

2018-2019
CN Grain Plan



Moving Canada's Grain



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MESSAGE FROM JJ RUEST

At CN we are focused on getting it right for farmers and our grain customers, regaining the confidence of Canadian businesses, and enhancing Canada's reputation as a reliable export partner.

As you will see in this 2018-2019 Canadian Grain Plan, CN is acquiring new high capacity hopper cars and new state-of-the-art locomotives. We qualified hundreds of new train crew members so far this year and we intend to enter next winter with 1,250 more qualified conductors than we had heading into last winter. As well, we are adding people in Operations to run safe and reliable service. CN is investing a record \$3.5 billion in its capital program for 2018. It includes \$400 million to increase our capacity and our network's resilience through line upgrades and double-tracking primarily across the Western provinces.

This first annual public Canadian Grain Plan is the product of extensive consultation with key stakeholders, and reflects the valuable feedback they have provided. CN believes that a collaborative approach to grain transportation will drive stronger results for the entire grain supply chain.



CN continues to welcome input on its Plan from interested stakeholders, and the Plan will be updated to reflect changing conditions and circumstances as we move forward together.

CN is well positioned to meet the transportation needs of its customers for the 2018-19 crop year and beyond.

A handwritten signature in blue ink that reads "JJ Ruest". The signature is stylized and fluid.

JJ Ruest
President and CEO



EXECUTIVE SUMMARY

As required by the Government of Canada, Team CN has put in place a comprehensive, robust and focused action plan to meet the anticipated volume of grain expected to be moved in the 2018-19 crop year. The objective is clear. It is the effective, efficient and timely movement of grain throughout the coming crop year.

To develop its plan, CN collaborated with key stakeholders, including producers, seeking their views and input. The measures reflect extensive consultations with grain producers, grain-handling companies, customers and Government officials. The foundation for the measures is Agriculture and Agri-Food Canada's projections for the 2018-19 crop year, which is anticipated to be comparable to the three-year average level, as well as similar to the previous two crop years.

The key, mutually-supportive measures in the action plan are:

- **The acquisition of 1,000 new high capacity hopper cars over the next two years that will upgrade CN's current fleet of 11,500 hopper cars. The greater capacity of the new cars will allow CN to meet additional crop yield;**
- **The acquisition of 200 new locomotives over the next three years, with 60 to be delivered by December 2018. This is in addition to CN's current fleet of 1,900 high-horsepower locomotives;**
- **The hiring of 1,250 new qualified locomotive conductors who will be fully trained and ready to work prior to winter 2018-19 when demand for capacity is often highest; and**
- **A record \$3.5 billion capital program for 2018 including \$400 million to increase CN's capacity and the resilience of its network through line upgrades and double-tracking primarily across the Western provinces. Other elements of the capital program will replace, upgrade and maintain key track infrastructure. CN has committed to completing these improvements before winter 2018-19.**



The CN plan is framed by three key factors.

The first provides a solid foundation for decision making by using available forecasts for the anticipated grain supply during the 2018-19 crop year. Determining the volume of traffic to be moved is the baseline for the measures in the action plan.

Second was to establish the maximum sustainable capacity of the combined supply chain for Western Canadian grain, while recognizing the inherent constraints and variables in a complex grain handling and delivery supply chain. By its nature, the annual grain harvest occurs in a very short time period, generating large volumes of inventory and surges in demand. With finite capacity in the Western Canada grain supply chain, reality dictates that the movement of grain takes place throughout the crop year. Significant capacity goes unused from April to September of the crop year, leading CN to place a significant portion of its grain car fleet in storage.

With volume forecasts and the maximum sustainable supply chain capacity determined, the final factor was to maximize CN's capacity by putting in place necessary resources to move grain in the 2018-19 crop year. This is being done through investments in locomotives, rail cars, train crews and rail network infrastructure.

Based on the measures in this action plan, and recognizing there are uncontrollable variables such as weather, and the closure of the Seaway from early January to late March, CN is confident it will have in place the necessary rail transportation system capacity to meet its obligations to move Western Canadian producers' grain for the 2018-19 crop year and beyond.



CN GRAIN PLAN



This plan, prepared in accordance with the Canada Transportation Modernization Act, addresses issues related to the 2018-19 crop year. It does two things. First, it assesses CN's ability to move anticipated levels of grain during the coming crop year. And, second, it identifies specific steps that CN has taken and is taking to put in place the operational capacity required to move grain in an effective, efficient and timely manner.

As a result, CN believes it is positioned to meet the transportation needs of its grain customers for the 2018-19 crop year and beyond.

Key to developing the plan was consultation with interested stakeholders. CN believes that a collaborative approach to grain transportation will drive stronger results for the entire grain supply chain.

