2019–20

Crop Year in Review


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Prince Rupert, BC

Highlights

- CN moved a record 28.3 million metric tonnes (MMT) of bulk grain and processed grain products ex Western Canada in hopper cars, tanks and boxcars during the 2019–20 crop year:
  - 0.9 MMT and +3.4% compared to the previous record set in 2018–19 (27.4 MMT)
  - 1.9 MMT and +7.3% versus the three-year average (26.4 MMT)
- CN moved over 1.15 MMT of bulk grain and processed grain products ex Western Canada in containers during the 2019–20 crop year, representing record intermodal grain movement.
- Combined, total grain movement from Western Canada was over 29.5 MMT.
- CN recorded its best ever single month for carload grain movement in October (2.79 MMT).
- CN also recorded the highest shipment volumes for individual months in March (2.65 MMT), April (2.73 MMT), May (2.54 MMT), June (2.62 MMT) and July (2.42 MMT).
- Three new high-throughput elevators were opened exclusively on CN lines. The construction of four additional facilities to be served by CN were also announced. Since 2015, of the 34 new high-throughput elevators built, announced or currently being built in Western Canada, 23 have been located on CN lines of which 19 are loop track facilities.
- A number of grain export projects, all served by CN, are either completed and are expected to be completed during the 2020–21 crop year, including G3 Vancouver Terminal, Fraser Grain Terminal, Fibreco Vancouver, and Sollio Agriculture Quebec City.

Acheson, AB

Shipping Performance

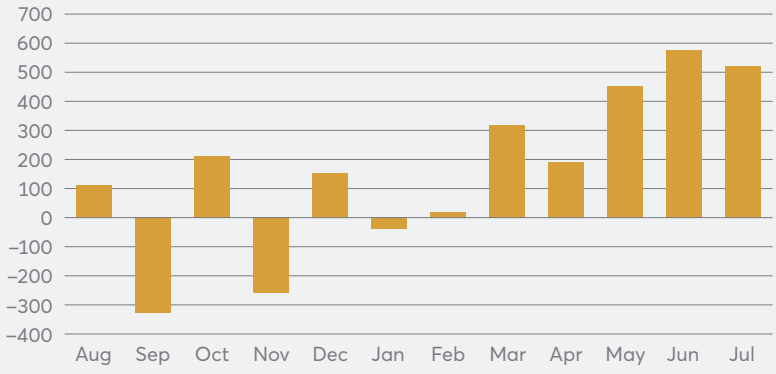
CN moved a record 28.3 MMT of bulk grain and processed grain products ex Western Canada via carload during the 2019–20 crop year — 0.9 MMT and +3.4% compared to the previous record set in 2018–19 and 1.9 MMT and +7.3% versus the three-year average. Grain shipments from Western Canada via intermodal also reached record levels, reaching over 1.15 MMT.

Demand for grain transportation is generally greatest from mid-September to mid-April when grain supplies are highest and grain company trading/handling margins are typically strongest. A number of factors contributed to a much different looking shipping pattern during the 2019–20 crop year.

First, exceptionally poor harvest weather delayed grain supply availability and pushed the shipment program further out — September saw the greatest decline in monthly tonnage moved compared to average, and record grain movement in October could not offset the grain shipment volume lost in September. CN experienced an eight-day labour disruption in November when the TCRC went on strike, leaving the CN Western Canada network operating at 10% of capacity. Thanks to a well-managed and orderly shutdown of rail operations before the strike occurred, by the second week of December, CN had returned to the peak shipping levels seen in the two weeks preceding the labour disruption, as well as being able to take on all customer demand for CN-supplied hoppers for the balance of December.

