



2021–2022

CN Winter Plan

ALL IN TOGETHER







TABLE OF CONTENTS

1. Message from JJ Ruest	5
Highlights of Winter Preparedness Measures	7
2. 2020–2021 Results	9
Challenges of Winter 2020–2021	10
Recurring Challenges	11
Lessons Learned	13
3. The Plan for Winter 2021–2022	16
Current Rolling Stock and Track/Yard Capacity	16
Current Procedure-Induced Capacity	18
Projected New Capacity and Resilience	20
4. Conclusion	23
Annexes	25
A. Toward a Strong and Lasting Recovery	25
B. Winter Impact on CN's Network	26

PHOTO ABOVE:
Geikie, AB

COVER PHOTO:
Hillsport, ON



1 Message from JJ Ruest

CN is pleased to submit its 2021–2022 Winter Plan: *All in together.*

The objective of CN's 2021–2022 Winter Plan is to ensure that our people and equipment remain ready to face winter. It outlines the measures and investments CN has undertaken, and will continue to make, to meet the requirements of our customers safely and efficiently during the harsh weather ahead.

Additionally, a prudent and well executed winter plan enhances Canada's reputation as a reliable and quality supplier to international markets. This report keeps everyone focused on moving freight and maintaining the integrity and smooth flow of supply chains even during the challenges of winter in Canada and the northern United States.

The winter of 2020–2021 unfolded during the pandemic. It also marked a sharp, yet uneven, recovery in CN's traffic volumes of the different commodity groups. During that time, CN reports having hauled 162 billion gross ton-miles (GTM), representing our best performance ever. This was the result of three main factors: the unrelenting dedication of our railroaders and the other players in the end-to-end supply chain; the implementation of best practices to mitigate the effects of extreme cold; and the injection of more than \$10 billion in capital investment over the last three years, which enhanced our resilience, in addition to safety and capacity.



Moose Lake, BC

“The objective of CN’s 2021–2022 Winter Plan is to ensure that our people and equipment remain ready to face winter.”



Because we understand our crucial role in keeping the economy running smoothly and the importance of investing to support future growth, we plan to invest nearly \$3 billion in 2021. These investments include key infrastructure projects and equipment renewal, further improving our recoverability after disruptions.

Extreme conditions are inevitable in Canada, and increasingly so as the planet deals with a changing climate. Again this year, we are applying the many lessons learned in the past. We will work with our customers to create accurate and timely forecasts of volumes and shipping patterns. These forecasts are essential to our resource and demand planning, especially given the fluctuations in business levels during these uncertain times. In that regard, we recognize the extremely dry conditions experienced by Western grain farmers in 2021 and the negative effects they have had on crop production for the start of the 2021–2022 crop year. This will impact grain shipment volumes during winter 2021–2022.

We will continue to align all components of the supply chain, from manufacturers to ports and yards, for the benefit of our customers and the economic recovery of Canada. And we will do so safely. We cannot overemphasize that fact. The safety of our employees, our customers, and the communities in which we operate remains a core value of our company.

We are well positioned to overcome the challenges of the coming winter. We will move our customers' goods, going *all in together*.

Handwritten signature of JJ Ruest.

JJ Ruest
President and CEO

Highlights of Winter Preparedness Measures



Nearly \$3 billion in capital investments in 2021,

including lengthening sidings, adding sections of double track, expanding yard capacity and modernizing rolling stock, in addition to regular maintenance

Conforming to new

train speed restrictions

Adding track patrols,

deploying stand-by engineering crews



Obtaining accurate and timely forecasts

of volumes and shipping patterns from our customers



Keeping consistent flow of air through the brake lines

by using more Distributed Braking Cars and by systematically changing the gaskets of air hose connectors

Monitoring

avalanches, landslides, water levels

Applying our **three-tier train length system**



Acquiring, in 2021–2022,

75 additional AC locomotives and using power efficiency technology



Taking delivery, in 2021–2022, of

1,000 additional high-capacity grain hopper cars

Adjusting

staffing levels

Having **snow-clearing and snow-melting equipment** ready



Applying risk management principles

to decision-making processes related to operations



Putting in place **extreme weather readiness plans, inspection and audit programs, employee training programs, and strategies involving non-rail modes of transport**

