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## Selected Railroad Statistics – unaudited

	2016	2015	2014
<b>Financial</b>			
<b>Key financial performance indicators</b>			
Total revenues (\$ millions)	12,037	12,611	12,134
Rail freight revenues (\$ millions)	11,326	11,905	11,455
Operating income (\$ millions)	5,312	5,266	4,624
Net income (\$ millions)	3,640	3,538	3,167
Diluted earnings per share (\$)	4.67	4.39	3.85
Adjusted diluted earnings per share (\$) <sup>(1)</sup>	4.59	4.44	3.76
Free cash flow (\$ millions) <sup>(2)</sup>	2,520	2,373	2,220
Gross property additions (\$ millions)	2,752	2,706	2,297
Share repurchases (\$ millions)	2,000	1,750	1,505
Dividends per share (\$)	1.50	1.25	1.00
<b>Financial position</b>			
Total assets (\$ millions)	37,057	36,402	31,687
Total liabilities (\$ millions)	22,216	21,452	18,217
Shareholders' equity (\$ millions)	14,841	14,950	13,470
<b>Financial ratios</b>			
Operating ratio (%)	55.9	58.2	61.9
Adjusted debt-to-adjusted EBITDA (times) <sup>(3)</sup>	1.75	1.71	1.57
<b>Operations <sup>(4)</sup></b>			
<b>Statistical operating data</b>			
Gross ton miles (GTM) (millions)	423,426	442,084	448,765
Revenue ton miles (RTM) (millions)	214,327	224,710	232,138
Carloads (thousands)	5,205	5,485	5,625
Route miles (includes Canada and the U.S.)	19,600	19,600	19,600
Employees (end of year)	22,249	23,066	25,288
Employees (average for the year)	22,322	24,406	24,525
<b>Key operating measures</b>			
Rail freight revenue per RTM (cents)	5.28	5.30	4.93
Rail freight revenue per carload (\$)	2,176	2,170	2,036
GTM per average number of employees (thousands)	18,969	18,114	18,298
Operating expenses per GTM (cents)	1.59	1.66	1.67
Labor and fringe benefits expense per GTM (cents)	0.50	0.54	0.52
Diesel fuel consumed (US gallons in millions)	398.9	425.0	440.5
Average fuel price (\$/US gallon)	2.34	2.68	3.72
GTM per US gallon of fuel consumed	1,061	1,040	1,019
Terminal dwell (hours)	14.0	15.0	16.9
Train velocity (miles per hour)	27.3	26.3	25.7
<b>Safety indicators <sup>(5)</sup></b>			
Injury frequency rate (per 200,000 person hours)	1.70	1.63	1.81
Accident rate (per million train miles)	1.42	2.06	2.73

(1) See the section entitled Adjusted performance measures in the MD&A for an explanation of this non-GAAP measure.

(2) See the section entitled Liquidity and capital resources - Free cash flow in the MD&A for an explanation of this non-GAAP measure.

(3) See the section entitled Liquidity and capital resources - Adjusted debt-to-adjusted EBITDA multiple in the MD&A for an explanation of this non-GAAP measure.

(4) 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).

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

## Management's Discussion and Analysis

This Management's Discussion and Analysis (MD&A) dated February 1, 2017, relates to the consolidated financial position and results of operations of Canadian National Railway Company, together with its wholly-owned subsidiaries, collectively "CN" or "the Company," and should be read in conjunction with the Company's 2016 Annual Consolidated Financial Statements and Notes thereto. All financial information reflected herein is expressed in Canadian dollars and prepared in accordance with United States generally accepted accounting principles (GAAP), unless otherwise noted.

CN's common shares are listed on the Toronto and New York stock exchanges. Additional information about CN filed with Canadian securities regulatory authorities and the United States Securities and Exchange Commission (SEC), including the Company's 2016 Annual Information Form and Form 40-F, may be found online on SEDAR at [www.sedar.com](http://www.sedar.com), on EDGAR at [www.sec.gov](http://www.sec.gov), and on the Company's website at [www.cn.ca](http://www.cn.ca) in the Investors section. Printed copies of such documents may be obtained by contacting CN's Corporate Secretary's Office.