Accordingly, CN consulted the grain industry as follows:

- On June 21, 2018, CN met with the Crop Logistics Working Group in a meeting organized by Transport Canada;
- During the months of June and July 2018, CN proactively reached out to associations of grain producers and other grain organizations to solicit their views on the CN grain plan; and
- Concurrently, CN published an open invitation on its website seeking comments on its draft grain plan from interested individuals and stakeholders.

Based on input from stakeholders, the plan was developed using four inter-related factors: the size of the 2018-19 crop, the maximum supply-chain capacity, CN capacity improvements, and CN's grain marketing programs.

We particularly appreciated the recommendations made by the Crop Logistics Working Group, and have included many of those recommendations in this report. We understand their view that the grain plan should be updated on a regular basis and undertake to do so. We will also continue to post weekly data on grain movement on our website. Should Transport Canada wish to consider formalizing the timeline for updating the plan, CN is open to discussing such a move. The recommendation we were not able to accommodate was the request that we break down our projected car movements by corridor. Our ability to do this is limited by the nature of our agreements with our grain company customers who ultimately make the decision as to how much grain moves in a specific corridor in a given week.

CN recognizes the importance of maintaining levels of service throughout the crop year. In order to provide better performance, we have undertaken a number of significant and strategically planned measures that are outlined in this plan.

CN also recognizes that yields have been trending up across Western Canada on an annual basis. In part, this is the result of technology and improved crop management practices, which have helped to minimize the impact of sub-par growing conditions and below average rainfall. CN will continue to increase capacity going forward in order to be able to meet the growing demand.

The company's objective and vision was clearly stated by CN's then Interim President and CEO J.J. Ruest in his March 8, 2018 letter to Transport Minister Marc Garneau and Agriculture and Agri-Food Minister Lawrence MacAulay: **"Ministers, you have my commitment that we will continue to stay connected with our customers and supply chain partners - across all industries - to ensure our action plan is well understood, to improve coordination of day-to-day operations in the field and to support the mid- and long-term resource planning process. We recognize the sense of urgency in regaining the confidence of Canadian business and on protecting Canada's reputation as stable trade partner in world markets."**

1

ESTIMATING THE GRAIN SUPPLY FOR 2018-19

There are several factors and variables that must be considered to have the information necessary for effective transportation system decision making.

Determining the volume of traffic to be moved is the first necessary step for proper transportation planning. When designing service, and especially recognizing that quite long lead times are required to get the right quantity of resources into the right places at the right time to meet demand, CN engages with all its customers to assess the volume of products to be moved. To that end, resource planning necessitates a comprehensive assessment of not only the grain supply chain, but all commodities – commodities that support good-paying Canadian jobs in other sectors including mining, energy, forestry, manufacturing, and retail – that use the shared rail network. In the case of grain, we rely primarily on government estimates to determine crop size.

In a given crop year, the grain supply potentially available for export and domestic use is made up of the carry-in inventory plus production. Production is a function of harvested area and yields. Adding a layer of complexity to the grain supply chain is the significant variability from year to year in regional production and crop quality levels depending on growing season and harvest conditions. These factors also influence the supplies available for shipment by rail for each of the two major Canadian railways. Also of note is that information varies, sometimes significantly, at different intervals, requiring adjustments to service design and asset allocation as the information becomes more reliable, typically closer to harvest.

The level of exports, domestic use, and carry-out are determined by external and domestic market forces that change during the course of the crop year. They, in turn, drive the sales and marketing decisions of the industry participants in the grain supply chain. These external forces create uncertainty with respect to what quantity of grain will enter the grain supply chain, affecting the quantity of domestic processing, exports, or other disposition. For example, high tariffs imposed by India on imports of peas and lentils, combined with increased production in major pulse crop producing countries, have translated into significantly reduced prices and export volumes for Western Canadian farmers. The result is less interest in selling product at those price levels, which reduces overall export and reduced usage of the available supply chain capacity.

It is also important to note that, in recent years, the increase in domestic usage has not kept up with the increase in Western Canadian grain production. This has placed an increasing emphasis on the movement of grain to port for export.

UNUSED CAPACITY

Millions of tonnes of grain export capacity go unutilized from April through early September every year. This was the case in the 2017-18 crop year as hopper car demand declined significantly from May 2018 onwards. The pace of deliveries into the primary elevator system declines in spring due to spring seeding as well as weight restrictions on provincial highways and local roads. The marketing decisions of farmers, and the commercial trading decisions of grain companies, to generally refrain from participating as heavily in the export market compared to the fall and winter months, are key drivers to reduced grain movement from spring through to early fall.

For example, many key import markets harvest their wheat crop in the spring and summer, making for plentiful local supplies. Furthermore, export competitors such as Russia, Ukraine, Europe, and the United States harvest their winter wheat crops at this time, meaning stronger competition in the export market. It is not a lack of overall wheat demand that limits the size of the Western Canadian wheat export program from spring to early fall. Rather it is the price at which Western Canadian wheat is offered into the export market compared to other options available to importers.