Grain Shipments vs 3-year average

000 tonnes

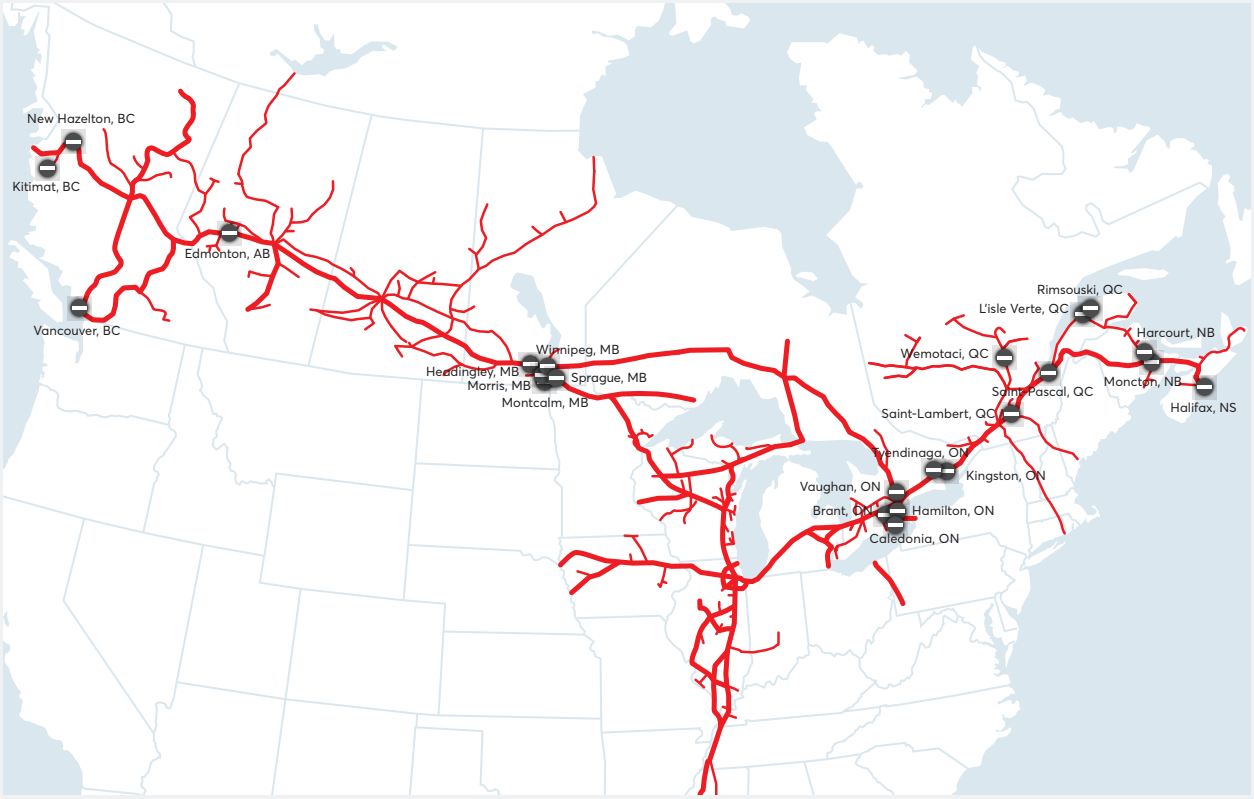


Besides the mainline disruption experienced in the Edmonton–Prince Rupert corridor in mid-January, CN experienced serious disruptions on the mainline between Edmonton and Vancouver in late January and early February, when heavy rains washed out sections of track and caused landslides. The Fraser Canyon tunnel was put out of service for five days, leaving this vital section of CN's network effectively out of action for over a week. Almost as soon as that disruption was resolved, the CN mainline between Toronto and Montreal saw an illegal blockade lasting over three weeks, quickly followed by a blockade at New Hazelton, BC, which took the Prince Rupert corridor out of action for a week. Blockades in Winnipeg, Edmonton, and other locations were of shorter duration but all had an impact on CN's operations. In total, CN experienced 32 blockades over a 22-day period. Network fluidity was dramatically affected across the CN network, and hopper car spotting levels fell to the levels seen during the strike in November. Over 1,400 trains, including passenger trains, were delayed or cancelled because of the blockades, causing shutdowns of parts of CN's network as freight was staged across the network waiting to be moved.

