Learn about Understanding the reality of winter by clicking here: https://player.vimeo.com/video/141806740
Winter Plan 2019 – 2020

4 Key Pillars

The Winter Plan is based on 4 key pillars forming the basis of our operating model for the coming winter and beyond:

Safety
is the overarching core value at CN. It shapes our corporate strategy, guides our decisions and is a critical dimension of our Winter Plan. We have invested and continue to invest in our infrastructure and in training our people to drive safer operations and a culture of looking out for each other. Safety is also a shared responsibility. Together with CN, communities, customers and supply chain partners play a critical role in ensuring a safe environment for their citizens, their employees and our employees. Winter brings particular challenges and CN is committed to putting safety ahead of all other considerations

Resilience
Our ability to sustain operations with minimal disruptions through winter operating conditions

Recoverability
Our ability to recover more quickly from severe winter conditions and disruptions. It is an outcome that results from CN’s record capital spending program over the past two years, which has been particularly focused on projects that enhance our ability to recover from disruptions

Partnering
Our strong winter operations are very much tied to accurate forecasts, which result from strong working relationships with our customers and supply chain partners. Those relationships ensure that capital is deployed in the right places where it will provide the greatest positive impact
Strong Capital Program Driving Safety, Capacity & Productivity

~C$14B Capital investments over the last 5 years

continued record capital envelope to support network resiliency

(in millions $ Cdn)  * Reflects % of revenues

Positive Train Control (PTC)
Capacity, Growth Initiatives & Maintenance
Information Technology

Largest Single Year Capital Budget

2,297  2,706  2,752  2,703  3,500  3,900
19%  21%  23%  21%  25%  25%
Adding Capacity & equipment in 2019 - 2020

Close to

140 miles
of double track

14
new sidings, extensions, spurs

Investments at
8 yards

205
new high horsepower locomotives
Increasing Inland Capacity for Growth and Winter Resiliency
Over the past 18 months…….

**Toronto**
- 80 new employees hired
- 15 new cranes, 22 new shunt trucks
- Developed Malport as supplemental capacity processing an average of 10,000ft per day (approx. 275 FEU) removing and average of 450 daily gate transactions from Brampton.

**Montreal**
- 7 new cranes, 8 new shunt trucks
- Implemented Speed Gate™. In September 2019

**Regina**
- New Intermodal terminal in partnership with Mobile Grain opening November 2019.

**Calgary**
- 7 new cranes, 5 new shunt trucks
- Construction completed to provide additional ground capacity of approx. 600 FEU

**Edmonton**
- 6 new cranes, 4 new shunt trucks
- Increased ground capacity completed summer 2019
- Constructing additional switching capacity to increase velocity
- Construction completed to provide additional ground capacity of approx. 500 FEU

**Vancouver**
- 6 new cranes, 6 new shunt trucks
- New Speed Gate™

**Detroit**
- Total of 10 cranes added of which 6 are new
- Gate realigned to support fluidity. From 2 ingate lanes and one outgate lane we now have 6 ingate lanes and 4 outgate lanes.
- Increased ground capacity approx. by 300 FEU

**Chicago**
- 10 new cranes with 2 more by the end of Q4 2019
- Addition of second empty handler crane July 2019 (dedicated at CY)
- Added second driver help kiosk

**Joliet**
- New crane added in 2019 - 4 cranes in total

**Memphis**
- Converted to a grounded operation in Q1-2019
- 10 new cranes in service, 9 new shunt trucks in service

**Intermodal Assets**
- Increased double stack rail cars by 9% in 2019
- Mobile app for drivers implemented.
- 89 Nose mounts +82% increase
- 82 Gensets +19% increase
- IntelliGEN (Full reefer fleet capable)
Network Strategies
Winter Readiness

Network Operations:

- Senior Level Winter Cabinet: Network Operations, Mechanical, Engineering and Motive Power, RTC and Service Design representation.

