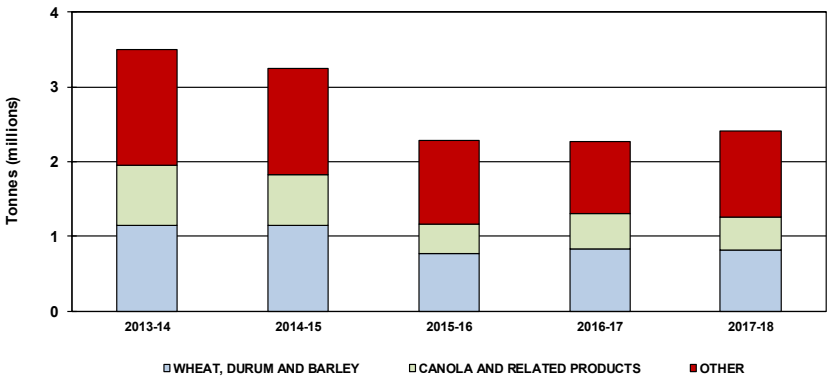
leaving the country in containers, which in the 2017-18 crop year amounted to 3.1 million tonnes. This proved to be 30.4% less than the 4.5 million tonnes shipped a year earlier. Total tonnage was roughly divided between traditional export grains and special crops, with both groupings having suffered declines.

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

Shipments of Western Canadian grain into the United States by truck totaled just over 2.4 million tonnes in the 2017-18 crop year. This proved 6.0% greater than the 2.3 million tonnes shipped a year earlier. Much of the gain was attributable to a 147.7% increase in the cross-border delivery of peas, which were buoyed largely in response to recently initiated Indian trade actions. This, coupled with gains for rye, oats and other commodities, lifted secondary grain volumes by 19.5%. Furthermore, this increase served to more than compensate for other losses, specifically: canola and related products, which dropped 7.8%; along with wheat, durum and barley, which fell by 1.9%.

As with railway shipments, the preponderance of the grain trucked into the United States, amounting to over 1.6 million tonnes, was directed into the US Midwest. This was followed by destinations in the US West, with 513,200 tonnes; the US Northeast, with 190,900 tonnes; and the US South, with 86,700 tonnes.

Truck Shipments - United States Destinations



Section 3: Infrastructure

Indicator Description	Table	1999-00	2015-16	2016-17	2017-18 Q1	Q2	Q3	Q4	YTD	% VAR
Country Elevator Infrastructure										
Delivery Points (number)	3A-1	626	271	277	277	281	280	281	281	1.4%
Elevator Capacity (000 tonnes)	3A-1	7,443.9	7,844.6	8,163.2	8,198.1	8,293.2	8,317.4	8,311.7	8,311.7	1.8%
Elevators (number) – Province	3A-1									
Elevators (number) – Railway Class	3A-2	917	383	391	391	400	399	400	400	2.3%
Elevators (number) – Grain Company	3A-3									
Elevators Capable of MCB Loading (number) – Province	3A-4									
Elevators Capable of MCB Loading (number) – Railway Class	3A-5	317	249	254	253	257	257	257	257	1.1%
Elevators Capable of MCB Loading (number) – Railway Line Class	3A-6									
Elevator Closures (number)	3A-7	130	27	15	0	1	1	1	3	-80.0%
Elevator Openings (number)	3A-8	43	40	23	0	10	0	2	12	-47.8%
Delivery Points (number) – Accounting for 80% of Deliveries	3A-9	217	97	99	n/a	n/a	n/a	n/a	101	2.0%
Railway Infrastructure										
Railway Infrastructure (route-miles) – Total Network	3B-1	19,390.1	17,288.1	17,276.1	17,276.1	17,295.0	17,295.0	17,279.9	17,279.9	0.0%
Railway Infrastructure (route-miles) – Class-1 Network	3B-1	14,503.0	14,664.2	14,606.5	14,606.5	14,625.4	14,625.4	14,610.3	14,610.3	0.0%
Railway Infrastructure (route-miles) – Non-Class-1 Network	3B-1	4,887.1	2,623.9	2,669.6	2,669.6	2,669.6	2,669.6	2,669.6	2,669.6	0.0%
Railway Infrastructure (route-miles) – Non-Grain-Dependent Network	3B-1	14,513.5	14,009.8	14,009.8	14,009.8	14,028.7	14,028.7	14,028.7	14,028.7	0.1%
Railway Infrastructure (route-miles) – Grain-Dependent Network	3B-1	4,876.6	3,278.3	3,266.3	3,266.3	3,266.3	3,266.3	3,266.3	3,251.2	-0.5%
Railway Fleet Size (railcars) – Average Weekly	3B-2	n/a	23,833	23,974	23,362	24,227	24,485	23,804	23,965	0.0%
Served Elevators (number)	3B-3	884	348	353	353	361	360	361	361	2.3%
Served Elevators (number) – Class 1 Carriers	3B-3	797	319	318	318	326	326	327	327	2.8%
Served Elevators (number) – Non-Class-1 Carriers	3B-3	87	29	35	35	35	34	34	34	-2.9%
Served Elevators (number) – Grain-Dependent Network	3B-3	371	110	116	116	117	117	117	117	0.9%
Served Elevators (number) – Non-Grain-Dependent Network	3B-3	513	238	237	237	244	243	244	244	3.0%
Served Elevator Capacity (000 tonnes)	3B-3	7,323.0	7,673.4	7,961.3	7,992.8	8,087.4	8,114.7	8,109.0	8,109.0	1.9%
Served Elevator Capacity (000 tonnes) – Class 1 Carriers	3B-3	6,823.2	7,467.6	7,732.5	7,764.0	7,860.6	7,891.2	7,885.5	7,885.5	2.0%
Served Elevator Capacity (000 tonnes) – Non-Class-1 Carriers	3B-3	499.7	205.8	228.8	228.8	226.8	223.5	223.5	223.5	-2.3%
Served Elevator Capacity (000 tonnes) – Grain-Dependent Network	3B-3	2,475.4	1,956.3	2,017.5	2,016.8	2,029.4	2,018.0	2,004.8	2,004.8	-0.6%
Served Elevator Capacity (000 tonnes) – Non-Grain-Dependent Network	3B-3	4,847.6	5,717.1	5,943.8	5,976.0	6,058.1	6,096.7	6,104.2	6,104.2	2.7%
Terminal Elevator Infrastructure										
Terminal Elevators (number)	3C-1	15	15	16	16	16	16	16	16	0.0%
Terminal Elevator Storage Capacity (000 tonnes)	3C-1	2,678.6	2,393.2	2,485.0	2,485.0	2,485.0	2,485.0	2,485.0	2,485.0	0.0%

DISCUSSION AND ANALYSIS

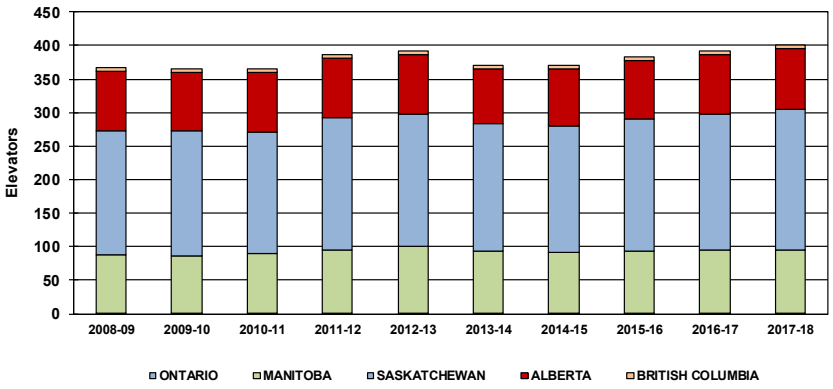
COUNTRY ELEVATOR INFRASTRUCTURE
[See TABLES 3A-1 through 3A-9]

At the outset of the 1999-2000 crop year, there were 1,004 licensed primary and process elevators situated across the prairies. By the close of the 2017-18 crop year, what remained encompassed a total of 400 facilities, representing a reduction of 60.2% from the base year. This decline marks one of the most visible changes that have taken place in the GHTS since the beginning of the GMP. However, much of this rationalization was concentrated in the GMP's first seven years, with only modest changes having occurred after the 2006-07 crop year.

The 2017-18 crop year brought a net increase of nine elevators to the network. Much of this increase related to the licensing of twelve elevators, chiefly Class A and B facilities, established by several smaller grain companies.[5] These additions were, however, partially offset by the closure of three other small elevators. Not to be overlooked was the fact that this expansion also included three newly commissioned, loop-track-equipped elevators in Saskatchewan: the 12,000-tonne Ilta Grain facilities at Belle Plaine and Saskatoon; along with the 35,000-tonne GrainsConnect Canada facility (owned by Australia-based GrainCorp) at Maymont.

At the close of the 2017-18 crop year, 209, or 52.3% of Western Canada's licensed elevators, were situated in Saskatchewan. This was followed by Manitoba and Alberta, whose corresponding 95 and 90 elevators accounted for shares of 23.8% and 22.5% respectively. The GHTS's remaining six facilities were divided between British Columbia, with five, and Ontario, with one. None of these proportions are far removed from those observed in the GMP's base year.

Country Elevators - Provincial Distribution



Much of the observed decline in elevators came from the closure of hundreds of the iconic wood-crib facilities that used to be found in virtually every small prairie town. Although some would be repurposed by new owners, 564 licensed Class A elevators, along with 128 Class B elevators, ultimately closed their doors during the last 19 years. These closures effectively drove a 404-community constriction in the grain-delivery network itself, which by the end of the 2017-18 crop year encompassed 281 locations as compared to the 685 benchmarked locations in the GMP's base year.

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

However, the smaller, wood-crib facilities were not the only elevators to be closed. Another 22 of the smaller Class C high-throughput elevators have also been shuttered. Only the largest high-throughput facilities, the licensed Class D elevators, have increased during this period, expanding almost threefold, to 148 from 38 in the base year. By the close of the 2017-18 crop year, high-throughput facilities accounted for 51.8% of total system elevators and 81.3% of its storage capacity. Both shares stand significantly above their respective base-year values of 11.9% and 39.4%.

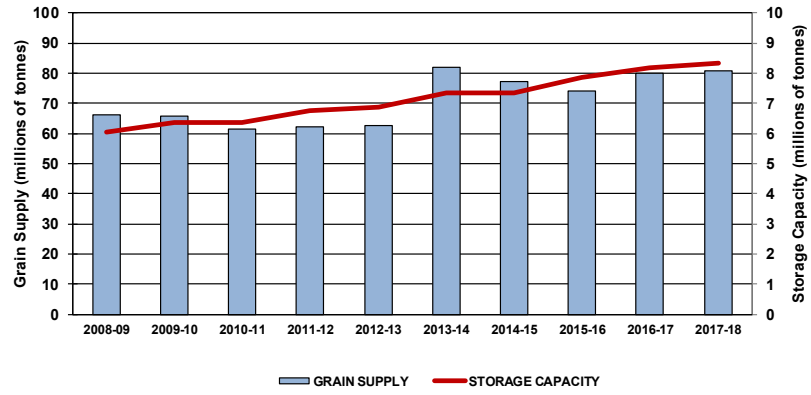
Of still greater importance is the fact that an even more efficient generation of Class-D facilities has begun to emerge. Not only do these facilities have more storage capacity than their forerunners, they also feature loop tracks with standing capacity for up to 150 railcars, which permits faster loading and more efficient unit-train operations.

Owing to its smaller footprint, G3 has made the greatest strides in developing loop-track operations, adding four such country elevators to its original seven-facility network since being established in 2015. However, most of the major grain handlers in Western Canada – among them Paterson Grain, Richardson International, and Viterra – have also embraced the concept, and are refitting several facilities with loop tracks of their own. Moreover, virtually all new elevator construction undertaken in the last three crop years – including those of such new entrants as Ceres Global Ag Corp., GrainsConnect Canada and Ilta Grain – have incorporated loop-track setups. At the close of 2017-18 crop year, some 18 loop-track facilities were in operation.

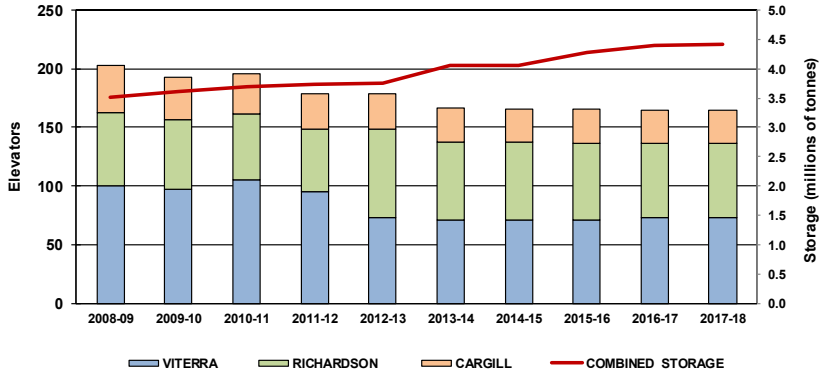
While the advent of these next-generation facilities strongly hints at potential future improvements in GHTS efficiency, it does not imply that the non-major grain handlers are being displaced as a result. In fact, the specialization of many has only served to fortify their positions in the marketplace, with firms like AGT Foods and Ingredients, Canpulse Foods, Delmar Commodities, Providence Grain Group and Scoular Canada all having expanded their presence in a highly competitive environment.