The increased resiliency of the CN network, due in large part to $7.4 billion of capital investment over the past two years, was demonstrated in March and April as CN worked to recover network fluidity, move the traffic that had accumulated as a result of the illegal blockades, and move the pent-up demand as a result of the mainline disruptions experienced between January and late February. Record volumes of grain were shipped in March and April as a result. This all occurred at a time when CN was adjusting resources in line with overall reduced demand as a consequence of the impact of the global pandemic on the economy.

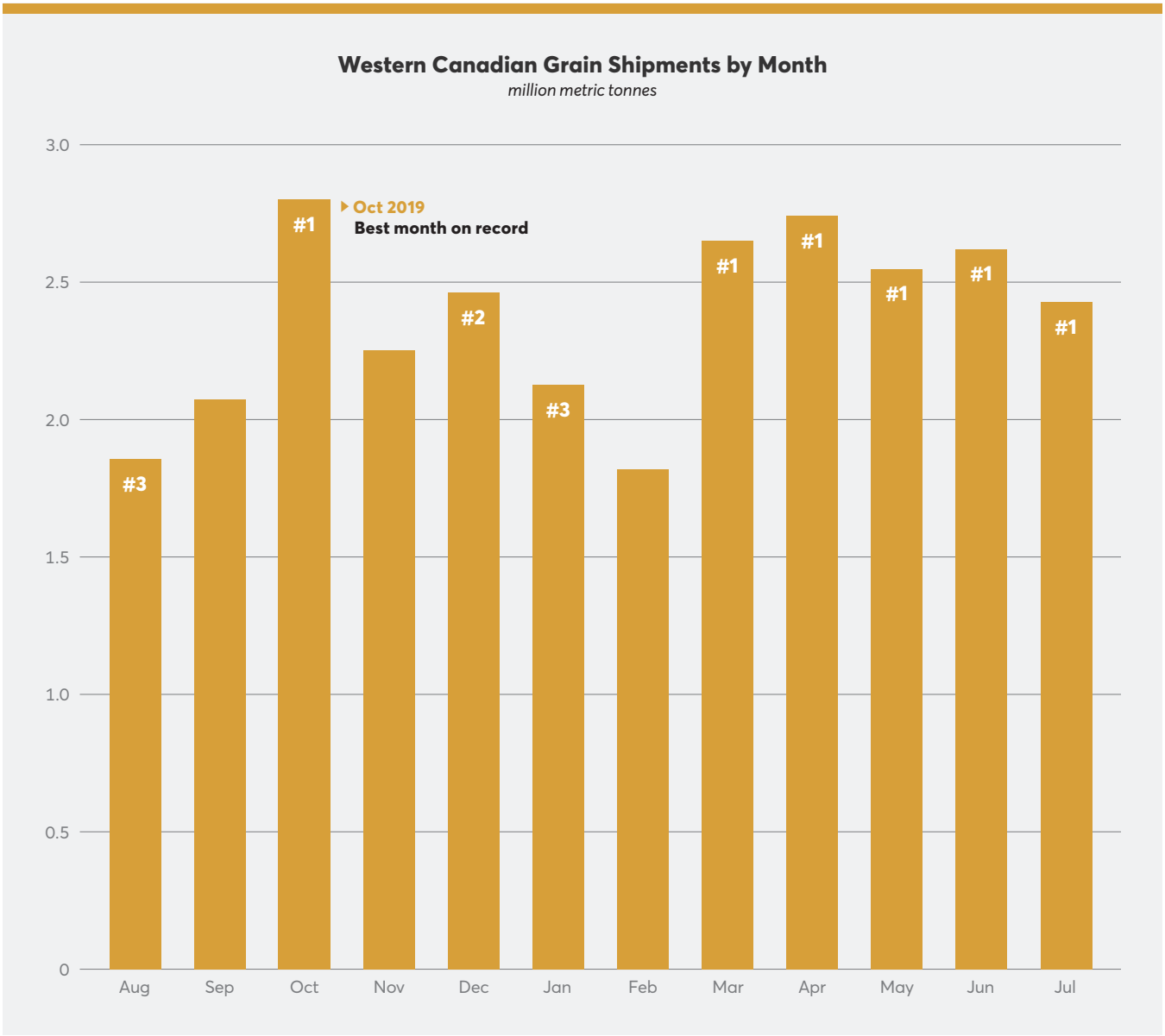
Summary of Illegal Blockades of CN Rail Network