During the consultations, it was suggested that CN's grain plan should refer to all grain to be moved by CN, even though the Act only requires CN to plan for grain found in schedule II of the Act. In response, the current plan takes into account all production and CN's capacity to move all types of grain.

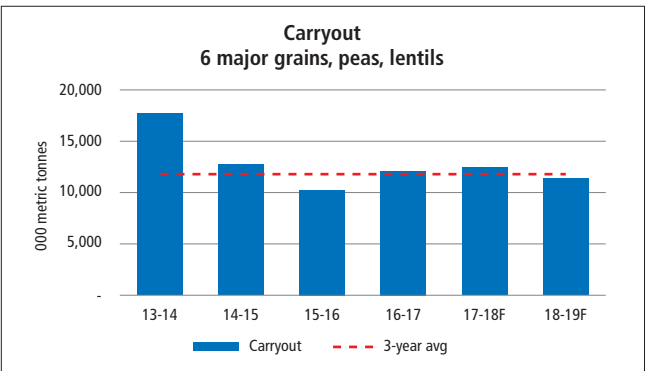
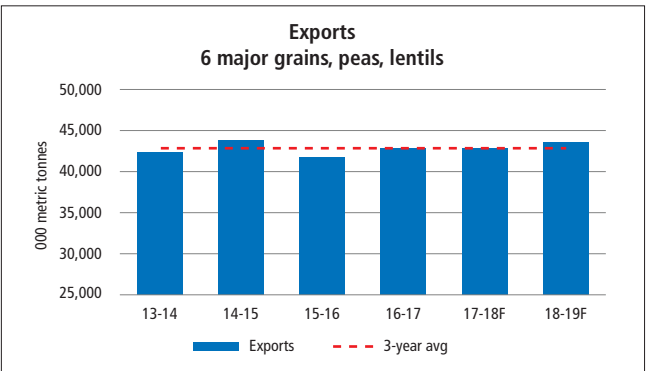
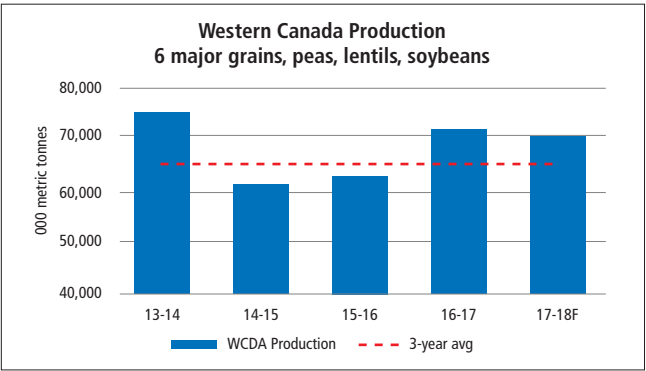
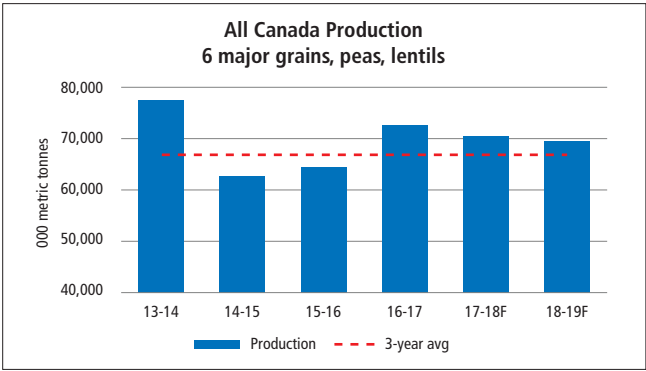
Based on its July Outlook for Principal Field Crops, Agriculture and Agri-Food Canada (AAFC) projects overall 2018-19 All-Canada carry-in, production, and exports of major grains to be in line with three-year average levels as well as being comparable to 2016-17 and 2017-18 crop year levels. Western Canadian production, exports, and carry-out stocks represent a large percentage of the total All-Canada estimates, and as such it is anticipated that Western Canadian production, exports, and carry-out will be similar.