Staging

emergency ballast and track panels

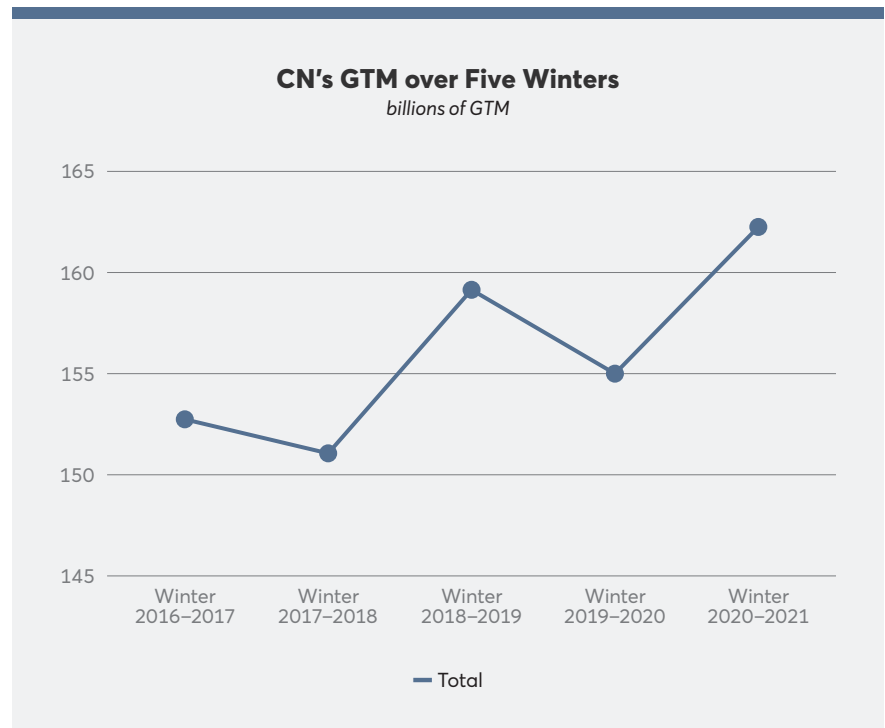


2 2020–2021 Results

When planning to meet the needs of its customers for winter 2021–2022, CN closely examined its 2020–2021 record and drew on the lessons learned over the years.

Overall, **CN hauled 162 billion gross ton-miles (GTM)** during winter¹ 2020–2021, up 4.6% in comparison to the 2019–2020 winter, and up 1.8% from our previous record of 159 billion GTM moved during winter 2018–2019.

The graph below shows CN's GTM over time.



Vegreville, AB
THIS PHOTO WAS TAKEN BEFORE
COVID-19 RESTRICTIONS.

