



# Innovating Everywhere, Every Day

2017 INVESTOR FACT BOOK







## MOVING FORWARD THROUGH INNOVATION

At CN, we take pride in how we do our job of moving customers' goods safely and efficiently. We have transformed ourselves from a Canadian-centric railway into a leading North American transportation and logistics company. We expanded our reach from the Pacific to the Atlantic to the Gulf of Mexico. We implemented an operational model that emphasizes discipline and productivity, becoming the most efficient carrier in the industry. We balance this efficiency with best-in-class customer service, centred on supply chain collaboration. This mindset sets us apart from our competitors, fosters innovation and secures our position for long-term growth.

As used herein, "CN", the "Company", "we", "our", and "us" refer to Canadian National Railway Company and, as the context requires, its subsidiaries.

Certain statements included in the 2017 CN Investor Fact Book constitute "forward-looking statements" within the meaning of the United States Private Securities Litigation Reform Act of 1995 and under Canadian securities laws. By their nature, forward-looking statements involve risks, uncertainties and assumptions. The Company cautions that its assumptions may not materialize and that current economic conditions render such assumptions, although reasonable at the time they were made, subject to greater uncertainty. Forward-looking statements may be identified by the use of terminology such as "believes", "expects", "anticipates", "assumes", "outlook", "plans", "targets", or other similar words.

Forward-looking statements are not guarantees of future performance and involve known and unknown risks, uncertainties and other factors which may cause the actual results or performance of the Company to be materially different from the outlook or any future results or performance implied by such statements. Accordingly, readers are advised not to place any undue reliance on forward-looking statements. Important risk factors that could affect the forward-looking statements include, but are not limited to, the effects of general economic and business conditions; industry competition; inflation, currency and interest rate fluctuations; changes in fuel prices; legislative and/or regulatory developments; compliance with environmental laws and regulations; actions by regulators; security threats; reliance on technology; trade restrictions; transportation of hazardous materials; various events which could disrupt operations, including natural events such as severe weather, droughts, floods and earthquakes; climate change; labor negotiations and disruptions; environmental claims; uncertainties of investigations, proceedings or other types of claims and litigation; risks and liabilities arising from derailments; and other risks detailed from time to time in reports filed by CN with securities regulators in Canada and the United States. Reference should be made to "Management's Discussion and Analysis" in CN's annual and interim reports, Annual Information Form and Form 40-F filed with Canadian and U.S. securities regulators and available on CN's website ([www.cn.ca/investor](http://www.cn.ca/investor)), for a description of major risk factors.

Forward-looking statements reflect information as of the date on which they are made. CN assumes no obligation to update or revise forward-looking statements to reflect future events, changes in circumstances, or changes in beliefs, unless required by applicable securities laws. In the event CN does update any forward-looking statement, no inference should be made that CN will make additional updates with respect to that statement, related matters, or any other forward-looking statement.





## 2016 Highlights

### TOTAL REVENUES

**\$12.0B**

### OPERATING RATIO

**55.9%**

### FREE CASH FLOW<sup>1)</sup>

**\$2.5B**

### DILUTED EARNINGS PER SHARE

**\$4.67**

### ADJUSTED DILUTED EARNINGS PER SHARE<sup>1)</sup>

**\$4.59**

1) See pages 92-94 for an explanation of these non-GAAP measures

#### PICTURED ABOVE:

La Tuque, QC  
Photo by CN employee  
Olivier Blackburn.

#### COVER:

Geikie, AB  
Photo by CN employee  
Tim Stevens.

# Contents

## Overview

- 02 Our Business at a Glance
- 04 Creating Long-term Value
- 06 Message from the President and CEO
- 08 Foundational Strengths
- 10 Driving Innovation
- 12 Enhancing Safety
- 14 Embedding Sustainability
- 18 Financial and Operating Measures

## Markets

- 20 Market Overview
- 24 Petroleum and Chemicals
- 32 Metals and Minerals
- 40 Forest Products
- 48 Coal
- 54 Grain and Fertilizers
- 62 Intermodal
- 70 Automotive

## Operations

- 76 Operational Overview
- 78 Western Region
- 80 Eastern Region
- 82 Southern Region
- 84 Multimodal

## Financials

- 86 Quarterly Consolidated Statements of Income
- 87 Quarterly Consolidated Balance Sheets
- 88 Quarterly Consolidated Statements of Cash Flows
- 90 Quarterly Financial and Statistical Data
- 92 Non-GAAP Measures
- 95 Labour Relations Data Table
- 96 Shareholder and Investor Information

Except where otherwise indicated, all financial information reflected in this document is expressed in Canadian dollars and determined on the basis of United States generally accepted accounting principles (GAAP).

#### TICKER SYMBOLS

CNR Toronto Stock Exchange  
CNI New York Stock Exchange



For the most up-to-date information, including financial results, regulatory filings, annual reports, company presentations, weekly performance metrics and webcasts and events, please visit:

[www.cn.ca/investor](http://www.cn.ca/investor)



# Our Business at a Glance

## A GREAT AND DIVERSIFIED FRANCHISE

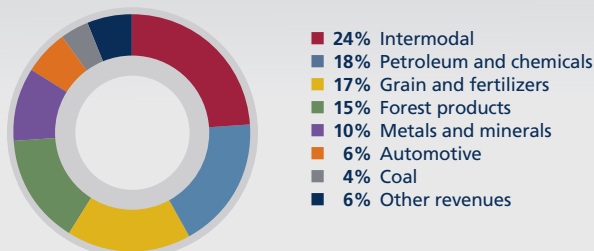
CN is a leading North American transportation and logistics company, and our 19,600-mile network spans Canada and Mid-America, connecting ports on three coasts. Our resource-rich, manufacturing-intensive network, along with our co-production agreements, routing protocols, marketing alliances and interline agreements, provide connections to consumers across North America.

We offer fully integrated rail and other transportation services, including intermodal, trucking, freight forwarding, warehousing and distribution. Serving exporters, importers, retailers and manufacturers, we move raw materials, intermediate goods and finished products to market, fostering the prosperity of the markets we serve.



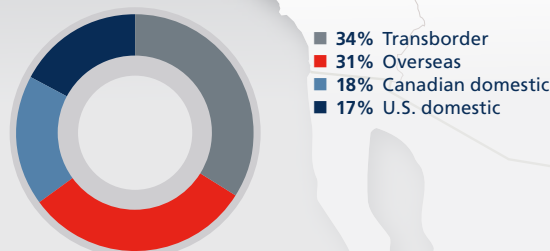
## Balanced and diverse portfolio

2016 REVENUES BY COMMODITY GROUP  
(% of total revenues)



## Broad geographic exposure

2016 REVENUES BY GEOGRAPHIC FLOW  
(% of freight revenues)





## A true backbone of the economy<sup>1)</sup>

ROUTE MILES

19,600

CARLOADS

5.2M

VALUE OF GOODS HANDLED

\$250B+

CAPITAL INVESTMENTS

\$2.75B

LOCAL SPENDING

(excluding payroll, benefits & pension)

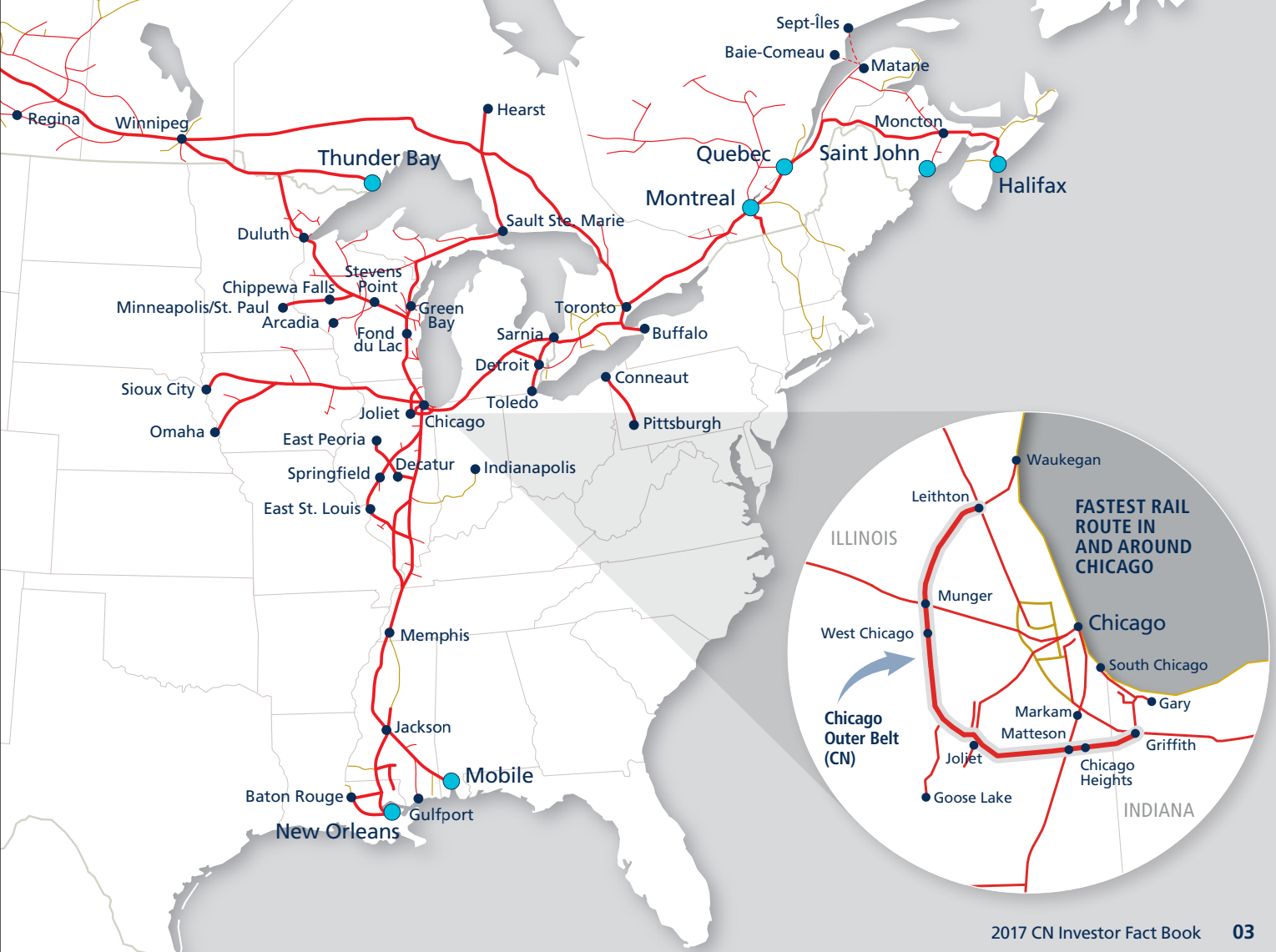
\$8.4B

EMPLOYEES

(as at December 31)

22,249

1) 2016 figures



Overview

Markets

Operations

Financials



# Creating Long-term Value

## VALUE CREATION HIGHLIGHTS

With a clear strategy focused on safety, efficiency, reliability and supply chain collaboration, CN is committed to creating long-term value for our shareholders through strong financial performance, dividend payments and share repurchases.

### 1. Solid share price performance

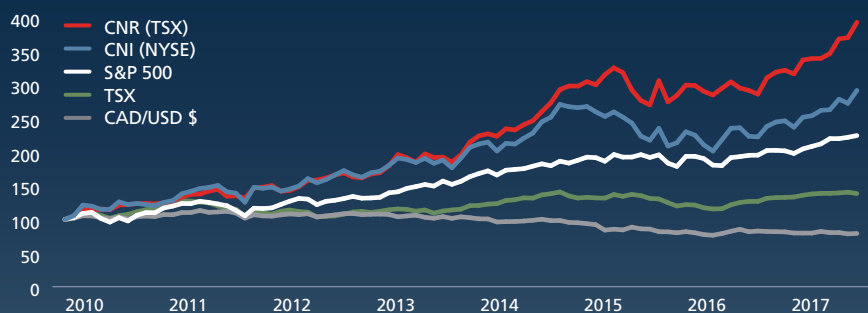
# 293%

#### SHARE PRICE RETURN SINCE JANUARY 2010<sup>1)</sup>

CN's share price on the TSX (CNR) has increased at a compound annual growth rate (CAGR) of 19% since our initial public offering (IPO) in 1995.

#### CN'S STOCK PERFORMANCE (2010 – 2017)<sup>1)</sup>

(Index: Closing price on January 29, 2010 = 100)



1) As at May 31, 2017

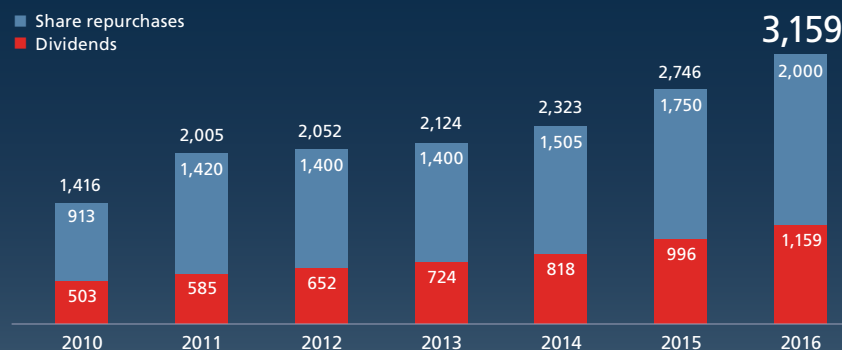
Source: Bloomberg

### 2. Rewarding shareholders

#### TOTAL SHAREHOLDER DISTRIBUTION

(in millions \$)

■ Share repurchases  
■ Dividends



# ~90%

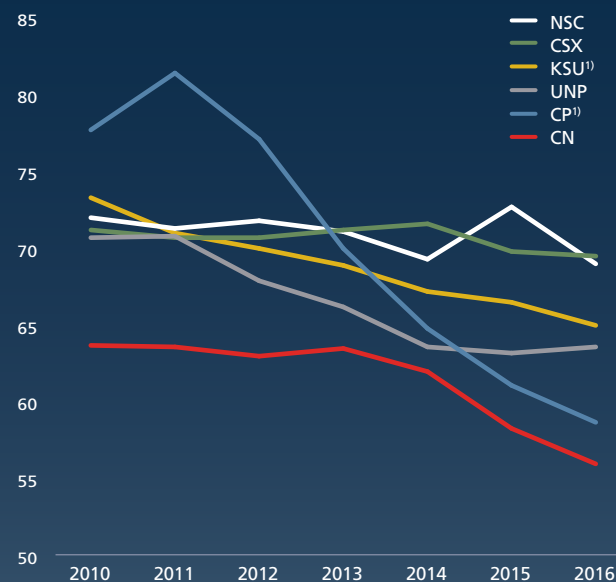
#### OF NET INCOME RETURNED TO SHAREHOLDERS IN 2016

CN's strong financial position allowed us to distribute close to \$3.2 billion to our shareholders in 2016. We have increased our dividend 21 consecutive times since 1995 at an average CAGR of 17%. CN has returned close to \$18 billion to our shareholders since 2000 in the form of share repurchases.



### 3. Industry-leading efficiency

**INDUSTRY OPERATING RATIOS (%)**  
(Expenses / Revenues)



1) Adjusted

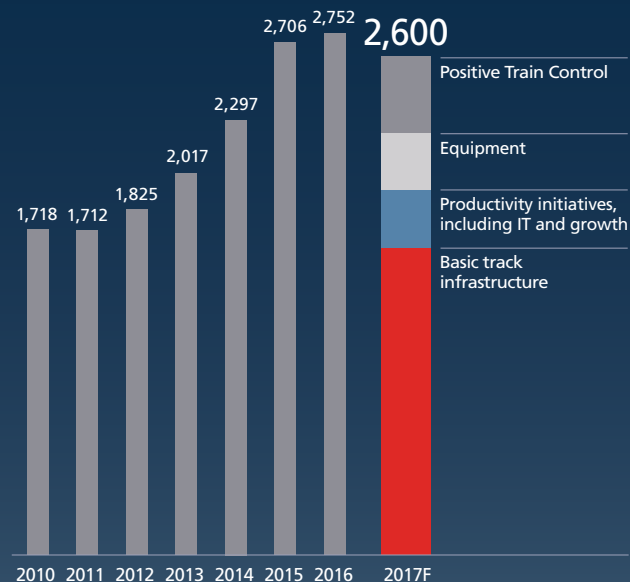
# 55.9%

#### LOWEST OPERATING RATIO OF ALL CLASS 1 RAILROADS

CN has maintained our operating ratio leadership position for more than 15 years, helping to drive significant free cash conversion for reinvestment and shareholder dispersions.

### 4. Investing for the long term

**CAPITAL INVESTMENTS**  
(in millions \$)



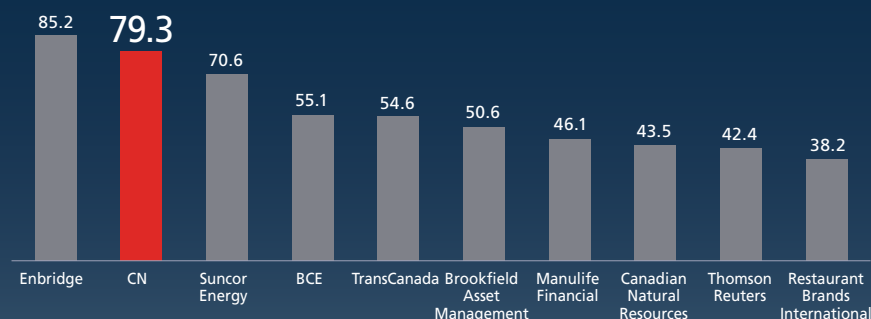
# \$15 billion

#### CAPITAL INVESTMENTS SINCE 2010

On average CN invests approximately half of our annual operating income back into the Company to build for the future. We employ a rigorous process to evaluate projects which generate an overall return above our cost of capital.

### 5. One of Canada's largest corporations

**MARKET CAPITALIZATION<sup>1)</sup>**  
(in billions \$)



1) List of Canadian corporations traded on the TSX, excluding banks – on May 31, 2017

Source: Bloomberg

# Scale

#### 2<sup>ND</sup> LARGEST INDUSTRIAL COMPANY IN CANADA

CN is the second largest Canadian non-bank company by market capitalization and the fifth largest firm traded on the TSX. CN's market cap has increased over 30 times the value of our IPO in 1995.



# Message from the President and CEO



**LUC JOBIN**  
President and Chief Executive Officer

## INNOVATING EVERYWHERE, EVERY DAY

Welcome to the *2017 CN Investor Fact Book*. Inside, you will find a wealth of information about CN, our operations, markets and financials. But beyond the facts, I hope you will gain a better understanding of our strategic vision to not only maintain our industry-leading position, but accelerate our pace of innovation.

### Building on a strong position

While 2016 provided a challenging economic environment for CN with revenues and volumes down about 5% year-over-year, reported earnings per share increased 6% and adjusted earnings per share increased 3%.

We also delivered a record-breaking annual operating ratio of 55.9%, a 230 basis point improvement over 2015. Furthermore, many of our key operating metrics also broke records, demonstrating our ability to adjust quickly in a changing environment, all the while maintaining best-in-class service for our customers.

The resiliency of our model, our network and our people has allowed CN to continue to deliver shareholder

value through the years. Combined with CN's longstanding financial management principles and strong balance sheet, we have consistently increased dividend payouts to our shareholders every year since our initial public offering at an average cumulative annualized rate of 17%.

### Accelerating the pace of innovation

With a 21-year track record of continuous improvement, it would be easy for us to rest on our laurels. But we continue to develop opportunities to grow our business, as the transportation landscape quickly changes around us.

## EXPERIENCED AND DEDICATED LEADERSHIP TEAM



For more information on CN's leadership team and senior officers, please visit [www.cn.ca/company-officers](http://www.cn.ca/company-officers)



By continuing to innovate, be it in deepening our supply chain integration with customers and other partners or developing a roadmap for a leading transportation and logistics company of the future, we are positioning CN to be more competitive for years to come.

To accomplish this, we will focus on three key areas of our business:

### **Leveraging our operating model and mindset**

We must continue to raise the bar on our operations, because no matter how efficient we may already be, our competitors are working hard to match us. We have and will continue to seek opportunities to enhance our cost base. For example, we are using the vast amounts of data generated by our various inspection technologies and maintenance programs to develop predictive analytics. Such forward-looking analysis has the potential to vastly improve our operations by helping to prevent incidents before they occur and targeting engineering and mechanical programs as well as network investments where they will have the most impact on service reliability.

### **Enhancing safety**

Safety is more than a priority at CN. It is a fundamental value that guides our actions at all times on our journey to becoming the safest railroad in North America. We are continually innovating and pushing forward on many fronts, including training. Our state-of-the-art training centres in Winnipeg, MB, and Homewood, IL, deliver an enhanced program focused on instilling and reinforcing a strong safety culture. We are also improving collaboration between management and unionized employees to ensure a safe and reliable service for all our stakeholders.

### **Improving our capabilities**

We plan to expand our product offering to meet the ever-increasing expectations of new and existing customers. That means becoming even more connected to our customers and supply chain partners through enhanced cooperation, communication and data sharing. It also entails building new capabilities to expand our offerings, penetrate new markets and attract new customers. To get there, we will build on our industry-leading operating model to make our service even more reliable and transparent.

### **Creating value for our shareholders**

Our unique network footprint, our customer-centric approach to service and our ability and willingness to invest for the long term are some of the key elements that contribute to the evolution of our strategy going forward.

These foundational strengths, combined with our innovative mindset, allow us to grow our business faster than the economy and deliver strong results for our shareholders.



**Luc Jobin**  
President and CEO



6



7



8



9

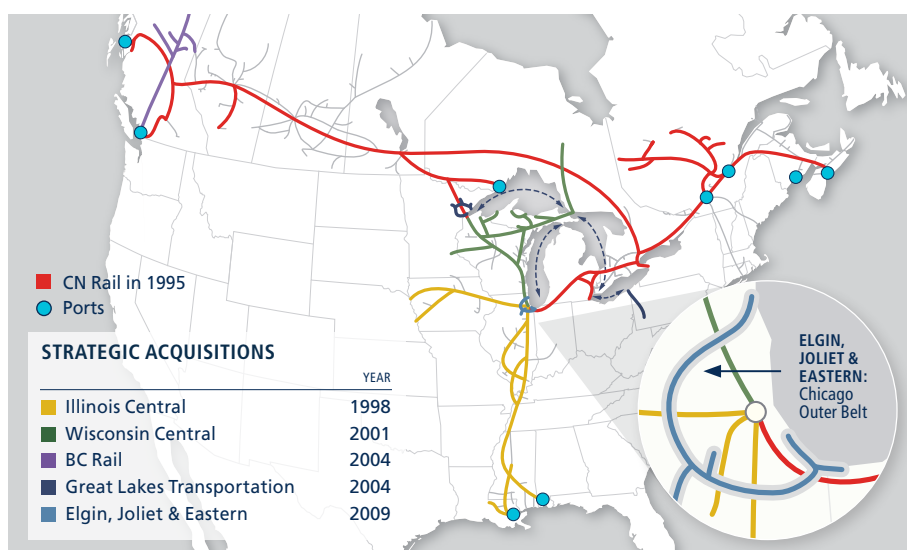
- 1 **Luc Jobin**  
President and CEO
- 2 **Janet Drysdale**  
Vice-President, Corporate Development
- 3 **Mike Cory**  
Executive Vice-President and COO
- 4 **Sean Finn**  
Executive Vice-President,  
Corporate Services and CLO
- 5 **Serge Leduc**  
Senior Vice-President and CIO
- 6 **Ghislain Houle**  
Executive Vice-President and CFO
- 7 **Kim Madigan**  
Vice-President, Human Resources
- 8 **Scott Daniels**  
Senior Vice-President,  
Strategy and Innovation
- 9 **Jean-Jacques Ruest**  
Executive Vice-President and CMO

# Foundational Strengths

## BUILDING ON A TRACK RECORD OF EXCELLENCE

We at CN are proud of the transportation leader we have become through strategic acquisitions, an intense focus on efficiency and safety as well as a mindset to help our customers win in their markets.

### Unrivaled network through strategic acquisitions



Building from a strong core Canadian network, we began our expansion in 1998 with the ground-breaking acquisition of the Illinois Central, linking Canada to the Gulf of Mexico. In 2001, CN added the Wisconsin Central, filling an important gap at the heart of our network. The acquisition of BC Rail in 2004 extended our reach into resource-rich British Columbia. With the addition of the Great Lakes Transportation business, CN became a major player in the U.S. steel supply chain. Our acquisition in 2009 of the Elgin, Joliet and Eastern created a competitive advantage for CN with a seamless route around Chicago.

# \$8 billion

INVESTED IN STRATEGIC ACQUISITIONS SINCE 1998

### Operational excellence



CN's business agenda starts with an unwavering commitment to safety and disciplined execution of all aspects of running our railroad by operating more efficient trains, reducing dwell times and improving overall network efficiencies. Through these efforts, we provide cost-effective and high-quality services to our customers.

# 16% increase

TRAIN PRODUCTIVITY SINCE 2010  
(GTM per train mile)

# 38% increase

YARD PRODUCTIVITY SINCE 2010  
(Cars per yard switching hour)

Our industry-leading operating efficiencies demonstrate our continuing focus on network fluidity and productivity.



## A true supply chain enabler



Port of Prince Rupert, BC

CN develops innovative solutions to make the entire supply chain more efficient. We work closely with our customers to better understand their business, adjust capacity to meet their needs as well as identify opportunities to bring producers and end users together. We seek to deepen customer engagement, optimize supply chain performance and create value for our customers by leveraging our expertise and fostering open communication with all of our stakeholders, including shippers, receivers, port authorities, terminal operators and others.

# Greater

## MARKET ACCESS

CN's unique three-coast network serves all major Canadian markets as well as the U.S. Midwest and South. We reach deep into resource-rich regions to connect producers with world markets. We are continually improving our customer-facing facilities and opening new storefronts such as our new Duluth Intermodal Terminal which opened in 2017.

# Faster

## DELIVERY TRANSIT

Ensuring the fluidity of our rail yards, terminals and network is key to delivering our customers' goods swiftly. For example, through our access to the Port of Prince Rupert, our steamship customers enjoy a one to two day transit advantage to/from Asia versus the Ports of L.A./Long Beach. Our unique Chicago Outer Belt allows us to build on the faster sailing times, avoiding the congestion of inner-city Chicago.

# Better

## CUSTOMER SOLUTIONS

To provide optimal customer service, CN works closely with customers to understand every detail of a shipment from true origin to ultimate destination and back again. For example, our Domestic Repositioning Program and extensive transloading facilities provide our steamship customers with match-back opportunities that enhance their round-trip economics.

## Reinvesting to build capacity

At CN, we take the long view when planning our business. We invest not only to maintain the safety and integrity of our network, we look for innovative ways to build a sustainable competitive advantage. Examples include our investments in long-train operations, which create capacity for CN and our customers, and CN Campus, our employee training facilities.

# 15,000

## EMPLOYEES COMPLETED TRAINING AT CN CAMPUS SINCE 2014

Our Claude Mongeau National Training Centre in Winnipeg, MB, and our CN Campus in Homewood, IL, are state-of-the-art facilities where CN employees and customers receive enhanced railroader training programs focused on instilling and reinforcing a strong safety culture.



CN's Claude Mongeau National Training Centre, Winnipeg, MB

# Driving Innovation



SCOTT DANIELS  
Senior Vice-President, Strategy and Innovation

## AHEAD OF THE CURVE: CN'S INNOVATION ADVANTAGE

**1 Robust customer relationships foster innovation** – As part of a connected system, CN is innovating collaborative win-win customer solutions. Our success depends on our ability to deliver consistent value to our customers across a range of needs. Developing a deeper understanding of our customers is a driving force for innovation at CN.

**2 Embedded ecosystem of collaboration** – We believe that we can continue to improve our long-term competitiveness via strong, mutually beneficial external networks spanning customers, entrepreneurs, technology developers, investors, industry leaders and the communities of ideas they represent.

**3 Strong balance sheet for capital investment** – Innovation requires conviction and strong human capital; it also requires the financial strength to undertake it profitably. CN has the advantage of all three and we continue to invest in innovation while maintaining a relentless focus on talent acquisition, management and development.

## EMBEDDING INNOVATION ACROSS THE BUSINESS

At CN, we think of innovation as a discipline and a frame of mind, not a function or an outcome. Innovation is more than just technology. It entails breaking the silos of strict functional decision making and bringing unconventional thinking and cross-disciplinary creativity to identify and address opportunities and challenges across our business.

### Shaping a platform for new growth opportunities

We view the markets in which we operate as connected systems and our role as facilitating the complete end-to-end flow of goods. We understand that our customers and their customers realize value from the efficient and effective operation of the system as a whole.

We see a wealth of opportunity in continuing to build our capabilities to support connections that are more efficient and valuable as well as improve transparency throughout increasingly complex supply chains like Intermodal and Automotive.

### Advancing technology and our operating model

We believe that our strongest asset is the diversity of experience and perspective represented by our 22,000-plus employees. That is why we are striving to ensure they have the tools to make better, faster, safer and more transparent decisions. To do so, we are committed to advancing in areas such as state-of-the-

art information architecture, automation, sensing, computational analytics and artificial intelligence. We look at technology and our operating model as interconnected; we cannot innovate in one without the other.

### Focusing on value creation

When we innovate, it is with creating value for our customers in mind. Working across functions, leveraging technology and building networks enable us to better understand and deliver what our customers value most.

We believe that customers are not homogeneous – even within common supply chains. Therefore, how we create value for the customer segments we serve must reflect those differences. Understanding our role in our customers' business is key to our partnership and service delivery across the supply chain, and a major driver of innovation for CN.



## INNOVATION AT WORK

Every day and in every corner of our business CN is working to develop and implement new and better ways of creating value for our customers.