February 2020



Typically, significant grain supply chain capacity goes unused every year in the spring and summer, especially in the eastern grain supply chain, but due to strong global demand and a significant amount of lower quality spring-harvested grain that ended up working its way into export channels, CN saw exceptionally strong demand for grain movement between May and July.

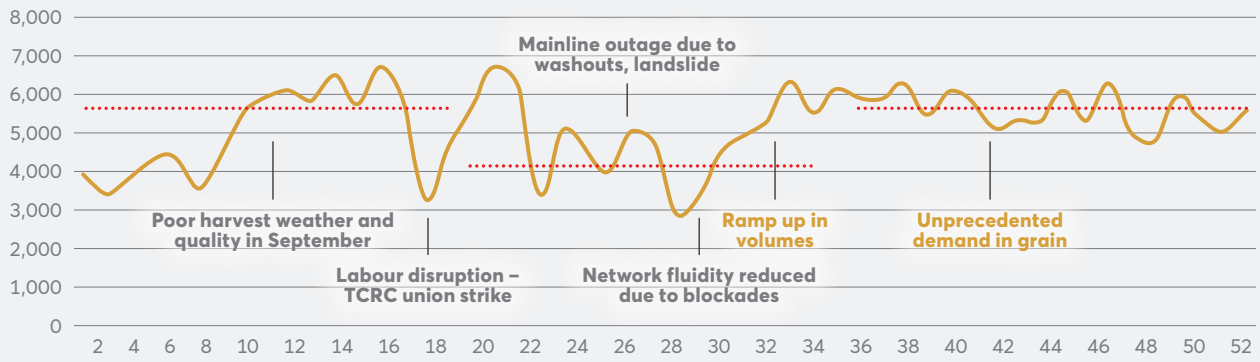
Like many companies, CN right-sized resources to demand during the peak of the pandemic, and as traffic volumes in other business segments recovered. The timing of that increased traffic volume was difficult for both customers and CN to predict — it was difficult to match up resources to traffic in that sort of environment. CN started recalling train crews in response to this increase in traffic volumes beginning June 2020. Generally speaking, crews in Canada have 15 days to report, and upon return to CN property must carry out railroad familiarization (typically lasting up to a week) in order to ensure safe operations. CN experienced weather-related challenges in July that affected mainline fluidity due in part to washouts caused by heavy rains in Western Manitoba as well as Northern Alberta, resulting in CN's line in Northern Alberta being out of service for one week and causing traffic delays on the mainline between Melville and Winnipeg in particular.



In its 2019–20 Grain Plan, and well in advance of harvest, CN's guidance to shippers was that it expected delivering a spotting program for bulk grain of 5,650 CN hoppers per week plus private cars, and 4,150 hoppers per week plus private cars during winter (assuming supply fluidity across corridors, no significant mainline disruptions, no labour disruptions, etc.).