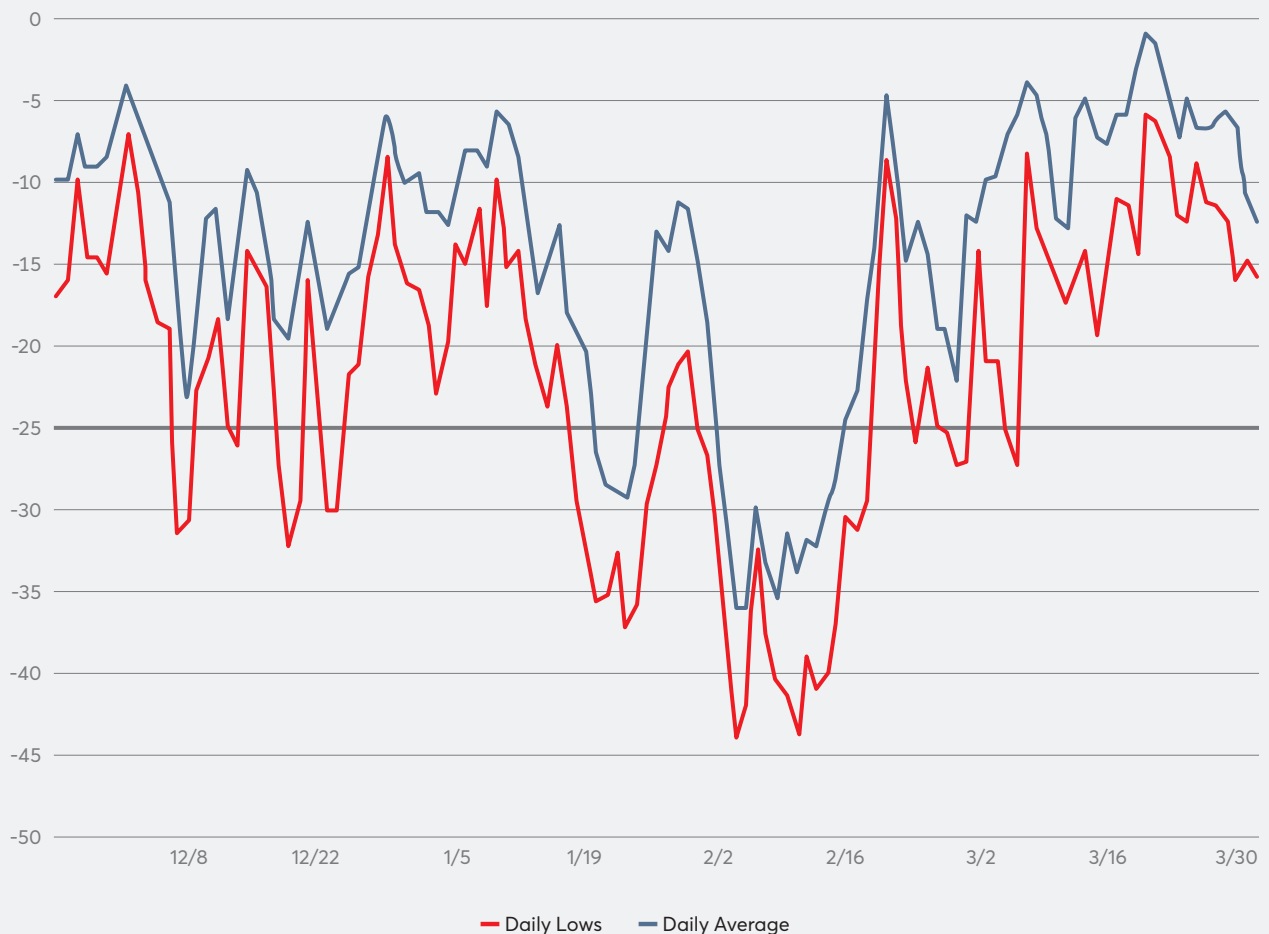
¹From a CN data collection point of view, winter runs from December 1 to March 31. However, from a CN operational standpoint, winter conditions often start in November (or as early as October in certain regions) and sometimes last well into April.

Challenges of Winter 2020–2021

Last year's exceptional results were achieved while facing the following challenges specific to winter 2020–2021:

- **COVID-19.** At its onset, the pandemic provoked strong demand for Western Canadian grain, as certain countries increased their inventories. However, all other commodity groups plunged dramatically before starting to recover, with varying degrees of intensity, in the fall of 2020. These uncertainties, along with significant transportation demand fluctuations during winter 2020–2021 forced CN to constantly adjust its resource levels to meet customer demand while implementing a comprehensive set of protectionary protocols against COVID-19 within its workforce. As a result, the timely availability of crews was sometimes compromised.
- **Early snowstorm.** In November 2020, Western Canada experienced an unusual early winter storm, with a significant accumulation of snow in some sections of the network. This had the effect of triggering CN's winter season earlier than on the typical date of December 1.
- **Extreme cold.** CN experienced a 10-day sequence of extreme cold in Western Canada (*under -25°C*) in February 2021, forcing a combination of smaller trains and stoppages for safety reasons.