### Developing a new way to transport bitumen



CN has partnered with InnoTech Alberta to develop a new and innovative way to transport bitumen – the heavy crude produced from Alberta's oil sands. CN has filed a patent application for CanaPux™, a process that turns bitumen into a semi-solid by mixing and coating it with polymer. The result is a small non-hazardous pellet that doesn't explode, leak or sink. Although still in the early stages of development, CanaPux has the potential to unlock new offshore markets for Canadian producers.

### Moving more Canadian grain under commercial agreements



CN has negotiated innovative commercial agreements with the majority of our grain customers that add visibility to the supply chain, help with advance planning and mitigate risk on both sides. They incorporate volume commitments from the shippers in exchange for guaranteed car supply from CN, with reciprocal penalties for non-compliance. This shift in approach, along with continued strong execution in the field, has led to increased grain shipment volumes and sets the stage for more growth in the future.

### Investing in cold supply chain solutions

CN has created a new and fast-growing service for our customers by investing in innovative cold supply chain solutions. Our CargoCool® service transports temperature-sensitive goods quickly and cost-competitively using smart containers and advanced monitoring systems that can detect the slightest variation in cargo temperature. CN will continue to develop new markets by investing in advanced technologies and capabilities.



### Deploying Positive Train Control to improve safety and efficiency

Positive Train Control (PTC) is technology mandated by the U.S. government to monitor and control train movements and automatically stop a train before an incident occurs. The system is designed to improve safety by significantly reducing the impact of human error in train operations. The safeguards may also improve network capacity and fluidity, advancing our vision of train operations in the years to come.



Chicago, IL  
Photo by CN employee Martin Simane.

### Leveraging technology to enhance safety



CN is investing to enhance our early detection technologies with additional wayside inspection systems that detect hot wheels and dragging equipment, hi-rail trucks that measure track geometry, collision avoidance systems, machine vision systems that detect hard-to-see defects, aerial drones for bridge inspections, autonomous track inspection boxcars and predictive analytics to better target maintenance and investment activities.

### Strengthening safety with fatigue risk management



CN has implemented a multi-pronged, science-based approach to managing fatigue in the workplace for our unionized employees, who account for about 80% of our workforce. For example, we have launched a pilot project in collaboration with our unions to track and record the sleep patterns of running trade employees, both on duty and off, using a fitness tracking device called a Readiband®.

# Enhancing Safety



**MITCH BEEKMAN**  
Vice-President, Safety and Sustainability

## **SAFETY – FIRST AND FOREMOST**

Safety is not just a priority at CN, but a deeply held core value. Our vision is to become the safest railway in North America. We think it is the right thing to do for our employees, customers and communities and it is good for business.

# 16,000

### **CN EMPLOYEES TRAINED ON “LOOKING OUT FOR EACH OTHER”**

Our program that teaches employees how to intervene if they spot unsafe behaviour at work.

# 97,400

### **FIRST RESPONDERS TRAINED SINCE 1988**

Through TRANSCAER®, an outreach effort to train community emergency personnel situated near rail lines where dangerous goods are transported.

# 12-15 miles

### **DETECTOR DISTANCING ALONG THE WAYSIDE OF OUR CORE NETWORK**

CN's number of wayside detectors that monitor passing trains for unsafe operating conditions exceeds the number required by industry regulations.

### **Strengthening our safety culture**

Our goals are simple: nobody gets hurt, and there are no accidents that negatively impact our communities, customers, or the environment. Key to achieving these goals is an uncompromising safety culture based on trust, pride, teamwork and innovation, in which everyone has a role as a safety leader.

To become the safest railway in North America, CN is adopting a multifaceted risk reduction strategy that combines developing our people, systematically executing good processes and investing in technology.

### **Our people are our strength**

At CN, safety is central to everything we do and we invest significantly in training, coaching, recognition and employee engagement initiatives to strengthen our safety culture. For example, we are taking a systematic approach to employee training and development at our national training centres in Winnipeg, MB, and Homewood, IL.

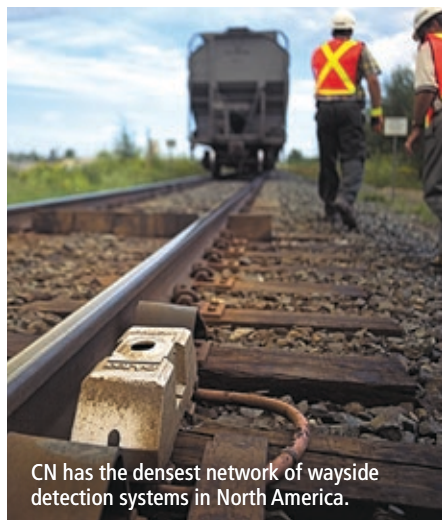
We are also taking action to improve the quality of employee interaction in the field. Our focus is on moving our people from “compliance with the rules” to an unwavering commitment to safe behaviour for themselves and those around them. In 2016, CN received an award from the Railway Association of Canada for our innovative “Looking Out for Each Other” training program, a joint union-management initiative that teaches a safety mindset focusing on effective peer-to-peer communications.

We also continue to rely on the good work of over 100 union-management health and safety committees, safety summits and other employee engagement initiatives to strengthen our safety culture.

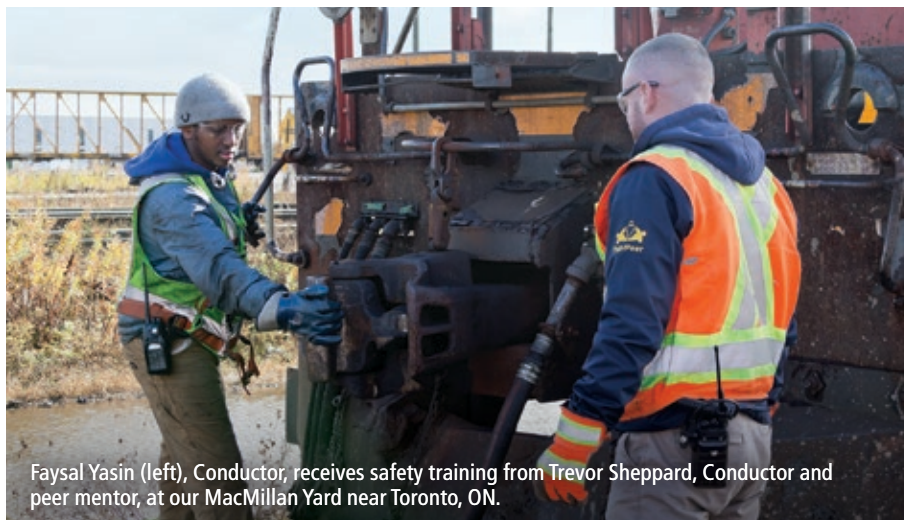
### **Honing processes to deliver results**

At CN, process initiatives aim to make safety a systematic part of all railroad activities and to focus on the top causes of accidents and injuries. For example, CN is certified by Responsible Care®, an ongoing environment, health, safety





CN has the densest network of wayside detection systems in North America.



Faysal Yasin (left), Conductor, receives safety training from Trevor Sheppard, Conductor and peer mentor, at our MacMillan Yard near Toronto, ON.

and security improvement initiative established by the North American chemicals industry. In 2016, CN received an award from the American Chemistry Council in recognition of our strong safety performance.

Another important aspect of our safety processes is working closely with municipal officials and emergency responders along our network to review our safety programs and share information on dangerous goods traffic moving through their communities. In 2016, CN earned a National Achievement

Award from Transportation Community Awareness and Emergency Response (TRANSCAER®) for helping communities understand the movement of dangerous goods.

#### Technology enhancing safety

CN invested approximately \$1.6 billion on track infrastructure in 2016 to improve the safety and fluidity of our network. The work included the replacement of more than two million cross ties and the installation of over 600 miles of new rail as well as bridge repairs, branch line upgrades and other general track maintenance.

CN uses a wide range of technologies to monitor the condition of track and rolling stock in order to proactively minimize risks. Already benefiting from the densest network of wayside inspection systems (WIS) in North America, CN has increased the number of WIS on our network by more than 25% over the last 10 years. We also acquired new hi-rail trucks that measure track geometric parameters like rail gauge and cross-level. In 2017, CN plans to invest \$28 million to acquire additional monitoring equipment to enhance our strong technological base for the early detection of defects.

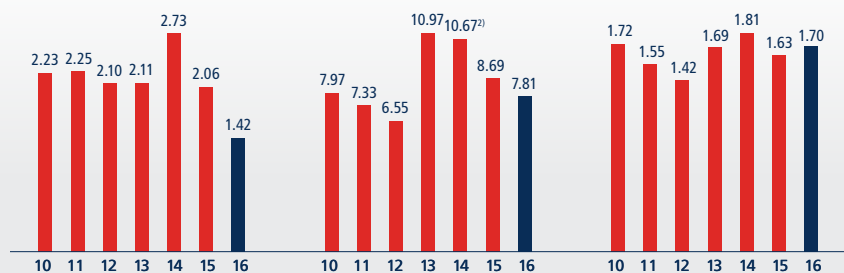
CN is also developing new lines of defense against accidents. For example, we are harnessing the predictive power of data analytics to mine the vast amount of data produced by our WIS, as well as other detection technologies and repair records, to assess trends and identify opportunities for preemptive maintenance work and capital projects.

## 31% reduction in FRA train accidents in 2016

**FRA TRAIN ACCIDENT RATIO**  
Accidents per million train miles<sup>1)</sup>

**TSB TRAIN ACCIDENT RATIO**  
Accidents per million train miles<sup>1)</sup>

**FRA PERSONAL INJURY RATIO**  
Injuries per 200,000 person hours



1) The Federal Railroad Administration (FRA) ratio includes only accidents with a cost in excess of US\$10,700, while the Transportation Safety Board (TSB) ratio includes all accidents.

2) Reflects change in TSB reporting criteria.



For more information on CN's leadership in safety, please visit [www.cn.ca/safety](http://www.cn.ca/safety)

# Embedding Sustainability

## AN INTEGRAL PART OF CN'S BUSINESS STRATEGY

At CN, we understand that our long-term success depends on running a sustainable railroad. To us, being sustainable means moving goods safely, being environmentally responsible, attracting and training top railroaders, building stronger communities and adhering to the highest ethical standards.

~15%

### LESS FUEL PER GROSS TON MILE THAN THE RAIL INDUSTRY AVERAGE

Achieved through CN's industry-leading operating model, fuel efficient locomotives, and leading-edge technology.

21%

### REDUCTION IN LOCOMOTIVE GHG EMISSIONS INTENSITY SINCE 2005

We exceeded our 2015 target of a 15% reduction in GHG emissions intensity versus 2005 and are working to set a new emissions reduction target in line with climate science.

### CN is part of the climate solution

Rail, the most environmentally friendly way of moving goods over land, is about four times more fuel efficient than trucks, on average. One train can move a ton of freight an average of 468 miles on a single gallon of fuel. Moving an equivalent amount of freight by rail instead of truck lowers greenhouse gas (GHG) emissions by 75%.

More use of intermodal transport would have significant environmental benefits. CN works with many of our customers to help them reduce their supply chain emissions by leveraging rail for the long haul.



Abrahamson, BC  
Photo by CN employee James Lucas.

### Leading the way in fuel efficiency

Environmental sustainability is part of CN's culture. Our committed team of railroaders works hard to reduce our carbon footprint by leveraging our unique asset-lean business model as well as our new fuel-efficient locomotives and leading-edge technologies.

CN continues to lead the North American rail industry in fuel efficiency. Over the past 20 years, we have increased our locomotive fuel efficiency by 37% and CN is approximately 15% more fuel efficient than the rail industry average.

#### PICTURED:

At CN, we are focused on conducting our operations safely and in a manner that protects the natural environment.



## 2016 AWARD AND RECOGNITION HIGHLIGHTS

MEMBER OF  
**Dow Jones  
Sustainability Indices**

In Collaboration with RobecoSAM

Listed on the North America Index since 2009 and the World Index since 2012



Recognized as a climate action leader since 2009 and listed on the CDP's exclusive A list in 2016

## THE GLOBE AND MAIL

Ranked first in the industrials group in the Globe and Mail's annual review of corporate governance practices in Canada in 2016



Best Overall Corporate Governance for publicly traded Canadian companies from the Governance Professionals of Canada in 2016

## Reducing our environmental footprint

Our innovation and efficiency mindset extends beyond locomotive productivity to include other equipment upgrades and programs to encourage employees and customers to adopt more sustainable practices. Since 2011, we have reduced our energy consumption at key yards and facilities by over 16% and saved 65,000 tonnes of CO<sub>2</sub>. In addition, CN has diverted 90% of our operational waste from landfills and undertaken more than 1,000 projects to improve housekeeping.

## Committed to good governance

At CN, sound corporate governance touches nearly every aspect of what we do, from ethics and diversity to safety and environmental protection. Central to this comprehensive approach is our strong belief that good corporate governance is simply good business.

## Industry-leading corporate governance practices

We believe that ethical business conduct is the result of a solid governance culture. This belief is reinforced by the leading governance standards adopted by CN's Board of Directors. For example, 12 of the 13 Board members are independent of CN, including the Board Chair. Also, Board members are subject to rigorous selection and evaluation processes.

Reflecting our commitment to continually improve our policies and practices, this year the Board adopted a policy on term limits whereby newly elected members will serve for a maximum of 14 years.

We are proud of the recognition we have received in 2016 for our corporate governance practices from a leading Canadian publication and corporate governance professionals. CN is also listed on several Canadian and global sustainability indexes, reflecting our strong performance across a broad range of environmental, social and governance practices.

## Experienced, effective and diverse leadership

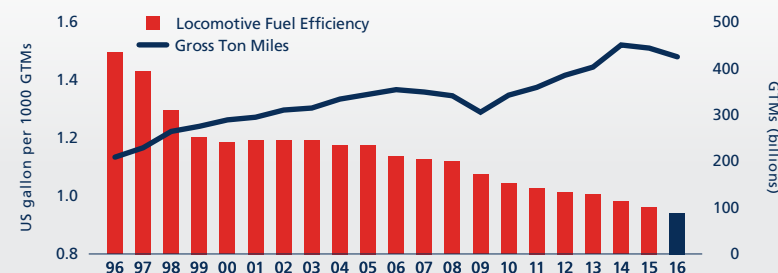
CN's Board of Directors believes that it benefits from a broad range of perspectives and relevant experience. That is why, in 2015, the Board approved a Diversity Policy that takes into account gender, age and ethnicity when recommending director nominees. The Board also adopted a target of having a minimum of one-third representation of women on the Board by 2017. We have achieved this goal with 38% (five out of 13) of our directors being women. In 2017, CN became a signatory to the Catalyst Accord, meeting the call to increase the representation of women on FP500 boards to 25%.

# 37%

improvement in fuel efficiency since 1996

### LOCOMOTIVE FUEL EFFICIENCY

vs. Gross Ton Miles (GTMs)



CN continues to strive for incremental improvement in locomotive productivity and is already 15% more fuel efficient than the average of our rail industry peers.



For more information on CN's corporate governance, including members of the Board of Directors, please visit [www.cn.ca/governance](http://www.cn.ca/governance)

22,249

CN RAILROADERS  
AT DECEMBER 31, 2016

Our highly skilled, diverse and motivated employees are our single greatest asset, helping us to sustain our leadership position.

35%

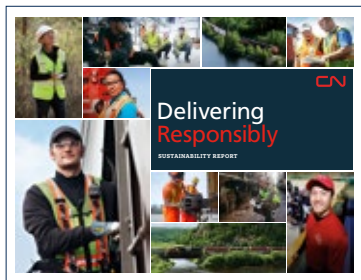
POSITIONS FILLED BY INTERNAL  
CANDIDATES IN 2016

Demonstrating our deep bench strength and commitment to employee development.

2X

MORE WOMEN HIRED IN 2016  
THAN IN THE LAST FIVE YEARS

Reflecting our dedication to diversity in the workforce.



For more information on CN's sustainability initiatives and performance, download our most current sustainability report at: [www.cn.ca/delivering-responsibly](http://www.cn.ca/delivering-responsibly)



Dave Jeffrey, Mechanical Instructor, provides practical training at Claude Mongeau National Training Centre in Winnipeg, MB.

### Our people – the foundation of our success

We are committed to being a top employer by recruiting, developing and retaining the best railroaders in the industry. Our 22,000-plus employees are the foundation of our success. By providing them with exciting development opportunities, a competitive total compensation package and an opportunity to build their careers, we ensure our employees continue to help sustain our leadership position.

#### Attracting and developing the right people

Last year, CN received over 72,000 applications. By leveraging our more than 400 CN employee ambassadors and our extended employee network to help us recruit talent, 37% of our new hires were employee referrals. This is a key component of our successful new-hire retention.

All our newly hired engineering, mechanical and transportation employees are provided with the know-how to be successful and safe railroaders through training at our state-of-the-art Claude Mongeau National Training Centre in Winnipeg, MB, and our CN Campus

in Homewood, IL. Management development programs for entry and senior-level managers, such as LINK and LEAD, are also provided at these two facilities.

#### Focusing on diversity

In today's increasingly complex global marketplace, diversity helps us better understand and respond to the needs of our stakeholders. At CN, we know diversity at all levels of the organization increases the effectiveness of our decision-making through a wider range of perspectives, which also fosters innovation. Working with our partners, we are reaching out to a range of diverse candidates, including women, visible minorities, Aboriginals, veterans and people with disabilities.

#### Fostering a collaborative innovation culture

CN encourages innovation by harnessing the power of diverse cross-functional teams to take on our biggest projects and challenges. Whether tackling supply chain efficiencies, enhancing workforce planning or patenting innovative ways of transporting bitumen, our team of railroaders is building the future together.





**PICTURED:**  
Elizabeth Hammack, Positive Train Control (PTC) System Validation Engineer, verifies software in the field where PTC will be installed.

## Innovation at work



### 1 State-of-the-art hands-on training

Employees and customers benefit from hands-on technical training at our Claude Mongeau National Training Centre in Winnipeg, MB, and our CN Campus in Homewood, IL. These ultra modern training facilities have hosted over 15,000 employees and nearly 200 customers.

### 2 Recognizing excellence

The President's Awards for Excellence, CN's highest form of recognition, rewards exceptional achievements that enable CN to be more customer-focused, safer, sustainable and efficient, as well as a better employer and neighbour in our communities.

### 3 Virtual Academy

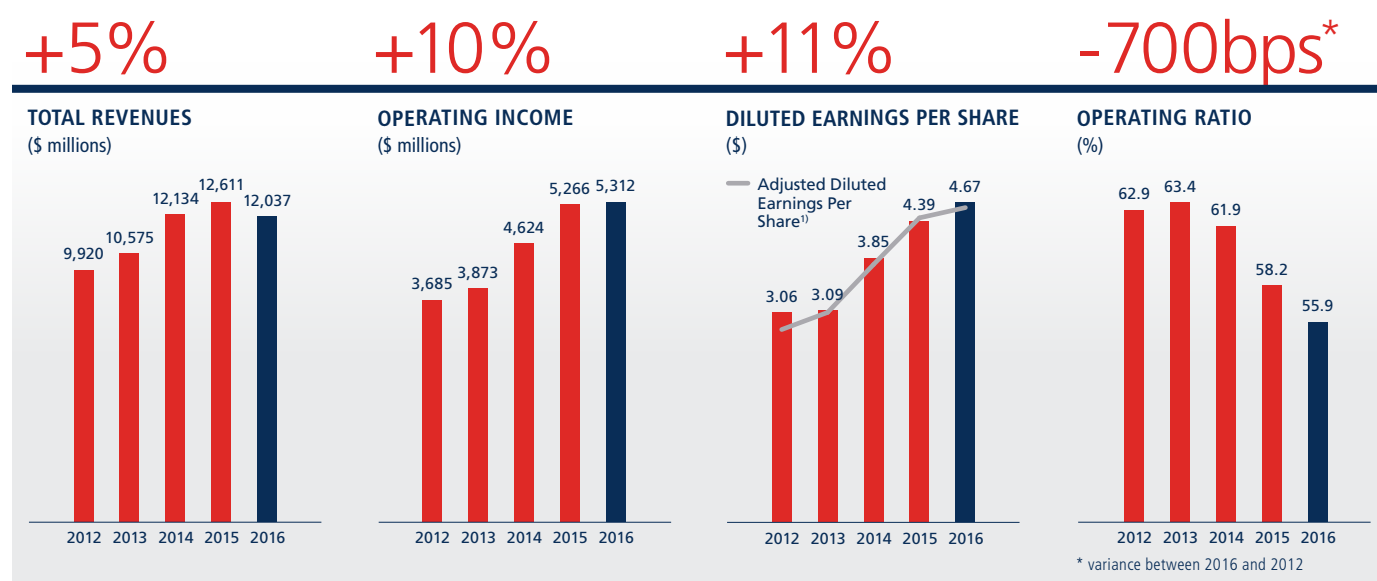
This online learning resource for management employees provides unlimited access to over 4,000 courses, videos and briefing documents to enhance their business and leadership expertise, keep their skills current and expand their knowledge.

# Financial and Operating Measures

## Financial measures

	2012	2013	2014	2015	2016
<b>KEY FINANCIAL PERFORMANCE INDICATORS</b>					
Total revenues (\$ millions)	9,920	10,575	12,134	12,611	<b>12,037</b>
Rail freight revenues (\$ millions)	9,306	9,951	11,455	11,905	<b>11,326</b>
Operating income (\$ millions)	3,685	3,873	4,624	5,266	<b>5,312</b>
Net income (\$ millions)	2,680	2,612	3,167	3,538	<b>3,640</b>
Diluted earnings per share (\$)	3.06	3.09	3.85	4.39	<b>4.67</b>
Adjusted diluted earnings per share (\$) <sup>1)</sup>	2.81	3.06	3.76	4.44	<b>4.59</b>
Free cash flow (\$ millions) <sup>1)</sup>	1,661	1,623	2,220	2,373	<b>2,520</b>
Gross property additions (\$ millions)	1,825	2,017	2,297	2,706	<b>2,752</b>
Share repurchases (\$ millions)	1,400	1,400	1,505	1,750	<b>2,000</b>
Dividends per share (\$)	0.75	0.86	1.00	1.25	<b>1.50</b>
<b>FINANCIAL POSITION</b>					
Total assets (\$ millions)	26,579	29,988	31,687	36,402	<b>37,057</b>
Total liabilities (\$ millions)	15,561	17,035	18,217	21,452	<b>22,216</b>
Shareholders' equity (\$ millions)	11,018	12,953	13,470	14,950	<b>14,841</b>
<b>FINANCIAL RATIOS</b>					
Operating ratio (%)	62.9	63.4	61.9	58.2	<b>55.9</b>
Adjusted debt-to-adjusted EBITDA multiple (times) <sup>1)</sup>	1.60	1.72	1.57	1.71	<b>1.75</b>

## 2016 VS. 2012 CAGR



1) See pages 92-94 for an explanation and reconciliation of these non-GAAP measures.



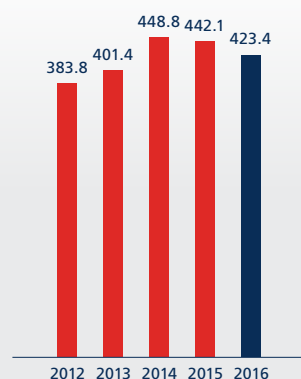
## Operating measures<sup>2)</sup>

	2012	2013	2014	2015	2016
<b>STATISTICAL OPERATING DATA</b>					
Gross ton miles (GTMs) (billions)	383.8	401.4	448.8	442.1	<b>423.4</b>
Revenue ton miles (RTMs) (billions)	201.5	210.1	232.1	224.7	<b>214.3</b>
Carloads (thousands)	5,059	5,190	5,625	5,485	<b>5,205</b>
Route miles (includes Canada and the U.S.)	20,100	20,000	19,600	19,600	<b>19,600</b>
Employees (end of period)	23,430	23,721	25,288	23,066	<b>22,249</b>
Employees (average for the period)	23,466	23,705	24,525	24,406	<b>22,322</b>
<b>KEY OPERATING MEASURES</b>					
Rail freight revenue per RTM (cents)	4.62	4.74	4.93	5.30	<b>5.28</b>
Rail freight revenue per carload (\$)	1,839	1,917	2,036	2,170	<b>2,176</b>
GTMs per average number of employees (thousands)	16,354	16,933	18,298	18,114	<b>18,969</b>
Operating expenses per GTM (cents)	1.62	1.67	1.67	1.66	<b>1.59</b>
Labor and fringe benefits expense per GTM (cents)	0.51	0.54	0.52	0.54	<b>0.50</b>
Diesel fuel consumed (US gallons in millions)	388.7	403.7	440.5	425.0	<b>398.9</b>
Average fuel price (\$/US gallon)	3.47	3.55	3.72	2.68	<b>2.34</b>
GTMs per US gallon of fuel consumed	987	994	1,019	1,040	<b>1,061</b>
<b>OPERATING METRICS</b>					
Car velocity (car miles per day)	205	205	199	224	<b>236</b>
Yard productivity (cars per yard switching hour)	38	42	44	48	<b>51</b>
Locomotive utilization (Trailing GTMs per total horsepower)	204	205	212	219	<b>230</b>
Train productivity (GTMs per train mile)	8,324	8,438	8,625	8,739	<b>9,314</b>
AAR Terminal dwell time (entire railroad, hours)	15.6	15.8	16.9	15.0	<b>14.0</b>
AAR Train velocity (miles per hour)	27.2	26.6	25.7	26.3	<b>27.3</b>
<b>CN ROLLING STOCK</b>					
Diesel locomotives (end of period)	1,913	2,029	2,087	2,180	<b>2,268</b>
Freight cars (end of period)	68,006	67,103	68,432	63,913	<b>63,442</b>

2) Statistical operating data, key operating measures, operating metrics and rolling stock information are unaudited and based on estimated data available at such time and are subject to change as more complete information becomes available. As such, certain of the comparative data have been restated. Definitions of these indicators are provided on our website, [www.cn.ca/glossary](http://www.cn.ca/glossary).

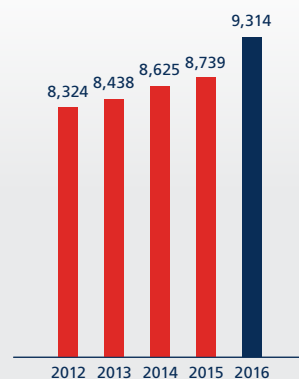
**+3%**

**GROSS TON MILES (GTMs)**  
(billions)



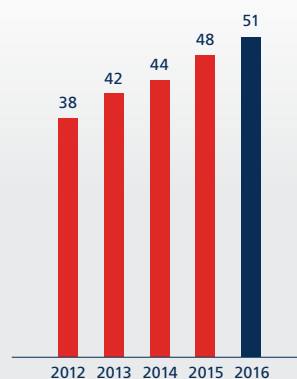
**+3%**

**TRAIN PRODUCTIVITY**  
(GTMs per train mile)



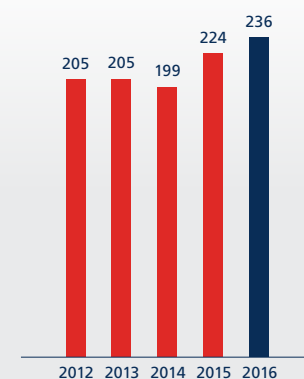
**+8%**

**YARD PRODUCTIVITY**  
(cars per yard switching hour)



**+4%**

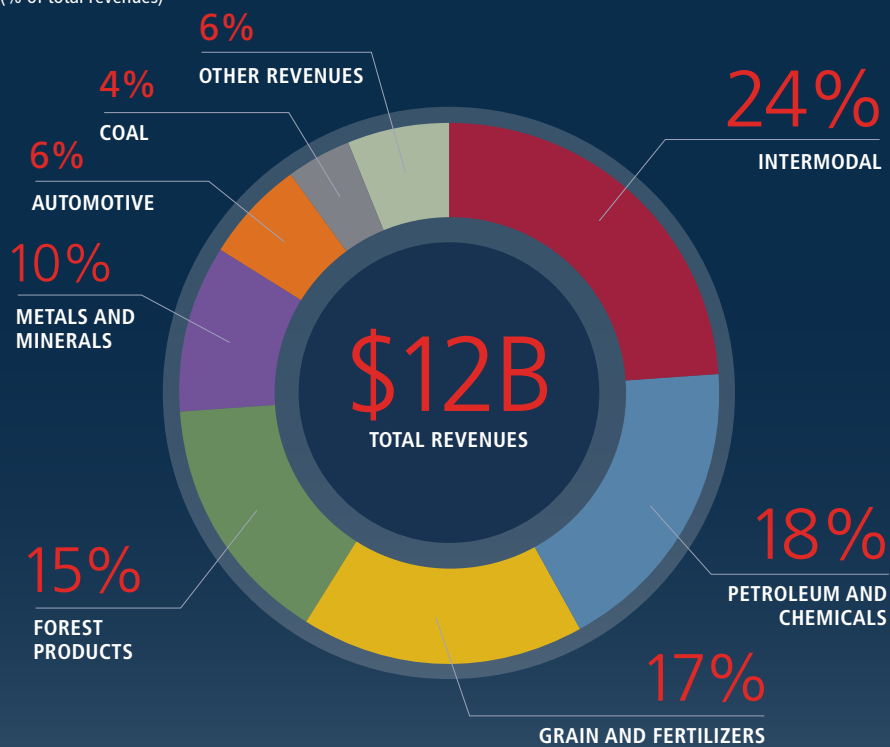
**CAR VELOCITY**  
(car miles per day)





## Business unit revenue mix

2016 REVENUES BY COMMODITY  
(% of total revenues)



# Market Overview

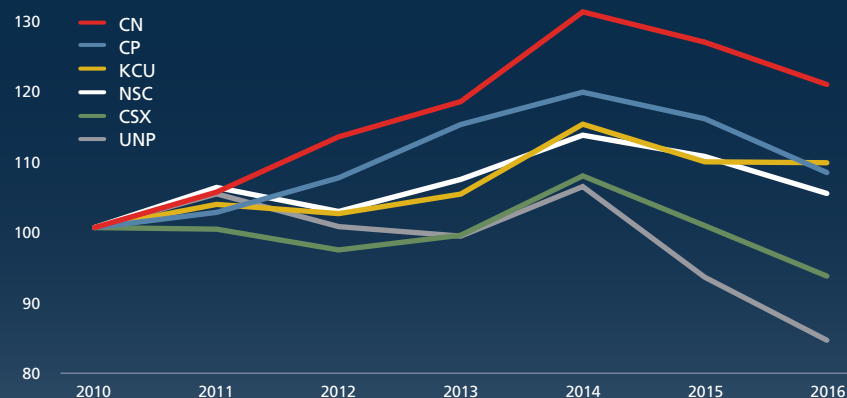
## CREATING VALUE FOR OUR CUSTOMERS

CN's freight revenues are derived from seven commodity groups representing a balanced and diversified portfolio of goods. This product diversity positions CN to better weather economic fluctuations and enhances our potential for growth opportunities.