While the overall number of elevators has changed little over the last decade, the network's storage capacity has risen steadily. By the close of the 2017-18 crop year it stood at just over 8.3 million tonnes, a new GMP

Grain Supply and Country Elevator Storage Capacity



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



record. Moreover, this embodies a 46.1% increase over the 5.7-million-tonne low reached under the GMP 14 years earlier. This expansion has effectively paralleled the rise in the grain supply, with roughly one tonne of storage being added for every ten-tonne increase in the grain supply.

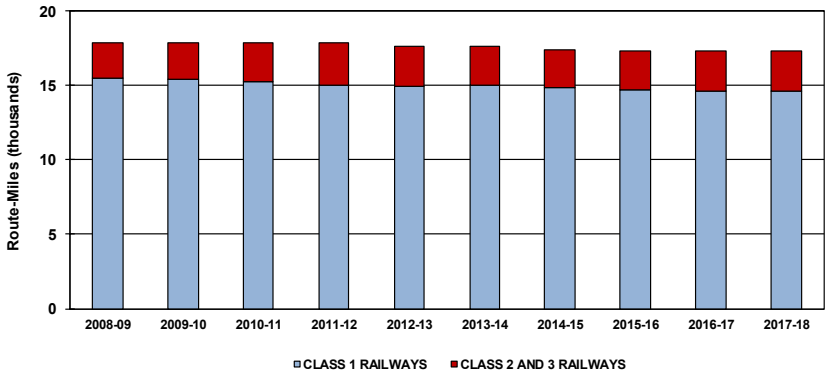
The 400 facilities making up the country-elevator network are licensed by dozens of separate companies. However, there are three principal grain handlers in western Canada, accounting for approximately three-quarters of the annual export movement: Viterra Inc., Richardson International, and Cargill Limited. Together, they have driven much of the industry's modernization efforts, and collectively oversee the operation of 41.2% of its facilities and 53.3% of its associated storage capacity.

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

Compared to changes in the GHTS's country-elevator network, that of the railway infrastructure has largely been secondary. This is because, even with the liberalized line transfer and discontinuance process introduced under the *Canada Transportation Act* in 1996, the major railways could only respond with the streamlining of their own networks once enough elevators had closed. Moreover, given the diversity of the traffic supported by the railways' infrastructure, its rationalization efforts could never match that of the grain companies. Over the last 19 years, this has resulted in the shedding of 2,188.3 route-miles, or 11.2%, of the 19,468.2 route-miles originally benchmarked. At the close of the 2017-18 crop year, this left a network of 17,279.9 route-miles.

To date, over three-quarters of the network reduction can be attributed to the discontinuance of some 1,703.5 route-miles of light-density, grain-dependent branch lines.[6] The 2017-18 crop year saw another 15.1 route-miles of these grain-dependent branch lines abandoned; all tied to a

Railway Infrastructure - Route-Miles Operated
(Western Canada)



section of CN's Alberta-based Coronado subdivision. However, this loss was more than offset by CP's opening of a new 18.9-route-mile section of non-grain-dependent branch line, located in Saskatchewan to service a new potash mine. Designated as the Belle Plaine subdivision, this new trackage effectively increased the network by 3.8 route-miles. Other changes in the composition of the railway network came from the transfer of various branch lines to smaller shortline railways, although none were recorded in the last twelve months. At the close of the 2017-18 crop year Class-1 carriers operated 84.6%, or 14,610.3 route-miles, while the smaller Class-2 and 3 carriers operated the remaining 15.4%, or 2,669.6 route-miles.[7]

6 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.

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

Covered Hopper Car Fleet

A significant portion of the GHTS's grain-handling capacity is tied to the number of covered hopper cars used by Canada's major railways in moving grain from the prairies. The size of the fleet arrayed varies with prevailing market conditions, expanding and contracting with changes in traffic volume. During the 2017-18 crop year, an average of 23,965 hopper cars were deployed to move grain, effectively unchanged from the 23,974-car average observed a year earlier. Of these, approximately 8,800 are publicly supplied, with roughly 7,900 cars provided by the Canadian government and another 900 cars furnished by the Alberta government.[8] The preponderance of the fleet, comprised of about 15,200 cars, is furnished using equipment either owned or leased by the railways and grain companies. This latter pool of railcars will continue to increase in number, ultimately replacing the government hoppers as they reach the end of their useful lives and are withdrawn from service.

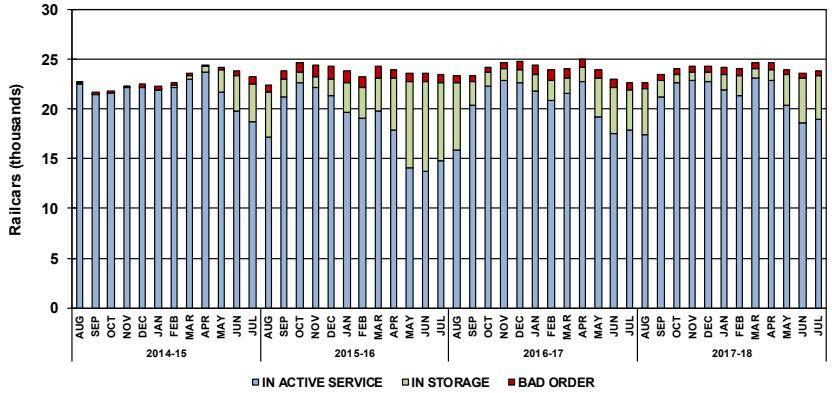
At any given moment in time, the equipment used for this purpose can be categorized in one of three ways: as being in active service moving grain; in storage awaiting later use; or "bad order" (i.e., removed from active service for repair). Typically, the proportion assigned to active service rises to meet peak demand, usually reaching its zenith sometime in the fall. This pattern was again evident in the 2017-18 crop year, with the proportion in active service rising to a height of 94.2% in November 2017, slightly greater than the 92.6% reached in the same period a year earlier. This meant that fewer railcars were held in storage or undergoing repair as the railways prepared for winter. Thereafter, the utilization rate began to slowly decline as more cars were placed in storage through the spring months, ultimately falling to a low of 79.1% in June 2018.

TERMINAL ELEVATOR INFRASTRUCTURE
[See TABLE 3C-1]

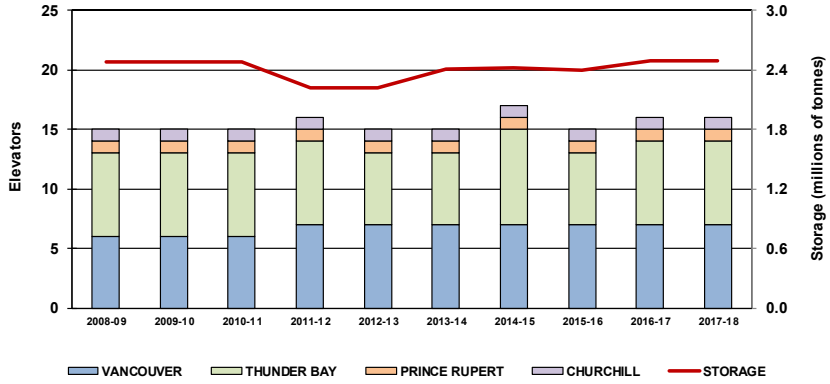
Terminal elevators, concentrated at the ports of Thunder Bay and Vancouver but complemented by stand-alone terminals in Churchill and Prince Rupert, have remained largely unchanged since the beginning of the

8 It should be noted that the publicly-supplied fleet was reduced in the wake of the Saskatchewan government's decision to sell the remainder of its fleet to provincially based shortlines in 2017.

Covered Hopper Cars - Number and Status



Terminal Elevators - Location and Storage Capacity
(Western Canada)



GMP. Much of this stems from the long-term nature of the structures themselves, the oldest of which has been in continuous operation since the 1920s.

Although the 2017-18 crop year saw no changes to the terminal elevator network, which remained comprised of 16 facilities with 2.5 million tonnes of storage capacity, substantial expansionary projects continue. Along with the recently completed 81,720-tonne expansion of the Richardson International terminal in Vancouver, additional development efforts will result in the opening of several new facilities along the west coast over the next few years. These expansion projects mark the first substantive additions to the terminal system's handling capacity in over three decades and reflects the growing needs of a system that is being called upon to handle an ever-increasing amount of export grain.

The most noteworthy of these involves G3's construction of a state-of-the-art terminal in Vancouver. Begun in March 2017, this new 180,000-tonne facility is expected to become operational in 2020. Similarly, Fibreco Export Inc., received the final approvals it needed for major enhancements to its present terminal midway through the 2017-18 crop year, which aims to add 171,200 tonnes of storage capacity – with 43,000 tonnes devoted to grain-handling activities – by 2019. Although a proposed modernization of the Parrish and Heimbecker terminal at Fraser Surrey Docks is expected to boost existing storage capacity by another 82,000 tonnes, the project had still not received the necessary approvals by the close of the 2017-18 crop year.[9]

The 2017-18 crop year also saw new grain-transloading capacity come on stream. The first of these involved the building of a new transloading facility in Prince Rupert by Ray-Mont Logistics, which went into full operation in October 2017. The second was the modernization of Columbia Containers' Vancouver transloading facility, which was completed in the fourth quarter of the crop year.

Each of these projects denotes a commercial response to the growing handling needs of the GHTS. And while each provides for additional capacity within the terminals themselves, they also bring more pressure to bear on the railway system that supports them. Increased grain shipments, along with heightened movements of coal, minerals, fuels, chemicals, forest products, and other commodities, have already begun to draw attention to the need for still more train-handling capacity. In crowded urban settings like Vancouver, established pinch points, such as the Thornton Tunnel and the Second Narrows Bridge, have become increasingly problematic in conducting grain and non-grain traffic to and from terminals on the North Shore. Congestion has also impeded the servicing of terminals situated on the South Shore, as well as elsewhere in the Greater Vancouver Area. Adding capacity to alleviate these bottlenecks is neither easy, immediate nor inexpensive.

Recognizing that congested trade routes have hampered Canadian export activity, various public and private sector stakeholders have moved to address the need for new infrastructure investment. The federal government alone earmarked $10.1 billion for such projects through 2028 under the National Trade Corridors Fund (NTCF). Since 2017, some $219.0 million has been allocated by the NCTF to several capacity-enhancing projects in the Greater Vancouver Area. These projects largely focused on the building of new roads, grade separations, and railway sidings to aid in the lessening of congestion. Although these investments provide some modicum of relief, they do not fully address the longer-term investment needs of the system.

9 A permit was subsequently issued in November 2018 by the Vancouver Fraser Port Authority for construction of what will be known as the Fraser Grain Terminal.

Section 4: Commercial Relations

Indicator Description	Table	1999-00	2015-16	2016-17	2017-18 Q1	Q2	Q3	Q4	YTD	% VAR
Trucking Rates										
Composite Freight Rate Index – Short-haul Trucking	4A-1	100.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Country Elevators Handling Charges										
Composite Rate Index – Receiving, Elevating and Loading Out	4B-1	100.0	133.1	134.7	135.6	135.1	135.1	135.1	135.1	0.4%
Composite Rate Index – Dockage	4B-1	100.0	165.0	153.8	153.8	153.8	153.8	153.8	153.8	0.0%
Composite Rate Index – Storage	4B-1	100.0	204.6	208.2	208.1	214.4	214.6	214.6	214.6	3.1%
Railway Freight Rates										
Composite Freight Rate Index – CN Vancouver	4C-1	100.0	132.2	136.6	148.0	148.0	148.0	133.7	133.7	-2.1%
Composite Freight Rate Index – CP Vancouver	4C-1	100.0	135.5	130.0	145.3	145.3	145.2	143.7	143.7	10.5%
Composite Freight Rate Index – CN Thunder Bay	4C-1	100.0	150.2	157.3	168.4	168.4	168.4	140.5	140.5	-10.7%
Composite Freight Rate Index – CP Thunder Bay	4C-1	100.0	145.3	134.4	155.2	155.2	155.0	141.1	141.1	5.0%
Effective Freight Rates ($ per tonne) – CTA Revenue Cap	4C-3	n/a	$33.84	$35.50	n/a	n/a	n/a	n/a	$36.87	3.9%
Terminal Elevator Handling Charges										
Composite Rate Index – Receiving, Elevating and Loading Out	4D-1	100.0	156.8	157.3	157.5	157.5	157.5	157.5	157.5	0.1%
Composite Rate Index – Storage	4D-1	100.0	183.7	185.1	185.2	185.2	185.2	185.2	185.2	0.1%

DISCUSSION AND ANALYSIS

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

Grain companies charge a variety of fees for elevator handling activities, predominantly for the receiving, elevating and loading out of grain. These are accompanied by additional charges for the removal of dockage (cleaning) and storage, all of which differ widely based on the activity, grain and province involved. Given the intricacy of these tariff rates, the GMP necessarily uses a composite price index to track changes in them over time.