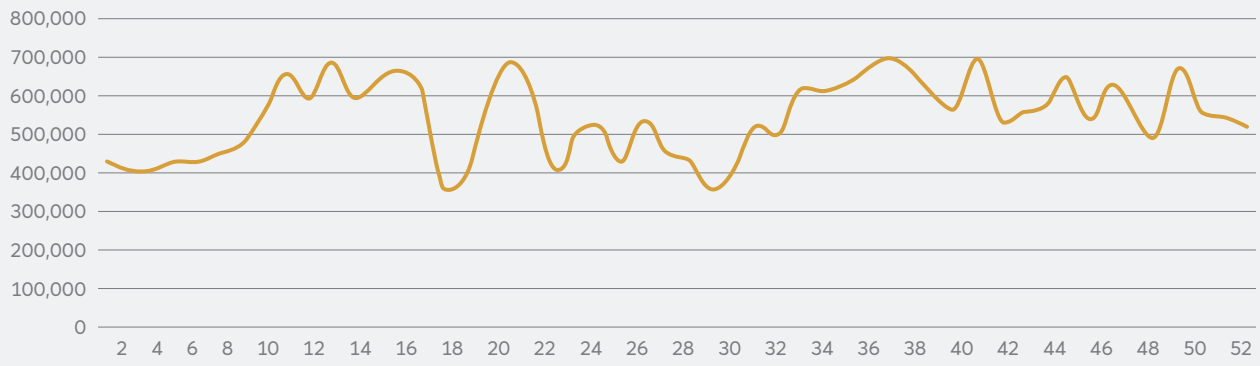
The chart below illustrates the pattern of movement of grain and processed grain products on CN in relation to CN's maximum sustainable supply chain capacity guidance for CN-supplied equipment. It is clear that some of the unprecedented supply chain challenges that CN experienced during the 2019–20 crop year caused weekly car spot levels to fall below the maximum supply chain capacity guidance, considering that those specific factors, such as not having any mainline disruptions or labour disruptions, are factors to be considered in determining whether CN can meet maximum sustainable supply chain capacity guidance levels. In the case of the fall period, the exceptionally poor harvest weather was the reason why maximum sustainable levels were not achieved — between August and October, CN recorded over 9,100 customer self-cancelled orders, which is unprecedented for that time of year.

Weekly Hopper Cars Spotted – Bulk Grain



Weekly grain shipments exceeded 500,000 metric tonnes in 34 individual weeks, with shipments in 17 of these weeks exceeding 600,000 metric tonnes beginning in Week 8.

Tonnes Shipped by Week – Western Canada

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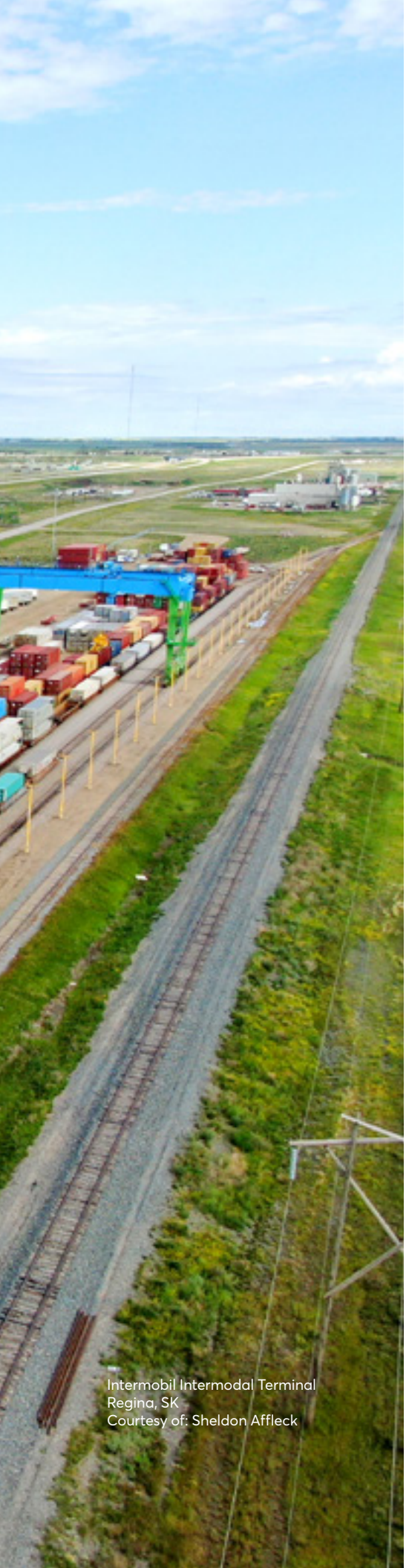


Intermobil Intermodal Terminal
Regina, SK
Courtesy of: Sheldon Affleck

CN Intermodal Grain Supply Chain in Review

While the majority of Canada's grain exports via intermodal are loaded into export containers at port, grain moving directly out of the Prairies on CN in intermodal containers represents over one million metric tonnes annually, and CN leads this segment of the market by far, both in terms of total tonnage shipped and product innovation.