CN's business model is based on continuous improvement and a supply chain mindset that allows us to view service the same way our customers do. This unique approach builds on our foundational strengths and fosters collaboration in every market. For example, CN has service level agreements with all our port terminal operators that focus on improving port dwell times. These agreements are one way to ensure loaded containers move quickly to their end destination. Many of our business segments, like Coal, Grain, Iron Ore and Auto Parts, are fully integrated into every step of their respective supply chains, from true origin to ultimate destination. All of our business units work closely with their customers to understand their market cycles, anticipate future demand and ensure alignment to penetrate new markets and increase efficiency.

## Delivering on our growth agenda

CN VOLUME PERFORMANCE RELATIVE TO INDUSTRY PEERS (RTMs)  
(Index 2010 = 100)



# +20%

### INCREASE IN RTMs SINCE 2010

CN's objective is to grow our business faster than the overall North American economy. CN has demonstrated a strong track record of growth, outpacing the economy and our railroad industry peers.



# Market Environment

## ADAPTING TO THE WORLD AROUND US

### Top market trends influencing our business

When we say CN is a true backbone of the North American economy, it is a reflection of the key role we play in fostering the prosperity of the customers, markets and communities we serve. We do not conduct business in isolation. Our transportation and logistics activities are interwoven with the industrial and commercial fabric of the North American and worldwide economies. We do our part to move our customers' goods and build markets wherever and whenever we can, with the goal of growing our volumes faster than the overall economy.

### Continuing economic growth

The first trend concerns macroeconomic factors, with the global secular low-growth environment expected to continue. On balance, strong economic momentum in the U.S., Europe, China and Canada, is expected to be partially offset by slowing or weaker growth in developing economies such as India, South Africa,

Brazil and Mexico. Our Sales & Marketing team continues to be ahead of the curve by monitoring market trends, fostering close, collaborative relationships with our customers and developing solutions that help our customers win in their markets all over the world.

### Shifts in global trade

Global as well as North American trade conditions, including trade barriers on certain commodities may interfere with the free circulation of goods across Canada and the U.S. We are constantly assessing potential trade actions by Canadian and U.S. governments in order to mitigate any adverse impacts.

### Service enhancement

Global supply chains are becoming more and more intricate and CN is supporting our customers to adapt. To compete in today's high-speed e-commerce economy, CN is working to further improve service consistency, visibility and responsiveness to create value for our customers.

### Low fuel costs

Global crude oil prices have stabilized at around US\$50 per barrel. However, low fuel prices also mean more competition from trucks. CN is able to leverage our low-cost position, supply chain approach and longer average length of haul to continue to provide a compelling service offering to our customers.

### Technological innovation

Having been a key mode of freight transportation for more than 200 years, the railroad industry is sometimes viewed as being behind in technological developments. However, today's locomotives are high-tech marvels of fuel efficiency and automation. And, CN takes advantage of technological innovation to better serve our customers and run a safe and efficient railroad.

#### PICTURED:

The Port of New Orleans recently increased its annual capacity by over 20% to 990,000 TEUs, allowing it to attract more ocean carrier services following the widening of the Panama Canal.



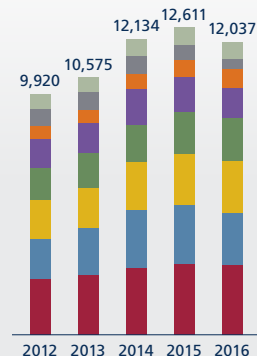
# Business Unit Performance

	Revenues \$ millions						Carloads thousands					
	2012	2013	2014	2015	2016	% Change <sup>1)</sup>	2012	2013	2014	2015	2016	% Change <sup>1)</sup>
Petroleum and Chemicals	1,655	1,952	2,354	2,442	2,174	(11%)	594	611	655	640	599	(6%)
Metals and Minerals	1,159	1,240	1,484	1,437	1,218	(15%)	1,024	1,048	1,063	886	807	(9%)
Forest Products	1,341	1,424	1,523	1,728	1,797	4%	445	446	433	441	440	0%
Coal	731	713	740	612	434	(29%)	435	416	519	438	333	(24%)
Grain and Fertilizers	1,613	1,638	1,986	2,071	2,098	1%	597	572	640	607	602	(1%)
Intermodal	2,261	2,429	2,748	2,896	2,846	(2%)	1,742	1,875	2,086	2,232	2,163	(3%)
Automotive	546	555	620	719	759	6%	222	222	229	241	261	8%
<b>Total rail freight</b>	9,306	9,951	11,455	11,905	11,326	(5%)	5,059	5,190	5,625	5,485	5,205	(5%)
Other	614	624	679	706	711	1%						
<b>Total</b>	9,920	10,575	12,134	12,611	12,037	(5%)						

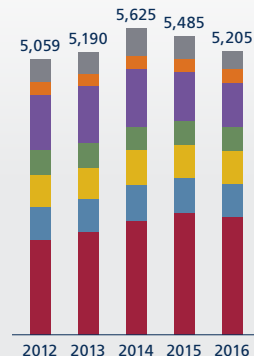
	RTMs millions						Average length of haul miles					
	2012	2013	2014	2015	2016	% Change <sup>1)</sup>	2012	2013	2014	2015	2016	% Change <sup>1)</sup>
Petroleum and Chemicals	37,449	44,634	53,169	51,103	43,395	(15%)	713	825	907	897	821	(8%)
Metals and Minerals	20,236	21,342	24,686	21,828	20,233	(7%)	248	257	291	307	313	2%
Forest Products	29,674	29,630	29,070	30,097	31,401	4%	790	784	798	810	836	3%
Coal	23,570	22,315	21,147	15,956	11,032	(31%)	474	471	354	317	292	(8%)
Grain and Fertilizers	45,417	43,180	51,326	50,001	51,485	3%	777	764	808	831	865	4%
Intermodal	42,396	46,291	49,581	52,144	53,056	2%	1,767	1,802	1,777	1,822	1,841	1%
Automotive	2,754	2,741	3,159	3,581	3,725	4%	660	642	712	766	730	(5%)
<b>Total</b>	201,496	210,133	232,138	224,710	214,327	(5%)	654	681	692	727	749	3%

1) % change from 2015 to 2016.

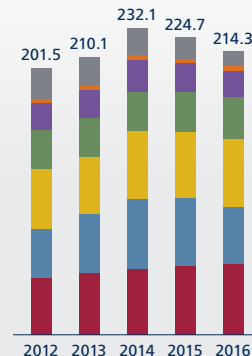
**REVENUES**  
(\$ millions)



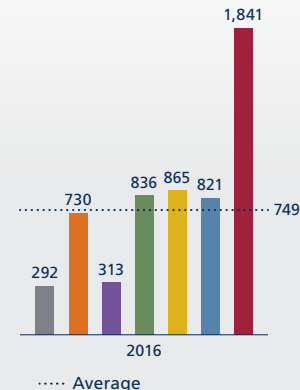
**CARLOADS**  
(thousands)



**RTMs**  
(billions)



**AVERAGE LENGTH OF HAUL**  
(miles)



■ Intermodal  
■ Petroleum and Chemicals

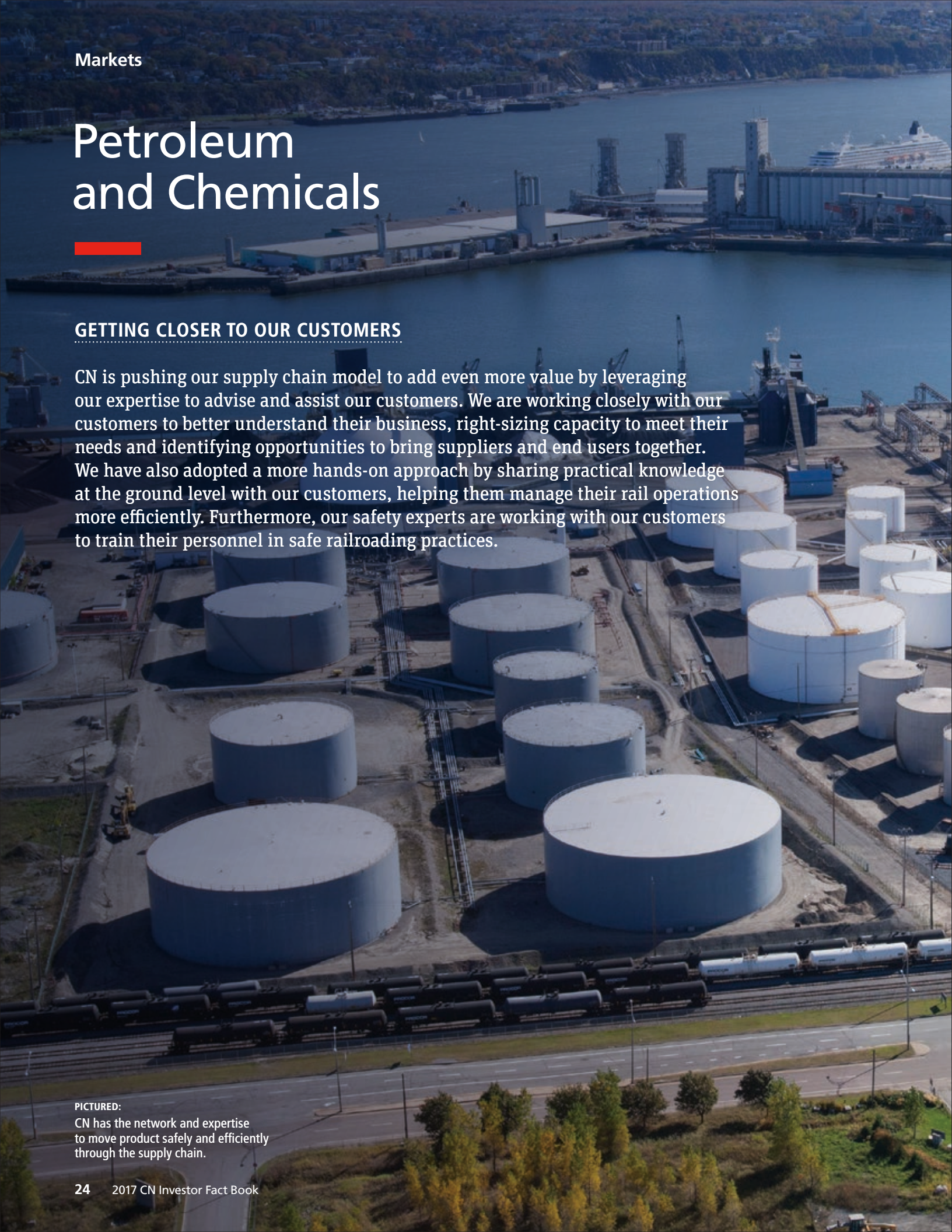
■ Grain and Fertilizers  
■ Forest Products

■ Metals and Minerals  
■ Automotive

■ Coal  
■ Other



# Petroleum and Chemicals



## GETTING CLOSER TO OUR CUSTOMERS

CN is pushing our supply chain model to add even more value by leveraging our expertise to advise and assist our customers. We are working closely with our customers to better understand their business, right-sizing capacity to meet their needs and identifying opportunities to bring suppliers and end users together. We have also adopted a more hands-on approach by sharing practical knowledge at the ground level with our customers, helping them manage their rail operations more efficiently. Furthermore, our safety experts are working with our customers to train their personnel in safe railroading practices.

**PICTURED:**

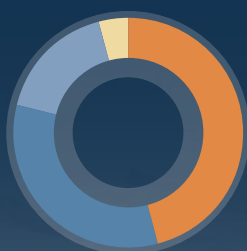
CN has the network and expertise to move product safely and efficiently through the supply chain.



## Business unit overview

### 2016 COMMODITY BREAKDOWN

(% of revenues)



- 46% Chemicals and Plastics
- 33% Refined Petroleum Products
- 17% Crude and Condensate
- 4% Sulfur

# \$2,174M

2016 REVENUES

### KEY FACTS

- CN is the only rail carrier servicing three major petrochemical centers in North America: the Alberta Heartland, the U.S. Gulf Coast and Southwestern Ontario
- CN handles over 50% of all Canadian chemicals production
- Petroleum and chemicals shipments move in customer-supplied private cars

### COMMODITIES

#### PETROLEUM PRODUCTS

- Propane, butane, crude oil, gasoline, diesel, fuel oil, lubricants, asphalt, condensate

#### CHEMICALS AND PLASTICS

- Polyethylene, caustic soda, sulfuric acid, pulp mill chemicals

#### SULFUR

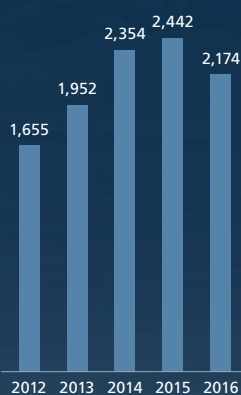
- Molten and dry sulfur

### MARKET DRIVERS

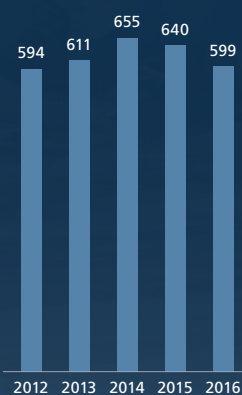
- North American industrial production
- North American oil and gas production
- Chemicals and plastics feedstock prices
- Investment by supply chain partners

## Metrics

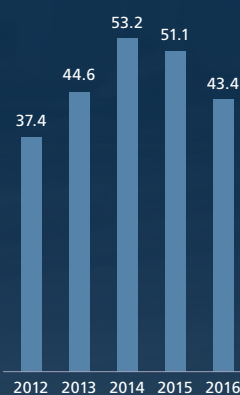
#### REVENUES (\$ millions)



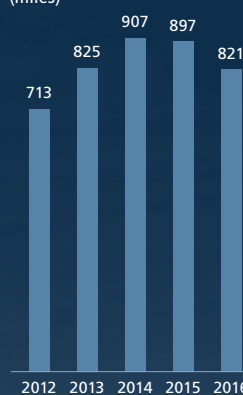
#### CARLOADS (thousands)



#### RTMs (billions)



#### AVERAGE LENGTH OF HAUL (miles)



2016 vs. 2012 CAGR

+7.1%

+0.2%

+3.8%

+3.6%

Overview

Markets

Operations

Financials

## Spotlight



**JAMES CAIRNS**  
Vice-President, Petroleum and Chemicals

### **CN'S UNIQUE REACH BENEFITS CUSTOMERS**

CN provides our petroleum and chemicals customers with unmatched competitive reach. We are the only railway to serve three major petrochemical hubs in North America – the Alberta Heartland, the U.S. Gulf Coast and Southwestern Ontario – providing our customers with the ability to use a single rail carrier from origin to destination.

#### **A simple approach that delivers**

Our approach is simple: provide value to our customers through seamless integration of our services with their business. We go beyond offering transport from origin to destination. We actively participate in helping our customers cut costs and improve their operations. Our holistic view allows us to share best practices and ensure more efficient operations at our customers' sites.

While petroleum and chemicals are shipped in private cars, CN is able to leverage our expertise in railcar fleet management and railroad operations for our customers to optimize their overall logistics costs. We strive to ensure our customers have the right number of cars at the right place at the right time. Whether it is car repositioning, helping merge and consolidate fleets, or storing surplus cars, we work with our customers to determine the best solutions.

#### **Capital invested where it matters most**

CN has a comprehensive capital investment plan to support safety, which is always our top priority, as well as growth. One focal point is the Greater Edmonton Area, where CN is deploying significant investments to support growth related to shipments of propane, diesel and various other petrochemical products.

#### **The shale revolution continues**

The shale revolution has stimulated tremendous production of oil and natural gas in the U.S. and Canada, brought on by advances in technology, notably horizontal drilling and hydraulic fracturing. This North American energy renaissance plays a significant role for CN's Petroleum and Chemicals group. Access to cheap oil and gas feedstocks has spurred a swell of activity in areas where CN has a natural advantage.

Capacity expansions at existing facilities and new plant start-ups are creating a unique opportunity for CN to leverage our franchise strengths.

#### **Sponsoring safety training**

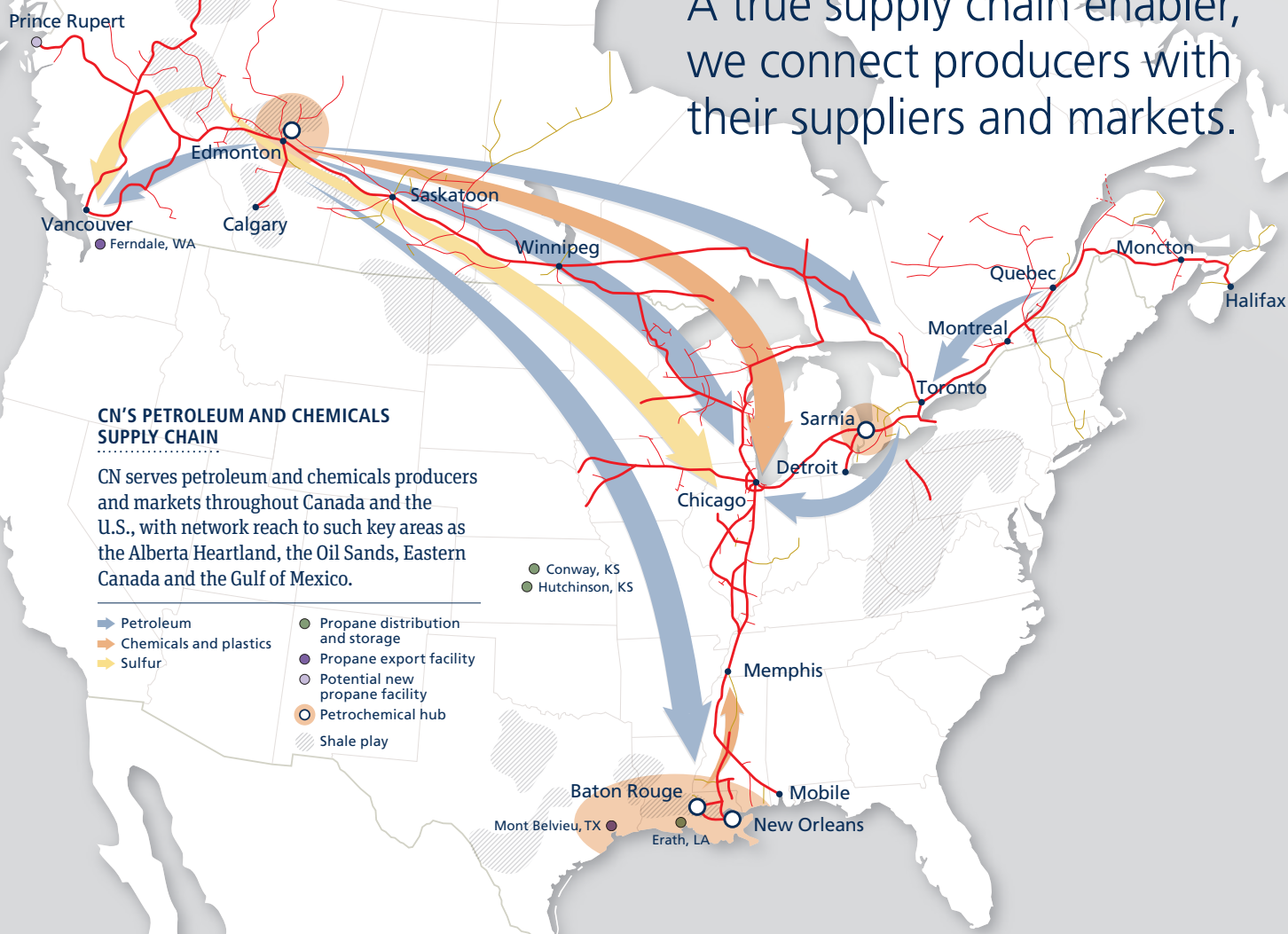
CN shares safety best practices with our customers and partners. Our safety experts work directly with our customers to train their personnel in safe railway operations. We also sponsor dangerous goods training for emergency responders, including a three-day crude-by-rail course for firefighters from across North America. Through another important community safety training program, in 2016, CN brought critical emergency response training to over 8,400 participants who live and work along our rail lines.



For more information on  
CN's petroleum and chemicals  
operations, please visit  
[www.cn.ca/petroleum](http://www.cn.ca/petroleum)



A true supply chain enabler,  
we connect producers with  
their suppliers and markets.



Overview

Markets

Operations

Financials

## Innovation at work



### 1 Recognizing safety performance

CN's Safe Handling Awards recognize our customers for achievements in meeting the challenges of maintaining safe operations. In 2017, we are introducing additional award categories that recognize corporate culture, community initiatives and innovation in safety.



### 2 Sharing best practices

We have deployed CN teams at several of our customers' sites to share learnings and identify areas where a different approach can help optimize the facilities' rail loading capacity and make better use of existing infrastructure and assets.



### 3 Rewarding the right behaviour

CN is working with our customers to support safer and sustainable behaviours and actions. For example, CN differentiates rates based on car type and charges a premium for shipments not using newer generation tank cars.



# Petroleum in Review

## CN CONTINUES TO BE AN IMPORTANT LINK IN THE PETROLEUM SUPPLY CHAIN

### Increased refining in Alberta

#### Expansion projects to drive growth in diesel

The supply of Alberta diesel is currently in a position of significant surplus. Various expansion projects are expected to add upwards of 70,000 barrels per day of diesel to a declining demand market. CN will support our customers in getting this surplus diesel to end markets, such as West Coast tidewater for export to Asia and South America as well as markets in the U.S. Midwest and Eastern Canada.

North West Refining Inc. is building a new refinery on CN's lines in Sturgeon County, AB, that is set to ramp up production throughout 2018. The refinery will convert

79,000 barrels of dilbit (diluted bitumen) per day into high-grade, ultra-low sulfur diesel fuel and other petrochemical products. CN expects to participate in the movement of these products to domestic and export markets.

#### Developing new end markets for propane

Propane is commonly used as a fuel for vehicles, cooking and electricity generation. It is also an important feedstock for polypropylene, a synthetic plastic used in a wide variety of industrial and consumer applications. About half of western Canadian propane is used within the region and one-third is shipped to Eastern Canada, with the



CN is working with Pembina to find new outlets for its incremental propane production in Redwater, AB.

balance transported to the U.S. Midwest. This proportion is likely to change, however, with the proposed construction of the new Ridley Island Propane Export Terminal.

Pembina Pipeline Corporation expects to commission a third fractionator at its Redwater, AB, site north of Edmonton in the third quarter of 2017. The new facility would add 55,000 barrels per day of propane capacity, bringing total capacity to 210,000 barrels per day, which would make Redwater the largest fractionation facility in Canada. Pembina ships its propane to an array of end markets all over North America and it continues to develop terminal and rail infrastructure to support growth from the Redwater complex.



**PICTURED:**  
CN offers crude oil producers a safe and scalable alternative to pipelines with greater market reach.

Photo by CN employee Brent Irvine.

### Ridley Island Propane Export Terminal

AltaGas has proposed building the first propane export terminal on Canada's West Coast. The terminal would be located on Ridley Island in the Port of Prince Rupert. Up to 1.2 million tonnes of propane per year would be transported from western Canadian producers using the existing CN rail network. It is estimated that the facility would offload up to 60 railcars per day. Construction is expected to begin in 2017 and be completed by the first quarter of 2019.

### Crude-by-rail remains a niche market

CN provides access to western Canadian undiluted heavy crude oil and dilbit through a large system of rail terminals. CN's network directly overlays the Peace River, Athabasca and Cold Lake production areas.

CN provides producers with single line access to refineries in Eastern Canada, the U.S. Midwest and Gulf Coast as well as export terminals in Louisiana.



CanaPux: a new way to move crude oil to market.

In addition, with CN's interconnections with other Class 1 railroads, CN customers can access the Pacific Northwest, Texas and the Eastern seaboard where current pipeline infrastructure is limited.

CN offers a safe and complementary service to pipelines, providing customers with greater market reach and scalability. Shippers can move 1, 20, 100 or more railcars at a time as production levels or net back differentials fluctuate. CN's ability to turn cars around quickly provides shippers with reduced costs in today's low crude oil price environment.

### CanaPux™ solid bitumen – supply chain innovation

CN has developed CanaPux, an innovative process to solidify bitumen. The process blends and coats bitumen with polymer that both thickens the bitumen into a solid puck about the size of a bar of soap and encases it in a protective shell. CanaPux are not flammable or explosive, will not dissolve, and float in water.

CanaPux can be exported using existing bulk rail and port infrastructure. Once at a refinery destination, the CanaPux would be heated and the resulting liquid goes through a separation process, which then enables the bitumen to be refined and the polymer to be recycled or shipped back to the origin for reuse. CanaPux is an innovative process, which has the potential to open new markets overseas and help Canadian producers reach refiners.



Refined petroleum products, including propane, butane, gasoline and diesel remain areas of future growth for CN.

## Outlook

Low oil and natural gas prices are supporting recent growth and investment in the production of propane, diesel and various other petrochemical products. CN has the capacity and supply chain connections to benefit from this growth in supply.

Crude oil shipments remain below their 2014 peak volume; however, this segment remains a niche market for CN. Crude oil production in Canada is forecast to increase and, with limited new pipeline construction in the near term, CN's crude-by-rail service can help Canada's heavy crude oil producers bridge the gap and get their product to market.

# Chemicals and Plastics in Review

## TAKING ADVANTAGE OF THE NORTH AMERICAN ENERGY RENAISSANCE

### Cheap feedstocks – best-in-class service

Low natural gas prices are having a positive effect on industries that use natural gas as an important source of feedstock in their production processes, including the chemicals and plastics sector. As a result, North American chemicals and plastics plants are once again investing to streamline their operations and improve productivity.

The increased production is serving solid demand in the automotive, construction and packaging sectors. CN works with producers in northern Alberta, the Louisiana petrochemical corridor and southern Ontario as well as with receivers to establish end-to-end

supply chain solutions that promote the value of raw materials and end products all along our network.

CN has an extensive network of strategically located CargoFlo® facilities for liquids transfer and break-bulk reload, enabling us to offer door-to-door service to our customers. This network combines the economy and environmental benefits of long-haul rail transportation with the flexibility of short-haul truck delivery.

### Alberta propane price advantage

Sustainable access to cheap feedstocks is often the best predictor of future petrochemical activity. Propane is a building block of downstream petrochemicals such as polypropylene. Polypropylene is the world's second



CargoFlo transfer facility in Moncton, NB.

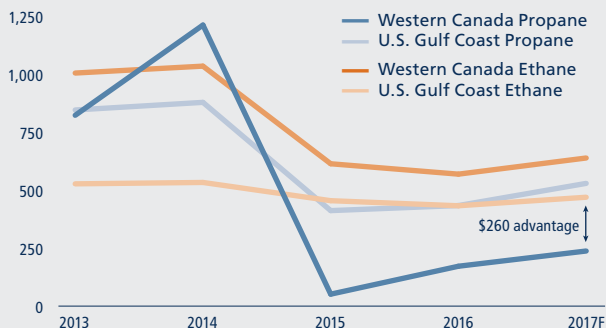
most widely produced synthetic plastic after polyethylene and is used in a wide variety of applications such as packaging, textiles, laboratory equipment and automotive parts.

Several companies in Alberta are developing polypropylene projects with final investment decisions expected between mid-2017 and 2018. These projects would require over \$6 billion to complete and, at full production, would yield about one billion tonnes of polypropylene annually.

These projects have been approved to receive royalty credits under the Alberta Petrochemicals Diversification program created to encourage companies to invest in the development of facilities.

### Abundant Alberta propane is a cheap substitute feedstock for ethane

#### ETHYLENE FULL COST PRODUCTION (U.S.\$/Tonne)



## Outlook

The North American chemicals market is mature, with growth expected to be in line with Canada and U.S. industrial production. However, the plastics market is benefiting from the North American energy renaissance and the low price of natural gas. With feedstocks accounting for 60-70% of the cost of manufacturing petrochemicals, Western Canada is carving out a significant cost leadership advantage given its cheap and abundant supply of propane. There is also a significant amount of new production being developed along the U.S. Gulf Coast, most of which will likely be directed to offshore markets. Several more plants are in the process of being built and should bring a modest amount of growth to CN.



# Sulfur in Review

## SULFUR PRODUCTION GROWING AGAIN

The main driver of sulfur consumption is its use in phosphate fertilizers. CN handles a significant portion of Canadian sulfur for export in both molten (liquid) and prilled (dry) form. The sulfur transported by CN is produced by extraction from sour gas, or from the refining or upgrading of crude oil.

Volumes of sulfur from sour gas continue to decline, following the reduction in overall sour gas production. Sulfur from sour gas is prilled and shipped to the West Coast to be exported. Sulfur production as a result of upgrading crude oil remains steady.

CN's franchise offers sulfur producers the option of shipping sulfur in molten form to traditional North American

markets concentrated in Florida and North Carolina. Alternatively, they can truck the molten sulfur to gas plants with prilling capacity and then ship the dry sulfur on CN to port for export. The two options for sulfur allow producers to capitalize on the best netbacks between domestic and overseas markets.