## Business profile

CN is engaged in the rail and related transportation business. CN's network of approximately 20,000 route miles of track spans Canada and mid-America, uniquely connecting three coasts: the Atlantic, the Pacific and the Gulf of Mexico. CN's extensive network and efficient connections to all Class I railroads provide CN customers access to all three North American Free Trade Agreement (NAFTA) nations. A true backbone of the economy, CN handles over \$250 billion worth of goods annually and carries almost 300 million tons of cargo, serving exporters, importers, retailers, farmers and manufacturers.

CN's freight revenues are derived from seven commodity groups representing a diversified and balanced portfolio of goods transported between a wide range of origins and destinations. This product and geographic diversity better positions the Company to face economic fluctuations and enhances its potential for growth opportunities. In 2016, no individual commodity group accounted for more than 24% of total revenues. From a geographic standpoint, 17% of revenues relate to United States (U.S.) domestic traffic, 34% transborder traffic, 18% Canadian domestic traffic and 31% overseas traffic. The Company is the originating carrier for approximately 85% of traffic moving along its network, which allows it both to capitalize on service advantages and build on opportunities to efficiently use assets.

## Corporate organization

The Company manages its rail operations in Canada and the U.S. as one business segment. Financial information reported at this level, such as revenues, operating income and cash flow from operations, is used by the Company's corporate management in evaluating financial and operational performance and allocating resources across CN's network. The Company's strategic initiatives are developed and managed centrally by corporate management and are communicated to its regional activity centers (the Western Region, Eastern Region and Southern Region), whose role is to manage the day-to-day service requirements of their respective territories, control direct costs incurred locally, and execute the strategy and operating plan established by corporate management.

See *Note 18 – Segmented information* to the Company's 2016 Annual Consolidated Financial Statements for additional information on the Company's corporate organization, as well as selected financial information by geographic area.

## Strategy overview

CN's business strategy is anchored on the continuous pursuit of *Operational and Service Excellence*, an unwavering commitment to safety and sustainability, and the development of a solid team of motivated and competent railroaders. CN's goal is to deliver valuable transportation services for its customers and to grow the business at low incremental cost. A clear strategic agenda, driven by a commitment to innovation, productivity, supply-chain collaboration, running trains safely, and minimizing environmental impact, drives the Company's efforts to create value for customers. CN thereby creates value for its shareholders by striving for sustainable financial performance through profitable top-line growth, adequate free cash flow and return on invested capital. CN is also focused on returning value to shareholders through dividend payments and share repurchase programs.

CN's success and long-term economic viability depends on the presence of a supportive regulatory and policy environment that drives investment and innovation. CN's success also depends on a stream of capital investments that supports its business strategy. These investments cover a wide range of areas, from track infrastructure and rolling stock, to information and operating technologies, and other equipment and assets that improve the safety, efficiency and reliability of CN's service offering. Investments in track infrastructure enhance the productivity and integrity of the plant, and increase the capacity and the fluidity of the network. The acquisition of new locomotives and railcars generates several key benefits. New locomotives increase fuel productivity and efficiency, and improve the reliability of service.

## Management's Discussion and Analysis

Locomotives equipped with distributed power allow for greater productivity of trains, particularly in cold weather, while improving train handling and safety. Targeted railcar acquisitions aim to tap growth opportunities, complementing the fleet of privately owned railcars that traverse CN's network. CN's strategic investments in information technology provide access to timely and accurate information which supports CN's ongoing efforts to drive innovation and efficiency in service, cost control, asset utilization, and safety and employee engagement.

### **Balancing "Operational and Service Excellence"**

The basic driver of the Company's business is demand for reliable, efficient, and cost effective transportation for customers. As such, the Company's focus is the pursuit of *Operational and Service Excellence*: striving to operate safely and efficiently while providing a high level of service to customers.

For many years, CN has operated with a mindset that drives cost efficiency and asset utilization. That mindset flows naturally from CN's *Precision Railroad* model, which focuses on improving every process that affects delivery of customers' goods. It is a highly disciplined process whereby CN handles individual rail shipments according to a specific trip plan and manages all aspects of railroad operations to meet customer commitments efficiently and profitably. This calls for the relentless measurement of results and the use of such results to generate further execution improvements in the service provided to customers. The Company's continuous search for efficiency is best captured in its performance according to key operating metrics such as car velocity, train speed, and yard and locomotive productivity. All are at the center of a highly productive and fluid railroad operation, requiring daily engagement in the field. The Company works hard to run more efficient trains, reduce dwell times at terminals and improve overall network velocity. With CN's business model, fewer railcars and locomotives are needed to ship the same amount of freight in a tight, reliable and efficient operation. The railroad is run based on a disciplined operating methodology, executing with a sense of urgency and accountability. This philosophy is a key contributor to CN's earnings growth and return on invested capital.