That million tonnes represent the volume shipped from three or four high-throughput elevators — the scale is not small. Shipping grain by intermodal unlocks additional capacity for grain producers, and the cooperation between CN and its steamship line partners is a big part of the success story.

The major disruption of the manufacturing industry in China in particular due to the pandemic, combined with the disruption of retail and commercial business in North America, caused severe disruption to the supply chain for containerized traffic in many forms. Specifically for the grain supply chain, reduced empty export container availability was the first problem to develop, followed by a reduced number of vessel sailings, which prevented loaded product from leaving port, causing congestion on docks and at waterfront terminals. As a result, grain shippers were unable to send as much product by hopper car as they wanted to port for reloading into containers, and the reduced supply of containers in the Prairies meant reduced direct-to-port container shipments from Western Canada. The situation improved in spring as the international container supply chain recovered.

This past fall saw the opening of the Intermobil intermodal terminal in Regina, Canada's first privately operated intermodal facility, and served exclusively by CN. This facility represents an opportunity for grain shippers in Southern Saskatchewan to tap into CN's proven model for moving grain by container. CN's major Western Canada intermodal terminal for grain shipments is located in Chappell Yard in Saskatoon, with other smaller ramps operating in Winnipeg, Edmonton, and Calgary.


WESTEEL
WESTEEL
WESTEEL

G3 Maidstone
Maidstone,SK
Courtesy of: G3 Canada Limited

New High-Throughput Country Elevators

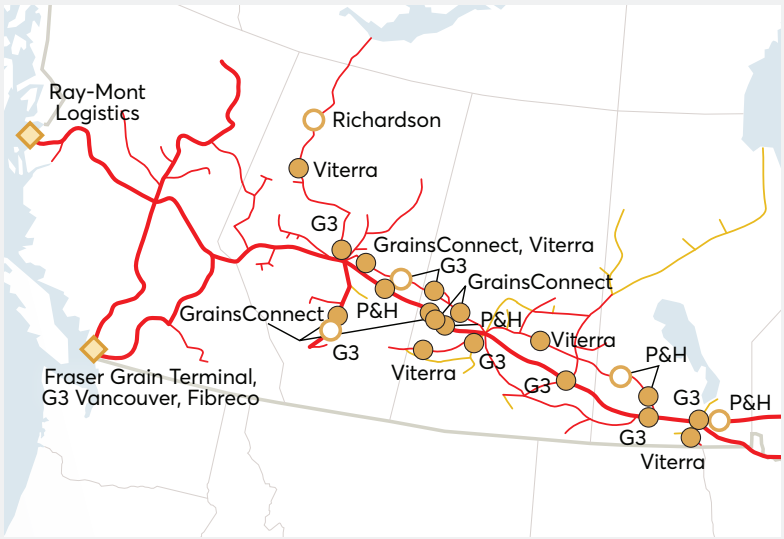
Since 2015, of the 34 new high-throughput elevators built, announced, or in construction, 23 have been situated on CN lines, of which 19 of these facilities are loop track facilities. Leading up to and during the 2019–20 crop year, three new facilities served exclusively by CN had their grand openings, namely:

- G3 Canada Limited – Maidstone, SK
- GrainsConnect Canada – Huxley, AB
- G3 Canada Limited – Morinville, AB

In the 2020–21 crop year, another four high-throughput loop track facilities are expected to open on CN, namely:

- Richardson International – High Level, AB
- Parrish & Heimbecker – Dugald, MB
- G3 Canada Limited – Irricana, AB
- G3 Canada Limited – Vermillion, AB