### **New sulfur facility strategically located on CN**

As refining capacity increases, producers will be required to move more sulfur to maintain refinery operations. Heartland Sulphur LP has chosen a site served by CN near Edmonton, AB, to provide sulfur forming and liquid loading facilities. The priller provides a cost-effective



Freshly prilled dry sulfur is transferred directly into railcars.

alternative to local crude refineries and oil sand producers. The facility will convert sulfur into a solid prill, which will allow producers to move their sulfur to offshore markets via the Port of Vancouver.

The Heartland Sulphur Terminal will be able to form up to 2,000 metric tonnes of sulfur per day and is configured to receive double that volume in liquid form via trucks. The facility is currently under construction and slated to open by the end of 2017.



The Port of Vancouver is CN's gateway for sulfur exports to overseas markets.

## Outlook

While the processing of sour gas, the traditional source of sulfur, continues to decline, the reduction is expected to be mitigated by an anticipated increase in sulfur from oil upgraders and refineries. In the near term, the completion of the Heartland Sulphur priller will provide producers another option to get sulfur to tidewater, where they can capitalize on a more attractive netback compared to the North American market. This new facility is expected to also provide a source of volume growth for CN.



# Metals and Minerals



## CN'S UNIQUE SUPPLY CHAIN APPROACH DEEPENS CUSTOMER ENGAGEMENT

Innovation and customer service are at the centre of CN's business model. We work closely with our customers to understand their market cycles and anticipate where and when future demand should be expected. Then, we plan our capacity, schedules and service to align with that future demand and the needs of our customers. We value the business relationships we have developed and bring forward innovative supply chain solutions to support our customers and help them reach new markets.

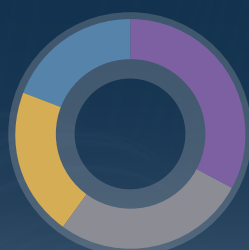
**PICTURED:**

CN's distribution centre in Hamilton, ON, plays a key role in delivering innovative supply chain solutions for our customers.



## Business unit overview

### 2016 COMMODITY BREAKDOWN (% of revenues)



■ 33% Metals  
■ 27% Minerals  
■ 21% Energy Materials  
■ 19% Iron Ore

# \$1,218M

2016 REVENUES

### KEY FACTS

- CN serves 10 aluminum smelters, more than any other railroad in North America
- CN is the top mover of aluminum, iron ore and base metal ore in North America

### COMMODITIES

#### METALS AND MINERALS

- Steel, non-ferrous ores and base metals, construction materials, machinery and large loads

#### ENERGY MATERIALS

- Frac sand and pipe

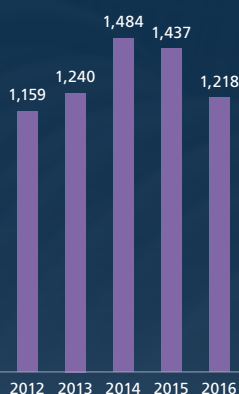
#### IRON ORE

### MARKET DRIVERS

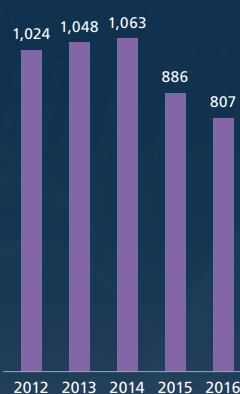
- Manufacturing production (e.g., automobiles, railcars, heavy equipment, aerospace)
- Non-residential construction activity
- Government spending on infrastructure projects
- Energy development projects
- World demand for ores and metals

## Metrics

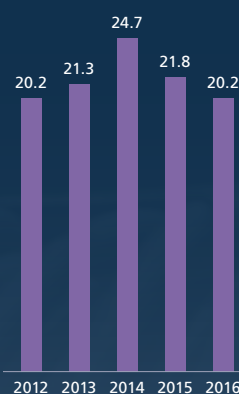
### REVENUES (\$ millions)



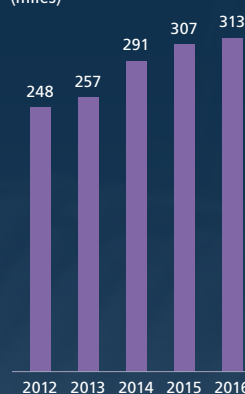
### CARLOADS (thousands)



### RTMs (billions)



### AVERAGE LENGTH OF HAUL (miles)



2016 vs. 2012 CAGR

+1.2%

-5.8%

0%

+6%

Overview

Markets

Operations

Financials



## Spotlight



**KELLY LEVIS**  
Assistant Vice-President, Industrial Products

### **WORKING CLOSELY WITH OUR CUSTOMERS**

Metals and minerals are inherently cyclical commodities, with demand following macroeconomic drivers such as construction and oil and gas activity. That's why it's critical for CN to maintain close relationships with our customers in order to understand their markets and key drivers. As a result of our strong commercial relationships with our customers, we are able to plan our service offering effectively.

#### **Strong origin and destination franchise**

CN leverages the strength of our rail network, which provides unique rail access deep into the base metals, iron ore and frac sand mining regions as well as to the most important aluminum and steel production areas in North America. This strong origin franchise, coupled with our access to the end markets for those commodities, makes CN a leader in the transportation of metals and minerals.

#### **Supporting our customers through market cycles**

CN seeks to provide quality and cost-effective service that creates value for our customers by helping them to maintain and grow their business. To better understand our customers' markets and their key drivers, we have multiple customer touchpoints that encourage

the free flow of information. We work with our customers systematically to review and develop growth targets and strategies. We also review train, crew and railcar requirements to right-size capacity with future demand. The goal is to monitor market conditions and anticipate changes so we can proactively adjust our assets and service schedules accordingly.

As a key player in the metals and minerals supply chain, we are able to identify opportunities to put suppliers and consumers together. A great example is frac sand. Through our close relationship with oil and gas producers at North America's major shale basins, we worked out the shipping schedules and logistics to link them up with frac sand producers in Wisconsin. And, to help make this happen, CN invested significantly to upgrade three of our subdivisions to handle the increased traffic.

#### **Adaptable shipping solutions**

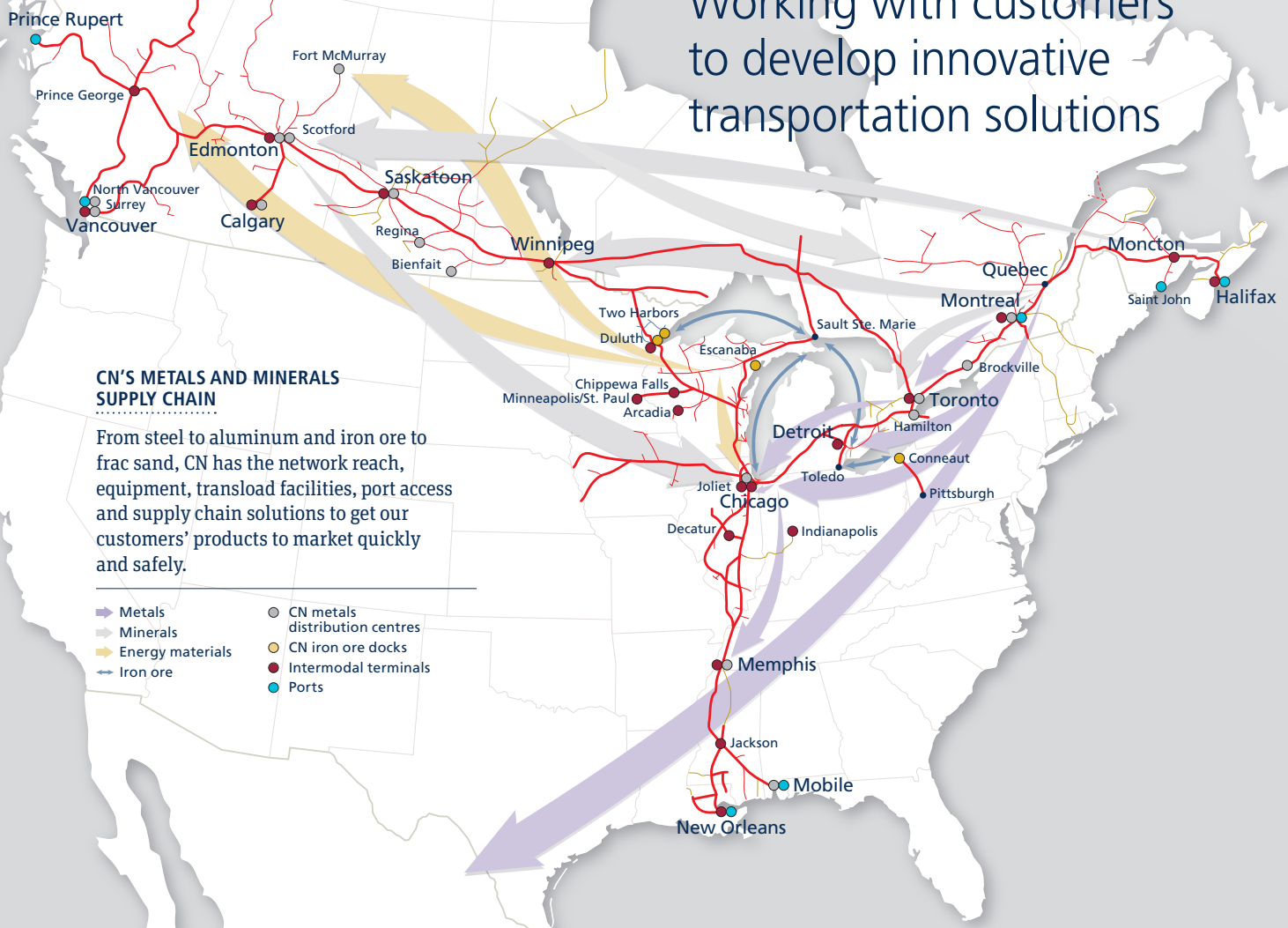
We have the reach and know-how to get metals and minerals traffic quickly and safely to destination. CN owns and operates over 63,000 railcars of all types to support our customer's current and future demand. CN's fleet planning process is designed to be flexible by constantly reviewing and adjusting our fleet based on expected demand, with a focus on supporting growth.

Through our *Sell One CN* integrated service, we provide customers located on and off our network with opportunities to take advantage of the low costs and environmental benefits of shipping by rail. Customers can use our intermodal service, combined with our metals reload facilities, to get their products to a wide range of destinations. Our containers can handle extremely heavy goods like steel, thanks to our innovative sliding floor mobile transport trays that can load up to 50,000 lbs in less than a minute.



For more information on CN's on-deck loading trays, please see our video at [www.cn.ca/metals](http://www.cn.ca/metals)

# Working with customers to develop innovative transportation solutions



## Innovation at work



### 1 Matching capacity to demand

CN has the flexibility to adjust capacity to market cycles. For example, in Edmonton, AB, CN is reopening two shuttered steel and pipe distribution centres to support the recent recovery in the oil and gas sector.



### 2 Riding the electric wave

Demand for lithium and aluminum for use in electric passenger vehicles is steadily increasing and is forecast to accelerate in coming years. CN is actively involved and deeply integrated with both these industries, and we are putting in place the capacity to deliver the anticipated growth.



### 3 Reducing lead times

As part of our continuous efforts to better serve our customers and anticipate their needs, CN maintains a cache (or reserve) of strategically located rolling stock for quick access to supply last-minute orders from our customers.



# Metals and Minerals in Review

## CN IS READY FOR THE NEXT WAVE OF GROWTH

### **CN is a strong partner to Canadian metal producers**

CN's network provides direct access to leading producers of steel, aluminum and other metals. By promoting an open flow of information with our customers regarding their operations and markets, we can better anticipate our customers' needs, which is especially important in times of rapid growth.

With the largest active fleet of railcars for metals in Canada, and through our network of 16 strategically located metals distribution centres, we provide efficient and competitive supply chain solutions to reach a wide range of customers.

### **A diverse customer base for steel**

CN's steel portfolio is well-diversified as our customers serve a wide variety of end markets, such as automotive, oil and gas, heavy machinery and non-residential construction. This helps minimize the impact on our business from the market cycles that are typical across each of these end markets.

### **CN has a strong position in the aluminum market**

Strong and lightweight, aluminum is an important ingredient in a wide array of products, from automobiles and aircraft to beverage cans and foil. The electrolysis process used to manufacture aluminum requires a great deal of electric power. This is why the industry has concentrated



CN moves more aluminum than any other railroad in North America.

in Quebec where hydroelectricity is abundant and relatively low-cost. The Canadian aluminum industry has ten smelters, including the one in Kitimat, BC, with a total combined production capacity of over three million metric tonnes annually, making it the world's third largest producer of primary aluminum after China and Russia.

Over the years, CN has moved more aluminum from Canada to the U.S. than any other railroad. CN's unique access to the Canadian aluminum smelters, coupled with our rail network reaching deep into the U.S., have made CN a strategic supply chain partner to the aluminum industry.

#### PICTURED:

CN's 16 strategically located metals distribution centres provide a wide range of services to our customers.



## Growth in minerals is expected to accelerate

The main commodities in the Minerals group are aggregates, cement and non-ferrous ore concentrates. As with many other commodities, supply and demand for minerals generally follow global market cycles as well as local factors such as government spending on infrastructure projects. CN keeps a close eye on projects and gets involved at the early stages to contribute supply chain solutions.

### Aggregates market evolving

The shipment of gravel and crushed stone by rail is a growing business for CN as local quarries in metropolitan areas are being depleted and replaced by sources further away. This added distance makes rail the transportation mode of choice and CN is at the forefront of this evolving market.

### Building on growth in cement

Renewed activity in the oil and gas sector and increased government spending on infrastructure projects are having a positive impact on CN's cement volumes. One example is BC Hydro's Site C project.



CN limestone and iron ore trains in Iron Junction, MN.  
Photo by CN Employee, Tim Stevens.

This \$8.8 billion hydroelectric project is located near CN's network in northern British Columbia. Construction began in 2015 and is expected to continue until 2024.

### Lithium is generating excitement

Canada is well-known for its rich deposits of non-ferrous ore, including copper, zinc and lithium. These deposits are mostly found in northern Canada, an area where CN's network offers unique supply chain solutions.

One non-ferrous metal that is creating a lot of excitement is lithium. Lithium metal is central to the manufacture of the lithium-ion batteries that are found in consumer electronics and, increasingly, in electric vehicles. The lithium mining industry is growing along with the battery market. CN's network reaches into lithium-rich regions of Canada and we are actively working with our customers on four large lithium mining projects, two of which are in the advanced stages of development.

## ALUMINUM PLANTS IN CANADA

CN serves all 10 Canadian smelters, which are amongst the lowest cost producers in the world.

Customer	Plant Location	Current Production Capacity (metric tonnes)
Alouette <sup>1)</sup>	Sept-Îles, QC	609,000
Rio Tinto Alcan	Alma, QC (Saguenay Power, QC)	467,000
Alcoa / Rio Tinto Alcan <sup>2)</sup>	Becancour, QC	445,000
Rio Tinto Alcan	Kitimat, BC	408,000
Alcoa	Baie Comeau, QC	280,000
Alcoa	Deschambault, QC	260,000
Rio Tinto Alcan	Laterriere, QC	247,000
Rio Tinto Alcan	Grand Baie, QC	227,000
Rio Tinto Alcan	Arvida, QC	172,000
Rio Tinto Alcan	Beauharnois, QC	25,000
<b>Total</b>		<b>3,140,000</b>

1) Aluminerie Alouette consortium is made up of the following five shareholders: Rio Tinto Alcan (Canada, 40%), Austria Metall (Austria, 20%), Hydro Aluminium (Norway, 20%), Marubeni (Japan, 13.33%) and Investissement Québec (Canada, 6.67%)

2) Alcoa (74.95%), Rio Tinto Alcan (25.05%)

## Outlook

Steel production will be driven by general economic and industrial growth as well as increasing demand for large-diameter pipe as pipeline construction ramps up. Aluminum demand is also forecast to rise as the metal is increasingly used in motor vehicle production and other innovative applications.

CN is well positioned to benefit from the favorable market outlook in most of the non-ferrous minerals. The shift to longer haul shipments makes transporting aggregates by rail more competitive. Large-scale construction projects will generate aggregates and cement shipments. Finally, the growing popularity of lithium battery-powered devices is forecast to accelerate in coming years.



# Energy Materials in Review

## THE OIL AND GAS SECTOR IS GROWING AGAIN

### Demand for frac sand is back

The 'shale revolution' is the result of two advances: hydraulic fracturing, or fracking, which cracks the shale by injecting a mixture of water, sand and chemicals underground at high pressure; and horizontal drilling – sinking a well a mile or more down and then a mile or more sideways. The process has made it possible to recover previously unreachable oil and gas reserves. Fracking requires large amounts of frac sand to hold the shale fractures open to release the oil and gas.

After a short downturn period, while the shale industry adjusted to the low oil and gas price environment, rig counts have been increasing and frac sand demand is growing again. CN has direct

access to one of the oil and gas sector's most sought-after frac sands – Wisconsin Northern White. The frac sand industry has built over 20 million tons of annual sand processing capacity on CN's Wisconsin network. CN has invested over \$100 million in infrastructure upgrades on three of our Wisconsin subdivisions to help create efficient and competitive supply chain connections between our frac sand customers and the shales in Western Canada and the U.S.

### Greater frac sand intensity

The downturn in the oil and gas market pushed the shale industry to quickly find new ways to stay competitive at low prices. The industry succeeded remarkably well by pushing drilling and fracking technology to the next level while keeping costs down. The horizontal



Pipeline construction creates renewed demand for steel pipes.

drilling and fracking of shales was improved by increasing lateral lengths, adding more stages per foot and drilling more wells per rig. One of the outcomes from this latest transformation is greater frac sand intensity, which means a lot more frac sand is required per well – growing to more than 25,000 tons per well.

### CN is shipping more steel pipe

CN pipe shipments for the oil and gas industry include large-diameter transmission pipes for the construction of pipelines and small-diameter pipes used for other applications. After a short downturn in pipe demand due to lower activity in the oil and gas sector, the industry has adjusted to the lower prices and the number of pipe shipments is on the rise once more.



With direct access to sources of Wisconsin Northern White frac sand, CN is ideally positioned to serve the shale industry.

## Outlook

Demand for pipe increases as construction of pipeline projects gets underway and drilling activity ramps up. More drilling would also benefit CN with additional shipments of frac sand, cement and other construction materials. Frac sand volumes may also benefit from greater frac sand intensity per well. CN is well-prepared to handle the growth in these commodities.

# Iron Ore in Review

## CN'S RAIL AND MARINE SERVICES WORK TOGETHER

### CN's well-oiled iron ore machine

CN's iron ore operation is an excellent application of our end-to-end supply chain mindset. By closely collaborating with our mine and steel mill customers, we transport the iron ore all the way from the mine to the mill. We move the iron ore by rail from the mine to our docks to be loaded onto our lakers, which ship the ore either directly to the steel mill or to our docks for the final leg by rail to the mill.

CN handled 34 million tons of iron ore in 2016 with an operation that requires finely tuned end-to-end coordination: loading trains quickly at the mine and arriving at the dock on time, managing trains from one dock to another to

load vessels quickly, vessels arriving and departing on schedule, and excellent operations management by everyone concerned.

### Great Lakes Fleet reliability and capacity

For more than 100 years, Great Lakes Fleet (GLF) has been an industry pioneer and leader. Today, GLF operates a safe, highly-efficient fleet of nine vessels, continually upgraded and enhanced to meet the needs of our customers.

With almost 20 million tons of annual carrying capacity, and reliable vessels able to deliver 15,000 to 75,000 tons per load, we carry a variety of bulk commodities throughout the Great Lakes and into the St. Lawrence Seaway.



Great Lakes Fleet vessel *Arthur M. Anderson* at the Two Harbor, MN, ore dock.

Our principal commodities and trade routes include:

- **Iron ore** – Sourced at the western end of Lake Superior and shipped to U.S. Great Lakes-area steel mills.
- **Limestone** – Sourced from quarries on Lakes Michigan and Huron and shipped throughout the Great Lakes.
- **Coal** – Sourced from Lakes Erie, Michigan and Superior, and shipped throughout the Great Lakes.
- **Specialty products** – Slag, mill scale, siliceous ore, fines, sinter and petroleum coke are sourced and shipped throughout the Great Lakes.



In 2016, CN moved 34 million tons of iron ore from mines to mills entirely on CN assets.

## Outlook

The outlook for iron ore is positive as the improving U.S. economy is expected to continue to drive demand for finished steel used in vehicles and consumer durables. Increased steel production for infrastructure and pipeline projects will also support demand for iron ore. This favorable economic outlook for iron ore demand will support continued solid volumes throughout CN's unique supply chain.



# Forest Products



## END-TO-END SOLUTIONS FOR CN'S FOREST PRODUCTS CUSTOMERS

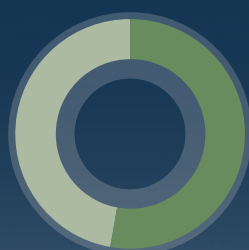
CN plays a vital role in the supply chains of our forest products customers, whether it is moving logs from remote parts of our network to the sawmills we serve or delivering containers of pulp and paper products throughout North America or for export to Asia. Through our railcar acquisition program, network of transload centres and innovative asset optimization program, we are positioned to grow with our customers as they meet rising U.S. housing demand and global consumption of packaging and tissue products. In addition to our strong presence in Canada, we are strategically located to serve markets in the U.S. Midwest and South as well as Asian markets through the ports of Vancouver and Prince Rupert. CN's integrated solutions help our forest products customers win in their markets.

**PICTURED:**  
CN train moves through Hinton, AB, pulling high-capacity centrebeams loaded with lumber.  
Photo by CN Employee Vic Whorpole.



## Business unit overview

### 2016 COMMODITY BREAKDOWN (% of revenues)



■ 53% Lumber and Panels  
■ 47% Pulp and Paper

# \$1,797M

2016 REVENUES

### KEY FACTS

- Largest rail carrier of forest products in North America
- Over 10% of total CN revenue tied to housing market
- Centrebeam fleet consists of over 10,000 premium cars

### COMMODITIES

#### LUMBER & PANELS

- Lumber, oriented strand board panels, plywood and siding

#### PULP & PAPER

- Wood pulp, newsprint, printing paper, logs, wood chips, wood pellets, clay

### MARKET DRIVERS

#### LUMBER & PANELS

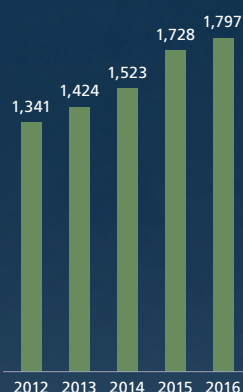
- Residential construction and remodeling activity

#### PULP & PAPER

- Global consumption of paper, tissue and packaging

## Metrics

### REVENUES (\$ millions)



### CARLOADS (thousands)



### RTMs (billions)



### AVERAGE LENGTH OF HAUL (miles)



2016 vs. 2012 CAGR

+7.6%

-0.3%

+1.4%

+1.4%



## Spotlight



**FIONA MURRAY**  
Vice-President, Industrial Products

### GROWING WITH OUR CUSTOMERS

Forest products customers need robust supply chains that are also flexible enough to meet changes in demand and sourcing. At CN, we pride ourselves on aligning closely with our customers to integrate key processes around car ordering and service at the first mile. By understanding our customers' business better, we have tailored first mile service and invested in additional rolling stock and transload facilities to enhance their responsiveness to market opportunities.

#### Focused on both the U.S. and Asian markets

CN's strong franchise allows our customers to maintain or even increase production as they see fit in order to take advantage of opportunities wherever they find them. Our industry-leading supply of premium equipment and direct access into the U.S., as well as our extensive interconnection agreements, let us fully participate in the ongoing recovery of the U.S. housing market, particularly in regards to shipments of lumber, panels and siding.

We also work with our forest products customers to develop alternative markets in Asia. India is a new market that our customers are increasingly turning to. CN's direct access to West Coast port capacity gives our customers the option to pivot towards the Asian market when demand in the U.S. softens.

The Port of Prince Rupert in particular has the potential to ship more forest products, especially lumber and woodpulp. The port is attracting additional steamship lines looking to benefit from a compelling service proposition, including reduced sailing time to/from Asia, fluid terminal operations as well as fast and consistent rail transit into Central Canadian and U.S. markets.

We work closely with partner ocean carriers and forest products producers to provide "match-back" of international containers. Match-backs occur when CN loads an import container that would otherwise return to Asia empty with export products such as lumber. Match-backs enable steamship lines to cover some of the cost of shipping empty containers back to their home port.

#### Largest high-capacity fleet

We are closely tracking the increase in demand for forest products, and the improving U.S. housing market in particular, to ensure we can always provide a high level of car order fulfillment for our customers. As a result, CN plans to add approximately 800 centrebeams in 2017 to what is already the largest high-capacity fleet in the industry.

With a view towards continuous improvement, CN has implemented a High Velocity Program (HVP) to reduce overall car cycle times and increase capacity for our forest products customers. The HVP provides priority car allocation on orders directed to predefined high-demand, high-velocity routes. In addition, through our Sell One CN integrated service, we provide customers the flexibility of using our intermodal service and transload facilities to get their products to destination.



For more information  
on CN's forest products  
operations, please visit  
[www.cn.ca/forestproducts](http://www.cn.ca/forestproducts)

# The fully integrated end-to-end forest products supply chain solution

Overview

Markets

Operations

Financials

## CN'S FOREST PRODUCTS SUPPLY CHAIN

CN serves the growing U.S. housing market with high-quality Canadian lumber, panels and siding. Asia is the principal market for Canadian wood pulp and an attractive diversification option for Canadian lumber producers. Our 14 forest products distribution centres provide our customers with intermodal flexibility and forward inventory capability.

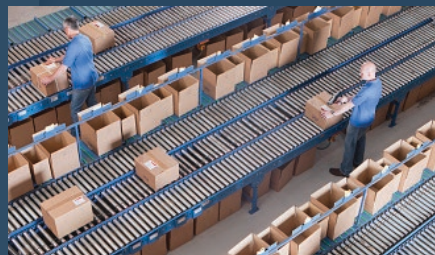
- Lumber and panels
- Pulp and paper
- Forest products distribution centres
- Intermodal terminals
- Ports

## Innovation at work



### 1 Growth in engineered wood siding

An area of growth for CN is the transport of engineered wood siding, which is an environmentally-friendly and long-lasting alternative to wood. The product is made of wood fibre mixed with resin and compressed to create very strong and natural-looking boards.



### 2 Helping to move e-commerce forward

U.S. demand for boxes used in e-commerce is forecast to rise more than 10% annually through 2020. We are working hard to develop high-quality relationships with packaging companies to maximize our share of this growing market.



### 3 Cleaner energy from lumber residue

Conversion of European energy production from coal to more sustainable solutions such as wood pellets and wood chips, particularly in the U.K., is driving growth in this segment. CN is working closely with our customers to further develop this business.



# Lumber and Panels in Review

## WORKING WITH CUSTOMERS TO OFFER FLEXIBLE SOLUTIONS

CN has a very strong origin and destination franchise for the transport of lumber and panels. We have direct access into some of the largest wood-producing regions in the world. We also directly serve the growing U.S. housing market in the Midwest and South as well as two deep-water ports on Canada's West Coast for the Asian market.

Canadian lumber is coveted for its high quality. It is generally lighter, dryer, easier to cut and nail, not as sensitive to the elements and less expensive than alternative sources. Canadian producers are continually innovating to develop

new products, such as engineered wood siding, and cultivate new markets, such as India. CN is working right alongside them to offer supply chain solutions that protect and grow market share.

### U.S. housing market continues to grow

New home sales have been steadily increasing in the U.S. since 2012, reflecting higher buyer confidence and millennials entering the housing market. Year-over-year, housing starts increased 4.9% in 2016, reaching 1.17 million units. Having not yet returned to pre-housing bubble levels, housing starts are expected to continue to steadily increase over the next few years.

CN's strong franchise in North America and our leadership position in the movement of forest products will allow us to continue to benefit from the U.S. housing recovery.

Our focus on balancing Operational and Service Excellence, combined with our extensive network, provides us with the capacity to ship increasing volumes of lumber, panels, siding and other housing-related products. More than 10% of CN's overall revenues are tied to the housing market, including not only lumber, panels and siding, but also the furniture and electronics needed to equip a new house, the metals needed for the home's plumbing and appliances, and the roofing shingles needed to cover it.



PICTURED:  
Lumber transloading at  
MacMillan Yard, Vaughan, ON.

## Lumber and panels growth

CN's lumber and panel shipments originate mainly in Western Canada and are destined to various markets in North America and offshore. The U.S. is the primary destination, accounting for over 75% of the segment's carloads over the past three years. U.S. housing starts have been on a steady, albeit gradual, climb since bottoming in 2009 and CN is well-positioned to benefit from this recovery.

The recession-related downturn in U.S. demand provided opportunities for Canadian producers to diversify the market for Canadian lumber. Lumber shipments to Asia, particularly to China, continue to be an important option for CN's Western Canadian customers. The rise in shipments to China reflects increased use of wood for framing purposes. Even with the ongoing U.S. recovery, these producers are likely to continue to capitalize on overseas opportunities and maintain a presence in Asia.

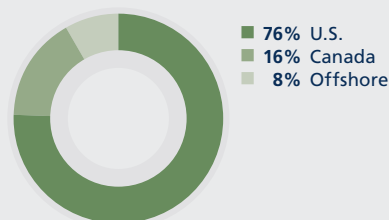


## Engineered wood siding

CN is experiencing double-digit growth in the transport of engineered wood siding, which is an eco-friendly and durable alternative to natural wood as well as aluminum and vinyl siding. The product is made of wood fibre coated with resin and compressed to create a board of superior strength. The product is used primarily in the residential housing and remodeling market.