Coldest Points on CN's Main Line (2020–2021)





Recurring Challenges

Every winter brings recurring and often inter-related problems, intrinsic to running a northern railroad during that time of the year. They include:

- **Physical properties of steel.** Severe cold is hard on steel. It places extra stress on steel wheels, and welded steel rails become less flexible.² This can reduce the volumes CN is able to move, regardless of the investments in infrastructure and experience gained in optimizing cold weather service.
- **Air brake system.** At -25°C and below, frozen gaskets leak air at brake hose couplings, air hoses freeze and air cannot move consistently through the full length of the compressed air brake system, thus rendering the system vulnerable to malfunction, forcing train length reductions.
- **Snow.** Although generally secondary to the effect of cold, snow can disrupt rail operations, forcing trains to slow down and increasing the risk of congestion on the network. Snow clearing in rail yards requires extra switching and resources.

- **Terminal operations.** Customers' operations at terminals are also affected by winter. When the destination terminal cannot accommodate rail traffic, CN must occasionally hold trains at origin or along the route. That equipment then takes longer to return for loading, creating delays and disruptions in the supply chain upstream.

Persistent heavy rainfall also affects terminal operations. At the Port of Vancouver, ongoing heavy rainfall occasionally prevents some export terminals from loading grain vessels. Consequently, CN must sometimes split and/or stage trains to manage the supply chain fluidity issues that can result from terminal operations issues.

² In addition, ice crystals wear down wheel treads, all leading to more frequent rail breaks and associated delays. CN has proceeded to eliminate up to 38,319 joints since February 2019 on continuous welded rail and has produced a video titled "The Tipping Point," which explains the impact of winter on rail operations (<https://www.cn.ca/en/media/video-gallery/>).

Every winter brings recurring and often inter-related problems, intrinsic to running a northern railroad during that time of the year.



Saint-Lambert, QC

- **Closure of the Port of Thunder Bay and the locks of the St. Lawrence Seaway.** These closures during winter remove up to 1,250 CN unloads per week at peak demand for grain, significantly affecting the capacity of the entire system.
- **Track disruptions.** The very nature of any rail network makes it vulnerable to washouts, rock falls, landslides and other natural hazards. CN invests heavily in technology to detect and mitigate these events.

Railroads are also facing the impacts of **climate change** on their infrastructure. Accordingly, while rail is part of the solution against climate change³, the industry must adapt. For winter operations specifically, climate change is affecting the intensity, frequency, and duration of cold snaps and precipitation. Washouts, persistent rain, floods, avalanches and landslides are likely to become more common as well.

Potential outcomes of climate change, including temperature extremes, flooding, hurricanes, and tornadoes, create physical risks to CN's network as well as legal, policy and market impacts. Through its cross-organizational **risk assessment processes**,⁴ CN identifies, monitors and mitigates those risks. Mitigation measures include some of the investments and best practices presented in this document.

³Shifting freight from truck to rail can reduce greenhouse gas emissions by up to 75%. A single train can allow to remove up to 300 trucks from the roads. Rail is approximately four times as fuel efficient as trucking, and CN continues to lead the industry, consuming ~15% less locomotive fuel per gross ton-mile, versus the average of its industry peers.

⁴The likelihood of a risk occurring and its impacts if it does occur are ranked on a scale from low to high. CN then determines mitigation activities and assigns ownership of the risk to the appropriate level.

Railroads are also facing the impacts of climate change on their infrastructure. Accordingly, while rail is part of the solution against climate change, the industry must adapt.

Lessons Learned

This year's Winter Plan incorporates important lessons learned from past challenges.

1 The first lesson pertains to CN **customer forecasts**. In winter 2020–2021, CN experienced challenges sourcing crews in a timely fashion because of the uncertain demand brought on by the pandemic. This was due to:

- The uneven recovery across CN's business segments, resulting in challenges in determining when and how many crews to recall to best meet shifting demands.
- The time between the recall of furloughed employees and the completion of the safety training refresher required as a condition of fully resuming work.

Customer forecasts are critical to having the necessary resources in place to move customer traffic and to creating adaptive contingencies. Frequent and open communication with customers ensures customer forecast updates are shared, allowing CN to adjust plans accordingly. Furthermore, maintaining open lines of communication fosters collaboration between CN's team, customers and supply chain partners, making it possible to balance customer demand with supply chain capacity.