2018-19 PRODUCTION FORECAST

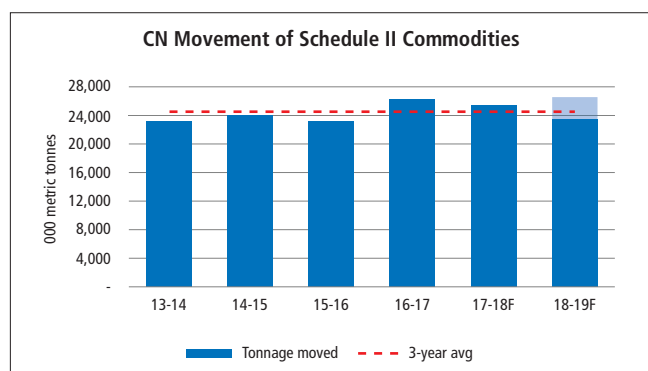
For the 2018-19 crop year, AAFC projects All-Canada production of the six major grains, plus peas and lentils, at 69.7 million metric tonnes (MMT), versus 70.5 MMT in 2017-18 and the three-year average of 69.3 MMT. Western Canada production of the six majors, peas, lentils and soybeans through 2017-18 is also presented in the

charts below for reference, reflecting the fact that soybean production in Western Canada has increased considerably in recent years.

During the consultations, the majority of comments received suggested that the 2018-19 volumes and production would be consistent with AAFC’s outlook. The following graphs illustrates those numbers:



This grain plan assesses CN's ability to move the grain that it is required to move during the crop year. Specific to CN, the following volumes (based on an estimate for the 2017-18 crop year) of Schedule II commodities have been moved over each of the past five crop years. Based on the estimates above, CN expects its share of grain to be moved over the course of the 2018-19 crop year will be 24-26 million tonnes, consistent with the range of the past three crop years, and CN has the resources required to do so.



However, experience shows that forecasts are exactly that – forecasts – and may not always reflect what turn out to be actual volumes. Therefore, over the course of the summer and fall, CN will refine its assessment of overall crop production, exports, and anticipated volumes to be moved. This assessment will draw on insight gained from market analysts, grain companies, grain grower organizations, western provincial agriculture ministries, and other stakeholders in the grain supply chain.

As of late July, rainfall in southern parts of Saskatchewan and Alberta had been generally less than 50 to 75 per cent of normal over the previous 30 days, while rainfall over the previous 60 days had been less than 75 per cent of normal in southwestern Saskatchewan, southern Alberta, and parts of southern Manitoba. Precipitation in central and northern parts of the Prairie growing region has generally been more regular, and crop condition ratings in these areas reflect the favourable soil moisture and growing season conditions, largely offsetting less favourable growing conditions in parts of the southern Prairies.



2 ESTABLISHING THE MAXIMUM SUSTAINABLE CAPACITY OF THE SUPPLY CHAIN FOR WESTERN CANADIAN GRAIN

INDUSTRY CONSIDERATIONS

The capacity of Canada's grain supply chain varies through the crop year, and a number of factors place a real limit on the maximum sustainable capacity that the grain supply chain can deliver at any point in time. The maximum sustainable capacity of the grain supply chain is also a function of the capacities and operational efficiency of the individual pieces of that supply chain, from origin to final destination.

While most rail-served industries generate a steady flow of traffic, the grain harvest creates a unique transportation situation. It occurs over a short period of time, generating very large volumes of inventory which cannot be all moved immediately after harvest. CN recognizes that it is during this peak period that the grain handling and trading-margin structure of the grain business is, on average, the most profitable for grain buyers and when farmer delivery pressure is the greatest. The challenge is how best to align demand with rail system capacity, as not all of it can fit into the supply chain during a given period of time, especially during peak demand between September and April.

CLOSURE OF GREAT LAKES – ST. LAWRENCE SEAWAY

Furthermore, export capacity is significantly constrained when the Great Lakes – St. Lawrence Seaway system is closed to navigation. The last export vessels, as well as lakers destined to transfer grain to elevators in the St. Lawrence River, generally depart Thunder Bay December 20-24; resumption of vessel loading in Thunder Bay generally does not occur until after March 25. Overall Thunder Bay railcar unloads decline from a peak level of 2600-3000 unloads per week in the fall to no more than a few hundred per week over the winter, with the pace of unloads picking back up in the last half of March. Direct rail shipments to transfer to grain elevators in the St. Lawrence, as well as to other destinations in eastern Canada and the U.S. represent a limited offset to this significant loss of export capacity.

STORAGE CAPACITY

Another crucial factor is grain storage capacity. Unlike many other grain supply chains around the world, the commercial storage capacity in Western Canada is very limited in relation to the size of the crop. Grain companies rely on producers to store most of the crop at harvest time, with supplies gradually drawn into the grain supply chain over the course of the crop year. The Canadian grain supply chain needs the entire crop year to move the total volumes produced and shipped. Thus, the efficiency of the grain supply chain

at any point in time must take into account the operational performance of other modes of grain transport involved in the movement of grain to its final destination, including domestic laker freight and export vessel freight.

Should a vessel not arrive for loading in the period it was expected, not be in all respects ready to load upon arrival, or be unable to load in inclement weather, terminal storage space may limit railcar unloading and affect the grain supply chain upstream. For example, if CN must hold trains at origin or along the route to the destination terminal because the terminal cannot accept the traffic, that equipment takes longer to return to the Prairies for loading. As a consequence, the overall car supply available to load grain at delivery points on the Prairies is reduced.