## Three-quarters of shipments destined to U.S.

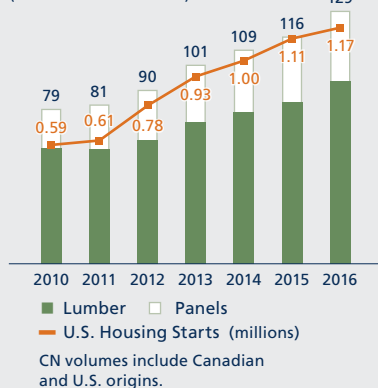
**LUMBER AND PANELS END MARKETS**  
(% of 2016 carloads)



An increasing number of mills are opening or restarting to take advantage of the growing remodeling trend in the U.S. To support this area of growth, we are working closely with our customers and developing relationships with new ones. CN's competitive advantages include our extensive reach into the fibre-producing regions, our large fleet of centrebeams required to ship long-length engineered wood siding and our reliable transit times that ensure prompt delivery of orders.

## CN benefiting from growth in U.S. housing market

**CN LUMBER AND PANEL VOLUMES TO THE U.S.**  
(thousands of carloads)



## Outlook

CN has extensive access to Canadian producers of lumber and panels, and we continue to improve our end-to-end service to enhance our competitive position with our diverse customer base.

The U.S. housing market is expected to grow steadily in the next few years, driven primarily by single-family housing. The number of starts of single-family units is a key indicator for lumber shipments as they require up to seven times more lumber per unit than multi-family units. CN expects the volume of our shipments of lumber and panels to follow this trend as there can be no assurance that potential trade actions related to the ongoing softwood lumber dispute will not have a material adverse effect on CN's volumes. We continue to work with customers to develop market options for their production.



# Pulp and Paper in Review

## LOOKING FOR OPPORTUNITIES TO GROW

CN's network and customer service advantages help to mitigate the impact of negative market changes. Our ongoing drive to improve end-to-end service enhances our competitive position in the transportation industry. We also continue to develop and diversify our product offerings, such as our forward inventory and warehousing, car reload and high-velocity programs, as well as our intermodal options.

### Demand for most paper grades is shrinking

Wood pulp is used predominantly as a major component in the manufacture of paper, paperboard, tissue, diapers and other personal care products. The majority of CN-served pulp producers are located in Western Canada, with most

consumers located in Asia and in the state of Wisconsin. Canada is currently the second-largest pulp producer in the world, surpassed only by Brazil.

North American demand for most paper grades is shrinking, with the newsprint sector being the hardest hit. North American newsprint demand continued to fall in 2016, marking the 17<sup>th</sup> consecutive year it has decreased. The decline in newsprint consumption is driven largely by increased competition from alternate media sources, including 24-hour television news channels, the Internet and social media. As such, CN's focus remains on growing market share with its current customer base to help them remain competitive in their markets.



Worldwide tissue consumption continues to grow.

### A few bright spots for wood pulp

The exceptions to the decline are the tissue products segment and the pulpboard segment, which is made up of containerboard and boxboard used to package consumer goods.

#### Pulpboard resurgence

The production of pulpboard, which plummeted in 2008 when many older mills were shuttered, has experienced a resurgence with capacity now back to pre-2008 levels. New mills have started up in recent years and several former newsprint machines have been or are in the process of being converted to containerboard production. This increase in supply will be absorbed by a strengthening economy, increased demand for perishable goods and a rapid increase in online shopping.

#### PICTURED:

A CN train rolls through the Quebec countryside carrying wood chips to market in gondola cars.

### E-commerce is driving the increase in demand for packaging

The containerboard market is being driven in part by consumers' growing comfort with purchasing large items online, which require larger and stronger boxes for shipping. In addition to the greater demand for shipping boxes, containerboard is also used inside the packages as protective material to prevent damage in transit. E-commerce is expected to continue to increase its share of the overall retail market, currently at 8% according to the December 2016 U.S. Census estimate, which will help to drive up U.S. requirements for shipping boxes.

### Tissue remains a growth story

Worldwide tissue consumption has risen at an annual rate of 5.4% since 2007, driven by increased prosperity in the developing world as well as stable demand in developed countries because tissue cannot be easily substituted. The global demand for both packaging and tissue has increased steadily with economic growth and evolving consumption habits, notably in developing markets such as China.



Canadian wood pellet production is mainly directly to the United Kingdom.

In order to support its expanded production capacity, China (and to a lesser extent, India) has been obliged to import a significant quantity of raw materials (primarily wood pulp and recycled paper) from Russia, North America and other fibre-rich regions because of scarce domestic wood fibre supply.

Over the next five years, the bulk of the wood pulp demand growth will be supplied by hardwood pulp (mainly eucalyptus) produced in Brazil, where significant investments in new mills and infrastructure continue to expand capacity.

### Wood pellet demand jumps

Wood pellets are made from compacted residue from the lumber production process. They can be used as fuel for power generation as well as commercial or residential heating. Wood pellets have a very high combustion efficiency and the Environmental Protection Agency (EPA) in the U.S. has endorsed wood pellet heat as one of the cleanest-burning, most renewable energy sources on earth.

A significant portion of the world's wood pellet production comes from Canada. Almost all of the Canadian production is exported from ports in British Columbia to customers in Europe (mainly the U.K.). After several years of stable volumes, CN shipped about 2.2 million tons in 2016, or 22,000 carloads (up 29% from 1.7 million tons in 2015). Wood pellet demand and production jumped in early 2016 and then remained stable through the rest of the year due to a temporary plateau in industrial demand combined with low oil prices and a warmer than usual winter.

### Export demand for wood pellets on the rise

CN WOOD PELLET VOLUME  
(thousands of carloads)



## Outlook

While there are always cyclical fluctuations in the demand for paper products, the overall trend remains downward, particularly for the printing and newsprint grades. On the other hand, North American demand for pulpboard, especially containerboard, is expected to increase in line with overall economic growth.

The upward trend in global tissue consumption is expected to continue to grow for the next few years as populations in countries like China and India increase their consumption of tissue products. Canadian wood pulp production, however, is expected remain stable, with no capacity expansion planned for the short to medium term.

Wood pellet demand is expected to continue to grow steadily through 2017, with the pace of demand picking up in 2018 as new projects come online in the United Kingdom.



# Coal

## ADAPTING TO CHANGING MARKETS

To help our customers adapt to fluctuating coal market prices, CN facilitates a sustainable coal supply chain that integrates every step along the way, from mine production through vessel arrival. Coal customers require a sophisticated supply chain view to enable better planning in today's changing environment.

CN is well-positioned to help existing and new customers remain competitive. We provide coal producers with the flexibility to reach a variety of target markets via our superior network reach. CN is the only railway in North America with direct access to coal export terminals on the West Coast of Canada (Vancouver and Prince Rupert) and the Gulf of Mexico (Convent, LA, and Mobile, AL).

**PICTURED:**  
CN is an integral part of the coal supply chain, able to consistently deliver in the most challenging environments.

Photo by CN employee  
Tim Stevens.



## Business unit overview

2016 COMMODITY BREAKDOWN  
(% of revenues)



■ 32% U.S. Coal – Domestic  
■ 23% U.S. Coal – Export  
■ 23% Canadian Coal – Export  
■ 22% Petroleum Coke

**\$434M**

2016 REVENUES

### KEY FACTS

- Canadian coal consists of both thermal and metallurgical coal
- U.S. coal is 100% thermal coal
- Overall, coal represents 4% of CN revenue

### COMMODITIES

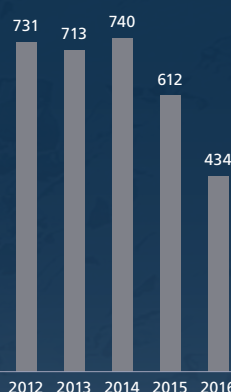
- Thermal grades of bituminous coal and metallurgical coal
- Petroleum coke

### MARKET DRIVERS

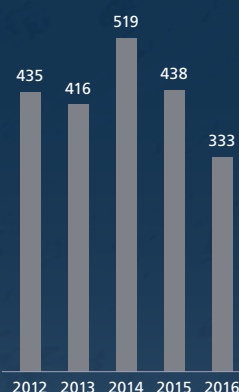
- Price of natural gas
- Weather
- Environmental regulations
- Global supply/demand conditions

## Metrics

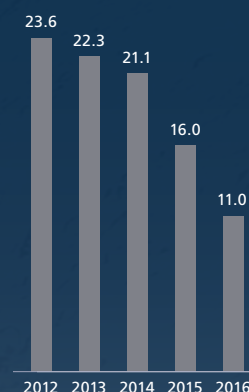
REVENUES  
(\$ millions)



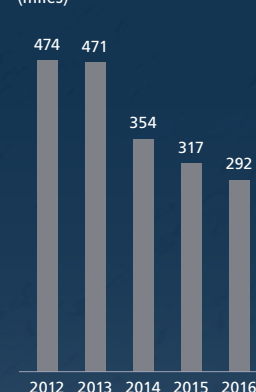
CARLOADS  
(thousands)



RTMs  
(billions)



AVERAGE LENGTH  
OF HAUL  
(miles)



2016 vs. 2012 CAGR

–12.2%

–6.5%

–17.4%

–11.4%

Overview

Markets

Operations

Financials



## Spotlight



**ALLEN FOSTER**  
Assistant Vice-President, Bulk

### A FAR-REACHING WORLD-CLASS SUPPLY CHAIN

Coal prices are highly dependent on fluctuating worldwide supply and demand factors, and North American coal mines adjust their production levels accordingly. Producers need to keep their costs low. Equally important, they require a reliable and flexible supply chain system. CN leads a collaborative team-based approach, where every stakeholder from mine to port is linked.

#### **CN moves an average of 45 million tonnes of coal every year**

That's a lot of coal. With direct access to 13 mines and seven petroleum coke-producing facilities in the U.S. and Canada, as well as seven high-capacity export terminals, we connect North American coal producers to markets around the world.

#### **Rebound in Canadian metallurgical coal**

In 2016, the price for Canadian metallurgical coal increased by almost 300% to US\$311 per metric tonne before settling back down to approximately US\$170 per metric tonne in the first quarter of 2017. This sizeable rebound in price is driven by a cut in production from China and has allowed for the restart of several mines on CN's network.

We are helping customers win in this new environment with a sophisticated world-class supply chain that ensures reliable, cost-effective coal deliveries. CN's collaborative service allows our customers to compete more effectively with U.S., Australian and Indonesian producers.

#### **Petroleum coke reaching new markets**

One of the by-products of the oil refining process is petroleum coke. Rising demand for the high-energy and cost-efficient fuel from the cement, smelting and power generation industries are major factors driving the global pet coke market. As a result, North American production is once again growing and CN is there to help with the supply chain. Canadian pet coke is mainly exported to Asian markets through the West Coast, while U.S. pet coke is focused on domestic

markets. By the end of 2016, Asian markets started to boost demand led by the Indian cement industry. This is driving an optimistic 2017 outlook for the industry.

#### **Two distinct markets for Illinois Basin Coal**

Producers of low-cost Illinois Basin Coal have the option of shipping directly to domestic utility plants that use sulfur scrubber technology, complementing the low-sulfur coal supplied from the Powder River Basin. Alternatively, CN provides the only direct access unit train service from Illinois Basin Coal mines to export terminals on the U.S. Gulf Coast at Convent Marine Terminals in Louisiana and at the Port of Mobile, which continue to build on our export footprint to Europe and Asia.



For more information  
on CN's coal operations,  
please visit  
[www.cn.ca/coal](http://www.cn.ca/coal)

We help our coal customers compete in an ever-evolving global marketplace

### CN'S COAL SUPPLY CHAIN

Whether coal producers are looking to sell into Asian or European markets, CN's extensive network reach and direct access offer our customers the flexibility of multiple terminals, both on the West Coast and Gulf Coast.

- Canadian coal
- U.S. coal
- Pet coke
- Mines
- Transload terminals
- Export terminals

### MAIN CN-SERVED COAL EXPORT TERMINALS

TERMINAL	CAPACITY 2016
Westshore Terminal – Vancouver, BC	33.0 <sup>1)</sup>
Ridley Terminals – Prince Rupert, BC	18.0 <sup>1)</sup>
Alabama State Docks – Mobile, AL	14.0 <sup>2)</sup>
Convent Terminal – Convent, LA	14.0 <sup>2)</sup>
Neptune Terminal – Vancouver, BC	12.5 <sup>1)</sup>
Thunder Bay Terminal – Thunder Bay, ON	11.0 <sup>1)</sup>
Four Rivers Terminal – Chiles, KY	10.0 <sup>2)</sup>

1) Million metric tonnes 2) Million short tons

### Innovation at work



#### 1 Building our pet coke franchise

CN and our supply chain partners have developed new service plans to expand our pet coke business to the U.S. Gulf and river terminals, allowing customers to quickly expedite pet coke from the refineries, thereby avoiding interruptions in production.

#### 2 Quick access to international markets

Through our access to Ridley Terminals at the Port of Prince Rupert and Convent Marine Terminal at Convent, LA, CN's customers can access global markets in Asia and Europe.

#### 3 Supply chain approach

We measure the amount of coal at the mine, on the train and at the port, and adapt our train schedule and frequency to match specific vessel arrival dates.





# Canadian Coal in Review

## CREATING AN EFFICIENT WORLDWIDE SUPPLY CHAIN

### Dedicated customer service

Canadian coal producers on CN's network have the strategic advantage of accessing all major coal export terminals on Canada's West Coast. CN has a dedicated service group, Bulk Operations, which works with all supply chain stakeholders to help manage inventories at the mines and terminals as well as coordinating to meet vessel schedules.

### Expanding long-train operations

CN is also improving the efficiency of the entire supply chain with the innovative expansion of long-train operations. With the construction of longer rail sidings and use of new Alternating Current (AC) traction locomotives and Distributed Power, CN now has the capability of running trains in excess of 200 railcars. The longer trains add more efficiency for customers by reducing the number of loading days and increasing overall throughput for terminals.

### Metallurgical coal renaissance

CN's network touches coal reserves that are suitable for both steel making (metallurgical coal) and power generation (thermal coal). Recent global contraction in the supply of metallurgical coal has prompted the reopening of some of the metallurgical coal mines located on the CN network. Many of the metallurgical coal mines on CN's network are turnkey operations and require short lead times to begin production. CN is working with these metallurgical coal producers to ensure a fluid inland supply chain and unmatched access to Canadian West Coast terminal capacity.

### Conuma Coal ready for market

At the end of 2015, metallurgical coal prices were at the lowest levels in recent history; there was simply too much supply. Conuma Coal took advantage of the weak market to purchase three coal mines in northeastern British



Columbia in mid-2016. CN worked with Conuma, developing rail plans and coordinating efforts to prepare for an eventual market rebound. Then, China issued a new policy restricting local coal production and the market reacted. The metallurgical coal price rose dramatically, vastly exceeding all expectations. Conuma had already started operation of one of their mines and began shipping coal to Ridley Terminals at the Port of Prince Rupert in October 2016. Conuma started production at a second mine in February 2017. In a short period of time, the region went from idled mines to a flurry of activity with a production capacity of four million tonnes.

### CN-SERVED COAL MINES IN CANADA

Company	Mine	Type	Estimated Capacity (million tonnes)	Status
Westmoreland	Coal Valley	Thermal	4.0	Operating (at 2M tonnes)
Conuma	Brule	Metallurgical	2.5	Operating
Grande Cache Coal	Grande Cache Coal	Metallurgical	2.0	Idle
Teck	Cardinal River	Metallurgical	2.0	Operating
Anglo American	Peace River Coal	Metallurgical	1.5	Idle
Conuma	Wolverine	Metallurgical	1.5	Operating
Conuma	Willow Creek	Metallurgical	1.0	Idle

## Outlook

The near-term outlook for Canadian metallurgical coal is positive. Coal prices have recently recovered due to China's policy of restricting domestic coal production, resulting in the removal of excess supply. With prices having risen dramatically in a very short period of time, prices are now at a level where Canadian mine restarts are economical. The new production policy in China has helped to regulate prices and is expected to help stabilize the market.

# U.S. Coal in Review

## DESTINED FOR BOTH DOMESTIC AND EXPORT MARKETS

### Fluctuating domestic demand

In the past five years, the U.S. thermal coal market has gone through a transformative period, from record high volumes in 2014/15 driven by 'Polar Vortex' winter weather, to historic lows in 2016, due to closures of coal-fired power plants related to stricter EPA regulations, a mild 2015/16 winter and low natural gas pricing. As a result, stockpiles at U.S. utilities were significantly higher than the five-year average.

CN handles over 22 million tons of domestic thermal coal annually, with roughly 20% of the volume transported from CN-served mines in southern Illinois (low-cost Illinois Basin Coal) destined

to utilities in the southeastern U.S. and barge-served river terminals. Over 75% of CN's domestic moves originate in the western U.S. (Powder River Basin low sulfur coal), where CN acts as the delivering carrier to coal-fired utilities in several Midwestern states.

### Secondary outlet in exports

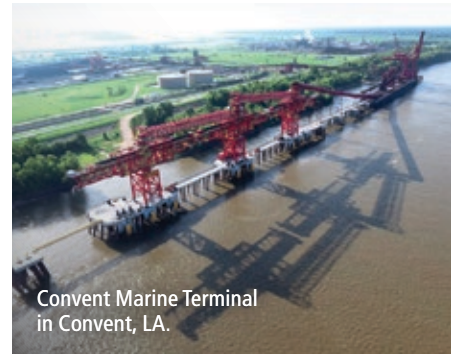
The U.S. export market has been similarly challenged; with 30-year lows in commodity pricing stemming from a global oversupply of coal and further exacerbated by the strong U.S. dollar.

CN exports approximately six million tons of coal per year via terminals on the U.S. Gulf Coast to utility customers in Europe and Asia. CN's all-rail supply chain directly serves the only Gulf Coast terminals that

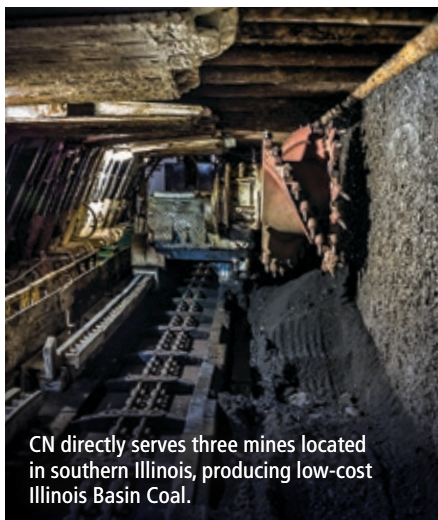
can receive coal by rail (Convent, LA, and Mobile, AL). Based on throughput capacity, these terminals could receive up to 20 million tons of coal annually, and are equipped with loop tracks to unload unit trains for stockpile or directly into vessels.

### Opportunities for petroleum coke

Refineries continue to increase their use of heavy crude slates, which in turn increases production of petroleum coke. CN is well-positioned to assist refineries in moving petroleum coke to domestic and export markets, and continues to gain market share. Since 2015, CN has tripled carloads of petroleum coke by marketing water-served terminals that can receive petroleum coke by rail.



Convent Marine Terminal  
in Convent, LA.



CN directly serves three mines located  
in southern Illinois, producing low-cost  
Illinois Basin Coal.

## Outlook

Recently, U.S. market conditions for both domestic and export coal have improved. As a result, several domestic producers have restructured and are holding production in check, which reduces supply and promotes pricing discipline.

The new "pro-coal" administration in Washington is working to roll back regulatory restrictions, setting the stage for a more stable long-term market for coal.

For the export market, U.S. export pricing has significantly improved to Europe (API2 index) since historic lows in early 2016. This pricing rebound has allowed the low-cost U.S. longwall producers served by CN to increase production to meet revived demand in Europe and Asia.



# Grain and Fertilizers

## HELPING OUR CUSTOMERS MEET PEAK DEMAND

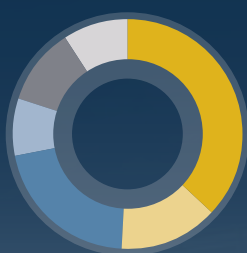
Global grain and fertilizer markets follow supply and demand dynamics. Peak supply comes when farmers harvest their crops – whether it's lentils in Saskatchewan in August or soybeans in Iowa in October. CN's network reach, operational capacity and supply chain solutions position it well to handle the demand peaks. We have a broad mix of commercial tools to help our customers, both large and small, to secure the freight capacity they need to meet their commitments.

**PICTURED:**  
ILTA Grain's new plant in Farley, SK, uses an innovative 112-car loop track for unit train service as well as CN's source-loaded container approach for exports.



## Business unit overview

2016 COMMODITY BREAKDOWN  
(% of revenues)



- 37% Canadian Grain – Regulated
- 14% Canadian Grain – Commercial
- 21% U.S. Grain – Domestic
- 8% U.S. Grain – Exports
- 11% Fertilizers – Potash
- 9% Fertilizers – Other

**\$2,098M**

2016 REVENUES

### KEY FACTS

- Regulated Canadian grain accounts for roughly 6% of CN's total revenue
- CN's U.S. grain franchise is concentrated in Illinois, Iowa, Michigan and Wisconsin
- CN competes directly with barges on the Mississippi River in the U.S.

### COMMODITIES

#### GRAIN

- Wheat, oats, barley, peas, corn, ethanol, dried distillers grain, canola seed and canola products, soybeans and soybean products

#### FERTILIZER

- Potash, ammonia nitrate, urea, phosphate fertilizers

### MARKET DRIVERS

#### GRAIN

- Weather conditions, seeded and harvested acreage, mix of grain crops and crop yield, size and quality of individual crops, international market conditions

#### FERTILIZER

- Input prices, demand, government policies, international competitive issues

## Metrics

REVENUES  
(\$ millions)



CARLOADS  
(thousands)



RTMs  
(billions)



AVERAGE LENGTH  
OF HAUL  
(miles)



2016 vs. 2012 CAGR

**+6.8%**

**+0.2%**

**+3.2%**

**+2.7%**



## Spotlight



**DOUG MACDONALD**  
Vice-President, Bulk

### DEVELOPING WIN-WIN SUPPLY CHAIN SOLUTIONS

As improvements in varieties and agronomic practices push crop yields higher, the grain and fertilizer supply chains need to adapt to ever-increasing demand for freight capacity to move product to market. CN works closely with customers to support their investment activities and develop win-win supply chain solutions that drive even greater efficiencies.

#### Moving to a more commercial framework for Canadian grain

CN's operational excellence sustains strong grain movement post-harvest when demand for freight is especially high. Our focus is on offering a mix of commercial car supply solutions to our customers that suits their individual needs, whether they are well-established players in the market or new market entrants looking for a way to grow their business.

Commercial car supply agreements with reciprocal penalties allow for more effective operational planning, giving supply chain players more certainty and allowing customers to sell forward with greater confidence. The majority of CN's weekly grain car supply is now tied to commercial agreements.

#### Innovative car allocation solutions

CN offers customers the opportunity to integrate private cars into our common pool through our Fleet Integration Programs, providing customers off-the-top car allocation in return for steady shipments to North American and offshore markets.

Our car auctions allow the market to secure a segment of overall car supply, providing additional certainty when making forward sales, and with freight values that are transparent to the market. These tradable contracts allow a secondary freight market to function in Western Canada and emphasize our customers' commercial decisions to drive car allocation.

#### Domestic potash flows to the U.S. Corn Belt

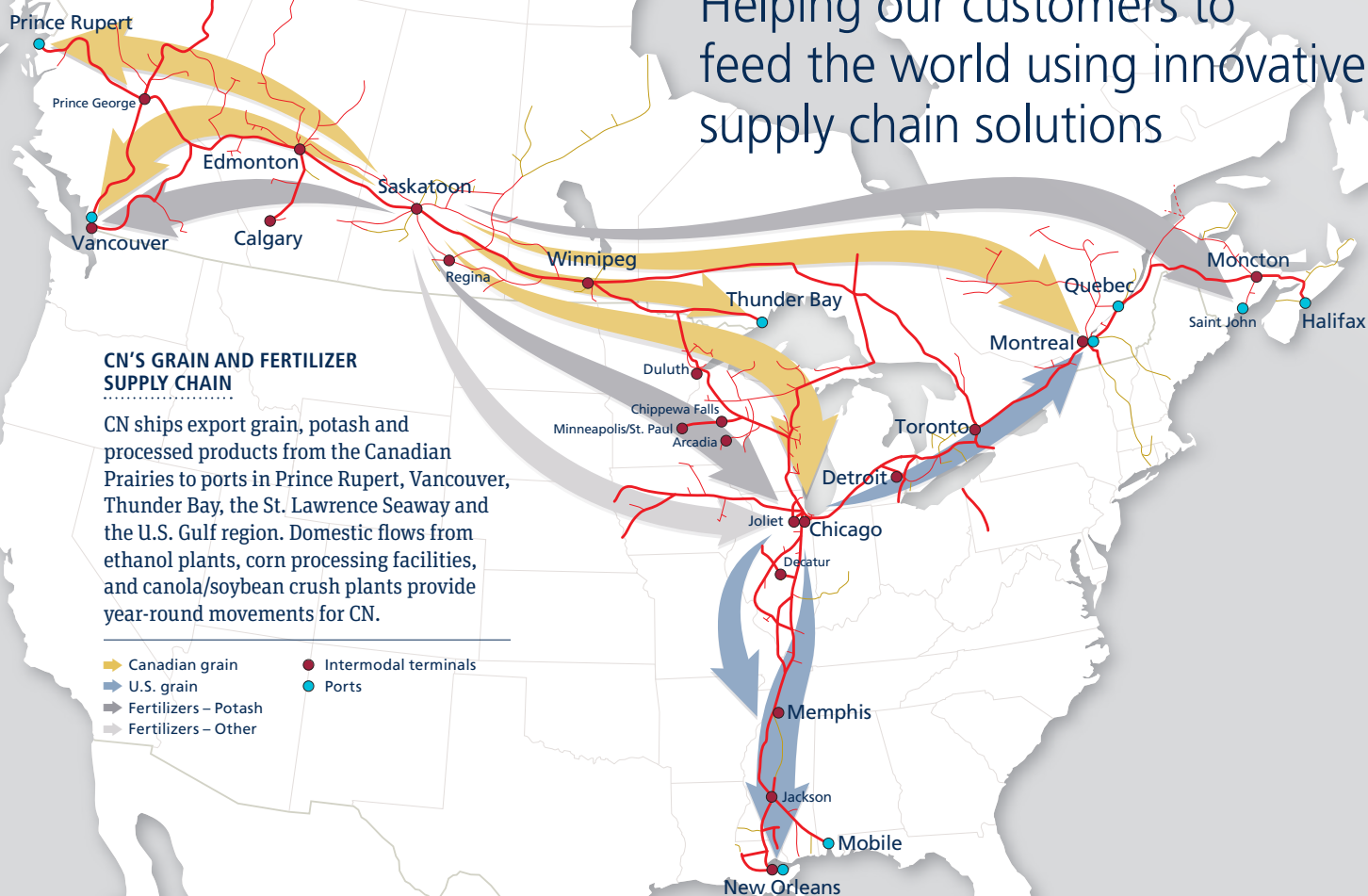
As demand for potash in the U.S. Corn Belt remains strong, CN continues to work with our customers to ensure that their potash railcars continue to cycle smoothly. This is particularly important because potash needs to be forward-placed in order to meet the needs of farmers, retailers and traders on a timely basis. With our unique Chicago Outer Belt we have successfully developed supply chain solutions to support our customers' investments and strategies to improve our market share position.

With improved crop yields, CN's supply chain must continue to adapt to increased demands for freight capacity. Our operational excellence and commercial car supply focus in both Canada and the U.S. positions CN well to help our customers achieve these goals.



For more information  
on CN's grain and fertilizer  
operations, please visit  
[www.cn.ca/grain](http://www.cn.ca/grain) and  
[www.cn.ca/fertilizer](http://www.cn.ca/fertilizer)

# Helping our customers to feed the world using innovative supply chain solutions



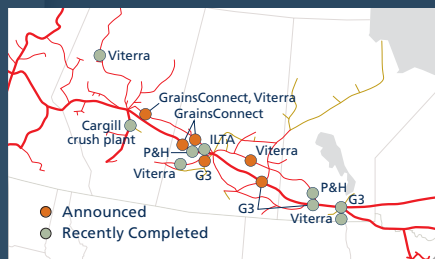
Overview

Markets

Operations

Financials

## Innovation at work



### 1 Products tailored to all shippers

Our fleet and auction products are a great fit for small shippers. Blocks of 25 cars are an efficient means of moving grain on a smaller scale, fit well with shortlines and suit receivers set up for smaller blocks.

### 2 New high-throughput elevators

CN is working closely with new and existing Canadian grain customers to develop efficient loop track elevators allowing unit trains of 130+ cars to load in less than 24 hours. Combined with new terminals being built in Vancouver, this unique end-to-end design lowers cycle times and increases capacity.

### 3 Destination: Saint John

Taking advantage of our investments in long-train operations, CN recently worked with Canpotex, the world's leading exporter of potash, to develop a new 205-car unit train service from Saskatchewan to the Port of Saint John, NB.



# Grain in Review

## DELIVERING STRONG GRAIN MOVEMENT

### New investment in Canadian grain

The Western Canada agricultural market continues to see an unprecedented pace of investment to support grain originators and exporters, with heavy focus on shipping through the Canadian West Coast to meet demand growth in key markets in Asia, the Middle East and Latin America.

Encouraged by a stable Canadian business climate, new entrants are also emerging, bringing more competition for farmers' grain into play. CN is participating in this expansion in grain infrastructure on a number of fronts, including contributing to an environment that supports the efficient movement of grain and processed grain products.

The new generation of high-throughput elevators, many with loop track designs, present opportunities for faster grain receiving and loading operations. As the industry continues to ship more and more grain to port in unit trains, facilities with longer car spots will allow the supply chain to become more efficient. Improvements in terminal infrastructure, as well as the emergence of the "loop-to-loop" grain supply chain model, combined with announcements of new export terminal infrastructure on the West Coast, translates into more efficient unloading operations. The faster the cars can be unloaded and empties returned to the country for loading, the more overall capacity can be delivered to customers.



High-efficiency grain elevator in Glenlea, MB.

CN's on-going investment in network capacity along the Winnipeg–Edmonton and Winnipeg–Chicago mainline corridors as well as significant upgrades to our branch line network allow for a more efficient overall flow of grain. Our Winter Ready program, which encourages the installation of equipment at origin to allow trains to be aired up in advance of crew arrival in winter, is just one example of creativity translating into increased supply chain efficiency.