Levis, QC

2 The second lesson relates to CN's \$10B **capital investments** over the past three years, including in rail infrastructure and rolling stock. In addition to regular maintenance, these investments have formed the building blocks upon which CN has increased — and continues to increase — its capacity, fluidity and resilience, while enhancing safety. Winters are known to cause network disruptions. And when these occur, it becomes imperative to resume full operational status rapidly. What used to take CN approximately 30 days to completely recover from a major network disruption four years ago can now be achieved in two weeks or less, due to the additional resilience acquired by lengthening sidings, adding sections of double track, expanding yard capacity and modernizing rolling stock. Technology also plays a role. For example, when algorithms can take over some of the workload associated with defect detection by the human eye, key personnel can devote their time and expertise to recovery efforts and the repair of equipment.

3 The third lesson pertains to the importance of supplementing a **consistent flow of air** through the brake lines of the train, the single most important factor in keeping our customers' shipments moving during winter. This is done using Distributed Braking Cars⁵ and Distributed Power locomotives⁶. Both help to charge the braking system, maintain pressure, and propagate braking commands from the lead locomotive all the way to the end of the train. In cold temperatures, this enables CN to maintain longer trains, unlocking capacity. CN ensures these Distributed Braking Cars are strategically deployed along the network for maximum effect during periods of extreme cold. CN has also analyzed data from the 2020–2021 winter season to maximize the effectiveness of these cars, developing standards for air source configuration and location in train consists.

4 The fourth lesson is the importance of a **well-functioning supply chain**. Aligning all components of the supply chain and ensuring partner infrastructure is well prepared for winter is also key. Thanks to CN's proactive approach, there are now over 50 grain elevators in Western Canada alone in addition to other industries equipped with a ground air source, which makes it possible for their loaded freight cars to be released to CN with air hoses already attached, allowing trains to depart more quickly from origin, thus improving network fluidity.



Les Coteaux, QC

⁵ Distributed Braking Cars are CN-modified boxcars containing air compressors and brake system associated equipment.

⁶ Distributed Power is a system installed on a locomotive that allows a train to be configured with additional locomotives in its middle and/or tail end, rather than only at the front.

5 The fifth lesson calls for strict adherence to CN's **three-tier system**, which prescribes specific train length reductions in cold weather, per the chart shown in the next section. These length restrictions have proven effective in keeping the network safe and fluid.

6 The sixth lesson is regulation of **train speeds**. CN is pleased with the decision from the Minister of Transport to revisit the initial Ministerial Order regarding the speed of trains transporting some crude oils and liquid petroleum gases in winter conditions. In its 2020–2021 Winter Plan, CN raised the issue that the previous Order, *based on calendar dates*, would have adverse unintended consequences on the fluidity of winter operations⁷. The new version of the Order still limits the speed of these trains but, importantly, it does so *based on ambient temperature*. This Ministerial Order is in addition to CN's self-imposed speed restriction through its Cold Weather Slow Policy, a standing operating procedure that includes mandatory slow orders and bulletins to crews for train movement at specific extreme cold temperatures.



7 The seventh lesson is the critical importance of **working in unison**, especially during winter conditions. Therefore, CN temporarily locates employees from support sections in operation centres to assist chief dispatchers with troubleshooting. The arrangement pools expertise, with beneficial results.

Finally, CN's **customers must be just as ready for winter**. This is why CN meets with them prior to the onset of winter to explain how they can ensure the safety of winter operations at their sites. CN also maintains a website (www.cn.ca/winter), where customers can find videos, winter checklists, a track inspection guide and a customer safety handbook.

⁷The imposed slowing of these trains has the domino effect of slowing all subsequent trains on the network (similar to cars behind a snowplough on the highway), which in turn reduces capacity and risks congestion at the time of year when rail already faces difficult operating conditions.

3 The Plan for Winter 2021–2022

CN has prepared this Winter Plan in accordance with the requirements of *Canada's Transportation Modernization Act* and with input from key stakeholders. This section explains how CN is getting ready for this coming winter through various investments and best practices.