The operational performance of other rail carriers also has a direct impact on CN, considering that a significant amount of traffic that CN handles does not terminate at a destination directly served by CN.

Another factor that impacts the supply chain performance is the complexity of the mix of products being moved through the country elevator network and terminal elevator system. Multiple grades and product quality levels may originate from multiple country elevators and be blended together at export position to produce a given quality specification called for by the sales contract. In years where crop quality is adversely impacted by weather, the complexity of products moving to port increases, adversely affecting grain supply chain performance. Multiple commodities are frequently loaded on the same export vessel, meaning more complicated terminal and rail logistics for that vessel shipment.

CN-SPECIFIC CONSIDERATIONS

CN delivers grain to three principal export destinations (Vancouver, Prince Rupert and Thunder Bay), with the balance moving to commercial destinations in Canada, the United States and Mexico. The closure of Thunder Bay outside the navigation season on the Great Lakes-St. Lawrence Seaway System, as well as the impacts of weather on supply chain performance, significantly affect the overall capacity of the end-to-end grain supply chain during the winter months. (For more detailed information regarding the destinations served by CN see Appendix 1.)

It is our view that, for planning purposes, based on an expectation that demand will continue to be heavily focused on exports via Prince Rupert, Vancouver and Thunder Bay (when available), the system can accommodate and CN can handle the following monthly average of weekly hopper car spots for CN-supplied equipment on a sustained basis. It is important to note that private cars provided by customers and dedicated to their service are not included in these numbers and that the number of private cars in the CN grain handling system has increased significantly in recent years.

CN Maximum Sustainable Capacity – Weekly Western CN-Supplied Covered Hopper Spots¹

	Grain Weeks	2018-19 Maximum
August	1-4	5,500
September	5-8	5,500
October	9-13	5,500
November	14-17	5,500
December	18-22	4,000
January	23-26	4,000
February	27-30	4,000
March	31-34	4,000
April	35-39	5,500
May	40-43	5,500
June	44-47	5,500
July	48-52	5,500

¹ Those numbers assume a fleet of 11,500 cars composed of Government cars, CN owned and leased cars and customer supplied private cars integrated into CN's common fleet. Private cars provided by customers but dedicated to their service are not included in these numbers.

For planning purposes, shippers can anticipate that CN's aggregate weekly shipping program will, on average, be reflective of the above carload volumes. We would stress that we believe these numbers reflect the **sustainable capacity** of the supply chain. However, there will be weeks where these levels are likely to be exceeded and others where these levels may not be achieved, depending on the fluidity of the overall grain supply chain. That said, CN is committed to making every effort to meet these levels consistently. CN also expects that demand for CN-supplied equipment will exceed the maximum sustainable capacity of the supply chain in some weeks (especially during grain companies' peak grain handling and trading margin profitability during the fall and winter), which will require CN to apply its rationing criteria to the demand it receives.

However, it is important to note that these numbers assume several key factors. They include:

- Grain supply chain fluidity across corridors;
- Seven-day terminal and rail unload operations at all major grain export facilities;
- A full resumption of loading during inclement weather at West Coast terminals;
- Normal (winter) rail operating conditions; (issues related to winter operating conditions and measures CN has taken to address them will be addressed in our Winter Contingency Report); and
- No significant labour disruptions or other major supply chain disruptions, including mainline disruptions.

Achieving these levels will enable CN to move the grain that it is required to transport during the crop year.

NETWORK CAPACITY INCREASED

Over the past several years, the overall network capacity that CN has available to serve customers has grown and capacity will continue to increase as the capital projects outlined in this plan are completed. The efficiency of the overall end-to-end grain supply chain has also improved, as shippers have increased the overall efficiency of country elevator and export terminal assets. However, in the past two years there has been a trend towards customers supplying their own private cars for the movement of bulk grain to port. The increased grain supply chain capacity on CN's network beyond the numbers stated above enables us to accommodate these private cars.

Clearly, there are a number of factors regarding the supply chain – some within, but many outside, the railway's control – that can unpredictably restrict the week-to-week supply chain capacity. A mainline disruption, for example, causes significant impacts to the grain supply chain, as well as the overall supply chain, that affect not only the immediate period after the incident, but the size of the program that CN can deliver for several subsequent weeks as it recovers.

As well, the transportation demands of other western economic sectors must be factored into planning. CN expects there to be continued very strong demand for rail network capacity from all business segments in Western Canada over the course of 2018 and 2019. The needs of those industries must also be taken into consideration when assessing what portion of overall network capacity can accommodate each segment of CN's business, including grain.