### Regulatory environment

Certain rail movements of grain from Western Canada are subject to regulation under Canadian legislation. This includes grain shipments to the ports of Vancouver, Prince Rupert and Thunder Bay, but excludes grain exported to the U.S. Regulated grain shipments are subject to a maximum revenue entitlement that

#### PICTURED:

With annual export capacity in excess of seven million tonnes, the Prince Rupert grain terminal offers the fastest route for Canadian grain bound for Asian and Middle Eastern markets.

a railway may earn during a given crop year. Railway companies are free to set freight rates for western grain shipments, but total revenue is limited during a given crop year to an amount determined annually by the Canadian Transportation Agency (CTA). The amount of revenue is based on a statutory formula that takes into account tonnage and length of haul of grain movements in that crop year, and a CTA-determined price index.

### Canadian pulse exports gaining momentum

The increase in production of pulse crops such as lentils and peas in Western Canada has been dramatic in the past few years. Production of peas and lentils each rose to record levels in 2016, reaching a combined 8.1 million metric tonnes versus 5.7 million the previous year. Asia and the Middle East are fueling the demand for pulse crops produced in Western Canada. India in particular is not producing enough to meet the demands of its ever-growing population. CN is working closely with our customers to develop supply chain solutions that capitalize on this opportunity.



Exports of split red lentils and other pulses from Western Canada are growing rapidly.

A significant portion of export volumes of pulses, especially lentils, is making extensive use of intermodal, including source loading in the Prairies and container stuffing at port. CN's empty container repositioning program from Eastern Canada to Saskatoon and Winnipeg allow steamship lines to secure export loads, thereby moving fewer empty containers back to the West Coast.

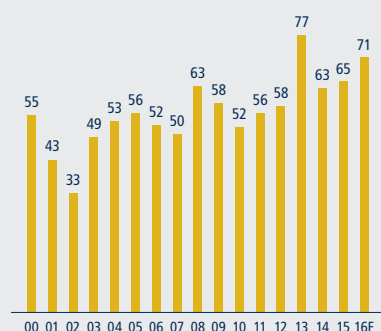
### CN is evolving along with the U.S. grain market

When demand for corn to produce ethanol began to expand in the mid-2000s, CN's U.S. grain franchise shifted away from an export focus towards more of a balance between exports and year-round corn and soybean movements. Also, expansion in the grain barge fleet, along with increased availability of truck and rail grain receiving capability along the Mississippi River, has altered trade flows and influenced transportation supply and demand economics.

When the direct rail export market is in full swing, our commercial freight solutions, such as our car auction and fleet integration programs, combined with strong and reliable operational performance, give customers greater certainty in meeting export sales. We are always working with our customers and shortline partners for ways to meet demand when it is at its greatest. We are also bringing other freight products to market that are operationally efficient fits for 25 to 50-car loaders.

### Canadian crop yields are increasing

**TOTAL CANADIAN GRAIN PRODUCTION FOR THE 2000-2016 CROP YEARS\***  
(million metric tonnes)



\* Total production of six majors plus peas and lentils  
Source: Statistics Canada, February 2017

## Outlook

Improved agronomic practices and genetic enhancements are promoting ongoing crop yield improvement in North America. This trend, along with the shift towards higher throughput grain elevators and port facilities, fits well with CN's model of highly efficient operations. However, the impact of weather conditions on crop production will remain the key driver of overall crop production in a given year.

CN's strategy of moving to a commercial framework with most of our grain customers as well as our commitment to working with all supply chain members provide a very constructive backdrop for grain shipments into the future.

In the U.S., expectations are for steady growth in demand for commodities such as corn and soybean/canola meal to support increased production of poultry, hogs and cattle. The production of biofuels such as ethanol will continue to be influenced in part by government policy.



# Fertilizers in Review

## CN IS HELPING THE FERTILIZER MARKET GROW

### Positive long-term fundamentals for potash

Canada is the largest producer of potash in the world and Saskatchewan is the centre for Western Canadian production. CN serves, or has access to, all the major potash mines in Saskatchewan. The majority of Canadian potash moves by rail to markets in the U.S. or to port for export through Canpotex to overseas markets.

Potash demand continues to grow worldwide and Canada has a strong competitive position in world markets. The world's growing population and limited arable land mean that crop yield improvements will play a critical role in meeting the increasing demand for food, underscoring solid demand for fertilizers. CN is well-positioned to benefit from an increase in demand through our broad North American franchise and connections to key ports to reach growth areas such as China, Brazil, India and South-East Asia.

### CN is growing with Canpotex

All Canadian export volumes of potash are currently sold through Canpotex. CN is an integral part of Canpotex's supply chain and, as their share of the global potash market grows, CN has been able to increase our market share with them.

Until recently, all of Canpotex's exports were shipped through terminals in Vancouver, BC, (170-car unit trains) and Portland, OR (130-car unit trains). As these terminals run into capacity constraints and to provide Canpotex

PICTURED:

CN train with a mix of fertilizer hoppers, Central City, IL.

## SASKATCHEWAN POTASH PRODUCTION CONTINUES TO GROW

New Canadian potash production capacity has come on line (Vanscoy) and potential new producers in the region surrounding Saskatoon and Regina continue with their development plans, driven by the long-term global demand and pricing of potash.

### GLOBAL POTASH DEMAND (M tonnes)

	2015	2016F	2018F	2020F	2020F vs. 2015	CAGR
Brazil	8.9	9.1	10.2	11.3	2.4	5%
SE Asia	9.9	10.3	11.3	12.2	2.3	5%
China	15.9	14.6	16.4	17.1	1.1	1%
India	3.9	4.0	4.6	5.4	1.5	7%

Source: CRU, February 2017





with additional flexibility, a third export option became critical to Canpotex's growth plans. In 2016, export capacity opened up at the potash terminal at the Port of Saint John, NB. CN worked with Canpotex to develop the potential of Saint John as a third export terminal for Canpotex, providing them with a competitive advantage into Brazil, one of the fastest growing fertilizer regions in the world.

CN had already invested to implement long-train operations in Eastern Canada by doubling the length of some rail sidings from 6,000 to 12,000 feet, acquiring new Alternating Current (AC) traction locomotives and expanding the use of Distributed Power. By taking advantage of available capacity in Eastern Canada and coordinating with the Port of Saint John, CN worked with Canpotex to implement 120-car potash trains from Saskatchewan to Saint John. When the concept proved to function well, CN and Canpotex increased train length to 153 cars. Now, 205-car unit trains at roughly 30,000 gross tons have become the new standard for CN moving potash from Saskatchewan to the East Coast.



Canpotex unit train, Park Gate, AB.  
Photo by CN Employee, Tim Stevens.

### Fertilizer production grows on low natural gas prices

With limited arable acreage and increasing pressure on agricultural production, fertilizer application is critical to achieving the quality and yields farmers expect. CN serves several fertilizer producers in Canada and the U.S., and transports various forms of nitrogen and phosphate fertilizers to core agricultural and industrial markets.

Natural gas is the main feedstock for nitrogen fertilizers. With the long-term projection of the price of natural gas

being favourable for fertilizer production, North America has new nitrogen fertilizer capacity that came on stream in 2016 and will ramp up production in 2017. New capacity for phosphates, however, is expected to come from overseas in Morocco and Saudi Arabia. While we expect this new low-cost supply could weigh on the sector, the potential for reduced exports from China will remain an important variable to watch. CN is, however, well-positioned to capitalize from the development of fertilizer distribution facilities on our network.



Unloading of potash cars at the Neptune facility, Vancouver, BC.

## Outlook

Global demand for potash is expected to grow, led by Brazil, South-East Asia, China and India. As a result, CN will continue working with Canpotex and potential new producers in Canada to help them capture market share as world food production increases. The U.S. market, considered a more fully developed market, remains strong. However, as Saskatchewan producers expand capacity and reduce production costs, they have an opportunity to capture market share from imports entering the U.S. from Russia, Belarus, Israel and others. CN is well-prepared to help our customers increase their penetration of the U.S. market.

The trade flows of fertilizers in North America are expected to be redefined due to new production coming on line, especially for nitrogen commodities.



# Intermodal

## OUR SUPPLY CHAIN MINDSET DELIVERS BEST-IN-CLASS SERVICE

The foundation of CN's strategic vision for our Intermodal franchise is to be a true supply chain enabler. By working collaboratively with our customers and fellow stakeholders, up and down the entire supply chain, we are able to provide efficient, innovative transportation products that deliver savings for our customers. Supported by a culture of continuous improvement, we generate sustainable growth by providing our customers with extensive reach via our three-coast network and industry-leading service. Ongoing investment in our network and services allows CN to deliver additional value by providing new market opportunities for our international and domestic intermodal customers.

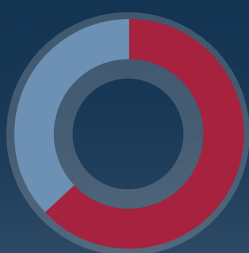


**PICTURED:**

A rubber-tired lift moves one of the thousands of containers handled at the Brampton Intermodal Terminal near Toronto, ON.

## Business unit overview

### 2016 MARKET BREAKDOWN (% of revenues)



■ 63% International  
■ 37% Domestic

# \$2,846M

2016 REVENUES

### KEY FACTS

- CNTL is one of Canada's largest trucking companies
- CargoCool® has one of Canada's largest reefer fleets
- Only railroad provider of Mobile Transport Trays (MTT)
- Dedicated customer service desk

### COMMODITIES

#### INTERNATIONAL

- Import and export containerized traffic

#### DOMESTIC

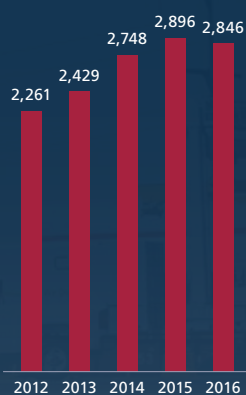
- Consumer products for large retailers
- Raw materials, manufactured goods and consumer products for wholesale trucking and logistics clients

### MARKET DRIVERS

- North American economy and consumer spending
- Global trade patterns
- North American industrial production

## Metrics

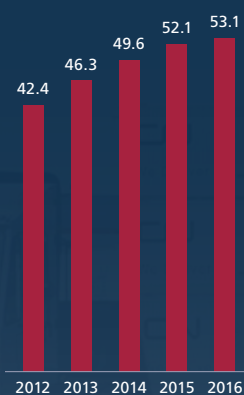
### REVENUES (\$ millions)



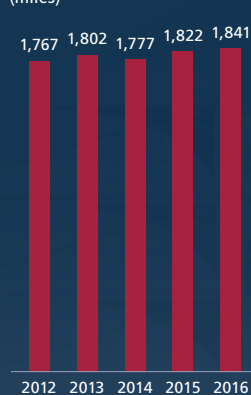
### CARLOADS (thousands)



### RTMs (billions)



### AVERAGE LENGTH OF HAUL (miles)



2016 vs. 2012 CAGR

+5.9%

+5.6%

+5.8%

+1.0%



## Spotlight



**KEITH REARDON**  
Vice-President, Intermodal and Automotive

### DELIVERING EFFICIENCIES AND CREATING VALUE

Intermodal has been CN's fastest growing business unit, with a CAGR of 8% since 2010. We are accomplishing this strong performance through a business model based on continuous service improvement, a supply chain approach that allows us to grow with our customers, and a culture that encourages nimbleness and the ability to seize opportunities quickly.

#### Collaboration is the key to growth

The goal of CN's energetic team of intermodal experts is to provide our customers with the highest level of cost-effective transportation and logistics services in North America. We innovate with our supply chain partners by taking a seamless, collaborative approach. Buoyed by our service level agreements with all the port authorities and terminal operators we serve, we strive to continually improve the efficiency and reliability of the whole supply chain.

To facilitate growth, maintain fluidity and extend our reach into new markets, CN continually invests in our inland terminals and we plan to undertake new expansions in 2017. Our terminal partners at CN-served ports are also making strategic investments to increase capacity to meet anticipated growth.

With a supply chain mindset, we have developed performance metrics with our customers that ensure they receive best-in-class service. By measuring our mutual success with daily and weekly scorecards, and through constant two-way communication, we help our customers outperform.

#### Two distinct markets

The CN intermodal book of business is segmented into two markets:

**International** – handles import/export container traffic on behalf of ocean carriers (also known as steamship lines).

**Domestic** – includes the retail segment in Canada, wholesale channels in Canada and the U.S. as well as transborder shipments between Canada, the U.S. and Mexico.

Our business is enhanced by CN's supporting infrastructure, including a trucking division (CNTL), a centralized dispatch group, a fleet of 8,900 containers

and 8,000 chassis, a logistics management team and an abundant supply of 40-foot containers from CN's Domestic Repositioning Program.

#### The CN advantage

CN has developed a very compelling service offering for our intermodal customers. There are many contributing factors to our success, starting with faster sailing times to Canadian West Coast ports. From Asia, Prince Rupert is two days faster and Vancouver is one day faster than shipping to L.A./Long Beach.

Other competitive advantages include fluid terminal operations, fast and consistent rail service to all major Canadian markets as well as a number of important U.S. markets in the Midwest and beyond, quick and easy access in and around Chicago as well as match-back programs to improve round-trip economics.



For more information on CN's domestic wholesale intermodal segment, please visit [www.cn.ca/wholesale](http://www.cn.ca/wholesale)

CN succeeds when we are able to help our customers succeed in their markets

Overview

Markets

Operations

Financials

### CN'S INTERMODAL SUPPLY CHAIN

CN's 21 intermodal terminals are located near ports and large urban centres, providing access to markets in North America and overseas. Our intermodal service allows all customers to benefit from the cost and environmental savings rail delivers.

- International
- Domestic
- Intermodal terminals
- Logistics parks
- Ports

### Innovation at work



#### 1 New Duluth Terminal

CN continues to expand our service offering by adding new inland terminals. The opening of the Duluth Terminal in partnership with Duluth Cargo Connect provides CN's ocean carriers and domestic intermodal customers with access to major markets in Minnesota and Wisconsin.

#### 2 Helping to grow the online world

CN is adapting to the growth of online shopping by matching retail import and domestic supply chains through our Domestic Repositioning Program as well as strategic partnerships with the strongest wholesale carriers in North America.

#### 3 Attracting new export facilities

In the fall of 2017, Ray-Mont Logistics is planning to open a containerized cargo facility at the Fairview Container Terminal in the Port of Prince Rupert to support growth in Canadian grain exports, including wheat, lentils, peas and soybeans.



# International Intermodal in Review

## CN'S BROAD MARKET REACH

Transporting import/export containers to key consumer markets throughout North America, the International intermodal segment represented 63% of CN's intermodal revenue in 2016.

### A full-service supply chain enabler

Whether customers are moving containers for import or export, CN provides full transportation services for all of the world's ocean carriers. Our unique market reach gives us direct access to the major ports of Vancouver, Prince Rupert, Montreal, Halifax, St. John, New Orleans and Mobile. CN enjoys rail access to the Port of Prince Rupert, the fastest-growing port in North America. Being the closest port to Asia, coupled with the speed and

reliability of CN's network, Prince Rupert offers some of the shortest transit times to key markets like Chicago.

CN's evolution from pure railroad thinking to supply chain enabler has been a key growth driver for our International segment through innovative service agreements with all major ports and terminal operators. CN intends to continue enhancing our International footprint with multi-million dollar expansions of inland terminals throughout our rail network.

### Inland terminal expansions

Year in, year out, CN invests to support overall network safety, fluidity, capacity and supply chain collaboration. As we continue to align our capacity with

port terminal expansions on three coasts and to meet projected increases in U.S.-destined volumes, inland terminal expansions are underway in the key growth markets of Detroit, Joliet and Memphis.

Terminal expansions will consist of increased ground storage, additional intermodal container handling equipment and gate automation. Once completed, these terminals will be better equipped to handle increased container volumes efficiently and cost-effectively.

Looking further ahead we are planning to develop other inland terminals throughout the network to accommodate growing traffic volumes, including a new \$250 million intermodal facility in Milton, ON.

#### PICTURED:

Once the current container terminal expansion project is completed in 2017, the Port of Prince Rupert's container capacity will increase by close to 60%.



The facility would benefit our customers and the regional economy by providing much needed inland terminal capacity, improving Central Canada's access to key transborder markets as well as the coastal gateways we serve.

### Gateway terminal expansions

2016 saw expansions at several CN-served ocean terminals, including the Ports of Montreal, Mobile and New Orleans. In 2017, a number of ongoing ocean terminal expansions will be completed. DP World's Prince Rupert Terminal will expand from their current annual capacity of 850,000 twenty-foot equivalent units (TEUs), to 1.35 million TEUs.

In conjunction with the terminal expansion, the Port of Prince Rupert will introduce refrigerated services. The import and export of chilled and frozen cargo is expected to remain a high-growth market and new capacity at Prince Rupert will help CN remain at the forefront. Global Container Terminals at Delta Port, located in the Port of Vancouver, is undergoing an expansion project that will create an additional 600,000 TEUs of capacity by the third



CN's grain transload facility in Chicago, IL, puts otherwise empty containers to work as they return overseas.

quarter of 2017, for a total throughput capacity of 2.4 million TEUs annually.

CN is well-prepared to handle the additional volumes that will result from these expansion projects.

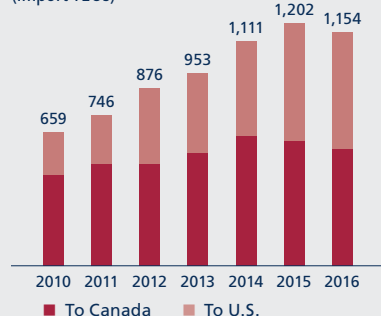
### Intermodal export grain and specialty crops

CN's grain and specialty crop segment has experienced significant growth in recent years due mainly to our role as a supply chain enabler and our ability to align steamship line container capacity

with grain shipper demand. Our ocean carrier partners are securing exports from the Prairies, which improves round-trip economics by enhancing both cost control and revenues. Grain shippers are also benefiting by using otherwise empty containers to grow their export supply chain and create surge capacity during periods of peak demand.

### Growth in CN's West Coast import volumes

#### PORTS OF PRINCE RUPERT AND VANCOUVER (Import TEUs)



TEU: Twenty-foot Equivalent Unit

## Outlook

Our rail access to three North American coasts positions us well to support growth in our International intermodal market segment. CN-served port expansions to be completed throughout 2017, combined with our innovative service offerings, also position CN's International segment to benefit from additional trade growth and provide new opportunities for our import/export customers.

Canadian trade is expected to remain stable, with potential upside as industrial development rebounds. The U.S. import/export market is anticipated to grow as our extensive reach into the Midwest and further capacity expansions of inland terminals will support increased demand for both imports and exports.



# Domestic Intermodal in Review

## INNOVATION DELIVERING GROWTH

Representing 37% of CN's 2016 intermodal revenues, our Domestic intermodal franchise is a highly diversified portfolio of products and markets for customers across North America. A unique characteristic of our Domestic business is the very long average length of haul (about 1,600 miles in 2016). CN's Domestic intermodal segment is built on a total supply chain perspective that is focused on collaboration with our customers and key partners.

We strive to enhance the value we provide to our customers' supply chains through product innovation.

### Highly diversified domestic growth strategy

The Domestic segment focuses on the development of new markets, products and services. Examples include supplying the rapid growth in e-commerce, diversifying our network through improvements to our Mexico service, and increasing development of the automotive market.

Other areas of focus include expansion of our CargoCool® program as well as ongoing innovations in our key retail,

manufacturing, less-than-truckload and full-load wholesale businesses. Our Domestic team collaborates with the wholesale community for specialized services and U.S. market reach beyond the CN rail network.

CN Domestic intermodal leverages our competitive advantages to co-market new supply chain options with our strategic partners by developing new markets. As well, we work with existing customers, including commodity-based segments, such as grain, to drive strategic marketing initiatives and new innovative product offerings.

As the grain and specialty crop industry continues to invest in the world food supply market, CN is very well-positioned to handle the continued growth as more grain shippers and ocean carriers participate in our export grain intermodal program. For example, CN invested to increase grain handling capacity at our Saskatoon intermodal terminal in 2016.

**PICTURED:**  
CN's Domestic intermodal service brings together the strengths of both rail and trucking.

Photo by CN employee  
Keith Bromley.

## CargoCool®

CN's CargoCool provides a fast, convenient, cost-competitive and eco-friendly approach to moving temperature-sensitive goods. With state-of-the-art monitoring systems and a dedicated team of service representatives, CN CargoCool provides a superior cold supply chain process that enhances food security. CN is the first railroad to introduce a refrigerated program operating in Canada, the U.S. and Mexico that offers traceability and post-audit capability.

CN has invested more than \$20 million over the past few years to increase CargoCool capacity. In 2016, CN added 200 new next-generation 53-foot refrigerated containers, bringing the CargoCool fleet to 620 units. The system also uses new power packs, clip-on gensets, underslung generator chassis and 40-foot insulated containers.

Since 2012, CargoCool revenues have grown at a CAGR of 14%. In 2016, this segment contributed revenues in excess of \$200 million. We have been successful in expanding our service offering from frozen food to fresh. Our aim is to use



Our advanced monitoring system detects the slightest variation in cargo temperature.



CN ships temperature-sensitive goods in 620 smart containers.

our experience and capabilities in the cold supply chain to penetrate other high-value, service-sensitive segments such as pharmaceuticals and cosmetics.

Given the growing global population and increasing demand for frozen processed food, CN is confident that this segment has healthy growth potential. The growth is expected to be driven by domestic Canada and transborder road-to-rail conversion, expansion of service to/from Mexico and continued leverage of CN's Domestic Repositioning Program for reefer assets. CN plans to acquire another 100 53-foot refrigerated containers in 2017 to handle the anticipated growth.

CargoCool provides superior reach, competitive transit times, critical remote monitoring and seamless customs services that ensure our customers' cargo gets to the right place at the right time at the right temperature.



Our network of 1,200 owner/operator trucks gets our customers' goods where they need to go.

## Outlook


CN's Domestic segment has solid growth potential given our network reach and best-in-class service, as well as expected capacity restrictions in the long-haul trucking industry. Current positive economic indicators including increasing consumer confidence and rising housing starts are expected to encourage growth. Our outlook is supported by the service and sustainability advantages rail can offer over other transportation modes. Additionally, CN's innovative approach to new services and products provides optimal shipping solutions for supply chains across North America.



# Automotive

## WINNING IN THE NORTH AMERICAN AUTOMOTIVE SUPPLY CHAIN

As the global automotive supply chain becomes more complex and interconnected, CN continues to develop a wide range of product solutions to allow us to have a greater participation in this service-sensitive market. We are also looking to extend our reach through additional automotive distribution centers in major markets. In order to provide good quality service to our finished vehicle customers, we continue to drive velocity improvements both on our network and within our facilities. CN's intermodal service also provides the efficient transportation of auto parts from domestic and international suppliers.

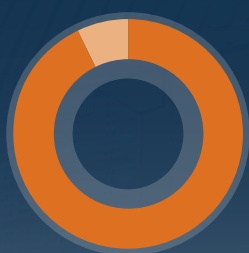


PICTURED:  
CN has invested in our Toronto auto compound, the largest auto facility on our network, to increase capacity and overall operating efficiency.



## Business unit overview

### 2016 COMMODITY BREAKDOWN (% of revenues)



93% Finished Vehicles  
7% Auto Parts

# \$759M

2016 REVENUES

### KEY FACTS

- Over 2.4 million finished vehicles handled annually
- 18 automotive compound facilities
- Serving 13 North American vehicle assembly plants
- 5,700 multi-level railcars in CN's fleet

### COMMODITIES

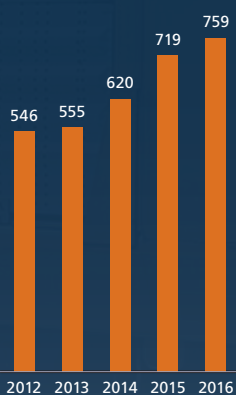
- Finished vehicles
- Auto parts

### MARKET DRIVERS

- Automotive production and sales in North America
- Consumer confidence and disposable income
- Average age of vehicles in North America
- Price of fuel

## Metrics

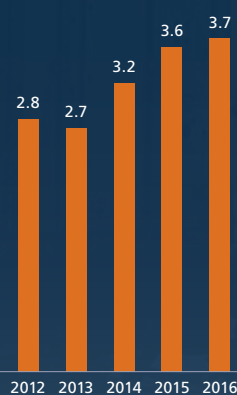
### REVENUES (\$ millions)



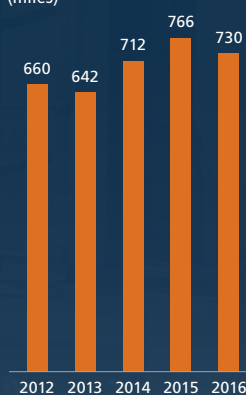
### CARLOADS (thousands)



### RTMs (billions)



### AVERAGE LENGTH OF HAUL (miles)



2016 vs. 2012 CAGR

+8.6%

+4.1%

+7.2%

+2.6%

Overview

Markets

Operations

Financials



## Spotlight



**WILLIAM (BILL) REICHARD**  
Assistant Vice-President, Automotive

### LEVERAGING INNOVATION TO SUSTAIN SHARE GROWTH

CN handles close to 70% of the finished vehicles sold in Canada. Our automotive business has grown in recent years thanks to our network advantage, quality service and continued investment in infrastructure and equipment. In addition, CN offers customers innovative solutions for the handling of their finished vehicles and parts. These benefits have resonated with our customers and have enabled CN to be successful in the market.

#### Driving efficiencies in the supply chain

CN continues to invest in equipment and infrastructure to drive growth in the automotive market and meet customer expectations. For example, in 2016, we added 10% capacity to our bi-level fleet to accommodate growth in SUV and light truck volumes. In order to create efficiencies we are balancing our network with growth in both the eastbound and westbound directions to maximize the utilization of our multi-level fleet. Consolidating specific destination traffic reduces switching time and terminal dwell, thus improving velocity and throughput. At our auto compounds, we have implemented geographic baying of vehicles to help the haul-away community load more expeditiously.

In the auto parts business, we have begun to transload 40-foot import containers into 53-foot containers to minimize the empty flow of equipment to and from Western Canada and Detroit.

#### Expanding automotive network capacity and reach

CN has grown our market share in Canada and, with our unique three-coast access, we are well-positioned to support growth in the U.S. For example, with a new auto compound at the Port of Mobile planned for 2018, we believe there will be opportunities to attract North-South traffic for domestic distribution as well as innovative short sea options to handle vehicle and auto parts business from Mexico to the U.S. and Canada.

Furthermore, we intend to support growth in the U.S. market by investing in new auto compounds in key metropolitan areas along our network.

Our auto compound in Halifax, NS, has grown by roughly 30% over the last five years. With the new Comprehensive Economic Trade Agreement between Canada and Europe, CN is once again increasing our capacity in Halifax to take advantage of potential growth in automotive imports and exports to/from Europe.

#### Employing technology to enhance supply chain collaboration

CN recognizes that our customers and partners are assessing technologies that could change the way shipments are planned and executed. Incorporating these innovations within CN's supply chain model will be critical to continuing the successful collaboration that drives supply chain efficiencies through enhanced shipment visibility and better planning.



For more information  
on CN's automotive  
operations, please visit  
[www.cn.ca/automotive](http://www.cn.ca/automotive)

# Connecting auto parts to finished vehicle assembly plants and North American buyers

Overview

Markets

Operations

Financials

## CN'S AUTOMOTIVE SUPPLY CHAIN

CN serves 13 assembly plants in Ontario, Michigan and Mississippi, accounting for 25% of North American production, as well as ports on three coasts. Our network allows us to distribute finished vehicles and auto parts to major population centres in Canada and the U.S. Midwest.

- Finished vehicles
- Auto parts
- Automotive facilities
- Assembly plants
- Parts plants
- Ports



## Innovation at work



### 1 Optimizing container capacity

Containerized auto parts from overseas are transloaded from 40-foot steamship containers into 53-foot domestic containers, which gives manufacturers more options to move parts and minimizes the number of empty containers.



### 2 Managing our fleet

An innovative tool helps CN meet our customers' empty supply requirements. It has the ability to analyze hot spots and display the release rate on loading/unloading, up-to-date transit times, congestion pockets and demand trends.



### 3 Performing vehicle modifications

For customers requiring post-production options, our Halifax auto compound can provide services such as installation of stereos, wheel locks, owner's manuals, splash guards, floor mats and more to ready the vehicles for distribution.



# Finished Vehicles and Auto Parts In Review

## CREATING AN EFFICIENT NORTH AMERICAN AUTOMOTIVE SUPPLY CHAIN

### Shipments of finished vehicles continue to grow

The nature of the finished vehicle business is that spring is the peak season for sales and vehicle shipments. It is during this period that the availability of both railcars and compound space can become tight. CN is continually looking for ways to generate the required capacity to handle the business in the most efficient manner throughout the year. As a result, CN is investing in infrastructure, rolling stock and technology to enable growth in the dynamic automotive business.

### Expanding auto compound capacity

CN has invested more than \$16 million over the last five years in our auto compounds in Halifax, Toronto, Edmonton, Chicago, Memphis and Jackson to support the growth in our automotive business.

In order to generate greater efficiencies within the existing footprint of our auto compounds, CN is implementing geographic baying of vehicles, which lets haul-away drivers load vehicles and exit the compounds more quickly.

### Investing to accommodate growth

CN's franchise is geared to SUV and light truck production, which currently accounts for 60% of all finished vehicle

sales in North America. In order to accommodate expected continued growth in this market segment, CN has invested in 10% more bi-level fleet capacity. As well, CN has a fleet of multi-purpose railcars that can be changed from bi-level to tri-level depending on consumer demand.

### Improving service to customers

CN is evolving to provide faster transit service for our automotive customers. We are redesigning our train service in certain corridors to exploit the speed of our intermodal trains. This will also generate faster asset turns on the multi-level fleet and create railcar capacity.