Western Canada CN-Served Grain Network Expansion since 2015



Announced new grain elevators Completed new grain elevators Waterfront export facilities


G3 Terminal Vancouver
Vancouver, BC
Courtesy of: G3 Canada Limited

Update – New CN-served Export Infrastructure

G3 Terminal Vancouver completed the commissioning of its state-of-the-art facility on the North Shore of Vancouver in Q2 2020. It is equipped with three loop tracks, the largest of which is capable of accommodating trains of up to 8,793 feet in length. The trains will unload in continuous motion using the same motive power that delivered the train to the facility. This terminal represents 8+ MMT of additional nameplate grain export capacity.

Fraser Grain Terminal, which is a partnership between Parrish & Heimbecker and GrainsConnect Canada, is expected to be in service in Q4 2020. This facility will be able to receive up to 120-car trains on a semi-loop, and represents an additional 3.5 MMT of nameplate grain export capacity at Fraser Surrey Docks on the Fraser River.

Fibreco Terminal, which is located on the North Shore of Vancouver, is in the final phases of its terminal enhancement project, and is nearly completed. This project represents up to 2 MMT of additional nameplate grain export capacity on CN. **Sollio Agriculture**'s export facility in the Quebec City area is nearing completion as well, and is expected to be able to be in operation in late Q4 2020/early Q1 2021.


Fraser Grain Terminal
Vancouver, BC
Courtesy of: GrainsConnect Canada

Vegreville, AB

Looking Ahead – CN's 2020–21 Grain Plan

CN published its Grain Plan for the 2020–21 crop year on July 31, outlining the volumes of grain CN expects to move and the operational capacity in place to move grain in an efficient and timely manner during the crop year. To develop this plan, CN consulted broadly with stakeholders, including many producer organizations, seeking their views and input.

At the time the 2020–21 Grain Plan was published, Agriculture and Agri-Food Canada (AAFC) was projecting All Canada production of the six major grains, peas and lentils to reach the second highest level on record. Anecdotal information at the time also suggested that favourable yield prospects in Western Canada could result in supplies increasing beyond that level. Now that harvest has begun, there are indications that overall western Canadian grain production has the potential to be the best on record. If the global demand is there to draw these supplies into the market, and assuming that end-to-end grain supply chain capacity will be heavily utilized throughout the entire crop year, CN now expects to move **27.5 to 29.5 million MMT of grain** from western Canada over the course of the 2020–21 crop year (excluding grain moved directly from western Canada via intermodal), compared to its previous guidance of 26 to 28 MMT.

The 2019–20 crop year, which saw CN ship record of volumes of grain in spring and summer due primarily to unusually strong global demand (much of it driven by the pandemic), was a reminder that end-to-end grain supply chain capacity is normally significantly underutilized in this period, especially in the eastern Canadian grain supply chain. Grain supply chain margins must be at levels that encourage strong grain movement off-farm throughout the year, and domestic grain values at the farm gate level must be at levels that sustain farmer selling. As is always the case, commercial market factors will play a large role in the pace and timing of how grain supplies will be drawn into the grain handling system during the 2020–21 crop year.

CN's capacity and network-resiliency enhancement initiatives have enabled CN to increase its guidance on maximum sustainable grain supply chain capacity for the 2020–21 crop year. These revisions include an increase of 150 car spots per week for CN-supplied hopper cars outside of winter and 350 car spots per week during winter. In addition, guidance on the number of customer-controlled private cars expected to be spotted weekly has increased as well. Outside of winter, guidance has been increased from 500–700+ cars per week to 950 cars per week, and during winter, guidance has been increased from 350–500+ cars per week to 750 cars per week. Achieving these levels requires a number of conditions to be satisfied, including seven-day terminal operations, no major mainline disruptions, no labour disruptions, network fluidity across corridors, etc. One of the initiatives in 2020–21 that will help CN to deliver strong grain spotting performance is the acquisition of 1,500 new-generation, high-capacity hopper cars, of which a significant portion will be in service starting in January 2021.

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