Current Rolling Stock and Track/Yard Capacity

CN's capital investments over the past three years included several multi-year maintenance and capacity-boosting projects, aligned to market demand. These projects have significantly enhanced safety and increased CN's resilience in dealing with and recovering from severe weather, network disruptions and other events that can alter network fluidity. More precisely, those investments included:

- **260 additional locomotives**, for a total of more than 2,200 winter-prepped locomotives. Locomotives tend to lose traction due to ice, snow and water, resulting in wheel slippage. To deal with that issue, these locomotives are 100% alternating current and, as such, have better traction than direct current systems⁸.
- **101 Distributed Braking Cars**, allowing to maintain train lengths in cold temperatures.
- Delivery of 1,500 high-capacity **grain hopper cars**⁹ purchased in 2020, bringing the total number of such cars in service between 2018 and the present to 3,500.

⁸These locomotives can maintain greater horsepower by disabling the wheel that senses slippage and rebalancing the horsepower among the remaining traction motors.

⁹Each car will move more grain due to its increased volume (5,431 cubic feet vs. 5,150); reduced length, making it possible to attach more hopper cars per train; and reduced weight, meaning CN can haul more grain per car.



Winnipeg, MB

These projects have significantly enhanced safety and increased CN's resilience in dealing with and recovering from severe weather, network disruptions and other events that can alter network fluidity.

- **Addition and lengthening of sidings** (up to 12,000 feet long), where two trains can meet and pass safely without impacting network fluidity.
- Total of **150 miles of double track** on CN's mainline, building capacity to move more traffic.
- Major **yard expansion** projects in key locations for greater throughput.
- **Ten automated track inspection cars**,¹⁰ which can operate at track speed. This creates network capacity because track time is no longer consumed by inspection vehicles. It enhances safety as inspections are undertaken more frequently, and, by leveraging technology instead of the human eye, performed more consistently.
- **Seven automated inspection portals (AIP)**,¹¹ allowing for the full inspection of a train at track speed versus a roll-by inspection at train departure from a yard. This feature will significantly improve safety, fluidity and yard capacity when, from a regulatory standpoint, AIPs are allowed to replace human inspections.

¹⁰ These cars are equipped with the latest sensor and artificial intelligence technology, allowing CN to assess, as trains go by, track gauge, geometry, and alignment to identify defects before they become an issue.

¹¹ The portals have high-resolution imaging hardware coupled with powerful machine learning software.

Current Procedure-Induced Capacity

CN has implemented the following operational procedures — or best practices — which also increase capacity and resilience, and maximize network fluidity while improving safety:

- Establishing a **three-tier system** to determine the maximum permissible train length allowed at certain trackside temperatures as per the chart below:

Maximum Train Length (in Feet) Allowed at Specific Temperatures								
TIER LEVEL	TEMPERATURE		CONVENTIONAL	A – DP (1x1x0)		B – DP (1x0x1)	C – ADDITIONAL AIR SOURCES	
	°C	°F		HEAD TO MID	MID TO END	HEAD TO END	3RD, 4TH, 5TH AIR SOURCE	
Non Intermodal, Non Single Commodity Bulk Trains								
Tier 1	-25	-13	7,000	6,667	3,333	10,000	For each air source added beyond the configuration corresponding to columns A and B, train length can be increased by 2,000 feet (2,500 for Intermodal and Single Commodity Bulk Trains) per additional air source, up to a maximum length of 12,000 feet. A maximum of five air sources to be used on a train.	
Tier 2	-31	-24	5,000	5,000	2,500	7,500		
Tier 3	-36 or lower	-33 or lower	4,000	4,000	2,000	6,000		
Intermodal and Single Commodity Bulk Trains								
Tier 1	-25	-13	8,000	8,000	4,000	12,000		
Tier 2	-31	-24	6,000	5,667	2,833	8,500		
Tier 3	-36 or lower	-33 or lower	4,500	4,500	2,200	6,700		

Notes:

- For the purposes of this table, Distributed Power (DP) can be remote locomotives or Distributed Braking Cars.
- For manifest trains running DP 1x0x1, the maximum length allowed from head end to DP remote is 7,500 feet.
- Iron ore trains on the former DMIR territory are excluded from these restrictions.
- The specified temperatures refer to the coldest forecasted temperatures between the train's origin and destination.
- Column C does not apply to key trains.