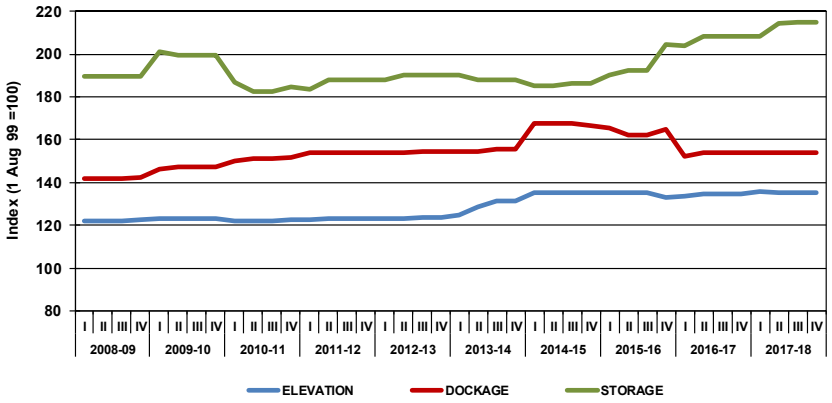
Throughout the last decade these rates have continued to rise, albeit by lower margins than in the initial years of the GMP. Comparatively modest changes were observed in the 2017-18 crop year: elevation rates increased by 0.4%, with the index rising to 135.1 from 134.7; dockage fees remained unchanged, with the index holding at 153.8; while storage rates increased 3.1%, raising the index to 214.6 from 208.2.

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

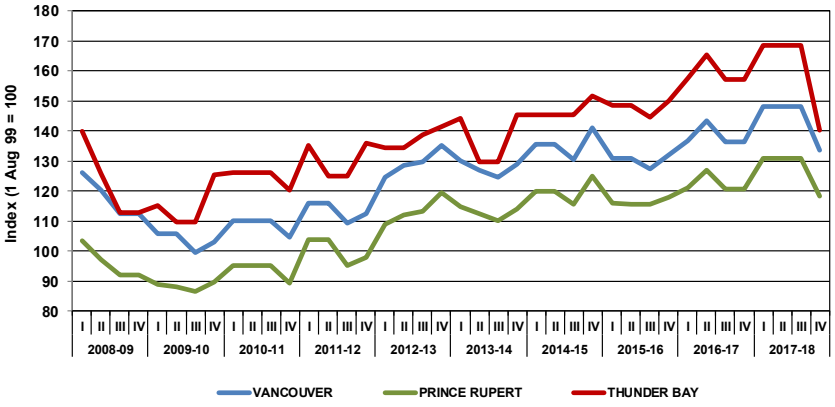
The single-car freight rates charged by CN and CP for the movement of regulated grain have changed substantially since the beginning of the GMP, evolving from what were largely mileage-based rates into a less rigidly structured set of more market-responsive rates. Likewise, these changes also employed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

CN initially extended the single-car rates it had in place at the close of the 2016-17 crop year through August 2017. The carrier then applied two sequential escalations: one in September; followed by a second in October. For westbound movements into Vancouver and Prince Rupert this meant an initial increase of 4.2% followed by another 4.0% increase one month later. Much the same was applied against the carrier's single-car rates into Thunder Bay and Churchill, although the former received an initial price hike of 3.0%. CN effectively maintained these rates unchanged through April 2018, at which point it then applied two consecutive reductions.

Primary Elevator Handling Charges



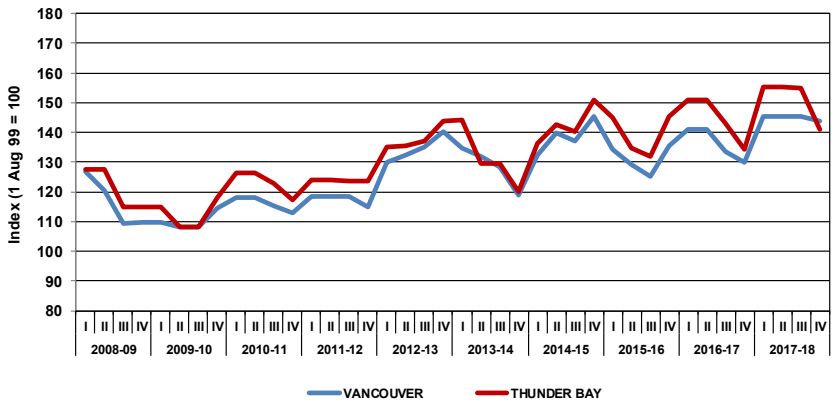
CN Single-Car Freight Rates - Primary Corridors
(Western Canada Destinations)



These too were differentiated directionally, with westbound movements receiving a 4.0% cut in May 2018 followed by a second 5.8% decrease in June 2018. Eastbound movements into Thunder Bay and Churchill received steeper reductions, with a 12.8% decrease applied in May followed by another 4.3% cut in June. By the close of the 2017-18 crop year, CN's single-car rates had effectively been reduced by: 2.1% in the Vancouver and Prince Rupert corridors; 10.7% in the Thunder Bay corridor; and 9.8% in the Churchill corridor.[10]

Unlike CN, CP immediately increased its single-car rates at the beginning of the 2017-18 crop year: by 6.4% on westbound movements into Vancouver; and by 10.0% on eastbound movements into Thunder Bay. These initial pricing actions were in turn followed by an across-the-board increase of 5.0% in October 2017. As was the case with CN, these rates remained effectively unchanged over the next six months. However, May 2018 saw CP cut its rates into Vancouver and Thunder Bay by 1.0% and 9.0% respectively. By the close of the crop year, CP's single car rates in the Vancouver corridor had risen by 10.5%, and by 5.0% in the Thunder Bay corridor.

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



Multiple-Car-Block Discounts

There have been equally significant changes to the structure of the freight discounts used by both carriers in promoting 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 those tied to blocks of 50 or more cars. These multiple-car-block discounts remained unchanged throughout the 2017-18 crop year. CN continued to offer discounts on movements of 50-99 car blocks that equated to $4.00 per tonne, and to $8.00 per tonne on movements of 100 or more cars. The corresponding discounts for CP remained at $4.00 per tonne for shipments in blocks of 56-111 cars, and at $8.00 per tonne for shipments in blocks of 112 or more cars.

Maximum Revenue Entitlement

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

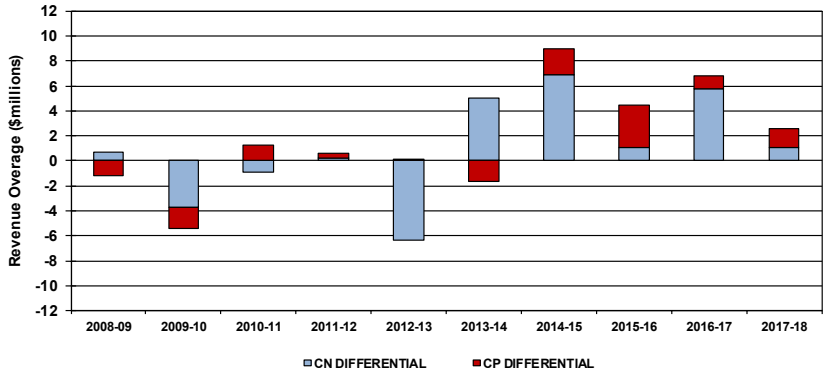
10 Despite the inability of the port of Churchill to accept traffic throughout the 2017-18 crop year owing to the forced closure of the Hudson Bay Railway north of Gillam, Manitoba, CN continued to publish rates for movement to the port.

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 2017-18 crop year, the Agency determined the value of the VRCPI to be 1.3817, which represented a year-over-year increase of 4.1%.[11] As a result, the MRE for CN and CP were set at $787.0 million and $708.0 million respectively, or $1,495.0 million on a combined basis.[12] This marked the seventh consecutive instance since the MRE's introduction that the carriers' combined revenue entitlement exceeded $1.0-billion. The Agency also determined that, for the 2017-18 crop year, the statutory revenues derived from the movement of regulated grain by CN and CP amounted to $788.1 million and $709.5 million respectively, or $1,497.6 million on a combined basis. These determinations resulted in both carriers exceeding their maximum entitlement: by $1.0 million in the case of CN; and by $1.5 million in the case of CP.[13] This meant that excess carrier revenues reached a combined $2.5 million, or 0.2%, above the prescribed maximum. It is worth noting that this is consistent with previous results wherein total carrier revenues have not exceeded 1% of their stipulated MREs since the 2007-08 crop year.

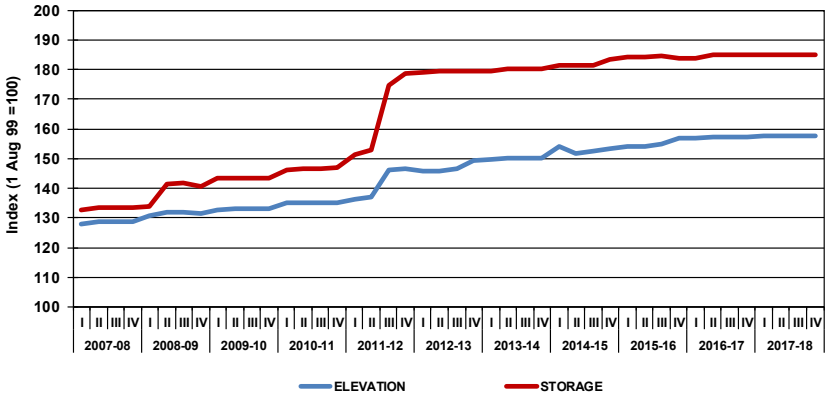
TERMINAL ELEVATOR HANDLING CHARGES
[See TABLE 4D-1]

About two-thirds of terminal-elevator revenues are derived from the charges levied for the receiving, elevating and loading out of grain. As with other price-related measures, the myriad of applicable tariff rates naturally lends itself to the use of composite indexes in gauging price movement over time. The 2017-18 crop year saw negligible changes to these rates, which lifted the composite price index by a mere 0.1%, to 157.5 from 157.3 in the previous year. As with elevation, minor changes in the daily charge for storage also led to a 0.1% increase in the composite price index, which rose to 185.2 from 185.1 a year ago.

Maximum Revenue Entitlement - Carrier Compliance



Terminal Elevator Handling Charges



11 See Canadian Transportation Agency Decision Number R-2017-37 dated 28 April 2017.
12 See Canadian Transportation Agency Determination R-2018-276 dated 31 December 2018.
13 Excess revenues, along with applicable penalties, are payable by the carrier to the Western Grains Research Foundation.

COMMERCIAL DEVELOPMENTS

India imposes tariff and non-tariff barriers against pulse imports

The Canadian pulse sector felt the impact of three distinct trade actions taken by the Indian government during the 2017-18 crop year. The first of these was the removal of a country-specific derogation (exemption) on 1 October 2017 that had allowed the importation of pulses to be fumigated with methyl-bromide upon arrival in India without penalty. This meant that Canadian shipments could still be exported to India under the general derogation, which is set to expire on 30 June 2019. However, Canadian shipments were now subject to a five-fold increase in the regular inspection fees payable upon arrival in India, which equated to about $15 per tonne. The loss of these exemptions was compounded by an ever-expanding series of restrictive trade measures. Beyond the Indian government's requirement for the fumigation of all imported grain, it moved to increase tariffs on several key crops, including the raising of tariffs on:peas to 50% from 0%; lentils and chickpeas to 30% from 10%; and on chickpeas to 60%. On 6 February 2018 India also added a social welfare surcharge (10% of applicable tariff) to the importation of lentils and chickpeas, bringing the effective tariff rates to 33% and 66% respectively. Further to this, on 25 April 2018 India introduced limits on the volume of imported peas, which was initially restricted to 100,000 tonnes for three months, but frequently extended and ultimately taking the form of an import prohibition currently set to expire on 31 March 2019. These measures have had a significant impact on pulse deliveries, which were virtually halved as the Canadian industry started to deal with the realities of being effectively shutout of a market that absorbed about 40% of Canada's pulse production, as well as the financial fallout from declining prices and margins. Moreover, in the face of what was expected to be a continuing global oversupply, few believed that the situation would reverse itself in the near term. Fortunately, China moved to take advantage of the situation, virtually doubling its Canadian pea imports for the year. Still, the market damage had been done, and many industry observers predicted that a sharp pullback in Canadian pulse production would ensue in 2018. With year-end statistics showing a 13% decline in seeded acres, these predictions appeared to have been correct.