CN understands the importance of balancing its drive for productivity with efforts to enhance customer service. The Company's efforts to deliver *Operational and Service Excellence* are anchored on an end-to-end supply chain mindset, working closely with customers and supply chain partners, as well as involving all relevant areas of the Company in the process. By fostering better end-to-end service performance and encouraging all supply-chain players to continuously improve daily engagement, information sharing, problem solving, and execution, CN aims to help customers achieve greater competitiveness in their own markets. Supply Chain Collaboration Agreements with ports, terminal operators and customers leverage key performance metrics that drive efficiencies across the entire supply chain.

The Company is strengthening its commitment to *Operational and Service Excellence* through a wide range of innovations anchored on its continuous improvement philosophy. CN is building on its industry leadership in terms of fast and reliable hub-to-hub service by continuing to improve across the range of customer touch points. The Company's major push in first-mile/last-mile service is all about improving the quality of customer interactions – developing a sharper outside-in perspective; better monitoring of traffic forecasts; higher and more responsive car order fulfillment; and proactive customer communication at the local level.

CN's broad-based service innovations benefit customers and support the Company's goal to drive top-line growth. CN understands the importance of being the best operator in the business, and being the best service innovator as well.

### **Delivering safely and responsibly**

CN is committed to the safety of its employees, the communities in which it operates and the environment. Safety consciousness permeates every aspect of CN's operations. The Company's long-term safety improvement is driven by continued significant investments in infrastructure, rigorous safety processes and a focus on employee training and safety awareness. CN continues to strengthen its safety culture by investing significantly in training, coaching, recognition and employee involvement initiatives.

CN's Safety Management Plan is the framework for putting safety at the center of its day-to-day operations. This proactive plan is designed to minimize risk, drive continuous improvement in the reduction of injuries and accidents, and engage employees at all levels of the organization. CN believes that the rail industry can enhance safety by working more closely with communities. Under CN's structured Community Engagement program, the Company engages with municipal officers and their emergency responders in an effort to assist them in their emergency response planning. In many cases, this outreach includes face-to-face meetings, during which CN discusses its comprehensive safety programs; its safety performance; the nature, volume and economic importance of dangerous commodities it transports through their communities; a review of emergency response planning; and arranging for training sessions for emergency responders. The outreach builds on CN's involvement in the Transportation Community Awareness and Emergency Response (TRANSCAER<sup>®</sup>), through which the Company has been working for many years to help communities in Canada and the U.S. understand the movement of hazardous materials and what is required in the event of transportation incidents.

CN has been deepening its commitment to a sustainable operation for many years, and has made sustainability an integral part of its business strategy. The best way in which CN can positively impact the environment is by continuously improving the efficiency of its operations, and reducing its carbon footprint. As part of the Company's comprehensive sustainability action plan and to comply with CN's environmental policy, the Company engages in a number of initiatives, including the use of fuel-efficient locomotives and trucks that reduce

## Management's Discussion and Analysis

greenhouse gas emissions; increasing operational and building efficiencies; investing in energy-efficient data centers and recycling programs for information technology systems; reducing, recycling and reusing waste and scrap at its facilities and on its network; engaging in modal shift agreements that favor low emission transport services; and participating in the Carbon Disclosure Project to gain a more comprehensive view of its carbon footprint. The Company combines its expert resources, environmental management procedures, training and audits for employees and contractors, and emergency preparedness response activities to help ensure that it conducts its operations and activities while protecting the natural environment. The Company's environmental activities include monitoring CN's environmental performance in Canada and the U.S. (ensuring compliance), identifying environmental issues inside the Company, and managing them in accordance with CN's environmental policy, which is overseen by the Environment, Safety and Security Committee of the Board of Directors. Certain risk mitigation strategies, such as periodic audits, employee training programs and emergency plans and procedures, are in place to minimize the environmental risks to the Company.

The Company's CDP Report, CN's Sustainability Report entitled "Delivering Responsibly" and the Company's Corporate Governance Manual, which outlines the role and responsibilities of the Environment, Safety and Security Committee of the Board of Directors, are available on CN's website in the Delivering Responsibly section.