- **Using advanced weather forecasts** to plan and develop contingencies for extreme weather events. With early warning, resources can be moved into the regions that are going to get hit the hardest by extreme weather, with emphasis on keeping yards fluid and preventing congestion.
- **Actively managing the fleet** by deploying cars outside the areas impacted by extreme weather to avoid causing more congestion.
- **Re-routing traffic when disruptions occur**, including over other railways' lines at CN's expense to meet the Company's commitments.
- **Managing the Vancouver Gateway** by holding traffic outside of the Lower Mainland until space is available and by encouraging terminal owners to proactively manage the flow of inbound railcars, thereby reducing congestion.
- **Deploying generators** across the network to make sure that safety or track equipment, such as railway signals, will not be affected by power failures due to cold weather.
- **Systematically changing the gaskets of air hose connectors** as part of normal car inspections to prevent leaks of air from the brake system. As noted, severe cold exacerbates wear.¹²
- **Detecting defects** on bearings, wheels and various components. Sensor systems embedded in tracks generate alarms when defects are detected. This technology allows for preventive action, such as the replacement of suspect wheels in preparation for winter, before component failure.
- **Monitoring of avalanches**, landslides, high-water levels, and other natural hazards is performed by detectors and warning devices located on the tracks or adjacent to the right of way. These include electro-sensors, knock-over posts, trip wire fences or water level sensors that trigger an alarm when abnormal conditions occur. CN also performs active control of avalanche zones with contained and safe blasting.
- **Planning weather-related restrictions** through daily severe weather forecasts, with overnight updates. CN's Winter Situation Report¹³ also relays real-time notices for severe weather that are integrated into the Company's rail traffic control system, allowing immediate response, such as adjustments of staffing levels to ensure the snow removal equipment has operators when needed.



¹² CN continues research to identify and implement additional options and new materials that can increase the efficiency of gaskets in cold temperatures.

¹³ <https://www.cn.ca/en/customer-centre/safety-guidelines-and-regulations/winter-situation-report/>

- **Preparing snow-clearing equipment** through inspections, maintenance, repairs, and repositioning of critical equipment — in advance of winter — in terminals and areas where snow-clearing needs are most likely, based on historical data. CN also uses forced air engines that provide quick and thorough cleaning of switches, along with nearly 1,400 snow melters, switch heaters, and other devices meant to keep critical switches clear of snow and ice buildup.
- **Responding to uncontrolled events with contingencies** such as adding track patrols, deploying stand-by engineering crews to remove debris or snow from the track, and staging emergency ballast and track panels so that CN can respond quickly in the event of a washout or other track damage.

Redpass, BC



Projected New Capacity and Resilience

As part of this year's plan, CN is adjusting its **resourcing/hiring**. Last year, there was significant uncertainty about the course of the pandemic, making it difficult for CN to plan crew resources and make reasonable assumptions about economic recovery. This year, with a considerably more reliable demand forecast in hand, CN is in a better position to calculate resource requirements.

In addition to the existing rolling stock, track and procedure-induced capacity described in the previous section, CN is planning to make **new capital investments of nearly \$3 billion** in 2021. The ongoing investments contribute to increasing resilience, a key factor of successful winter operations, especially when recovery from a disruption is in order.

They include:

- More than \$1.5B on **track maintenance**, including the replacement of rail and ties, carrying out bridge improvements, and other general track maintenance.
- More than \$250M on **double tracks, sidings, and yard track expansion** projects, the vast majority of which being in Western Canada (west of Edmonton), with, for example, more than 15 miles of additional double tracks.



Vancouver, BC
© VANCOUVER FRASER PORT AUTHORITY / JOHN SINAL PHOTOGRAPHY INC.

The ongoing investments contribute to increasing resilience, a key factor of successful winter operations, especially when recovery from a disruption is in order.