Bill C-49 receives Royal Assent

The *Transportation Modernization Act*, which amends the *Canada Transportation Act* along with other Acts respecting transportation in Canada received Royal Assent on 23 May 2018. The Act included provisions that had long been sought by grain shippers and farmers, among them: the ability to have reciprocal penalties and dispute resolution included in service-level agreements; the definitional strengthening of the "adequate and suitable" level of service railways must provide to shippers; the addition of soybeans to the list of commodities shielded under the Maximum Revenue Entitlement; and the publication of new railway and supply chain performance metrics. Many within the grain industry maintained that these changes would spur improvements in Canada's rail transportation system, others voiced the view that its real impact would only be revealed with time.

GHTS moves to acquire next-generation of hopper cars

Within 24 hours of Bill C-49 receiving Royal Assent, the Canadian National Railway Company (CN) announced that it was planning to acquire 1,000 high-capacity hopper cars for use in grain service. Slated for delivery over the next two years, these new state-of-the-art cars are to be built by National Steel Car Limited (NSC) at its facility in Hamilton, Ontario. Less than two weeks later, the Canadian Pacific Railway (CP) announced that it had also placed an order for 1,000 new cars from NSC, but that they would be part of a broader 5,900-car acquisition plan that would enable the carrier to completely remove all low-capacity hoppers (including those owned by the Government of Canada) from its fleet over the next four years. Both carriers indicated that their investments were facilitated by the changes made to the Maximum Revenue Entitlement under Bill C-49. However, they were not the first to secure new rolling stock. Companies such as Richardson International and Parrish and Heimbecker have been quietly assembling their own car fleets for several years. GrainsConnect Canada, one of the country's newest grain-handlers, has already taken partial delivery of the four 134-car train sets they ordered to service their newly constructed high-throughput elevators. The lure of the NSC design is understandable when considering that each car offers up to 19% more

carrying capacity (by volume) than a conventional cylindrical hopper car. The gain is augmented by the car's shorter length (56-feet versus 59-feet), which lifts the carrying advantage per linear foot to almost 28%. This can be exploited still further if trains can be lengthened beyond their current limits. CP has already moved decisively in this direction, initiating actions to support 8,500-foot train operations rather than the 7,000-foot maximum in place today. One of these involves eliminating the multiple-car-block discounts that have supported movements in less than 112-car lots beginning in the 2018-19 crop year.

Fibreco Terminal Enhancement Project gets approval

On 7 December 2017 the Port of Vancouver issued a project permit to Fibreco Export Inc. allowing it to proceed with the marine component of its larger Terminal Enhancement Project in North Vancouver, British Columbia. The project sought to enhance the terminal's current wood pellet operations, add new grain export operations and remove the existing woodchip exporting infrastructure. These plans call for the enhanced facility to have about 43,000 tonnes of dry bulk storage capacity, a rail spot for full unit trains, along with a new shiploader and an expanded berth capable of loading Panamax vessels. But the permit only applied to work to be undertaken on federal lands and waters managed by the Vancouver Fraser Port Authority, this included berth improvements, dredging, and demolition. Construction on much of the upland work, which included the proposed silos and railway infrastructure, was held back awaiting another permit from the District of North Vancouver, which came two months later, on 9 February 2018. Concurrent with this, Regina-based AGT Foods and Ingredients announced shortly after the initial permit was issued that it had reached a 20-year terminal services agreement with Fibreco to move its grain products through the new export facility.

Ray--Mont opens Prince Rupert transload facility:

Ray-Mont Logistics officially opened its new integrated container-loading facility at the south end of Ridley Island in Prince Rupert on 31 August 2017. This was followed almost three weeks later by the arrival of the first unit train bearing a load of canola meal. With a focus on pulses and special crops, the ten-acre facility was designed to accommodate the delivery of

One of the new 5,431 cubic-foot hopper cars being produced by National Steel Car Limited at the company's facility in Hamilton, Ontario. With deliveries and committed orders for some 3,000 units, these cars are quickly becoming the successor to the cylindrical hopper cars that have been the backbone of the GHTS since the early 1980s. (Image courtesy of National Steel Car)

100-car unit trains, which will see product offloaded into a grain dumper and through a state-of-the art conveyance system for reloading into export containers. These containers will then be trucked to the neighbouring Fairview Container Terminal for shipment to markets around the globe.

Columbia Containers completes modernization of Vancouver transload facility

Columbia Containers Ltd., a wholly owned subsidiary of Fort-Saskatchewan based Providence Grain Solutions, completed work on the construction of a new $26-million transloading facility on the south shore of Vancouver's Burrard Inlet in April 2018. The project, which involved a full modernization of the company's existing operations, was intended to allow for a near threefold increase in throughput, which stood at about 650,000 tonnes annually. As with other transload operators, Columbia, which handles a variety of agricultural products ranging from wheat to pulses, has witnessed the surge in container traffic moving through the port. However, the company's aging infrastructure limited its ability to accommodate any further growth in the demand for its grain-transloading

services. Beyond a physical expansion of the facility, the initiative incorporated state-of-the-art features, including: twin receiving tracks for inbound railcars; a system of protected dumpers, conveyors and transfer towers to move the arriving grain; dual container load-out capabilities; and 11,000 tonnes of on-site storage.

Hudson Bay Railway ordered to repair line to Churchill

In the aftermath of the flooding that led to the immediate closure of the Hudson Bay Railway's (HBR) line between Gillam and Churchill, Manitoba, in late May 2017, the carrier announced that, owing to the severity of the physical damage inflicted, a resumption of service was not likely before winter or the spring of 2018. Subsequent engineering assessments revealed that the track bed had been washed away in some 31 locations and that at least 13 bridges and 68 culverts had sustained damage. The cost of restoring the line was estimated at anywhere between $20 and $60 million. However, the HBR's owner, Denver-based OmniTRAX, revealed in June 2017 that it was not prepared to expend the money needed to return the line – which it had been trying to sell since late 2015 – to service. Not only did this prove a death blow for any attempt to move grain through the port of Churchill during the 2017 shipping season, it also meant that a vital transportation link for many northern Manitoba communities had been cut. This led to the formal filing of a level-of-service complaint against the carrier. Ultimately, the Canadian Transportation Agency found the HBR in breach and ordered that it commence repairs by 3 July 2018, and to supply the Agency with monthly reports on its progress. But the HBR demurred, filing an appeal with the Federal Court of Appeal. Even so, the HBR moved to initiate repairs in accordance with the Agency's order. All the while, OmniTRAX indicated that it was in final negotiations for the sale of the railway to a group of interested investors under a deal then being brokered by federally appointed facilitator, Wayne Wouters. The Hudson Bay Railway and the Port of Churchill were subsequently sold in late August 2018 to Arctic Gateway Group Limited Partnership, a private-public partnership comprised of Missinippi Rail Limited Partnership, Fairfax Financial Holdings and AGT Limited Partnership. The line has since been repaired and made operational.

Wheat exports to Japan resume

The Western Canadian grain industry welcomed the late-July announcement by Japan that it would resume importing wheat from Canada after lifting an embargo imposed a month earlier. The embargo initiated by Canada's second largest wheat buyer followed the discovery of a handful of genetically modified wheat plants, which is not authorized to be grown commercially in any country, in a ditch alongside an access road in southern Alberta. This action was mirrored by South Korea, which had also suspended Canadian wheat imports but resumed trade eight days later. Follow-up testing by the Canadian Food Inspection Agency concluded that the rogue wheat plants were isolated to one location and found no evidence that any unapproved product had entered the grain supply chain.

CP settles labour problems

Canadian shippers breathed a collective sigh of relief after it was announced by CP on 30 May 2018 that it had reached a tentative four-year agreement with its train crews to end a strike that had begun less than 24 hours earlier. Although the agreement reached between the Calgary-based railway and the Teamsters Canada Rail Conference, which represents approximately 3,000 company employees, was only ratified in late July, full operations were restored the next day. A potential strike by some 360 members of the International Brotherhood of Electrical Workers was also avoided with a last-minute agreement between the parties, and the subsequent ratification of a three-year contract.

Section 5: System Efficiency and Performance

Indicator Description	Table	1999-00	2015-16	2016-17	2017-18 Q1	Q2	Q3	Q4	YTD	% VAR
Country Elevator Operations										
Average Elevator Capacity Turnover Ratio	5A-1	4.8	6.3	6.4	1.6	1.6	1.4	1.6	6.2	-3.1%
Average Weekly Elevator Stock Level (000 tonnes)	5A-2	3,699.3	3,062.8	3,152.8	3,466.9	3,845.1	4,151.6	2,880.4	3,575.0	13.4%
Average Days-in-Store (days)	5A-3	41.7	26.1	24.9	26.3	31.0	33.5	22.8	28.3	13.7%
Average Weekly Stock-to-Shipment Ratio – Grain	5A-4	6.2	3.9	3.6	4.0	4.4	5.2	3.4	4.2	16.7%
Railway Operations										
Movements to Western Canada										
Railway Car Cycle (days) – Empty Movement	5B-1	10.7	7.3	7.6	8.1	8.1	9.2	8.6	8.5	11.5%
Railway Car Cycle (days) – Loaded Movement	5B-1	9.2	6.0	6.5	6.9	7.7	7.5	6.9	7.2	11.8%
Railway Car Cycle (days) – Total Movement	5B-1	19.9	13.3	14.1	15.1	15.8	16.7	15.4	15.7	11.6%
Railway Car Cycle (days) – Non-Special Crops	5B-2	19.3	13.0	13.9	14.9	15.6	16.4	15.2	15.5	11.9%
Railway Car Cycle (days) – Special Crops	5B-3	25.8	15.2	15.4	16.1	21.2	19.6	17.2	17.7	14.8%
Railway Loaded Transit Time (days)	5B-4	7.8	4.8	5.2	5.8	6.3	6.3	5.7	6.0	15.3%
Movements to Eastern Canada										
Railway Car Cycle (days) – Empty Movement	5B-5	n/a	10.9	9.7	9.7	10.2	12.5	11.0	11.0	14.2%
Railway Car Cycle (days) – Loaded Movement	5B-5	n/a	12.4	11.2	13.4	13.3	12.6	13.5	13.1	17.2%
Railway Car Cycle (days) – Total Movement	5B-5	n/a	23.4	20.9	23.1	23.5	25.1	24.5	24.2	15.8%
Railway Loaded Transit Time (days)	5B-8	n/a	9.9	8.7	11.1	10.8	11.0	10.9	10.9	25.4%
Movements to the United States										
Railway Car Cycle (days) – Empty Movement	5B-9	n/a	11.4	11.2	11.6	11.9	13.2	11.9	12.2	8.4%
Railway Car Cycle (days) – Loaded Movement	5B-9	n/a	15.2	13.6	14.2	16.1	17.3	15.1	15.7	15.8%
Railway Car Cycle (days) – Total Movement	5B-9	n/a	26.6	24.8	25.8	27.9	30.5	27.1	27.9	12.5%
Railway Loaded Transit Time (days)	5B-12	n/a	11.1	9.8	10.4	12.3	13.4	11.4	12.0	21.8%
Traffic to Western Canada										
Hopper Car Grain Volumes (000 tonnes) – Non-Incentive	5B-13	12,718.7	5,313.3	6,211.9	1,874.2	1,435.3	1,223.5	1,513.0	6,046.0	-2.7%
Hopper Car Grain Volumes (000 tonnes) – Incentive	5B-13	12,945.9	31,837.9	32,408.1	8,589.9	7,920.1	7,640.0	7,914.2	32,064.2	-1.1%
Hopper Car Grain Volumes ($ millions) – Incentive Discount Value	5B-14	$31.1	$238.6	$244.7	$64.9	$59.8	$57.9	$59.3	$241.9	-1.1%
Traffic Density (tonnes per route mile) – Total Network	5B-15	330.4	536.3	558.9	605.7	540.9	512.5	545.6	553.0	-1.0%
Terminal Elevator Operations										
Average Terminal Elevator Capacity Turnover Ratio	5C-1	9.1	18.4	21.4	n/a	n/a	n/a	n/a	18.9	-11.7%
Average Weekly Terminal Elevator Stock Level (000 tonnes)	5C-2	1,216.2	1,179.4	1,138.8	1,238.5	1,195.1	1,243.8	1,112.8	1,196.5	5.1%
Average Days-in-Store – Operating Season (days)	5C-3	18.6	10.9	10.5	12.0	11.8	10.3	11.3	11.5	9.5%
Average Weekly Out-of-Car Time	5C-5	n/a	11.7%	12.1%	9.2%	11.2%	15.3%	9.7%	11.2%	-7.4%
Port Operations										
Average Vessel Time in Port (days)	5D-1	4.3	7.9	10.3	8.1	10.9	14.8	7.7	10.0	-2.9%
Average Vessel Time in Port (days) – Waiting	5D-1	1.9	3.2	4.7	3.3	5.2	8.4	3.3	4.8	2.1%
Average Vessel Time in Port (days) – Loading	5D-1	2.4	4.7	5.6	4.8	5.7	6.4	4.4	5.2	-7.1%
System Performance										
Total Time in Supply Chain (days)	5E-1	68.1	41.8	40.6	44.1	49.1	50.1	39.8	45.8	12.8%

DISCUSSION AND ANALYSIS

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

The net effect of changes in primary elevator throughput and storage capacity is reflected in the system's capacity-turnover ratio. With primary elevator throughput having decreased by 0.2% to 45.5 million tonnes, the turnover ratio for the 2017-18 crop year also declined, albeit by a somewhat greater 3.1%, to 6.2 turns from the 6.4 turns reported a year earlier. This differential was largely attributable to the dampening effect of a further 141,600-tonne expansion in the storage capacity of the primary-elevator system, which has been steadily rising for several years.