### **Building a solid team of railroaders**

CN's ability to develop the best railroaders in the industry has been a key contributor to the Company's success. CN recognizes that without the right people – no matter how good a service plan or business model a company may have – it will not be able to fully execute. The Company is addressing changes in employee demographics that will span multiple years, with the workforce undergoing a major renewal. This is why the Company is focused on hiring the right people, onboarding them successfully, helping them build positive relationships with their colleagues, and helping all employees to grow and develop. As part of its strategy to build a solid team of railroaders, the Company leverages its state-of-the-art training facilities in preparing employees to be highly skilled, safety conscious and confident in their work environment. Curricula for technical training and leadership development has been designed to meet the learning needs of CN's railroaders – both current and future. These programs and initiatives provide a solid platform for the assessment and development of the Company's talent pool, and are tightly integrated with the Company's business strategy. Progress made in developing current and future leaders through the Company's leadership development programs is reviewed by the Human Resources and Compensation Committee of the Board of Directors.

### **2016 Highlights**

#### ***Leadership changes***

On June 7, 2016, CN announced a number of leadership changes including Claude Mongeau's decision, due to a health condition, to step down from his role as President and Chief Executive Officer (CEO) and member of the Board of Directors at the end of June 2016, as well as the appointment of Executive Vice-President and Chief Financial Officer (CFO) Luc Jobin to President and CEO on July 1, 2016, and member of the Board of Directors on June 30, 2016. Additionally, on June 27, 2016, the Company announced that Ghislain Houle would become Executive Vice-President and CFO, and that Mike Cory would assume the role of Executive Vice-President and Chief Operating Officer following the retirement of Jim Vena, also effective as of July 1, 2016.

#### ***Reinvestment in the business***

CN spent \$2.75 billion in its capital program, with \$1.6 billion invested to maintain the safety and integrity of the network, particularly track infrastructure; \$0.55 billion for equipment capital expenditures, including 90 new high-horsepower locomotives, \$0.3 billion on initiatives to support growth and drive productivity, and \$0.3 billion for the U.S. federal government legislative Positive Train Control (PTC) implementation.

#### ***Shareholder returns***

The Company repurchased 26.4 million of its common shares under its share repurchase program during the year, returning \$2 billion to its shareholders. CN also increased its quarterly dividend per share by 20% to \$0.3750 from \$0.3125 in 2015, effective for the first quarter of 2016, and paid \$1,159 million in dividends in 2016.

#### ***Sustainability***

The Company's sustainability practices once again earned it a place on the Dow Jones Sustainability World and North American Indices as well as a position on the *Climate A List* by CDP in 2016.

## Management's Discussion and Analysis

### Financial highlights

- CN attained record operating income, net income, and earnings per share in 2016, as well as a record operating ratio.
- Net income increased by \$102 million, or 3%, to \$3,640 million in 2016, with diluted earnings per share rising 6% to \$4.67.
- Adjusted net income remained flat at \$3,581 million in 2016, with adjusted diluted earnings per share increasing 3% to \$4.59. See the section of this MD&A entitled *Adjusted performance measures* for an explanation of these non-GAAP measures.
- Operating income increased by \$46 million, or 1%, to \$5,312 million in 2016. The increase in operating income reflects the Company's efforts to manage costs in a lower volume environment, while continuing to drive the Company's agenda of *Operational and Service Excellence*.
- CN's operating ratio improved by 2.3 points to 55.9% in 2016, the lowest annual operating ratio in its history.
- Revenues decreased by \$574 million, or 5%, to \$12,037 million in 2016, compared to the prior year.
- Operating expenses decreased by \$620 million, or 8%, to \$6,725 million in 2016.
- The Company generated record free cash flow of \$2,520 million, a 6% increase over 2015. See the section of this MD&A entitled *Liquidity and capital resources - Free cash flow* for an explanation of this non-GAAP measure.

### 2017 Business outlook and assumptions

The Company expects to see growth across a range of commodities, particularly in intermodal traffic, grain, finished vehicles, and lumber and panels. The Company continues to see volume weakness in thermal coal shipments to domestic markets.

Underpinning the 2017 business outlook, the Company assumes that North American industrial production will increase in the range of one to two percent. For the 2016/2017 crop year, the grain crops in both Canada and the U.S. were above their respective five-year averages. The Company assumes that the 2017/2018 grain crops in both Canada and the U.S. will be in line with their respective five-year averages.