- Recognizing the importance of its **West Coast trade gateways** in Vancouver and Prince Rupert, CN has committed more than \$150M to this area. This amount is supplemented by funds from the Government of Canada and the Ports of Vancouver and Prince Rupert, and is earmarked for several multi-year capacity-related initiatives under Transport Canada’s National Trade Corridors Fund (NTCF). The Burnaby–North Shore Rail Corridor Improvement Project, with its components, falls under the NTCF:¹⁴
 - The Thornton Rail Tunnel Ventilation Upgrades, consisting in a new system of ventilation with the addition of jet fans to improve network fluidity and reduce tunnel passage wait time.
 - The Rail Corridor Improvements, consisting in a new 18,000-foot siding track running from the Willingdon Junction to Piper Avenue.
- More than \$100M on **strategic technology projects** to enable the next competitive level of modern railroading operation.
- **Rolling stock:**¹⁵
 - **1,000 new-generation, high-capacity grain hopper cars** that will expand capacity and help meet the growing needs of North American grain farmers, as well as demands of grain customers.
 - The acquisition of **75** high-horsepower, fuel-efficient **locomotives**, in addition to the 260 already received.

¹⁴ Refer to the 2021 CN Vancouver Plan (https://otc-cta.gc.ca/sites/default/files/cn_vancouver_congestion_plan_2021_-_reference_binder.pdf) for details and a more complete list of projects.

¹⁵ Delivery of the rolling stock may extend into early 2022 but will be completed in the timeframe covered under this plan (Dec.1 – Mar. 31).





4 Conclusion

The punishing cold of Canadian winters is simply a fact of life. CN is ready. Its Winter Plan is a comprehensive strategy borne of experience and expert analysis of how severe cold can disrupt a rail network.

CN is committed to innovation and investment. As outlined in this Plan, CN's level of investments has enhanced its resilience. The Company is prepared for winter. The added miles of double track, new and lengthened sidings and additional alternative current and distributed power locomotives and air distribution cars are particularly valuable in this regard.

In 2021, CN is planning to invest nearly \$3 billion of additional capital across its network. It will also maintain and enhance its proven best practices. CN will also continue to encourage and assist its customers and partners to adopt winter-ready infrastructure and to frequently communicate their latest business forecasts.

CN appreciates its customers' willingness to work closely with its railroaders to manage the challenges of winter. Customers expect the service to meet their needs throughout the year, and they expect CN to be able to recover quickly when disruptions occur, while keeping them informed of the status of their shipments. This Winter Plan provides the basis to fulfill those expectations.

Yes, CN is ready for winter 2021–2022. This does not mean that its future winter plans cannot be improved. Therefore, CN welcomes continuous input, which is always seriously considered. To that effect, all feedback can be sent to contact@cn.ca.





ANNEX A

Toward a Strong and Lasting Recovery

Logistics and supply chains are key in difficult times like these to keep freight flowing, from raw material to finished goods to store shelves. Transportation is mission critical.

The economy relies on billions of moving parts, and CN moves a tremendous amount of them. Close to three quarters of surface goods shipped in Canada each year move along the railroad. When rail is disrupted, this supply chain is broken and the wheels of the economy begin to squeak in alarm.

That is why goods transported by rail simply must keep moving. After the unprecedented 18% fall in CN's shipment volumes in the second quarter of 2020, the economy began showing signs of a sharp but uneven recovery in the third quarter. CN immediately brought locomotives and railcars out of storage and called back, and safety retrained, 2,800 furloughed train crews.

As demand on CN's network increased significantly across other business sectors through the fall of 2020, grain shipments also continued at record pace. That demand, combined with strong operational execution by CN and the end-to-end supply chains, as well as CN's increased capacity gained over the last three years, were key factors driving CN's record bulk grain movement for 14 consecutive months, from March 2020 to April 2021.

From the very early days of the pandemic, CN moved quickly to establish a safe working environment for its approximately 24,000 employees, and for the communities in which it operates. Approximately 19,000 operating employees have been in the field working every day of the pandemic, supported by another 5,000 employees who have been helping run the railway from their homes. Their dedication and perseverance were crucial to CN's remarkable performance during the pandemic and will be key to upholding the recovery in which we find ourselves now.

ANNEX B

Winter Impact on CN's Network



The map is based on historical data. "Severe" winter conditions means portions of CN's network most likely to be exposed to cold snaps (temperatures below -25° Celsius) at least twice per winter and for more than three days at a time.





www.cn.ca/winterplan