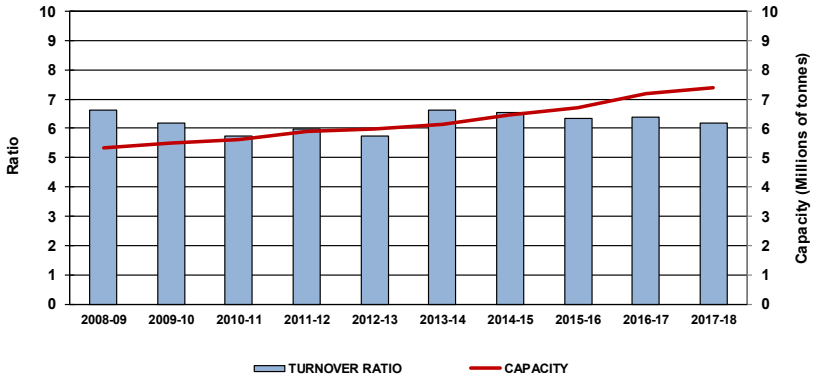
Elevator Inventories

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

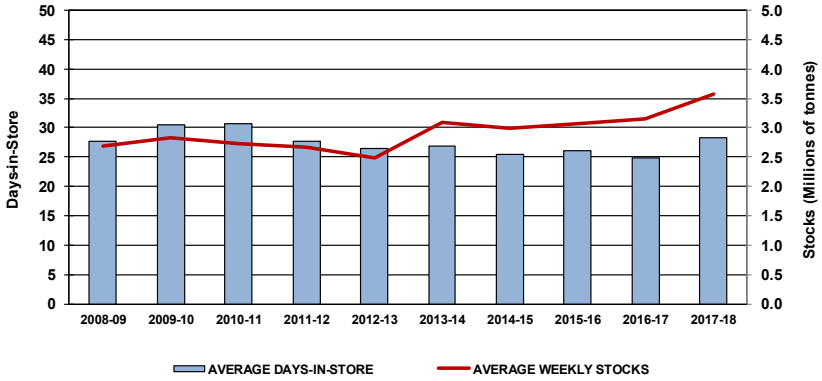
Notwithstanding periodic fluctuations, approximately half of the GHTS's primary elevator storage capacity is employed in maintaining its operational grain inventories. Even as the system's associated storage capacity rose, stocks seldom moved above the 3.0-million-tonne mark until the 2013-14 crop year. It was not until then that the expansion in storage capacity, coupled with the need to accommodate larger harvests, allowed primary elevator stocks to consistently rise beyond this level without congesting the system. In fact, the 2017-18 crop year saw average primary elevator inventories reach above this threshold for a fifth consecutive year, rising by 13.4%, to almost 3.6 million tonnes from 3.2 million tonnes a year earlier. Moreover, the net addition of 1.5 million tonnes of storage capacity over the last five crop years allowed elevator stocks to reach a GMP record of 4.3 million tonnes in February 2018.

While stock levels continue to rise, the amount of time spent by grain in inventory has continued to decline. After having fluctuated around 30 days for several years that average has dropped closer to the 25-day mark.

Primary Elevator Capacity Turnover Ratio



Primary Elevator Inventories

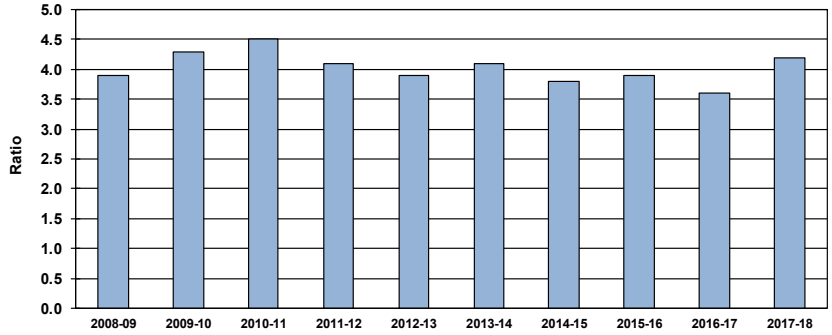


The pace at which grain must move in order to accommodate the greater volume of grain being handled by the GHTS has contributed significantly to this reduction. Even so, the overall average for the 2017-18 crop year rose by 13.7%, to 28.3 days from a record GMP low of 24.9 days a year earlier. Much of this increase reflected the congestion brought on by a deterioration in railway service during the second and third quarters.

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 that follow in the next seven days. A decade ago, the average stock-to-shipment ratio generally stood somewhere around a value of 4.5. In more recent years, however, the average has repeatedly fallen below 4.0, suggesting the maintenance of tighter inventories in relation to the volume of grain slated for shipment in the coming week. Even so, the 2017-18 crop year saw a 16.7% spike in the average ratio, which climbed to 4.2 from the record GMP low of 3.6 a year earlier. This increase was largely reflective of the buildup in inventories occasioned by the GHTS's reduced fluidity in the second and third quarters.

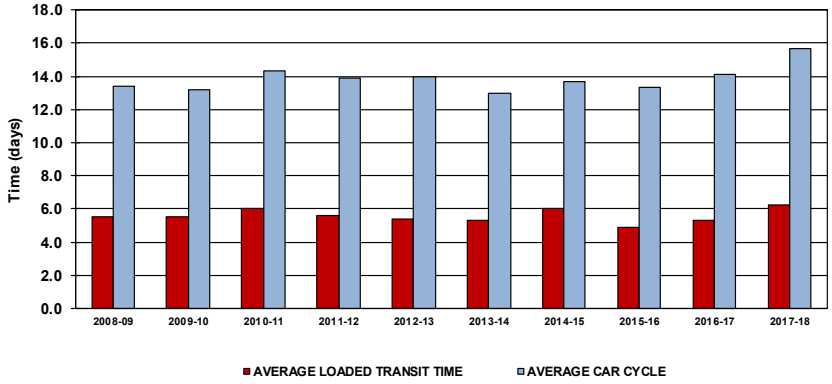
Primary Elevators - Stock-to-Shipment Ratio



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

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

Railway Car Cycles and Loaded Transit Times
(Western Canada)



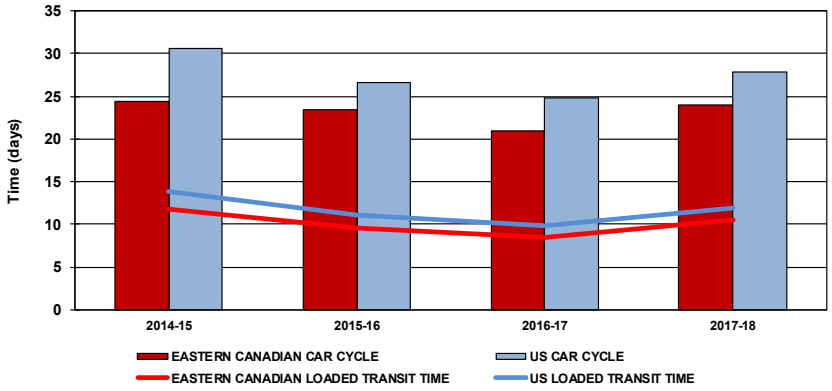
Movements to Western Canada
[See Tables 5B-1 through 5B-4]

During the 2017-18 crop year the car cycle for shipments terminating within Western Canada averaged 15.7 days, an 11.6% increase over the 14.1-day average recorded a year earlier. This rise reflected increased cycle times in the west-coast corridors. The biggest gain, 17.3%, was recorded in the Prince Rupert corridor, where the average car cycle increased to 16.2 days from 13.8 a year earlier. This was supported by a

13.8% increase in the Vancouver-corridor average, which rose to 16.3 days from 14.3 days in the previous year. These increases were partially countered by a 2.1% reducti on in the Thunder Bay corridor, where the average fell to 13.3 days from 13.5 days. Much of the observed increases were tied to elongations of the car cycle in the winter months, which significantly hampered the movement of grain to the west coast.

Owing to the heavy weighting of non-special crops in the overall traffic mix, the car cycle for these commodities showed a similar increase, with the average rising 11.9%, to 15.5 days from 13.9 days a year earlier. A slightly greater increase was noted for the car cycle tied to special crops, which rose by 14.8%, to an average of 17.7 days from 15.4 days. The comparatively higher average for special crops still appears linked to the handling characteristics of such shipments, which tend to move in smaller numbers in regular merchandise-train service rather than in the unit-train lots typical of non-special crops.

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



Loaded Transit Time

Allied with the railways' average car cycle is the movements' 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 gradually decreased since the beginning of the GMP. However, in keeping with the recent elongations of the overall car cycle, the average loaded transit time has also risen. The 2017-18 crop year saw this average increase 15.3%, to 6.0 days from 5.2 days a year earlier.

The irregularity in the underlying distribution, as gauged by the coefficient of variation, proved little different in the 2017-18 crop year, falling marginally to 32.7% from 33.9% a year earlier. Both values are not far removed from those observed in earlier years, indicating that the amount of time taken in moving a loaded hopper car to a port in Western Canada remains highly variable.

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

Parallel performance measures for grain shipments into Eastern Canada and the United States were added to GMP reporting in the 2014-15 crop year. Owing to the greater distances involved in reaching these markets, these data show noticeably higher averages than observed for Western Canadian destinations. In the case of movements into Eastern Canada, the car cycle climbed by 15.8% in the 2017-18 crop year, with the average rising to 24.2 days from 20.9 days a year earlier. A lesser 12.5% increase was observed on movements into the United States, with the average car cycle rising to 27.9 days from 24.8 days.

In equal measure, the average loaded-transit time associated with movements into Eastern Canada and the US are substantially higher than those to Western Canadian destinations. In the case of the former, this amounted to an average of 10.9 days, which represented an increase of 25.4% from the 8.7 days reported a year earlier. For movements into the United States, the increase amounted to a marginally lesser 21.8%, with the average climbing to 12.0 days from 9.8 days. The underlying distributions

showed an even sharper difference, with the coefficient of variation on movements into Eastern Canada standing at 25.7% against 56.0% for those into the United States.

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

The amount of railway traffic moving in multiple-car blocks remains substantial. Since the 2005-06 crop year, at least three-quarters of the regulated grain moving to the four ports in Western Canada was earning a discount, against only half in the GMP's base year. While this value is subject to seasonal variations, it continues to rise, and regularly reaches beyond the 80% mark. The 2017-18 crop year saw 84.1% of the grain shipped moving in blocks of 50 or more cars, up from the 83.9% recorded a year earlier.

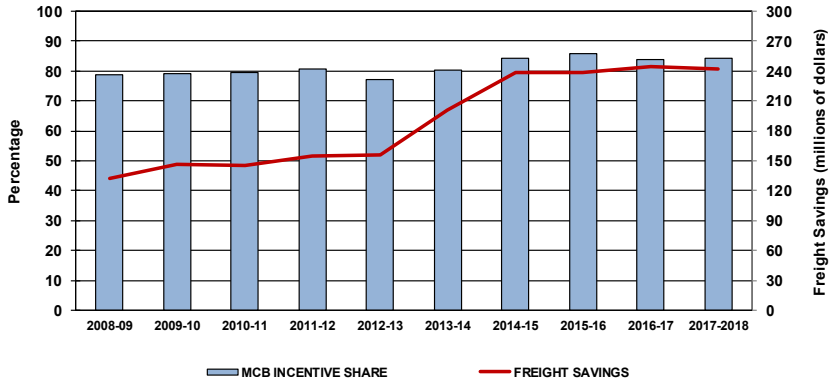
The monetary value of the discounts earned by grain shippers – estimated as gross savings in railway freight charges – now stands several times greater than in the GMP's base year. These savings are estimated to have fallen by 1.1% in the 2017-18 crop year, to $241.9 million from a GMP record of $244.7 million a year earlier. For the most part, this decline reflected the reduction in total grain handlings, with the average discount earned remaining unchanged at an estimated $7.55 per tonne.