PICTURED:

The Halifax auto compound is a 100-acre facility located on the north-east side of the Halifax harbor, handling close to 170,000 vehicle imports annually.

### The auto parts supply chain

Auto parts move in boxcars as well as domestic and international containers. A large number of auto parts originate overseas in containers. Mexico is also a major source for auto parts. CN is well-positioned to participate in the end-to-end supply chain as CN has the majority share of steamship lines calling on Canadian ports and the majority share of production facilities serving Canada.

CN moves containerized imports of auto parts through both our West and East Coast ports directly to the production centers of Michigan and Ontario. We also handle containerized exports of auto parts through Vancouver and Halifax. Through our domestic channel, auto parts can be delivered to Parts Distribution Centers in 40-foot international containers or transloaded into 53-foot domestic containers. CN's intermodal service has the flexibility and the fleet capacity to handle growth.



CN manages GM's pipeline for wheel imports from Asia.

### Effective management of parts shipments worldwide

CN Supply Chain offers the services of managing the movement of auto parts from the origin supplier to the destination production plant. We will arrange all aspects of the supply chain, including the ocean, rail, truck, transload (if required), customs, customer service and billing.

CN's Auto-Desk provides dedicated customer service for time-sensitive, high-value auto parts shipped in containers.

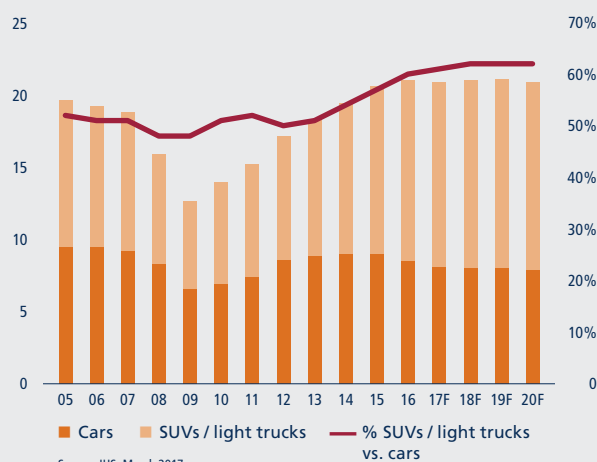
The Auto-Desk tracks roughly 1,000 shipments per week en route to North America, ensuring the parts are moved expeditiously to the production plant. This high level of supply chain management is required for the "just-in-time" inventory strategy of automotive manufacturers.

### Case study: An optimized solution for General Motors

GM was not getting its supply of wheels delivered from Asia to its plant in Detroit in a timely manner. CN Supply Chain proposed to manage GM's complete pipeline for wheels from Asia to Detroit. The wheels are now transloaded out of international containers into domestic intermodal containers on the West Coast. GM benefits from faster, more reliable transit times. The steamship line benefits by not having to reposition its empty containers back to port. CN benefits by filling intermodal containers that would otherwise have moved empty back east.

## North American SUV and light truck sales outpacing cars

NORTH AMERICAN LIGHT VEHICLE SALES 2005–2020 (millions)



## Outlook

After seven straight years of North American finished vehicle sales growth, from 12.7 million vehicles in 2009 to 21.0 million in 2016, 2017 sales of finished vehicles in North America are expected to stabilize. Following significant investment in our automotive compounds and bi-level fleet, CN has been steadily increasing our share of finished vehicle volumes, including several new pieces of business secured in the latter part of 2016. In 2017, the focus will be on the development of new facilities in the U.S. to allow greater market penetration there.

Manufacturing volumes of auto parts are forecast to follow finished vehicle production and stabilize at peak 2016 levels. CN has the robust international and domestic intermodal franchise required to increase our participation in the auto parts market.

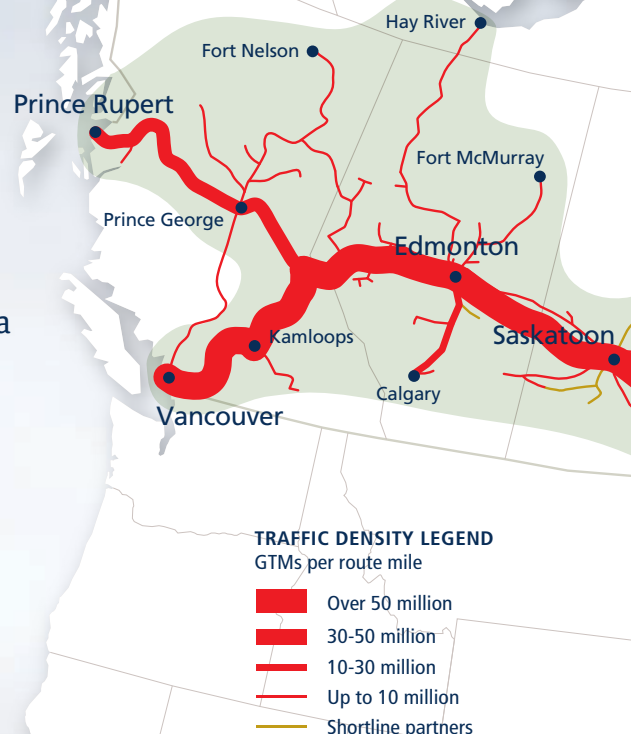


# Operational Overview

## TAKING SERVICE TO THE NEXT LEVEL

CN has been long recognized for our leading operating model, demonstrated by the lowest operating ratio of any Class 1 railroad for more than 15 years. Leveraging our operating model and unique franchise, we've evolved our strategic agenda over the past seven years to focus on our unique supply chain approach.

This mindset sets us apart from our closest competitors and accelerates service and product innovation. Building on our foundational strengths of operational and service excellence, we aim to step up the pace of innovation to secure our position for the long run.



## Regional performance

**REGIONAL GTMs**  
(% of 2016 total GTMs)

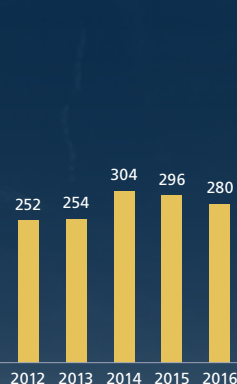
■ 49% Western  
■ 24% Eastern  
■ 27% Southern



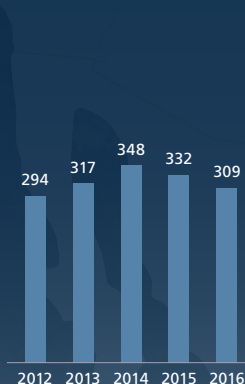
**WESTERN REGION**  
(millions of GTMs per route mile)



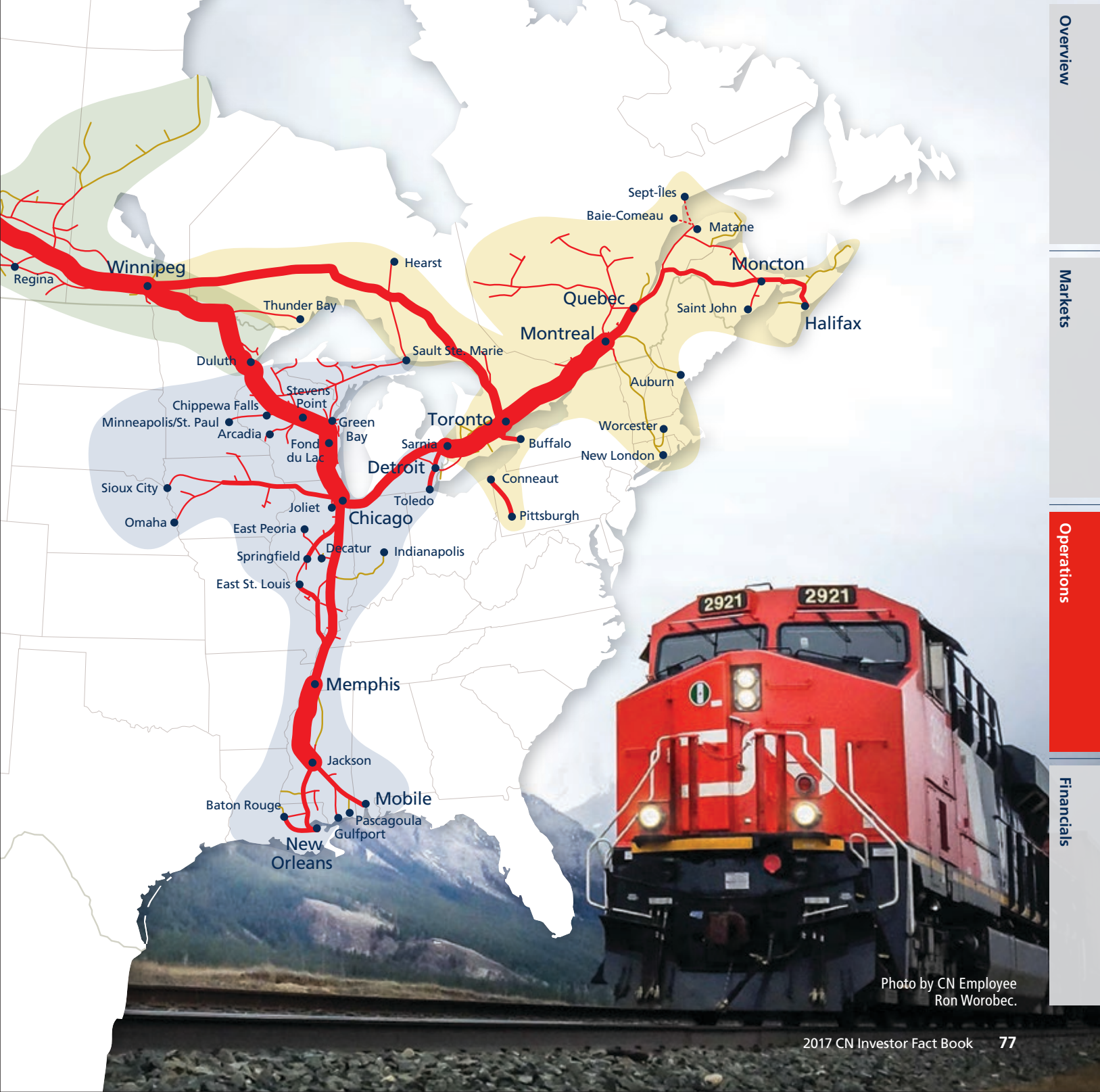
**EASTERN REGION**  
(millions of GTMs per route mile)



**SOUTHERN REGION**  
(millions of GTMs per route mile)



We continue to invest  
in our great franchise  
year after year



Overview

Markets

Operations

Financials

Photo by CN Employee  
Ron Worobec.



## Western Region



**DOUG RYHORCHUK**  
Vice-President, Western Region

### CN'S ADVANTAGE IN THE WEST

**1 Long-train operations** – Over the past 15 years, CN has invested heavily to serve our customers with more efficient long-train operations by extending sidings from 6,000 to 12,000 feet, acquiring new Alternating Current (AC) traction locomotives and expanding the use of Distributed Power (DP).

**2 Access to the North** – CN has access to the northern resource-rich regions of British Columbia, Alberta and Manitoba, reaching as far north as the Northwest Territories. Prince Rupert, located near the Alaska border and the closest port to Asia, is also served by CN.

**3 Low grades** – CN enjoys the lowest grades of any railroad through the Rockies, allowing us to get our customers' cargo to destination more efficiently by maximizing train length and fuel productivity while improving train handling and safety, even in winter.

### DELIVERING THE GOODS TODAY, INVESTING FOR TOMORROW

#### Investing to support Western Canada's resources

CN sees significant long-term potential for our resource oriented customer base in Western Canada. We want to provide our customers with efficient rail transportation that enhances their competitiveness in North American and global markets. That's why we continue to invest in our Western network to accommodate longer, heavier and faster trains in Alberta, Saskatchewan and Manitoba.

#### Focused on long-train operations

In 2016, CN invested close to \$700 million in Western Canada to improve the safety and fluidity of the network as well as to allow for more efficient long-train operations by building longer sidings of up to 12,000 feet. Since 2012, CN has invested in new AC locomotives that provide better rail adhesion for pulling longer, heavier trains. These locomotives are also equipped with DP, which allows a locomotive to be placed anywhere along a freight train and be remotely controlled from the lead locomotive. DP enables CN to run longer trains in cold weather when trains would normally be shortened due to lower air pressure in the braking systems. Combined, these investments create more capacity and resiliency within the supply chain, enabling customer shipments to reach the right markets at the right time.

#### Advancing the grain supply chain

CN is promoting open communication with all of our stakeholders. All parties are constantly sharing information to understand and optimize supply chain performance, including scheduling hopper car and container supply, planning vessel loading as well as managing the pipeline in order to avoid pinch points and keep the supply chain running smoothly. For example, some customers are now topping up the air pressure in the railcars before CN crews arrive, cutting hours off cycle times and in turn earning credits from CN.

Grain customers continue to make investments along our network to support more sales of Canadian grain on the world market. Elevator companies are upgrading facilities to enhance throughput by constructing new elevators with efficient loop track designs. Port terminals have also expanded and designed facilities to unload unit trains at a faster rate and with improved vessel loading capabilities.

As a result of the investments made by CN and our customers, as well as enhanced supply chain collaboration, CN was able to increase Western Canadian grain order fulfillment from a peak weekly average of 3,300 grain cars spotted in 2007 to over 6,000 in 2016.





## Regional highlight

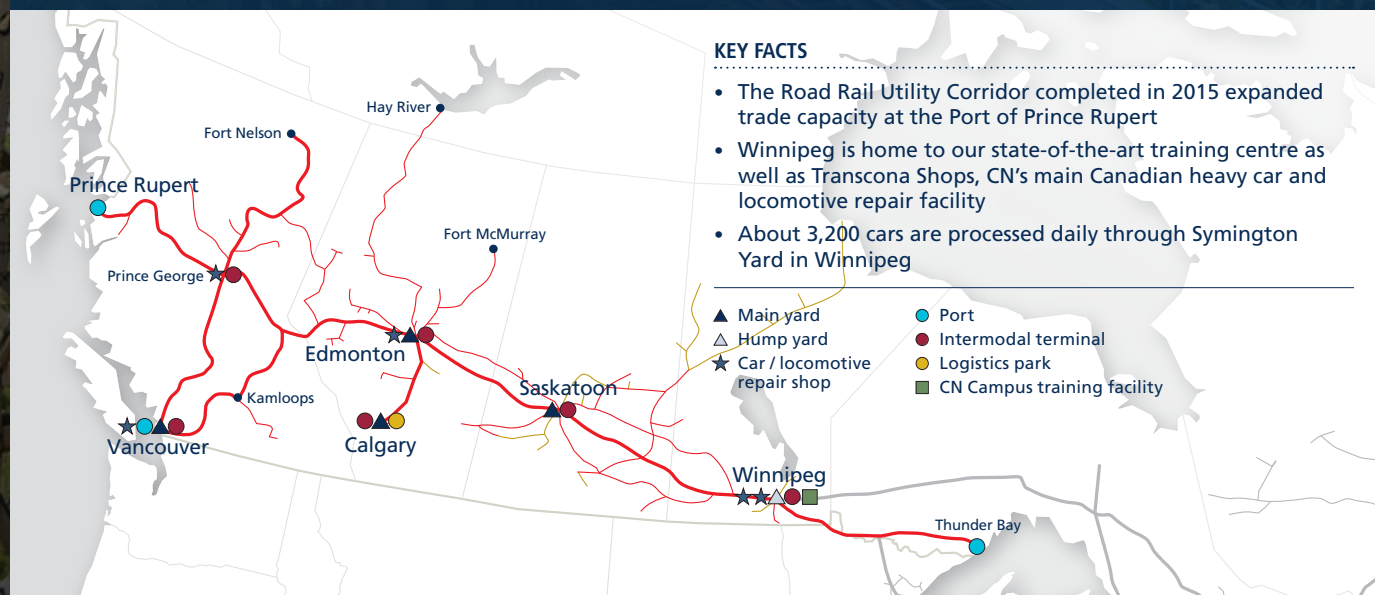
### Container business growing through Prince Rupert

Prince Rupert is the fastest-growing port in North America. To increase its ability to handle new growth, DP World, the terminal operator, is increasing its throughput capacity from 850,000 TEUs to 1.4 million TEUs by the summer of 2017.

CN's Network Operations group has been working with other CN planning teams in Finance, Marketing and Human Resources in a fully integrated effort to prepare for DP World's container terminal expansion. CN has the capacity in place to take full advantage of the increased volumes when the expansion is complete.

**PICTURED:**  
CN train carrying  
forest products  
between Prince George  
and Vancouver.  
Photo by CN Employee  
Michael Thomas.

## WESTERN REGION FACILITIES





## Eastern Region



**MICHAEL FARKOUH**  
Vice-President, Eastern Region

### CN'S ADVANTAGE IN THE EAST

**1 Extensive reach** – CN's Eastern Region extends from Winnipeg eastwards, interconnecting with our U.S. network at several points in Ontario and south of Montreal. CN's network extends through Canada's industrial heartland in Ontario, deep into the mineral and timber producing regions of northern Quebec, continuing east into the Maritimes all the way to the Port of Halifax, a key gateway to Europe.

**2 Canada's population centre** – About two-thirds of Canada's population resides within CN's Eastern Region, driving demand for food and consumer products. CN continues to invest in major facilities such as the Brampton Intermodal Terminal and MacMillan Yard near Toronto in order to support future growth in these segments.

### LEVERAGING THE STRENGTH OF OUR FRANCHISE

#### Growing in service-sensitive markets

CN's aim is to grow our volumes at low incremental cost and we achieve that through supply chain innovation. Our mindset allows us to deliver comprehensive services across a wide range of industries and products. We invest time and capital to create more efficient solutions for our customers with a view to the long term.

We try to put ourselves in the shoes of our customers, especially those who compete in service-sensitive markets like automotive and consumer goods. That is why we're investing to expand our intermodal and automotive terminals, and working with our customers to develop reciprocal scorecards to improve our performance with businesses where service matters most.

#### Investing in the network

Given expectations of solid freight volumes in the years ahead, CN invested more than \$550 million in 2016 in Eastern Canada to build for the future and improve safety, capacity and fluidity across our networks in Ontario, Quebec and the Maritimes.

In recent years, CN has also invested in our main line corridor in Northern Ontario by installing sections of double track and extending sidings to accommodate longer, more efficient

trains. These investments enable long intermodal and potash trains between Western and Eastern Canada. CN is now able to absorb incremental volumes with trains up to 12,000 feet long.

#### Eastern ports are growing

CN is moving a lot more traffic through our East Coast ports by working with our steamship line customers and other supply chain partners to grow their business.

With the fastest transit times from Europe of any port on the Eastern Seaboard, the Port of Halifax is a mainstay in global trade. Via CN, the only rail connection from the Port of Halifax, the port is just two days transit to hubs like Toronto, giving cargo-ready access to major markets in Canada and the U.S. Midwest. To improve the port's competitiveness, \$350 million has been invested by all stakeholders in the last five years.

With rail integrated throughout its operations, the Port of Montreal is a natural partner for CN. Situated close to the U.S. border and readily accessible from transatlantic markets, the Port of Montreal provides ideal access to the U.S. Midwest and major Canadian centres. The port handles 30 million tonnes of cargo annually and, with the recent completion of the Viau container terminal, increased its annual capacity by 350,000 TEUs to 1.9 million TEUs.



PICTURED:  
CN serves the Port  
of Halifax, which is  
just two days by rail  
from Toronto.



Conceptual rendering  
of Milton Logistics Hub.

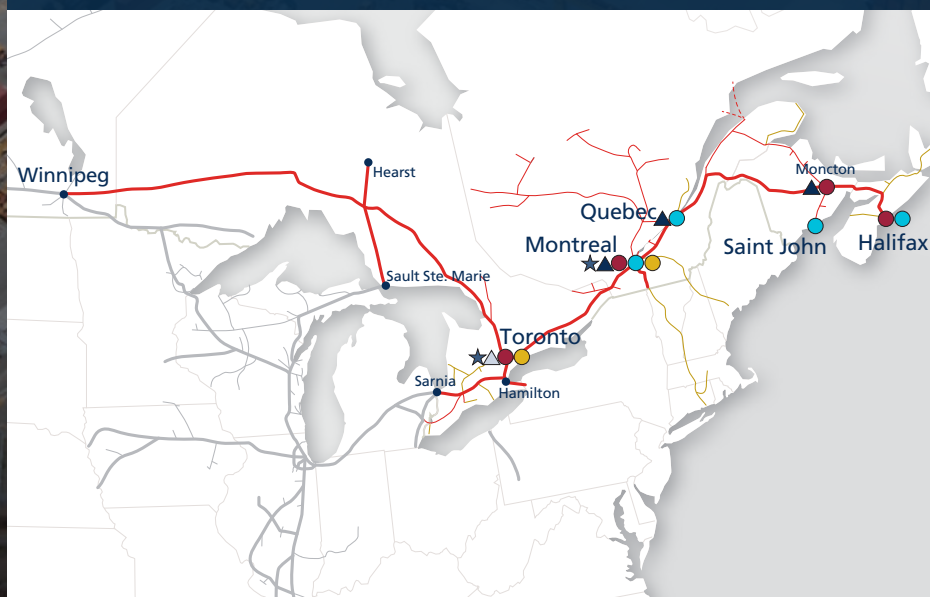
## Regional highlight

### Creating new supply chain efficiencies

To accommodate future growth efficiently, CN has proposed building a new \$250 million intermodal facility in Milton, ON, known as the Milton Logistics Hub. The facility would benefit our customers and the regional economy by providing much needed inland port capacity, improving Central Canada's access to key transborder markets as well as the coastal gateways we serve.

The project is being assessed through a comprehensive federal review process. In 2016, CN took steps to satisfy the regulatory requirements, submitting an Environmental Impact Statement to the Canadian Environmental Assessment Agency and an application to the Canadian Transportation Agency. The documents and other information on the project are available at [www.cnmilton.com](http://www.cnmilton.com).

## EASTERN REGION FACILITIES



### KEY FACTS

- CN's corporate headquarters is located in Montreal, QC
- Eastern Region is home to CN's two largest inland intermodal terminals (Brampton and Montreal) and our largest classification yard (MacMillan Yard near Toronto)
- CN serves four deep water ports in the Eastern Region: Halifax, Saint John, Montreal and Quebec

- ▲ Main yard
- △ Hump yard
- ★ Car / locomotive repair shop
- Port
- Intermodal terminal
- ◆ Logistics park



## Southern Region



**JOHN ORR**  
Senior Vice-President, Southern Region

### CN'S ADVANTAGE IN THE SOUTH

**1 Chicago Outer Belt** – CN has now fully integrated the former Elgin, Joliet and Eastern (EJ&E) network that encircles Chicago. This allows us to link all five of our rail lines entering Chicago from all directions into one seamless system. The result is fluid operations and higher throughput capacity in the Chicago area.

**2 New gateway for U.S. economy** – With increased Panama Canal capacity and new, efficient intermodal facilities at the Port of Mobile and the Port of New Orleans providing on-dock access for rail shipments, CN is looking to draw increased volumes of container traffic entering North America via the Gulf of Mexico.

**3 Building for the future** – CN is investing significantly to expand our service offering in the U.S., including new development and investment in our Detroit, Memphis and Joliet intermodal terminals.

### DEMONSTRATING OUR LONG-TERM COMMITMENT

#### CN's Chicago advantage

CN's acquisition in 2009 of the former EJ&E network that encircles Chicago allowed us to link all five of our rail lines entering this all-important hub into one seamless system around the city. In doing so, our trains bypass the congestion on inner city corridors, creating an important competitive advantage for CN. We are the only railroad not heavily reliant on belt roads in Chicago to deliver traffic to interchange points with other railroads and for furtherance on our network. Our trains now move twice as fast through Chicago, giving us a minimum 24-hour advantage over the competition.

CN completed the integration of the former EJ&E network by investing hundreds of millions of dollars on infrastructure improvements, such as connections, siding extensions and signaling. We also invested in upgrades to improve the capacity and efficiency of the former EJ&E's Kirk Yard in Gary, IN, now our largest railcar classification and interchange yard in the U.S.

Today, with approximately 25% of our freight traffic touching the city, CN is focused on improving network efficiencies to ensure the safe and efficient flow of freight and passenger trains through the Chicago area.

#### Investing in the network

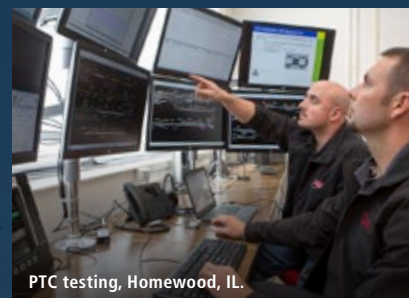
CN is building for the future with large capital investments in long-term safety and capacity improvements to ensure we continue to play our role as a true backbone of the economy. In recent years, CN has invested significantly to improve the velocity and resilience of our Ranier-to-Chicago main line corridor by installing sections of double track and extending sidings to accommodate longer, more efficient trains and improve border fluidity.

Examples include Steelton Hill, WI, where bottlenecks in transborder shipments are now avoided. Similarly, CN performed work on the Paul Tellier Tunnel between Port Huron, MI, and Sarnia, ON, to improve the capacity and fluidity of shipments to and from Central Canada. CN has also opened up new intermodal terminals in recent years (for example Duluth and Joliet) and invested in existing terminals to support growth.

CN is planning for the future with several projects having received all required permits and ready for implementation when volumes pick up. Examples of these "shovel-ready" projects include the Joliet Yard bypass and the Fond du Lac Yard bypass.



PICTURED:  
CN's bypass route  
around Chicago gives  
us a 24-hour edge on  
the competition.



PTC testing, Homewood, IL.

## Regional highlight

### Positive Train Control is progressing

The U.S. federal government has mandated installation of Positive Train Control (PTC) on certain rail lines. Having spent about US\$500 million to date, CN is progressing with targets filed with the Federal Railroad Administration (FRA), including training employees, equipping locomotives, installing radio towers, and completing track segments. CN is showing leadership in the industry, with Mike Cory, CN Executive Vice-President and Chief Operating Officer, chairing the PTC committee studying interoperability with other railroads. We plan to invest CDN\$400 million in 2017 to continue to install the required technology. In total, CN plans to invest US\$1.2 billion to implement PTC on about 3,500 route-miles of track by 2020.

### SOUTHERN REGION FACILITIES



### KEY FACTS

- About one-third of our rail network and employees are located in Southern Region
- Roughly one out of every four CN carloads originates, terminates or travels through the Chicago hub
- Homewood, a Chicago suburb, is home to CN's U.S. corporate headquarters and a US\$25-million state-of-the-art training centre, which opened in 2014

- |                                |                               |
|--------------------------------|-------------------------------|
| ▲ Main Yard                    | ● Port                        |
| △ Hump Yard                    | ● Intermodal Terminal         |
| ★ Car / Locomotive Repair Shop | ● Logistics Park              |
|                                | ■ CN Campus Training Facility |



# Multimodal



**MARTIN GUIMOND**  
Vice-President, Multimodal Operations

## END-TO-END SUPPLY CHAIN SOLUTIONS

### Focused on the customer

At CN, we strive to improve customer service and operational efficiency through a mindset that focuses on the entire movement of goods through the complete supply chain. We are increasingly connected to every step of the process, integrating all supply chain players to improve how products get from true origin to ultimate destination. We work with our customers to drive down costs, improve visibility of the entire move with common metrics, and seamlessly integrate our services into the operations of our customers.

Building on the strides we have made in supply chain collaboration, we are developing new solutions for more complex challenges in service-sensitive markets. Industries that work with smaller lot sizes and just-in-time inventory management systems, such as automotive and consumer goods, require dedicated customer service and a high level of supply chain management. We aim to continuously improve our efficiency and level of customer service by leveraging the latest innovations and technologies to exceed our customers' expectations of a supply chain leader.

## EXTENDING OUR NETWORK REACH

CN's extensive network of distribution centres includes strategically positioned transfer, warehousing and reload facilities that provide a number of services to both rail- and non-rail-served shippers and receivers. This allows us to extend the market reach of existing rail shippers and enables non-rail-served shippers and receivers to benefit from rail transportation's cost and environmental advantages.



For more information on CN's supply chain solutions, please visit [www.cn.ca/supply-chain-solutions](http://www.cn.ca/supply-chain-solutions)



### Automotive

Through our network of 18 automotive distribution facilities, CN moves finished vehicles and parts for dealers and assembly plants across North America. We also provide gateway services through the ports of Halifax and Vancouver for import/export of vehicles to/from Europe and Asia.



### CargoFlo®

CN has a network of 21 CargoFlo® bulk distribution terminals. These strategically located transload facilities are designed to handle our customers' liquid and solid bulk commodities such as specialty grains and plastics – quickly, safely and contaminant-free.

95 supply chain facilities  
strategically located  
across our network to  
serve major markets

#### SUPPLY CHAIN FACILITIES

CN is a key part of the North American supply chain that links the towns and cities along our network to world markets. We work hard with our partners to innovate, create and implement solutions that drive sustainable growth for our customers and the communities we serve.

- Port
- Automotive
- CargoFlo®
- Forest products distribution centre
- Intermodal terminal
- Logistics park
- Metals and minerals



#### Forest products

CN is the largest rail carrier of forest products in North America and we offer the industry's first truly integrated solution. Our network of 14 strategically positioned, state-of-the-art transfer, warehousing and reload facilities extend our customers' reach and reduce their costs.



#### Intermodal

CN's 21 intermodal terminals are located near ports and large urban centres, allowing goods to access major markets in North America and overseas via train, truck and ship.



#### Logistics parks

CN's five logistics parks are multi-functional facilities connecting rail with trucks, vessels and barges as well as offering warehousing and distribution services.



#### Metals and minerals

Through our network of 16 metals and minerals distribution centres, CN is working closely with customers to develop innovative transportation solutions to make the entire supply chain more efficient.