It is CN's expectation that the significant investments made to increase the capacity of the CN rail network will provide us with more resiliency in dealing with and recovering from severe weather, network disruptions and other unanticipated events that can impact grain movement.

3 ESTABLISHING THE CN CAPACITY

This plan details the aggressive action CN has taken and will take to put in place the resources to move the grain crop over the course of the 2018-19 crop year.

THE FLEET

CN operates a fleet of approximately 11,500 hopper cars in Canada to move customers' grain. This shared fleet is made up of Government of Canada hopper cars, CN owned and leased cars, and customer-supplied private cars that have been integrated into the common fleet. To maximize fluidity, CN fully deploys the fleet at times of peak demand and places cars into storage when customer demand declines. For example, there was an average of 2,500 hoppers stored during the first two months of the 2017-18 crop year, and nearly 1,500 cars were in storage through May 2018. These fluctuations in fleet size reflect the seasonality of grain demand.



To further expand capacity and rejuvenate the aging hopper car fleet, on May 24, 2018, **CN announced the acquisition of 1,000 new generation high-cube grain hopper cars over the next two years.** While delivery of those new cars will begin during the latter part of the 2018-19 crop year, they will immediately make a positive contribution in light of their additional capacity. This important acquisition will enable CN to adjust to additional grain demand, in part through greater carrying capacity on average relative to the current CN common fleet.

LOCOMOTIVES

CN operates a fleet of nearly 1,900 high-horsepower locomotives (3,000 horsepower or greater), which includes **130 additional locomotives leased since November 2017.** These leased units have enabled CN to address significant unexpected increases in demand in most business units. In 2017-18, the pace and level of increased demand exceeded the customer provided forecasts which CN relies on to plan service levels.

To accommodate future growth opportunities and drive operational efficiency across its system, on December 22, 2017, **CN announced the acquisition of 200 new locomotives over the next three years from GE Transportation.** CN is the only North American railway company acquiring such a large number of locomotives. It is an unequivocal statement about our commitment to improve our capacity to serve the Canadian economy. The first 60 new locomotives will be in service by the end of 2018 and will increase CN's capacity as well as our resiliency during the coming crop year.

CREWS

In 2017-18, the lack of sufficient crews to move the larger than expected demand across CN's entire book of business contributed to service challenges. After adding hundreds of conductors to the field so far this year, CN continues to hire with a particular focus on crews in Western Canada. **Approximately 1,250 additional new qualified conductors will be in the field network-wide before next winter, compared to heading into the 2017-18 winter.** This will bring our total number of qualified conductors and locomotive engineers to approximately 7,800.

RAIL INFRASTRUCTURE

Given the surge of demand for network capacity CN experienced during the past 18 months, CN has undertaken a record capital investment program in 2018 to expand network capacity and resiliency, especially in Western Canada. When more trains operate on a network, a key to maintaining the fluidity of all movements is infrastructure improvements such as passing siding tracks where two trains can operate simultaneously. As well, adding double track and yard capacity improves network resiliency, which in turn allows CN to better manage through and recover from unplanned network disruptions.

Disruptions to the mainline, especially in the Winnipeg to Edmonton, Winnipeg to Chicago, Edmonton to Vancouver, and Edmonton to Prince Rupert corridors, have the greatest potential impact to network fluidity given the sheer volume of traffic moving along a section of mainline versus less busy parts of the CN network.

CN looks for opportunities to route traffic around disruptions. While traffic may not move as quickly and efficiently on an alternate route compared to the higher speed mainline, it is still able to continue to move. For example, when a derailment at the Fabian Bridge due to a windstorm in October 2017 shut down the mainline between Saskatoon and Edmonton for four days, CN diverted dozens of trains onto the Prairie North Line.

CN develops a start-up plan that is put into action once the track is made passable, which includes determining how traffic will move. Re-opening a line does not signal a return to business as usual. The process of getting the network properly synchronized and in the case of grain, regaining the proper balance of loaded and empty cars, can take as long as several weeks following a significant disruption.

To meet these challenges, and to improve the resiliency of the network, **CN has an extensive \$3.5 billion capital program for 2018**. A key feature of this year's investments is \$400 million to build new track infrastructure aimed at increasing CN's capacity and improving the resiliency of the CN network.

The capacity improvements include the following:

Saskatchewan

- Construction of 10 miles of double track just east of Melville;
- Construction of about seven miles of double track west of the Saskatchewan-Manitoba border;
- Construction of about 11 miles of double track near the Alberta-Saskatchewan border; and
- Installation of new track capacity at CN's Melville Yard.

Alberta

- Construction of 12 miles of double track west of Edmonton across Parkland County;
- Construction of about seven miles of double track near Wainwright, east of Edmonton;
- Construction of about seven miles of double track near Tofield, east of Edmonton;
- Construction of about 11 miles of double track near the Alberta-Saskatchewan border;
- Installation of a new bypass track at Walker Yard in Edmonton, to increase efficiency of train movements through the yard;
- Building new storage and bypass tracks at Scotford Yard northeast of Edmonton for additional car storage and improved operational efficiency; and
- Building new track capacity at CN's yard in Swan Landing.