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

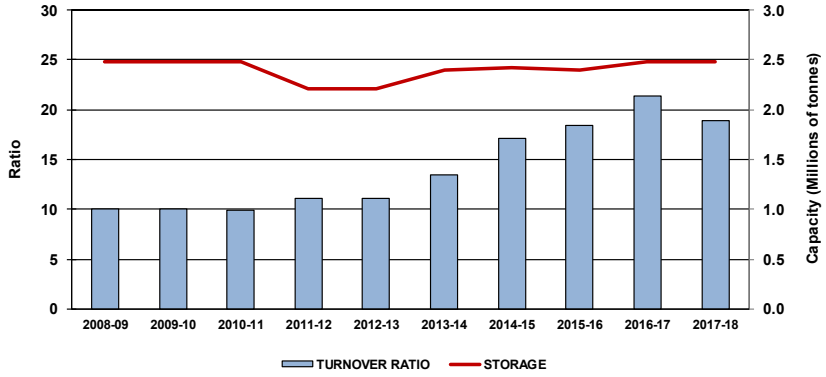
The net effect of changes in terminal-elevator throughput and storage capacity is reflected in the system's capacity-turnover ratio, which fell by 11.7%, to an average of 18.9 turns from the record-setting 21.4 turns noted a year earlier. This reduction is sizably greater than the 5.3% decrease in terminal-elevator throughput reported on earlier. This is because, as a simple composite value, the overall ratio is sensitive to any significant swing in the tonnage handled through individual facilities. The turnover values tied to some of the smaller terminals at the ports of Vancouver and Thunder Bay can be especially distortionary.

Nevertheless, the GHTS's annual terminal throughput now stands 50% above the 23.5 million tonnes benchmarked at the beginning of the GMP.

MCB Movements and Freight Savings
(Western Canada)



Terminal Elevator Capacity Turnover Ratio



More significantly, the west-coast gateways of Vancouver and Prince Rupert have shouldered much of the additional workload. Although storage capacity is now slated to increase in the wake of ongoing expansionary efforts, the turnover ratio has virtually doubled from what it was at the beginning of the GMP.

Terminal Elevator Inventories

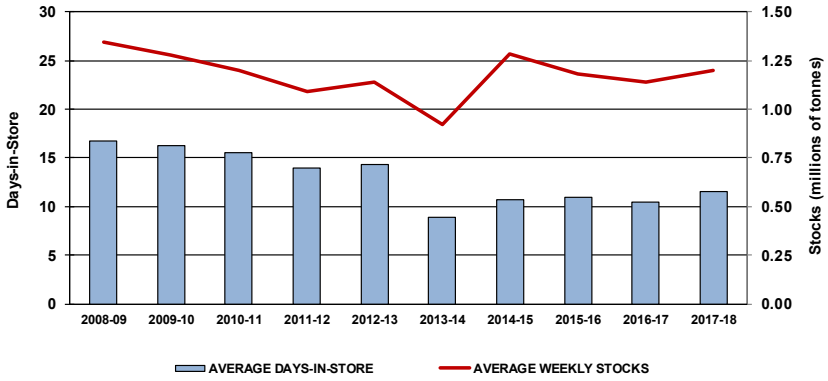
Given that there have been few physical changes to the GHTS's terminal elevator system over the past 18 years, grain inventories have not varied substantially since the beginning of the GMP. In fact, average weekly stock levels have tended to fluctuate in a band between 1.0 million tonnes and 1.5 million tonnes. This was again the case in the 2017-18 crop year, with the average weekly stock level increasing 5.1%, to 1.2 million tonnes from 1.1 million tonnes a year earlier.

Moreover, terminal stocks have typically been maintained at about half of the system's licensed storage capacity. Still, stocks fluctuate from week to week, rising and falling in conjunction with the workings of the supply chain itself. This means that stocks normally use anywhere from 40% to 60% of the licensed storage capacity at any given time. A utilization rate that exceeds these bounds, such as was the case in the 2013-14 crop year, typically denote major exceptions in the orderly flow of grain through the GHTS. While weekly terminal stocks varied significantly in the 2017-18 crop year, they still averaged 49.8% of the system's stated storage capacity.

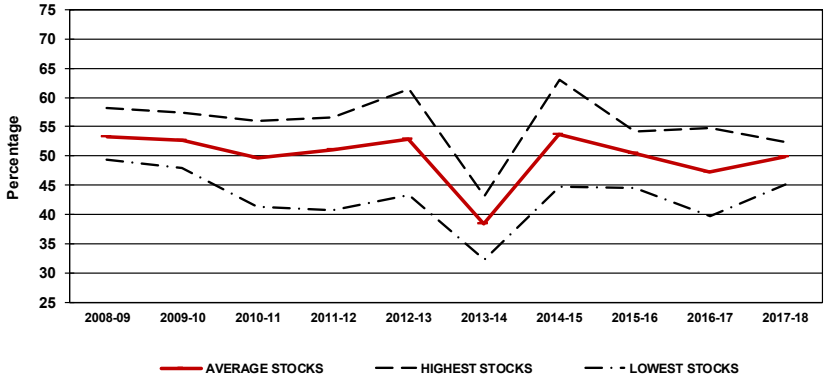
But higher throughput has brought more pressure to bear on the maintenance of adequate terminal stocks. The average stock level now represents about 3% of the system's annual throughput rather than the 5% they did 18 years earlier. This has placed even greater emphasis on just-in-time inventory practices, heightening the need for a consistent flow of the right grain, to the right terminal, at the right time. Characteristic of the rise in these practices has been a longer-term decrease in the amount of time grain spends in terminal inventory, which has been cut by a full seven days over the life of the GMP, falling to an annualized average of 11.5 days from 18.6 days.

Even so, the 2017-18 crop year's average of 11.5 days rose 9.5% from the previous crop year's 10.5-day average. Much of this increase was shaped

Terminal Elevator Inventories



Terminal Elevator Capacity Utilization



by activity at Thunder Bay, which saw its average days-in-store climb by 26.0%, to 19.4 days from 15.4 days. The increase for the Pacific Seaboard ports of Vancouver and Prince Rupert showed a more modest 2.4% increase, with the average rising to 8.7 days from 8.5 days.

However, the latter rise conceals the decline from an average of 10.2 days in August 2017 to 6.9 days in December 2017, and the rebound to 8.1 days by July 2018. These averages suggest that west coast stocks were being drawn down substantially in the face of an irregular and constricted inbound rail movement.

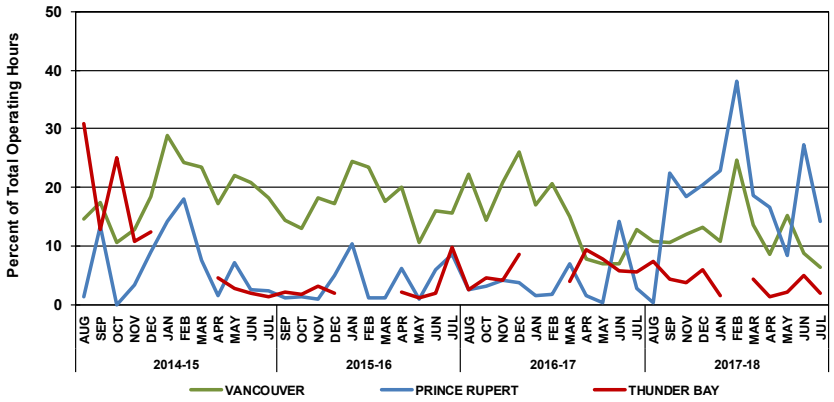
Equally indicative of tighter terminal inventories was the further decline in many of the grain-specific stock-to-shipment ratios, particularly along the Pacific Seaboard. Although most commodities showed averages that stood comfortably above 1.0, all had minimums that fell substantially below this threshold. As such, every grain was in short supply at some point during the crop year.

Port Terminal Out-of-Car Time

A related measure, denoted as out-of-car time, gauges how often a port terminal had no railcars to unload while staffed and operating. The indicated proportion points to how consistently grain flowed through the terminal system during a specified period. This measure offers some insight into how the pace of inbound rail deliveries matches with the terminals' handling capacity, and whether a slowdown in the flow of traffic has generated any undue idle activity. These statistics tend to show a degree of seasonality, with out-of-car time often peaking in the winter months, typically a more difficult operational period.

With its greater operating hours, Vancouver's out-of-car time is most indicative of the system's overall efficiency. Proportionately, 12.2% of the port's total terminal operating hours were idled during the 2017-18 crop year, down noticeably from the 16.2% recorded in the previous year. Despite this overall improvement, monthly values fluctuated between a low of 8.6% and a high of 24.8%, with significant swings also noted among terminals located on both the north and south shores. A similar overall reduction was observed for Thunder Bay, where the out-of-car time dropped to 4.0% from 5.0%. Prince Rupert, however, saw a three-fold

Terminal Elevator Out-of-Car Time



increase in its out-of-car time percentage, which rose to 18.0% from 5.3% a year earlier.

Taken collectively, terminal elevators were left without grain to unload 11.2% of the time, down moderately from the 12.1% noted the previous year. Even so, the overall statistics blur the fact that inbound terminal elevator activity was significantly curtailed at the height of winter and that Prince Rupert shouldered a disproportionate share of the burden. This can be seen in the out-of-car time values for February 2018, with the proportions reaching heights of 24.8% for Vancouver and 38.2% for Prince Rupert.

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

A total of 883 vessels called for grain at Western Canadian ports during the 2017-18 crop year. This represented a 7.9% reduction from the 959 ships that arrived for loading a year earlier. Over half of these, 468, called at Vancouver. This was followed by Thunder Bay with 310, and Prince Rupert with 105. Owing to its closure for the 2017 shipping season, no vessels called at the port of Churchill.

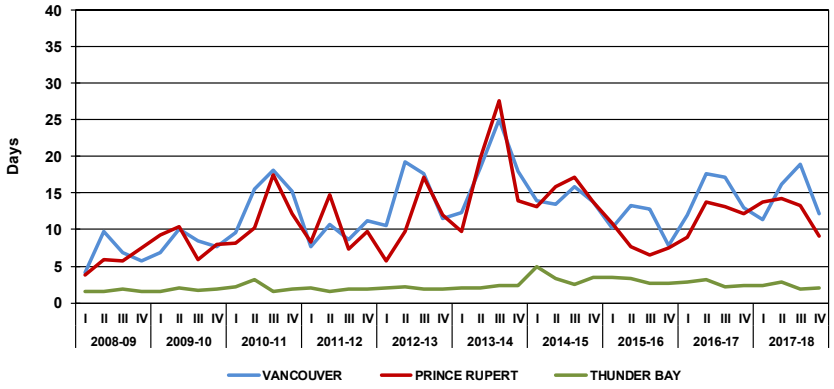
Average Vessel Time in Port

The amount of time spent by vessels in port is generally indicative of the GHTS's overall efficiency: when low, it suggests that grain is moving through the system in a timely and uniform manner; when high, it hints at some underlying impediment. The 2017-18 crop year saw a 2.9% reduction in this average, which fell to 10.0 days from 10.3 days a year earlier. This was chiefly due to a 7.1% decrease in the amount of time vessels spent loading, which fell to an average of 5.2 days from 5.6 days a year earlier. However, the improvement was partially offset by a 2.1% increase in the amount of time vessels spent waiting to load, which rose to an average of 4.8 days from 4.7 days.

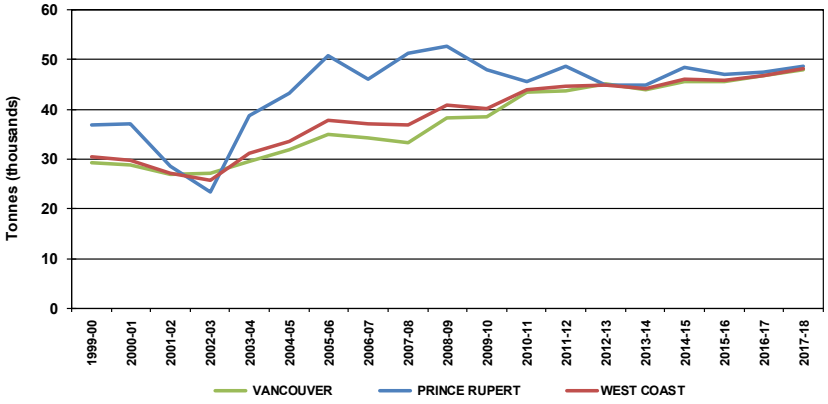
Much of this reduction was attributable to an improvement at Vancouver, where a vessel's average time-in-port declined by 4.0%, to 14.5 days from 15.1 days a year earlier. This was accompanied by a 14.8% decrease for Thunder Bay, which saw its average fall to 2.3 days from 2.7 days. These improvements were partially offsetting by a 5.8% increase at Prince Rupert, where the average rose to 12.8 days from 12.1 days a year earlier.

It is worth noting that despite the broader decline, the time spent by vessels in port spiked sharply in the third quarter, with the overall average for March 2018 reaching a height of 19.4 days. This was driven by a progressive rise in the amount of time ships spent in the west-coast ports of Vancouver and Prince Rupert, which peaked at an average of 21.0 days and 16.5 days respectively during this period. Undoubtedly, much of the increase arose out of the delays incurred in getting grain to port during these winter months, which again gave rise to complaints from many grain handlers regarding the consistency of railway service.

Vessel Time in Port
(Western Canada)



Average Load per Vessel



Beyond the need to better coordinate the inbound movement of grain by rail, the physical demands of arriving ships has placed additional pressure on the GHTS. For a commercially active centre such as Vancouver, this frequently involves the disproportionate allocation of available achorages. Accordingly, there have been instances during the last five crop years where vessels waiting to load grain in Vancouver have tied up all of the nearby anchorages, with the overflow then forced to moor further to the west along the coast of Vancouver Island. Not only does this necessitate additional pilotage services, it contributes to harbour congestion and drives up demurrage costs.