# Quarterly Consolidated Statements of Income

Unaudited

(\$ millions, unless otherwise indicated)

	2015					2016				
	Q1	Q2	Q3	Q4	Year	Q1	Q2	Q3	Q4	Year
<b>REVENUES</b>	3,098	3,125	3,222	3,166	<b>12,611</b>	2,964	2,842	3,014	3,217	<b>12,037</b>
<b>OPERATING EXPENSES</b>										
Labor and fringe benefits	668	542	588	608	<b>2,406</b>	590	469	495	565	<b>2,119</b>
Purchased services and material	457	434	401	437	<b>1,729</b>	408	377	379	428	<b>1,592</b>
Fuel	361	327	293	304	<b>1,285</b>	235	243	261	312	<b>1,051</b>
Depreciation and amortization	296	285	287	290	<b>1,158</b>	307	296	312	310	<b>1,225</b>
Equipment rents	94	83	93	103	<b>373</b>	95	92	92	96	<b>375</b>
Casualty and other	159	92	73	70	<b>394</b>	112	72	68	111	<b>363</b>
<b>Total operating expenses</b>	<b>2,035</b>	<b>1,763</b>	<b>1,735</b>	<b>1,812</b>	<b>7,345</b>	<b>1,747</b>	<b>1,549</b>	<b>1,607</b>	<b>1,822</b>	<b>6,725</b>
<b>Operating income</b>	<b>1,063</b>	<b>1,362</b>	<b>1,487</b>	<b>1,354</b>	<b>5,266</b>	<b>1,217</b>	<b>1,293</b>	<b>1,407</b>	<b>1,395</b>	<b>5,312</b>
Interest expense	(104)	(105)	(111)	(119)	<b>(439)</b>	(123)	(116)	(118)	(123)	<b>(480)</b>
Other income (loss)	4	16	11	16	<b>47</b>	5	(1)	-	91	<b>95</b>
<b>Income before income taxes</b>	<b>963</b>	<b>1,273</b>	<b>1,387</b>	<b>1,251</b>	<b>4,874</b>	<b>1,099</b>	<b>1,176</b>	<b>1,289</b>	<b>1,363</b>	<b>4,927</b>
Income tax expense	(259)	(387)	(380)	(310)	<b>(1,336)</b>	(307)	(318)	(317)	(345)	<b>(1,287)</b>
<b>Net income</b>	<b>704</b>	<b>886</b>	<b>1,007</b>	<b>941</b>	<b>3,538</b>	<b>792</b>	<b>858</b>	<b>972</b>	<b>1,018</b>	<b>3,640</b>
Operating ratio	65.7%	56.4%	53.8%	57.2%	<b>58.2%</b>	58.9%	54.5%	53.3%	56.6%	<b>55.9%</b>
<b>EARNINGS PER SHARE (\$)</b>										
Basic	0.87	1.10	1.26	1.19	<b>4.42</b>	1.01	1.10	1.26	1.33	<b>4.69</b>
Diluted	0.86	1.10	1.26	1.18	<b>4.39</b>	1.00	1.10	1.25	1.32	<b>4.67</b>
<b>WEIGHTED AVERAGE NUMBER OF SHARES (millions)</b>										
Basic	809.4	803.5	797.6	792.4	<b>800.7</b>	786.1	778.9	772.3	766.7	<b>776.0</b>
Diluted	814.3	808.0	801.9	796.3	<b>805.1</b>	789.0	782.0	775.7	770.1	<b>779.2</b>
Dividends declared per share (\$)	0.3125	0.3125	0.3125	0.3125	<b>1.2500</b>	0.3750	0.3750	0.3750	0.3750	<b>1.5000</b>

# Quarterly Consolidated Balance Sheets

Unaudited

(\$ millions)

	2015				2016			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>ASSETS</b>								
<b>Current assets</b>								
Cash and cash equivalents	178	86	537	153	188	160	215	176
Restricted cash and cash equivalents	473	462	523	523	522	510	500	496
Accounts receivable	924	910	938	878	861	799	863	875
Material and supplies	429	463	427	355	432	451	405	363
Other current assets	216	162	186	244	237	202	186	197
<b>Total current assets</b>	<b>2,220</b>	<b>2,083</b>	<b>2,611</b>	<b>2,153</b>	<b>2,240</b>	<b>2,122</b>	<b>2,169</b>	<b>2,107</b>
Properties	29,857	30,053	31,686	32,624	31,813	32,120	32,959	33,755
Pension asset	1,010	1,070	1,127	1,305	1,450	1,559	1,651	907
Intangible and other assets	305	292	304	320	300	293	289	288
<b>Total assets</b>	<b>33,392</b>	<b>33,498</b>	<b>35,728</b>	<b>36,402</b>	<b>35,803</b>	<b>36,094</b>	<b>37,068</b>	<b>37,057</b>
<b>LIABILITIES AND SHAREHOLDERS' EQUITY</b>								
<b>Current liabilities</b>								
Accounts payable and other	1,738	1,596	1,757	1,556	1,571	1,488	1,621	1,519
Current portion of long-term debt	1,083	1,502	1,305	1,442	987	1,238	671	1,489
<b>Total current liabilities</b>	<b>2,821</b>	<b>3,098</b>	<b>3,062</b>	<b>2,998</b>	<b>2,558</b>	<b>2,726</b>	<b>2,292</b>	<b>3,008</b>
Deferred income taxes	7,200	7,312	7,697	8,105	8,029	8,166	8,374	8,473
Other liabilities and deferred credits	678	662	676	644	597	602	575	593
Pension and other postretirement benefits	666	666	683	720	704	703	691	694
Long-term debt	8,283	7,806	9,143	8,985	9,141	9,084	10,022	9,448
<b>SHAREHOLDERS' EQUITY</b>								
Common shares	3,706	3,687	3,671	3,705	3,731	3,722	3,734	3,730
Common shares in Share Trusts	—	(44)	(100)	(100)	(77)	(77)	(77)	(137)
Additional paid-in capital	452	461	470	475	396	365	358	364
Accumulated other comprehensive loss	(2,201)	(2,192)	(1,983)	(1,767)	(1,925)	(1,913)	(1,831)	(2,358)
Retained earnings	11,787	12,042	12,409	12,637	12,649	12,716	12,930	13,242
<b>Total shareholders' equity</b>	<b>13,744</b>	<b>13,954</b>	<b>14,467</b>	<b>14,950</b>	<b>14,774</b>	<b>14,813</b>	<b>15,114</b>	<b>14,841</b>
<b>Total liabilities and shareholders' equity</b>	<b>33,392</b>	<b>33,498</b>	<b>35,728</b>	<b>36,402</b>	<b>35,803</b>	<b>36,094</b>	<b>37,068</b>	<b>37,057</b>

Overview

Markets

Operations

Financials



# Quarterly Consolidated Statements of Cash Flows

Unaudited

(\$ millions)

	2015					2016				
	Q1	Q2	Q3	Q4	Year	Q1	Q2	Q3	Q4	Year
<b>OPERATING ACTIVITIES</b>										
Net income	704	886	1,007	941	3,538	792	858	972	1,018	3,640
Adjustments to reconcile net income to net cash provided by operating activities:										
Depreciation and amortization	296	285	287	290	1,158	307	296	312	310	1,225
Deferred income taxes	70	147	146	237	600	155	171	138	240	704
Gain on disposal of property	–	–	–	–	–	–	–	–	(76)	(76)
Changes in operating assets and liabilities:										
Accounts receivable	71	5	19	93	188	(27)	66	(47)	5	(3)
Material and supplies	(84)	(35)	46	77	4	(86)	(6)	46	44	(2)
Accounts payable and other	21	(91)	136	(348)	(282)	(8)	(73)	106	(76)	(51)
Other current assets	(17)	10	8	45	46	(6)	24	23	(20)	21
Pensions and other, net	(69)	(4)	3	(42)	(112)	(62)	(65)	(62)	(67)	(256)
<b>Net cash provided by operating activities</b>	<b>992</b>	<b>1,203</b>	<b>1,652</b>	<b>1,293</b>	<b>5,140</b>	<b>1,065</b>	<b>1,271</b>	<b>1,488</b>	<b>1,378</b>	<b>5,202</b>
<b>INVESTING ACTIVITIES</b>										
Property additions	(468)	(659)	(937)	(642)	(2,706)	(469)	(670)	(890)	(666)	(2,695)
Disposal of property	–	–	–	–	–	–	–	–	85	85
Other, net	(3)	(14)	(25)	(19)	(61)	(12)	(16)	(24)	(20)	(72)
<b>Net cash used in investing activities</b>	<b>(471)</b>	<b>(673)</b>	<b>(962)</b>	<b>(661)</b>	<b>(2,767)</b>	<b>(481)</b>	<b>(686)</b>	<b>(914)</b>	<b>(601)</b>	<b>(2,682)</b>

Unaudited

(\$ millions)

	2015					2016				
	Q1	Q2	Q3	Q4	Year	Q1	Q2	Q3	Q4	Year
<b>FINANCING ACTIVITIES</b>										
Issuance of debt	–	–	841	–	<b>841</b>	677	–	832	–	<b>1,509</b>
Repayment of debt	(47)	(9)	(60)	(636)	<b>(752)</b>	(111)	(387)	(18)	(439)	<b>(955)</b>
Net issuance (repayment) of commercial paper	310	69	(234)	306	<b>451</b>	(300)	622	(586)	401	<b>137</b>
Settlement of foreign exchange forward contracts on long-term debt	–	–	–	–	–	(1)	(23)	9	(6)	<b>(21)</b>
Issuance of common shares for stock options exercised	11	4	7	57	<b>79</b>	11	4	31	15	<b>61</b>
Withholding taxes remitted on the net settlement of equity settled awards	–	(1)	–	(1)	<b>(2)</b>	(25)	(11)	(4)	(4)	<b>(44)</b>
Repurchase of common shares	(410)	(402)	(432)	(498)	<b>(1,742)</b>	(512)	(532)	(502)	(446)	<b>(1,992)</b>
Purchase of common shares for settlement of equity settled awards	(1)	–	(1)	–	<b>(2)</b>	–	(10)	(4)	(1)	<b>(15)</b>
Purchase of common shares by Share Trusts	–	(44)	(56)	–	<b>(100)</b>	–	–	–	(60)	<b>(60)</b>
Dividends paid	(252)	(250)	(248)	(246)	<b>(996)</b>	(293)	(291)	(288)	(287)	<b>(1,159)</b>
<b>Net cash used in financing activities</b>	<b>(389)</b>	<b>(633)</b>	<b>(183)</b>	<b>(1,018)</b>	<b>(2,223)</b>	<b>(554)</b>	<b>(628)</b>	<b>(530)</b>	<b>(827)</b>	<b>(2,539)</b>
Effect of foreign exchange fluctuations on U.S. dollar-denominated cash, cash equivalents, restricted cash, and restricted cash equivalents	4	–	5	2	11	4	3	1	7	15
<b>Net increase in cash, cash equivalents, restricted cash, and restricted cash equivalents<sup>1)</sup></b>	<b>136</b>	<b>(103)</b>	<b>512</b>	<b>(384)</b>	<b>161</b>	<b>34</b>	<b>(40)</b>	<b>45</b>	<b>(43)</b>	<b>(4)</b>
Cash, cash equivalents, restricted cash, and restricted cash equivalents, beginning of period <sup>1)</sup>	515	651	548	1,060	<b>515</b>	676	710	670	715	<b>676</b>
<b>Cash, cash equivalents, restricted cash, and restricted cash equivalents, end of period<sup>1)</sup></b>	<b>651</b>	<b>548</b>	<b>1,060</b>	<b>676</b>	<b>676</b>	<b>710</b>	<b>670</b>	<b>715</b>	<b>672</b>	<b>672</b>
Cash and cash equivalents, end of period	178	86	537	153	<b>153</b>	188	160	215	176	<b>176</b>
Restricted cash and cash equivalents, end of period	473	462	523	523	<b>523</b>	522	510	500	496	<b>496</b>
<b>Cash, cash equivalents, restricted cash, and restricted cash equivalents, end of period<sup>1)</sup></b>	<b>651</b>	<b>548</b>	<b>1,060</b>	<b>676</b>	<b>676</b>	<b>710</b>	<b>670</b>	<b>715</b>	<b>672</b>	<b>672</b>
<b>SUPPLEMENTAL CASH FLOW INFORMATION</b>										
Interest paid	(91)	(111)	(97)	(133)	<b>(432)</b>	(117)	(119)	(121)	(113)	<b>(470)</b>
Income taxes paid	(228)	(186)	(167)	(144)	<b>(725)</b>	(236)	(162)	(168)	(87)	<b>(653)</b>

1) The Company adopted Accounting Standards Update 2016-18 in the first quarter of 2017 on a retrospective basis. Comparative balances have been reclassified to conform to the current presentation. See Note 2 – Recent accounting pronouncements in the Company's 2017 Interim Consolidated Financial Statements for additional information.



# Quarterly Financial and Statistical Data

Unaudited

	2015					2016				
	Q1	Q2	Q3	Q4	Year	Q1	Q2	Q3	Q4	Year
<b>REVENUES (\$ millions)</b>										
Petroleum and chemicals	643	586	609	604	2,442	578	492	532	572	2,174
Metals and minerals	377	351	377	332	1,437	310	292	303	313	1,218
Forest products	418	424	441	445	1,728	462	439	449	447	1,797
Coal	159	148	161	144	612	93	95	110	136	434
Grain and fertilizers	535	489	479	568	2,071	522	432	497	647	2,098
Intermodal	689	728	764	715	2,896	693	697	736	720	2,846
Automotive	159	201	180	179	719	187	199	186	187	759
<b>Total rail freight revenues</b>	<b>2,980</b>	<b>2,927</b>	<b>3,011</b>	<b>2,987</b>	<b>11,905</b>	<b>2,845</b>	<b>2,646</b>	<b>2,813</b>	<b>3,022</b>	<b>11,326</b>
Other revenues	118	198	211	179	706	119	196	201	195	711
<b>Total revenues</b>	<b>3,098</b>	<b>3,125</b>	<b>3,222</b>	<b>3,166</b>	<b>12,611</b>	<b>2,964</b>	<b>2,842</b>	<b>3,014</b>	<b>3,217</b>	<b>12,037</b>
<b>STATISTICAL OPERATING DATA</b>										
Gross ton miles (GTM) (millions)	111,390	110,709	109,740	110,245	442,084	103,468	99,999	105,535	114,424	423,426
Revenue ton miles (RTM) (millions)	57,129	55,713	55,334	56,534	224,710	52,256	49,717	53,448	58,906	214,327
Carloads (thousands)	1,353	1,414	1,393	1,325	5,485	1,255	1,249	1,332	1,369	5,205
Route miles (includes Canada and the U.S.)	19,600	19,500	19,600	19,600	19,600	19,600	19,600	19,600	19,600	19,600
Employees (end of period)	25,179	24,529	23,862	23,066	23,066	22,636	22,162	22,166	22,249	22,249
Employees (average for the period)	25,064	24,897	24,173	23,490	24,406	22,694	22,230	22,134	22,231	22,322

Statistical operating data, key operating measures and safety indicators are unaudited and based on estimated data available at such time and are subject to change as more complete information becomes available. As such, certain of the comparative data have been restated. Definitions of these indicators are provided on our website, [www.cn.ca/glossary](http://www.cn.ca/glossary).

Unaudited

	2015					2016				
	Q1	Q2	Q3	Q4	Year	Q1	Q2	Q3	Q4	Year
<b>KEY OPERATING MEASURES</b>										
Rail freight revenue per RTM (cents)	5.22	5.25	5.44	5.28	<b>5.30</b>	5.44	5.32	5.26	5.13	<b>5.28</b>
Rail freight revenue per carload (\$)	2,203	2,070	2,162	2,254	<b>2,170</b>	2,267	2,118	2,112	2,207	<b>2,176</b>
GTM per average number of employees (thousands)	4,444	4,447	4,540	4,693	<b>18,114</b>	4,559	4,498	4,768	5,147	<b>18,969</b>
Operating expenses per GTM (cents)	1.83	1.59	1.58	1.64	<b>1.66</b>	1.69	1.55	1.52	1.59	<b>1.59</b>
Labor and fringe benefits expense per GTM (cents)	0.60	0.49	0.54	0.55	<b>0.54</b>	0.57	0.47	0.47	0.49	<b>0.50</b>
Diesel fuel consumed (U.S. gallons in millions)	114.3	106.0	98.8	105.9	<b>425.0</b>	103.7	93.6	94.3	107.3	<b>398.9</b>
Average fuel price (\$/U.S. gallon)	2.84	2.73	2.58	2.54	<b>2.68</b>	2.07	2.30	2.43	2.58	<b>2.34</b>
GTM per U.S. gallon of fuel consumed	975	1,044	1,111	1,041	<b>1,040</b>	998	1,068	1,119	1,066	<b>1,061</b>
<b>SAFETY INDICATORS<sup>1)</sup></b>										
Injury frequency rate (per 200,000 person hours)	1.64	1.46	1.90	1.55	<b>1.63</b>	1.66	1.48	1.91	1.75	<b>1.70</b>
Accident rate (per million train miles)	2.47	2.49	1.79	1.48	<b>2.06</b>	1.11	1.57	1.31	1.71	<b>1.42</b>

1) Based on Federal Railroad Administration (FRA) reporting criteria.

Overview

Markets

Operations

Financials



# Non-GAAP Measures

*This document makes reference to non-GAAP measures that do not have any standardized meaning prescribed by GAAP and therefore, may not be comparable to similar measures presented by other companies. From management's perspective, these non-GAAP measures are useful measures of performance and provide investors with supplementary information to assess the Company's results of operations and liquidity. These non-GAAP measures should not be considered in isolation or as a substitute for financial measures prepared in accordance with GAAP.*

## Adjusted performance measures

Management believes that adjusted net income and adjusted earnings per share are useful measures of performance that can facilitate period-to-period comparisons, as they exclude items that do not necessarily arise as part of CN's normal day-to-day operations and could distort the analysis of trends in business performance. Management uses these

measures, which exclude certain income and expense items in its results that management believes are not reflective of CN's underlying business operations, to set performance goals and as a means to measure CN's performance. The exclusion of items in adjusted net income and adjusted earnings per share does not, however, imply that these items are necessarily non-recurring.

The following table provides a reconciliation of net income and earnings per share, as reported for the periods specified, to the adjusted performance measures presented herein:

Unaudited

(\$ millions, except per share data)

Year ended December 31	2012	2013	2014	2015	2016
<b>Net income as reported</b>	<b>2,680</b>	<b>2,612</b>	<b>3,167</b>	<b>3,538</b>	<b>3,640</b>
Adjustments:					
Other income	(281)	(69)	(80)	—	(76)
Income tax expense	57	39	8	42	17
<b>Adjusted net income</b>	<b>2,456</b>	<b>2,582</b>	<b>3,095</b>	<b>3,580</b>	<b>3,581</b>
<b>Basic earnings per share as reported</b>	<b>3.08</b>	<b>3.10</b>	<b>3.86</b>	<b>4.42</b>	<b>4.69</b>
Impact of adjustments, per share	(0.26)	(0.03)	(0.09)	0.05	(0.08)
<b>Adjusted basic earnings per share</b>	<b>2.82</b>	<b>3.07</b>	<b>3.77</b>	<b>4.47</b>	<b>4.61</b>
<b>Diluted earnings per share as reported</b>	<b>3.06</b>	<b>3.09</b>	<b>3.85</b>	<b>4.39</b>	<b>4.67</b>
Impact of adjustments, per share	(0.25)	(0.03)	(0.09)	0.05	(0.08)
<b>Adjusted diluted earnings per share</b>	<b>2.81</b>	<b>3.06</b>	<b>3.76</b>	<b>4.44</b>	<b>4.59</b>

For the year ended December 31, 2012, the Company reported adjusted net income of \$2,456 million, or \$2.81 per diluted share. The adjusted figures for the year ended December 31, 2012 exclude a first quarter gain on disposal of a segment of the Bala and a segment of the Oakville subdivisions, together with the rail fixtures and certain passenger agreements, of \$281 million, or \$252 million after-tax (\$0.29 per basic share or \$0.28 per diluted share); and a second quarter net income tax expense of \$28 million (\$0.03 per diluted share) consisting of a \$35 million income tax expense resulting from the enactment of higher provincial corporate income tax rates that was partly offset by a \$7 million income tax recovery resulting from the recapitalization of a foreign investment.

For the year ended December 31, 2013, the Company reported adjusted net income of \$2,582 million, or \$3.06 per diluted share. The adjusted figures for the year ended December 31, 2013 exclude a first quarter gain on disposal of a segment of the Oakville subdivision, together with the rail fixtures and certain passenger agreements, of \$40 million, or \$36 million after-tax (\$0.04 per diluted share) and a second quarter gain on exchange of perpetual railroad operating

easements including the track and roadway assets on specific rail lines, of \$29 million, or \$18 million after-tax (\$0.02 per diluted share). The adjusted figures also exclude a second quarter income tax expense of \$5 million (\$0.01 per diluted share) and a third quarter income tax expense of \$19 million (\$0.02 per diluted share), both resulting from the enactment of higher provincial corporate income tax rates.

For the year ended December 31, 2014, the Company reported adjusted net income of \$3,095 million, or \$3.76 per diluted share, which excludes a gain on disposal of the Deux-Montagnes subdivision, including the Mont-Royal tunnel, together with the rail fixtures, of \$80 million, or \$72 million after-tax (\$0.09 per diluted share) in the first quarter.

For the year ended December 31, 2015, the Company reported adjusted net income of \$3,580 million, or \$4.44 per diluted share, which excludes a deferred income tax expense of \$42 million (\$0.05 per diluted share) resulting from the enactment of a higher provincial corporate income tax rate in the second quarter.

For the year ended December 31, 2016, the Company reported adjusted net income of \$3,581 million, or \$4.59 per diluted share, which excludes a gain on disposal of approximately one mile of elevated track leading into Montreal's Central Station, together with the rail fixtures, of \$76 million, or \$66 million after-tax (\$0.09 per diluted share) in the fourth quarter, and a deferred income tax expense of \$7 million (\$0.01 per diluted share) resulting from the enactment of a higher provincial corporate income tax rate in the second quarter.



# Non-GAAP Measures (cont.)

## Free cash flow

Management believes that free cash flow is a useful measure of liquidity as it demonstrates the Company's ability to generate cash for debt obligations and for discretionary uses such as payment of dividends, share repurchases, and strategic

opportunities. The Company defines its free cash flow measure as the difference between net cash provided by operating activities and net cash used in investing activities; adjusted for the impact of major acquisitions, if any.

The following table provides a reconciliation of net cash provided by operating activities, as reported for the periods specified, to free cash flow:

Unaudited

(\$ millions)

Year ended December 31	2012	2013	2014	2015	2016
<b>Net cash provided by operating activities</b>	<b>3,060</b>	<b>3,548</b>	<b>4,381</b>	<b>5,140</b>	<b>5,202</b>
Net cash used in investing activities <sup>1)</sup>	(1,399)	(1,925)	(2,161)	(2,767)	(2,682)
<b>Free cash flow</b>	<b>1,661</b>	<b>1,623</b>	<b>2,220</b>	<b>2,373</b>	<b>2,520</b>

1) As a result of the retrospective adoption of Accounting Standards Update 2016-18 in the first quarter of 2017, changes in restricted cash and cash equivalents are no longer classified as investing activities within the Consolidated Statement of Cash Flows and are no longer included as an adjustment in the Company's definition of free cash flow. There is no impact to free cash flow.

## Adjusted debt-to-adjusted EBITDA multiple

Management believes that the adjusted debt-to-adjusted earnings before interest, income taxes, depreciation and amortization (EBITDA) multiple is a useful credit measure because it

reflects the Company's ability to service its debt and other long-term obligations. The Company calculates the adjusted debt-to-adjusted EBITDA multiple as adjusted debt divided by adjusted EBITDA.

The following table provides a reconciliation of debt and net income to the adjusted measures presented below, which have been used to calculate the adjusted debt-to-adjusted EBITDA multiple:

Unaudited

(\$ millions, unless otherwise indicated)

As at and for the year ended December 31	2012	2013	2014	2015	2016
<b>Debt</b>	<b>6,863</b>	<b>7,802</b>	<b>8,372</b>	<b>10,427</b>	<b>10,937</b>
Adjustment: Present value of operating lease commitments <sup>1)</sup>	559	570	607	607	533
<b>Adjusted debt</b>	<b>7,422</b>	<b>8,372</b>	<b>8,979</b>	<b>11,034</b>	<b>11,470</b>
<b>Net income</b>	<b>2,680</b>	<b>2,612</b>	<b>3,167</b>	<b>3,538</b>	<b>3,640</b>
Interest expense	342	357	371	439	480
Income tax expense	978	977	1,193	1,336	1,287
Depreciation and amortization	924	980	1,050	1,158	1,225
<b>EBITDA</b>	<b>4,924</b>	<b>4,926</b>	<b>5,781</b>	<b>6,471</b>	<b>6,632</b>
Adjustments:					
Other income	(315)	(73)	(107)	(47)	(95)
Deemed interest on operating leases	29	28	28	29	24
<b>Adjusted EBITDA</b>	<b>4,638</b>	<b>4,881</b>	<b>5,702</b>	<b>6,453</b>	<b>6,561</b>
<b>Adjusted debt-to-adjusted EBITDA multiple (times)</b>	<b>1.60</b>	<b>1.72</b>	<b>1.57</b>	<b>1.71</b>	<b>1.75</b>

1) The operating lease commitments have been discounted using the Company's implicit interest rate for each of the periods presented.

# Labour Relations Data Table

Maintaining positive working relationships with our employees' unions and with the employees themselves is important to CN. We are committed to building and sustaining regular and on-going dialogue with union leaders and working with them on issues of mutual interest. We strive to reach consensus whenever

we can. When we cannot, we use traditional and alternative forms of dispute resolution to peacefully resolve our differences.

## Canada

As at the end of 2016, CN employed a total of 15,428 employees in Canada, of which 11,215 were unionized.

## United States

As at the end of 2016, CN employed a total of 6,821 employees in the U.S., of which 5,406 were unionized.

## UNIONIZED EMPLOYEES: CANADA AND U.S.

As at December 31, 2016

	Number	Expiration
<b>CANADA</b>		
Conductors and Yard Coordinators	2,466	22/07/2016 <sup>1)</sup>
Track Forces	2,737	31/12/2018
Shopcraft	1,722	31/12/2018
Locomotive Engineers	1,703	31/12/2017
Clerical and Intermodal	1,636	30/03/2019
Signals and Communications	699	31/12/2021
Rail Traffic Controllers	176	31/12/2018
Special Agents	63	31/12/2017
Other	13	–
<b>UNITED STATES</b>		
Enginemen, Conductors and Yard Coordinators	1,275	N/A <sup>2)</sup>
Track Forces	1,342	N/A <sup>2)</sup>
Locomotive Engineers	974	N/A <sup>2)</sup>
Shopcraft	927	N/A <sup>2)</sup>
Signals and Communications	408	N/A <sup>2)</sup>
Clerks	297	N/A <sup>2)</sup>
Other	183	N/A <sup>2)</sup>

## CN WORKFORCE

As at December 31, 2016

	Canada	U.S.	Total
<b>All employees</b>	15,428	6,821	22,249
Unionized employees	11,215	5,406	16,621
Non-unionized employees	4,213	1,415	5,628

1) On May 29, 2017 CN reached a tentative collective agreement with the Teamsters Canada Rail Conference – Conductors, Trainpersons and Yardpersons (TCRC – CTY) which is pending ratification.

2) The Railway Labor Act (RLA) governs labor relations for U.S. railroads and their employees and was enacted to prevent railway labor disputes. Under the RLA, and unlike in most other industries, railway collective bargaining agreements do not terminate on a specified date. Rather, the agreements typically set forth a date upon which the parties agree to begin renewal negotiations and discuss changes to wages and working conditions. Negotiations continue until an agreement is reached or the parties have been released by the National Mediation Board after exhausting all of the various mechanisms in the law designed to allow the parties to reach a settlement.





# Shareholder and Investor Information

## Transfer agent and registrar

Computershare  
Trust Company of Canada

### Offices in:

Montreal, QC; Toronto, ON;  
Calgary, AB; Vancouver, BC

Telephone: 1-800-564-6253  
[www.investorcentre.com/service](http://www.investorcentre.com/service)

## Co-transfer agent and co-registrar

Computershare Trust Company, N.A.  
Attn: Stock Transfer Department

### Overnight mail delivery:

250 Royall Street  
Canton, MA 02021

### Regular mail delivery:

P.O. Box 43078  
Providence, RI 02940-3078

Telephone: 303-262-0600  
or 1-800-962-4284

## Shareholder services

Shareholders with questions concerning their shares should contact:

Computershare  
Trust Company of Canada  
Shareholder Services  
100 University Avenue  
8<sup>th</sup> Floor  
Toronto, ON M5J 2Y1

Telephone: 1-800-564-6253  
[www.computershare.com](http://www.computershare.com)

## Investor relations

### Paul Butcher

Vice-President, Investor Relations

Telephone: 514-399-0052  
Fax: 514-399-5985  
Email: [investor.relations@cn.ca](mailto:investor.relations@cn.ca)

### Tony Yee

Senior Manager, Investor Relations

Telephone: 514-399-4654  
Fax: 514-399-5985  
Email: [investor.relations@cn.ca](mailto:investor.relations@cn.ca)

## Mailing address

CN Investor Relations  
935 de La Gauchetière St. W.  
16<sup>th</sup> Floor  
Montreal, QC H3B 2M9  
[www.cn.ca/en/investors](http://www.cn.ca/en/investors)

STAY CONNECTED WITH CN:

---



[facebook.com/CNrail](https://facebook.com/CNrail)



[twitter.com/CNRailway](https://twitter.com/CNRailway)



[linkedin.com/company/cn](https://linkedin.com/company/cn)

[www.cn.ca](https://www.cn.ca)



# What CN Stands For

CN's goal is to be internationally regarded as one of the best-performing transportation and logistics companies. Our commitment is to create value for both customers and shareholders by deepening customer engagement, leveraging the strength of our franchise and delivering Operational and Service Excellence.

At CN, we take pride in how we do our jobs to move customers' goods safely and efficiently. We are also proud of what our company stands for: a set of five core beliefs that drive how we conduct our business every day.