Manitoba

- Adding a dozen new and extended tracks within its Symington Yard, the centerpiece of CN's transcontinental network, improving the efficient handling of rail cars from across Canada and the United States.

British Columbia

- Construction of four new train passing sidings between Prince Rupert and Jasper, Alberta;
- Extension of three existing passing sidings between Prince Rupert and Jasper; and
- Adding a siding extension north of Kamloops on CN's Vancouver to Edmonton corridor.

These capacity improvements are being made along CN's busy transcontinental corridor and include other rail yard expansions that will improve efficient movement of rail cars and add resiliency to the network.

Other basic capital program elements will focus on the replacement, upgrade and maintenance of key track infrastructure to improve overall safety and efficiency.

Those investments will also facilitate grain movement and will contribute to the efficiency of the end-to-end grain supply chain, of which CN is one component.

CN recognizes that time is of the essence working aggressively to complete these improvements prior to next winter. Managing major infrastructure work on busy corridors is a highly complex task. It requires significant planning and resources, which CN has committed.

NATIONAL TRADE CORRIDORS FUNDING

On June 22, 2018, the Government of Canada announced funding for several key projects at the Port of Vancouver through the National Trade Corridors Fund. This included funding for projects that will increase the rail capacity in the corridor leading to the export grain and other terminals on Vancouver's North Shore. CN is pleased to partner with the Government and the Port of Vancouver on these projects and while they will not be completed in time to impact this year's harvest will help alleviate serious capacity constraints in future years.

4 CN'S GRAIN MARKETING PROGRAMS

In recent years, CN has moved from a general car allocation program for the movement of bulk grain to various commercial programs tailored to the specific needs of its customers. Having consulted with its customers, CN has developed programs that enable customers to secure priority car supply.² The outcome is a more timely allocation of hopper cars that better meets the needs of grain producers.

CN offers the following auction programs under which customers bid to secure capacity in the CN fleet. To provide performance certainty for both customers and CN, the programs include reciprocal penalties assessed on the basis of objective criteria which maintains balance in the reciprocal obligations of both railways and shippers.

- CN Commercial Fleet Auction Program Western Canada Grain
- CN Export Fleet Auction Program Western Canada Grain
- CN Commercial Fleet A10 Auction Program Western Canada Grain
- CN Export Fleet A10 Auction Program Western Canada Grain

CN also has fleet programs allowing customers to integrate private cars into CN's fleet. In return for this commitment, customers are provided priority car supply in relation to the supply they contribute to CN. Reciprocal penalties are also provided in case commitments of each party are not met.

- 2018 Western Canada Commercial Fleet Integration Program
- 2018 Western Canada Export Fleet Integration Program

Between these products as well as other commercial car supply agreements that CN expects to enter into with customers, CN anticipates that for crop year 2018-19, more than 95 per cent of our hopper car fleet capacity will be subscribed under its commercial programs. CN has been able to design commercial programs that are consistent with the needs of its customers while also being balanced through the application of reciprocal penalties.

² More details about CN's programs, guidelines and list of producer loading sites can be found at <https://www.cn.ca/en/your-industry/grain/grain-documents-and-programs/>.



5 SUMMARY

Based on the supply chain and market analysis outlined in this document, CN will have the resources in place to effectively and efficiently meet the demand to move the grain crop over the course of the 2018-19 crop year. **CN is investing in its franchise at an unprecedented level in a commitment to move more traffic, including grain.**

CN has made significant investments in car fleet, locomotive power, train crews, and track infrastructure that will increase overall capacity, improve the resiliency of CN's rail network, and improve CN's ability to recover from significant disruptions to its network.

CN is committed to add capacity and align its resources to meet the demand. It is doing that by taking into account the limitations of the supply chain and its obligations to service other segments of the Canadian economy, and also recognizing that right-sizing its infrastructure is in the best long-term interests of the grain industry, as well as the other

industries served by CN. Based on the best market forecasts available and recognizing there are external variables beyond its control, CN is confident this action plan will meet the needs of its grain customers.

We thank all stakeholders who took the time to provide their views on CN's grain plan. We want to work collaboratively with the industry respecting grain movements and believe this consultation was a success.

We will update this grain plan on a regular basis as estimates of crop production evolve. We will also update the plan to reflect our performance to date and report on any significant events that may have temporarily impacted performance. We also intend to continue to consult the industry through the course of the crop year.