At the same time, the ships calling for grain at west-coast ports have also been getting larger. The aggressive building programs of various ship owners has resulted in newer and bigger vessels replacing the smaller bulk vessels that were reaching the end of their serviceable lives. Ships taking on loads of 45,000 or more tonnes are now commonplace at both Vancouver and Prince Rupert. The use of these larger ships results in longer loading times, with their physical accommodation having spurred operators such as Pacific Elevators and Alliance Grain Terminal to replace their smaller shipping galleries with new, more efficient ones.

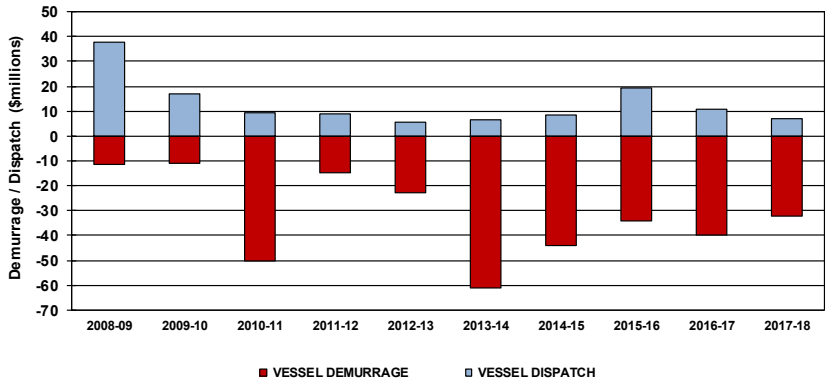
Distribution of Vessel Time in Port

Another impediment to the flow of grain through the terminal network is reflected in the number of ships spending long periods of time in port. The proportion of ships with stays of more than five days rose marginally in the 2017-18 crop year, to 54.6% from 54.4% a year earlier. Moreover, ships in port for an unusually long time remained comparatively high, with the proportion of vessels spending 16 or more days in port declining only marginally to 25.6% from 25.8%. This, however, was virtually double the 14.5% level witnessed just two years earlier. With almost all delays tied to ships calling at Vancouver and Prince Rupert, west-coast exports are the most adversely affected by impairments to terminal grain shipments.

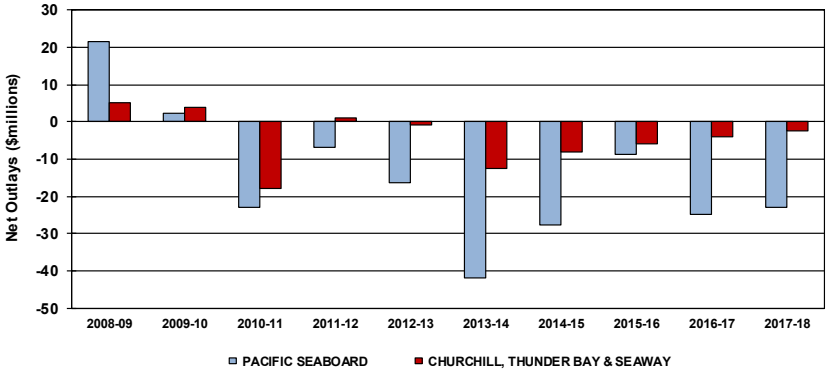
Distribution of Berths per Vessel

Similarly, there were only modest changes in the proportion of vessels needing to berth more than once during the 2017-18 crop year. At Vancouver, this proportion rose to 53.6% from 51.7% a year earlier. While

Annual Demurrage and Dispatch



Annual Demurrage and Dispatch - Region



at Thunder Bay the proportion fell to 13.5% from 16.4%. Although the Vancouver proportion remains generally consistent with those observed in the first years of the GMP, the reduction posted by Thunder Bay continues to show a progressive improvement.

Demurrage and Dispatch

Changes to the amount of time vessels spend in port are often reflected in the demurrage costs and dispatch earnings reported by the WGEA, which provides a monetary indication of how efficiently grain flowed through Western Canadian ports. For the eighth consecutive year, these two elements dovetailed to produce a net cash outlay for grain handlers. Although the $25.2 million paid out in the 2017-18 crop year was on par with the previous crop year's $28.9 million expenditure, it still proved almost double the $14.7 million expended two years earlier. This financial result was shaped chiefly by a 19.4% reduction in demurrage costs, which fell to $32.0 million from $39.7 million the previous year. Even so, a 36.8% reduction in dispatch earnings, which fell to $6.8 million from $10.8 million, ate into these savings.[14]

These results were chiefly driven by the financial penalties incurred along the Pacific Seaboard, which had a net cash outlay of $22.8 million against $24.8 million a year earlier. The results from activity at Churchill, Thunder Bay and points along the St. Lawrence Seaway were more positive, with reduced demurrage costs driving the net cash outflow down to $2.3 million from $4.1 million.

SYSTEM PERFORMANCE
[See TABLE 5E-1]

Overall GHTS performance can be most readily gauged by the amount of time taken by grain in moving through the system. By the close of the 2017-18 crop year, this time dimension had plunged 32.7%, to an average of 45.8 days from a benchmark 68.1 days in the GMP's base year. Notwithstanding this broad downward trend, disruptions to the fluid flow of grain have periodically resulted in more time being taken. Such was the

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

Days Spent Moving Through the GHTS Supply Chain

FARM OPERATIONS

COUNTRY ELEVATOR STORAGE TIME

RAILWAY LOADED TRANSIT TIME

TERMINAL ELEVATOR STORAGE TIME

MARINE OPERATIONS

				TOTAL	NET CHANGE
1999-00	41.7	7.8	18.6	68.1	
2014-15	25.5	5.8	10.7	42.0	-32.7%
2015-16	26.1	4.8	10.9	41.8	
2016-17	24.9	5.2	10.5	40.6	
2017-18	28.3	6.0	11.5	45.8	

case in the 2017-18 crop year, when the average rose 12.8% from the previous crop year's record-setting low of 40.6 days.

The supply chain provides a useful framework within which to examine the elements contributing to that performance. This 5.2-day worsening was the sum of increases in all areas of GHTS activity, with the average amount of time grain spent in inventory at a country elevator increasing by 3.4 days, a 1.0-day increase in its storage time at terminal elevators, and another 0.8-day penalty from an increase in the railways' loaded transit time. But these increases were all symptomatic of broader issues at play in the provision of railway service.

Unfortunately, they also came at a time when the GHTS was confronting a total grain supply of 80.6 million tonnes, the second largest on record. Furthermore, non-grain shipments were also at historic levels, with all Canadian-originated railway traffic having increased by 3.3% in the 2017-18 crop year, to 374.6 million tonnes.[15] This heightened demand for the railways' limited carrying capacity led many stakeholders to voice concern over the reduced priority that grain shipments might again be given. Such treatment, it was feared, could bring about service problems akin to those encountered in the 2013-14 crop year, when the GHTS grappled with a record 81.9-million-tonne grain supply.

Late in the 2016-17 crop year, it was observed that the average loaded-transit and car-cycle times associated with Western Canadian grain shipments had already begun to climb. This continued into the 2017-18 crop year, with year-to-date increases of 15% being typical by the close of the first quarter. The situation continued unabated into the second quarter and worsened still further in the third. At its peak in February 2018, the average loaded transit time on grain movements to Western Canadian ports had increased by 36.2%, reaching 7.9 days against 5.8 days a year earlier. A similar gain was observed for the average car cycle, which stood at 19.9 days as compared to the previous February's 14.6 days.

With the elongation of the railways' car cycle significantly constricting the available supply of railcars, the growing backlog of unfilled car orders soon led to burgeoning country elevator stocks and longer times in inventory. The downstream effects of delayed shipments presented corollary issues for terminals starved of inbound grain – especially along the west coast – which soon found themselves short of the grain they needed to load ships in a timely manner. This in turn led to port congestion and vessel delays.

The situation at Prince Rupert was made even more difficult as CN began restricting the number of hopper cars it was making available for the movement of grain in the corridor. Despite hopper-car orders that reached beyond the previous crop year's handle, grain shipments through the Prince Rupert Grain terminal fell by 13.9%. Latent concerns over the setting of reduced movement priorities for grain seemed justified when gauged against volume increases of 26.0% for containers and 46.8% for coal.

With shipper ire again running high, their frustrations began to resonate among legislators then shepherding Bill C-49, the *Transportation Modernization Act*, through Parliament. In the face of renewed calls for more effective regulation, the federal Transport and Agriculture Ministers demanded that the nation's two major railways move to correct the situation. Both carriers claimed that the slowdown was due in large measure to an unanticipated surge in traffic, a larger-than-expected crop and the debilitating effects of a cold and snowy winter. Still, both reported that they were responding with the short-term deployment of more resources along with a longer-term investment in plant, equipment and personnel. Improvements in fluidity were noted through the latter part of the third quarter as CN and CP carried through on their commitments to correct the situation and reduce the traffic backlog.

15 Drawn from Statistics Canada, *Railway Carloadings, November 2018*.

Section 6: Producer Impact

Indicator Description	Table	1999-00	2015-16	2016-17	2017-18 Q1	2017-18 Q2	2017-18 Q3	2017-18 Q4	2017-18 YTD	% VAR
Export Basis										
1CWRS Wheat ($ per tonne) – Original Methodology	6A-10A	$54.58	n/a	n/a						
1CWRS Wheat ($ per tonne) – Revised Methodology (1)	6A-10A	n/a	$82.87	$94.30					$91.50	-3.0%
1CWA Durum ($ per tonne) – Original Methodology	6A-10B	$67.63	n/a	n/a						
1CWA Durum ($ per tonne) – Revised Methodology (1)	6A-10B	n/a	$116.14	$116.86					$112.88	-3.4%
1 Canada Canola ($ per tonne)	6A-10C	$52.51	$65.24	$65.63					$63.10	-3.9%
Canadian Large Yellow Peas – No. 2 or Better ($ per tonne)	6A-10D	$54.76	$62.16	$69.11					$63.47	-8.2%
Producer Cars										
Producer-Car-Loading Sites (number) – Class 1 Carriers	6B-1	416	180	160	143	143	143	142	142	-11.3%
Producer-Car-Loading Sites (number) – Class 2 and 3 Carriers	6B-1	122	138	130	130	130	130	130	130	0.0%
Producer-Car-Loading Sites (number) – All Carriers	6B-1	538	318	290	273	273	273	272	272	-6.2%
Producer-Cars Scheduled (number) – Covered Hopper Cars	6B-2	3,441	5,871	5,519	1,062	1,404	837	475	3,778	-31.5%

(1) The methodology used to calculate the export basis in the 2012-13 through 2017-18 crop years does not allow for direct comparison with those of previous crop years.

DISCUSSION AND ANALYSIS

CALCULATION OF THE EXPORT BASIS

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

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

The only practical means of addressing these calculations rests in standardizing the estimates around a representative sample of grains, and grain stations. As a result, the GMP consciously limits its estimations to four specific grains: wheat; durum; canola; and peas.[16] The export basis and producer netback for each commodity is then calculated for each of the 43 grain stations. These location-specific calculations are then clustered to portray the averages for nine geographic areas, comprised of four to six grain stations each, namely: Manitoba East; Manitoba West; Saskatchewan Northeast; Saskatchewan Northwest; Saskatchewan Southeast; Saskatchewan Southwest; Alberta North; Alberta South; and Peace River.

Components of the Calculation

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

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

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

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

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

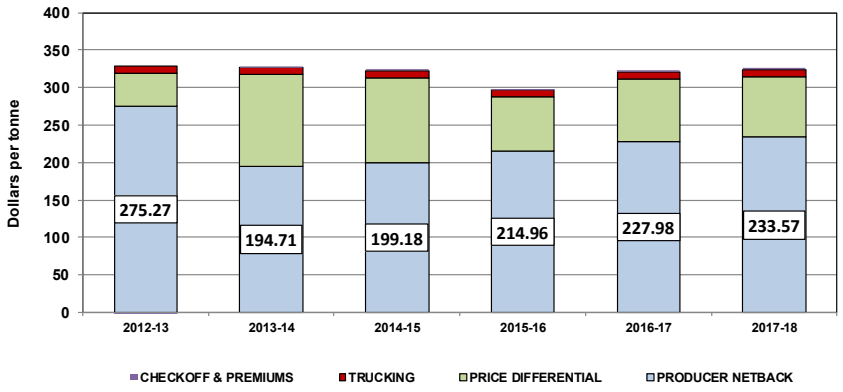
In its earlier reports, the Monitor described how higher prices have generally been responsible for any improvement in the per-tonne returns accruing to producers of wheat and durum. In comparison, reductions in the export basis have proven to be secondary. Whether it be price or the export basis, their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

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

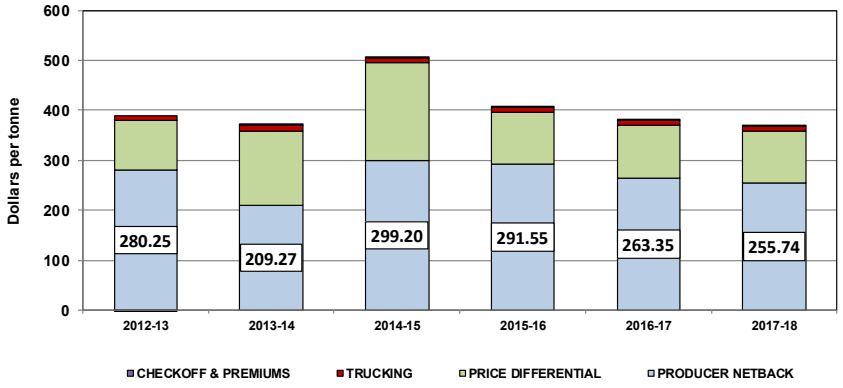
The financial return to farmers of 1CWRS wheat amounted to an estimated $233.57 per tonne in the 2017-18 crop year. This represented a gain of 2.5% over the $227.98 estimated a year earlier. Much of the improvement was attributable to an increase in the average price, which is constructed around a tonnage-based weighted average export quotation for 1CWRS wheat (13.5% protein), and that rose by 0.9%, to $325.07 per tonne from $322.28 per tonne a year earlier. Supported by the weak Canadian dollar, this modest increase reflected the continuing strong global demand for high-quality wheat.