RTC: (Rail Traffic Control)

- Additional senior staff 7/24 at all RTC Centers for the winter.
- Procedures and guidelines in place for managing adverse operating conditions with the goal of maintaining Network Fluidity.
Gaskets and Gladhand Connections
- Implementing tactical replacement program as a pre-winter blitz
  - Replace gaskets on entire intermodal car fleet
- Research being performed by cross-functional team of suppliers
- Objective to keep up to date on latest material science for gaskets

National Research Center (NRC) Cold Weather Testing
- Project being conducted with NRC to perform cold weather testing on two full railcars
- Railcars have been delivered to NRC – testing began in August 2019

New York Air Brake (NYAB) Investigation into Operational Leakage
- Working with major parts supplier to develop parts that perform better in extreme conditions.
Operating in Winter
Constant Improvement & Advanced Planning

- In western Canada we have 26% more qualified and experienced crews in place vs. early 2018.
- Locomotive Fleet – over 200 new AC locomotives added since the spring of 2018 with 60 more delivering Q4 2019 and Q1 2020.
- Locomotive Reliability – Modified processes in place to ensure the right locomotives are deployed in the right areas of our network.
- Air Repeater cars – 100 now in service, 40 added in 2019
- Backup power generators – adding and deploying across key areas of our network to improve safety and prevent delays (Signal failures caused by cold temperature power outages)
- Track and Signal Repair Teams – In winter we will dispatch both Inspection and repair crews simultaneously vs. first an inspection then a repair crew if needed.

Strategic Intermodal Railcar Storage Plan
- Vancouver 25,000ft
- Prince Rupert 20,000ft
- Halifax 10,000ft
- Montreal 10,000ft
- Key inland terminals will hold one day worth of car supply
Automated car inspection portals

CN’s Automated Inspection Portals will modernize the railcar inspection process by pairing high-resolution imaging hardware with artificial intelligence. Using the latest in machine vision applications, the system complements manual inspections and helps our expert carmen maintain our fleet with more efficiency, leading to a safer and more reliable railway with fewer disruptions.

Automated track inspection program

CN is investing in specially equipped railcars using the latest sensor and AI technology. These automated track inspection cars move in regular train service at track speed gathering and analyzing massive amounts of track condition data. When a defect is detected, an alert is automatically sent to track maintenance employees.

Learn about our Autonomous Track Inspection Program by clicking here: https://vimeo.com/339797564

Learn about how we are Redefining Railcar Inspections by clicking here: https://vimeo.com/332002914
Operating in Winter
Customer Service

• Focus on exception management & recovery plan – on line set off’s & bad orders
• Track weather patterns & plan ahead to address weather related disruption.
• Ensure cut-offs & transit reflect winter train plan & velocity.
• Proactive Customer communication & notification.
• Risk Mitigation on temperature controlled traffic – Online (In-Transit) fuelling process (Set off railcars and Bad Order)
• Demand & Empty pipeline management – Staying ahead of the demand curve for winter
• Measuring & Monitoring online dwell across the network.
• Manage sensitive traffic with higher sense of priority i.e. Automotive, Reefer, VIP
• Tracking HOT containers closely to execute recovery plan if warranted.
# Intermodal Winter Operations

## Train Length Guidelines

CN has a four-tier system for addressing the impact of severe winter temperatures and ensuring safe operations under these conditions. The following chart shows CN’s train length safety-driven policy for cold-weather operations. Reductions in train length are required once temperatures are -25°C or below.

## Maximum Train Length Based on Ambient Temperature

<table>
<thead>
<tr>
<th></th>
<th>Above -25°C</th>
<th>Tier 1 -25°C to -30°C</th>
<th>Tier 2 -30°C to -35°C</th>
<th>Tier 3 Colder than -35°C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Head End Power</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unit train</td>
<td>10,000</td>
<td>8,800</td>
<td>6,000</td>
<td>4,500</td>
</tr>
<tr>
<td>Carload train</td>
<td>10,000</td>
<td>7,000</td>
<td>6,000</td>
<td>4,500</td>
</tr>
<tr>
<td>Intermodal train</td>
<td>12,000</td>
<td>8,800</td>
<td>6,000</td>
<td>4,500</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>With Distributed Power or Air Repeater Cars</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit train</td>
<td>11,300</td>
<td>11,000</td>
<td>9,000</td>
<td>7,500</td>
</tr>
<tr>
<td>Carload train</td>
<td>11,300</td>
<td>10,000</td>
<td>8,500</td>
<td>7,000</td>
</tr>
<tr>
<td>Intermodal train</td>
<td>14,000</td>
<td>12,000</td>
<td>10,500</td>
<td>8,500</td>
</tr>
</tbody>
</table>