APPENDIX 1

DESTINATIONS FOR EXPORT GRAIN SERVED BY CN

The Port of Vancouver

The Port of Vancouver is by far the primary focus of bulk export grain movement from Western Canada. Of the 39.6 MMT of grain that moved to Vancouver, Prince Rupert, and Thunder Bay during the 2016-17 crop year combined, 24.3 MMT moved to the Port of Vancouver. The emphasis on grain shipping through Vancouver is due to a number of factors. First, shipment to most major export markets for Canadian grain is, for the most part, the most cost and/or distance favorable via the Canadian West Coast relative to shipment east – this even applies to destinations in Europe and the Mediterranean. Second, the cost of moving grain from Western Canada to the Canadian West Coast is considerably lower than the costs of moving grain from Western Canada through the eastern grain supply chain (Thunder Bay – St. Lawrence). Finally, all of the major grain companies involved in export grain movement own their own terminal assets at the Port of Vancouver, meaning that these companies are able to capture all the profits associated with grain handling and trading relative to situations where grain companies must move grain through other parties' assets.

CN directly serves grain facilities on the North Shore of Vancouver and at Fraser Surrey Docks along the Fraser River, as well as receiving traffic at interchange from Canadian Pacific Railway (CP). Cargill and Richardson have major grain export terminals on the North Shore, while facilities such as Fibreco and Kinder Morgan are direct-hit facilities that ship lower volumes of grain. Grain is also delivered to transload facilities on the South Shore that transfer grain from hopper cars to export containers.

Traffic originating on CN is also interchanged with CP when destined to the South Shore of Vancouver. Viterro has two terminals (Cascadia and Pacific) on the South Shore, and other major facilities include Alliance Grain Terminal and Columbia Containers. It is important to note the efficiency of CP in moving traffic interchanged from CN to CP-served destinations on the South Shore of Vancouver and back to interchange with CN has a direct impact on CN performance.

The Port of Prince Rupert

Prince Rupert Grain is the primary grain export facility at the Port of Prince Rupert. Three grain companies own the Prince Rupert Grain export terminal (Viterro, Cargill and Richardson). Prince Rupert Grain may allow the shipment of grain from other grain companies through the terminal, but the owners of Prince Rupert Grain ship the vast majority of grain through the terminal.

While grain companies place car orders with CN through CN's car ordering system, Prince Rupert Grain decides on terminal authorization for car orders, which in turn is driven by the timing of vessel freight and other factors. There are frequently situations where the car orders of grain companies for a given week exceed the number of cars authorized by Prince Rupert Grain, reducing overall supply chain capacity in the Prince Rupert corridor.

Prince Rupert capacity is generally used to the fullest extent possible from September through May, with grain companies typically reducing their relative shipment volume through Prince Rupert sooner than they would through the Port of Vancouver, but later than they would through the eastern grain supply chain.

The Port of Thunder Bay

With the exception of a few companies, all of the major grain exporters in Western Canada own terminal assets wholly or jointly at the Port of Thunder Bay. The amount of terminal storage and throughput capacity at Thunder Bay is proportionally far greater in relation to the quantity of grain shipped through the Port than is the case at Vancouver or Prince Rupert. The number of “turns” that a grain terminal in Thunder Bay sees over the course of the crop year is significantly lower than the West Coast terminals.

Throughput capacity is generally fully utilized at Thunder Bay from September through the middle of December. The close of navigation along the Great Lakes – St. Lawrence Seaway System generally occurs in the last week of December, and the loading of vessels in Thunder Bay generally does not resume until around March 25, depending on the severity of ice conditions on the Great Lakes. In years when ice conditions are extreme, vessel loading at Thunder Bay has resumed as late as April 10-15. Unless export market demand for Canadian wheat and durum is unusually strong, the Thunder Bay shipment program generally slows in early May, leaving capacity utilization well below the level seen during peak demand between September and April.

Total direct grain exports from Thunder Bay in the 2016-17 crop year were 1.73 MMT, or less than one-quarter of total grain shipments from Thunder Bay, with the balance moving by laker to transfer elevators and processing facilities in the Great Lakes - St. Lawrence Seaway System. The largest lakers transiting the Great Lakes can load approximately 30,000 metric tonnes of grain.

MOVEMENT OF GRAIN IN OTHER CORRIDORS

While more than 80% of CN grain movement terminates at the ports of Vancouver, Prince Rupert, and Thunder Bay, grain originated by CN moves to a variety of commercial destinations within Canada, the United States and Mexico. Major destinations in Eastern Canada include wheat mills, malting plants and oilseed processing facilities, as well as transfer elevators and transloading facilities in the Quebec City and Montreal markets. Movement of grain to destinations within Western Canada is primarily to processing facilities and feed mills in the B.C. interior. Grain originated by CN destined for the U.S. market is primarily interchanged to other Class 1 railroads for movement to final destination, and as such, cycle times on CN-supplied equipment are driven in large part by what happens beyond the point of interchange.





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