The $2.79-per-tonne increase in wheat prices was bolstered by a near-matching $2.80 per-tonne reduction in the export basis, which fell by 3.0%, to $91.50 per tonne from $94.30 per tonne a year earlier. Much of this reduction was attributable to a cut in the price differential – or spread – between the export quotation and the elevator spot price, which fell 3.3%, to $80.74 per tonne from $83.53 per tonne a year earlier. In effect, the price differential includes applicable freight, handling, cleaning, storage, weighing and inspection charges, as well as an opportunity cost or risk premium. With trucking charges remaining unchanged at $9.82 per tonne, the only other contributors to the change in the export basis came from a $0.03 per tonne reduction in the check-off which was offset by a $0.02 per tonne cut in applicable trucking premiums.

Producer Netback - 1CWRS Wheat



Producer Netback - 1CWA Durum



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

The financial return to farmers of 1CWA durum amounted to an estimated $255.74 per tonne in the 2017-18 crop year. This represented 2.9% less than the $263.35 per tonne reported in the 2016-17 crop year. The decline was driven mostly by lower durum prices, which fell to $368.62 per tonne, 3.0% below the $380.21-per-tonne average recorded a year earlier. Much of this decline reflected the continuing oversupply of world markets as well as the injurious effects of Italy's recently imposed country-of-origin labelling rules along with the campaign led by local farm interests to undermine Canada's reputation for durum quality.

The full effect of the price decline was cushioned by a modest decrease in the export basis, which fell by 3.4%, to $112.88 per tonne from $116.86 per tonne. Virtually all this $3.98 reduction was attributable to a $4.02 decrease in the price differential, which fell to $102.06 per tonne from $106.08 per tonne a year earlier. As outlined with respect to 1CWRS wheat, the $9.82-per-tonne trucking cost did not change in the 2017-18 crop year, so did not factor into a worsening of the producer netback. However, a $0.03-per-tonne gain from a lower check-off charge of $1.03 per tonne coupled with a $0.07-per-tonne reduction in the trucking premiums paid to producers, served to lessen the producer netback by another $0.04 per tonne.

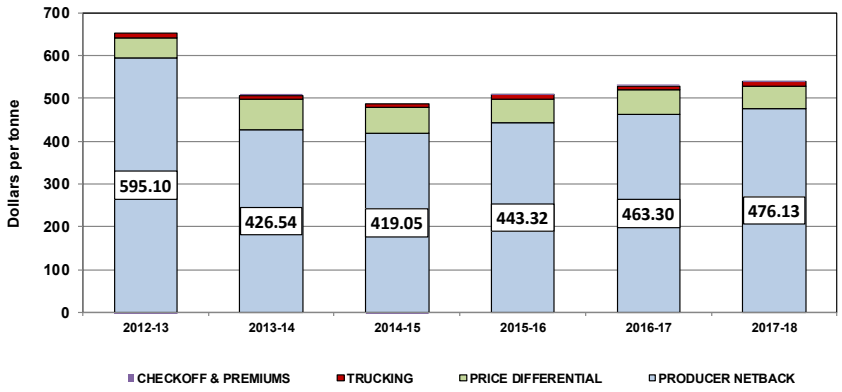
CANOLA AND YELLOW PEAS
[See TABLES 6A-1C through 6A-10D]

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

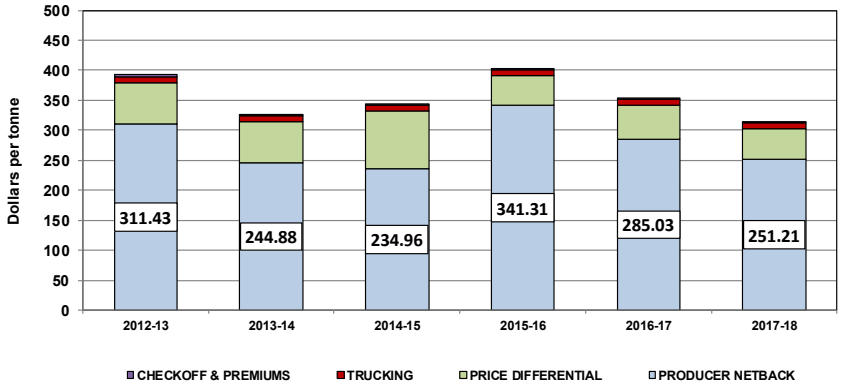
1 Canada Canola
[See Tables 6A-1C through 6A-10C]

The netback to producers of 1 Canada canola increased by 2.8% in the 2017-18 crop year, rising to $476.13 per tonne from $463.30 per tonne a year earlier. This result was mostly driven by higher canola prices, with

Producer Netback - 1 Canada Canola



Producer Netback - Large Yellow Peas



the average Vancouver cash price gaining 1.9% to reach $539.23 per tonne from $528.93 per tonne. This reflected the continuing strong international demand for oilseeds which also helped lift Canadian canola production to a new record.

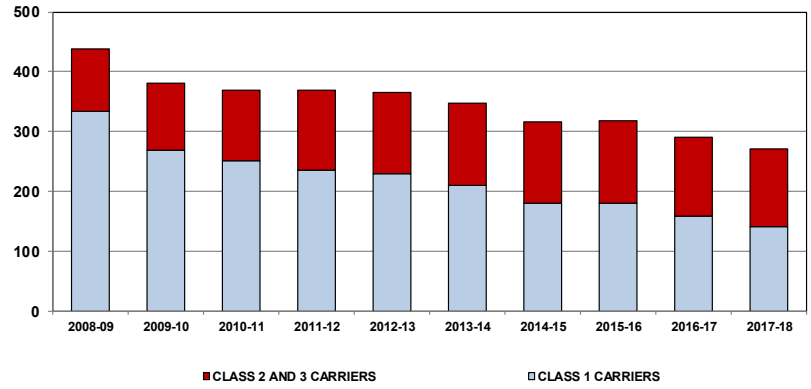
This improvement was supported by a 3.9% reduction in the export basis, which fell to an average of $63.10 per tonne from $65.63 per tonne a year earlier. As observed with wheat and durum, virtually all the increase stemmed from a decrease in the price differential, which declined to $53.21 per tonne from $55.36 per tonne a year earlier. The costs derived from trucking and the payment of a check-off did not change in the 2017-18 crop year, so did not contribute to the variance in the producer netback. These were estimated at $9.82 per tonne and $0.92 per tonne respectively. Only a $0.38-per-tonne increase in the trucking premiums paid to producers aided in further reducing the export basis.

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

The visible netback to producers of large yellow peas has proven the most volatile of the four commodities monitored under the GMP. Producers experienced an 11.9% decline in these returns during the 2017-18 crop year, which fell to $251.21 per tonne from $285.03 per tonne a year earlier. Much of this reduction was attributable to lower market prices brought on by the imposition of tariff and non-tariff barriers by India, traditionally a major Canadian export market. As a result, the dealer's closing price fell by 11.1%, to $314.68 per tonne from $354.14 per tonne.

The export basis for large yellow peas fell by 8.2% in the 2017-18 crop year, to $ 63.47 per tonne from $69.11 per tonne a year earlier. As with other commodities, much of the decrease was rooted in a reduction of the price differential, which stands in for the cost of freight as well as other handling activities, and that fell by 9.5%, to $51.97 per tonne from $57.44 per tonne. This was supported by a $0.23-per-tonne reduction in Pulse Growers Association fees which was partially offset by a $0.06 decrease in trucking premiums. Since trucking costs remained unchanged at $9.82 per tonne, it had no contributory effect on the export basis.

Producer-Car Loading Sites



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

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

Loading Sites
[See Table 6B-1]

The number of producer-car loading sites situated across Western Canada has continued to decline from the 710 originally benchmarked at the beginning of the GMP. The 2017-18 crop year saw the closure of another

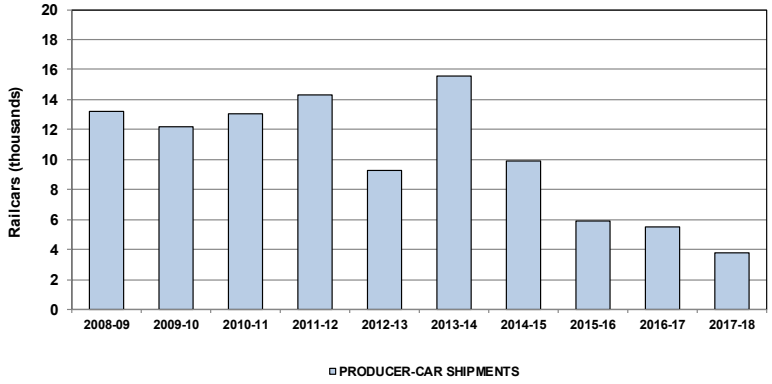
18 sites, with the overall number falling by 6.2%, to 272 from 290. All the reductions came by way of CP's decision to close a variety of sites local to its lines. This resulted in an 11.3% cutback in the number of sites operated by Class 1 carriers, which fell to 142 from 160, while those serviced by Class 2 and 3 carriers remained unchanged at 130.

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

Producer-car shipments have declined significantly since reaching a high of 15,603 carloads in the 2013-14 crop year. In the 2017-18 crop year, scheduled shipments totaled just 3,778 carloads, a mere quarter of the volume recorded four years earlier. Much of this decline reflects the realities of today's competitive environment and the limited economic appeal of the producer-loading option. Moreover, what remains has largely been refocused on serving the American market for select grains, with an estimated two-thirds of total producer-car shipments now being directed into the United States.

Equally noteworthy is the attendant shift in the mix of commodities handled. Until the 2009-10 crop year, wheat, durum and barley were dominant, representing virtually all the traffic moved. But the proportion accorded to oilseeds and other commodities soon began to climb. The 2017-18 crop year saw the share given over to wheat, durum and barley rebound only slightly, to 35.8% from 28.0% a year earlier. Conversely, shipments of oilseeds, special crops and oats remained stout, although their share declined to 64.2% from 72.0% the previous year. This marked the third consecutive crop year in which the shipment of these commodities displaced those of wheat, durum and barley.

Producer-Car 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 western Canada, eastern Canada, the United States and Mexico; by vessel from terminal elevators at the four ports in western Canada; and by truck to the United States.

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

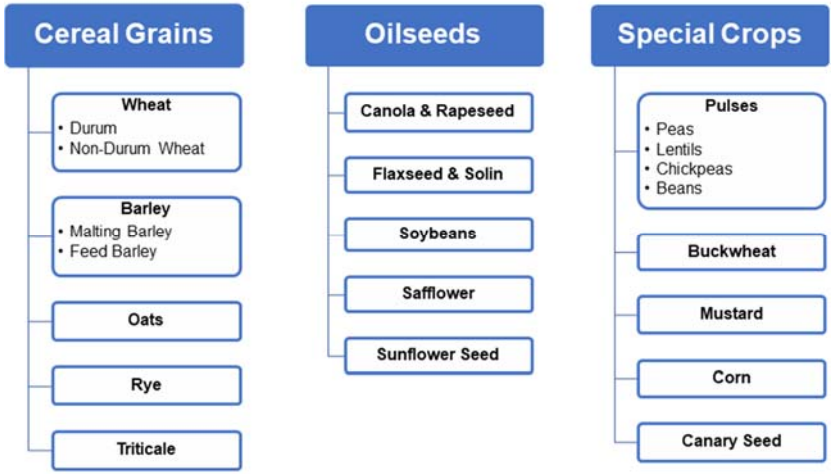
- Series 4 – Commercial Relations: Measurements relating to the rates applicable on various grain-handling and transportation services.

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

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

Appendix 2: Commodity Guide

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



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

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

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

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

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

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

Appendix 3: Acknowledgements

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

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