### Value creation in 2017

- CN plans to invest approximately \$2.5 billion in its 2017 capital program, of which \$1.6 billion is targeted toward track infrastructure, \$0.4 billion on the U.S. federal government legislative Positive Train Control (PTC) implementation, \$0.3 billion on initiatives to drive productivity, and \$0.2 billion on equipment capital expenditures.
- The Company's Board of Directors approved an increase of 10% to the quarterly dividend to common shareholders, from \$0.3750 per share in 2016 to \$0.4125 per share in 2017.
- The Company's new share repurchase program allows for the repurchase of up to 33.0 million common shares between October 30, 2016 and October 29, 2017. As at December 31, 2016, the Company had repurchased 3.5 million common shares under this program.

The forward-looking statements discussed in this section are subject to risks and uncertainties that could cause actual results or performance to differ materially from those expressed or implied in such statements and are based on certain factors and assumptions which the Company considers reasonable, about events, developments, prospects and opportunities that may not materialize or that may be offset entirely or partially by other events and developments. In addition to the assumptions and expectations discussed in this section, reference should be made to the section of this MD&A entitled *Forward-looking statements* for assumptions and risk factors affecting such statements.

## Management's Discussion and Analysis

### Forward-looking statements

Certain statements included in this MD&A are "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 include, but are not limited to, those set forth in the table below, which also presents key assumptions used in determining these forward-looking statements. See also the section of this MD&A entitled *Strategy overview – 2017 Business outlook and assumptions*.

Forward-looking statements	Key assumptions
Statements relating to revenue growth opportunities, including those referring to general economic and business conditions	<ul style="list-style-type: none"><li>• North American and global economic growth</li><li>• Long-term growth opportunities being less affected by current economic conditions</li></ul>
Statements relating to the Company's ability to meet debt repayments and future obligations in the foreseeable future, including income tax payments, and capital spending	<ul style="list-style-type: none"><li>• North American and global economic growth</li><li>• Adequate credit ratios</li><li>• Investment-grade credit ratings</li><li>• Access to capital markets</li><li>• Adequate cash generated from operations and other sources of financing</li></ul>
Statements relating to pension contributions	<ul style="list-style-type: none"><li>• Adequate cash generated from operations and other sources of financing</li><li>• Adequate long-term return on investment on pension plan assets</li><li>• Level of funding as determined by actuarial valuations, particularly influenced by discount rates for funding purposes</li></ul>

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 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 U.S., including its Annual Information Form and Form 40-F. See the section entitled *Business risks* of this MD&A 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.

### Financial outlook

During the year, the Company issued and updated its 2016 financial outlook. The 2016 actual results were higher than the Company's last 2016 financial outlook that was issued on October 25, 2016, as a result of higher than expected volumes in the fourth quarter of 2016 and operating productivity gains, including cost-management initiatives.

## Financial highlights

<i>In millions, except percentage and per share data</i>				Change	
	2016	2015	2014	2016 vs 2015	2015 vs 2014
Revenues	\$ 12,037	\$ 12,611	\$ 12,134	(5%)	4%
Operating income	\$ 5,312	\$ 5,266	\$ 4,624	1%	14%
Net income	\$ 3,640	\$ 3,538	\$ 3,167	3%	12%
Adjusted net income <sup>(1)</sup>	\$ 3,581	\$ 3,580	\$ 3,095	-	16%
Basic earnings per share	\$ 4.69	\$ 4.42	\$ 3.86	6%	15%
Adjusted basic earnings per share <sup>(1)</sup>	\$ 4.61	\$ 4.47	\$ 3.77	3%	19%
Diluted earnings per share	\$ 4.67	\$ 4.39	\$ 3.85	6%	14%
Adjusted diluted earnings per share <sup>(1)</sup>	\$ 4.59	\$ 4.44	\$ 3.76	3%	18%
Dividends declared per share	\$ 1.50	\$ 1.25	\$ 1.00	20%	25%
Total assets	\$ 37,057	\$ 36,402	\$ 31,687	2%	15%
Total long-term liabilities	\$ 19,208	\$ 18,454	\$ 16,016	(4%)	(15%)
Operating ratio	55.9%	58.2%	61.9%	2.3-pts	3.7-pts
Free cash flow <sup>(2)</sup>	\$ 2,520	\$ 2,373	\$ 2,220	6%	7%

(1) See the section of this MD&A entitled *Adjusted performance measures* for an explanation of this non-GAAP measure.

(2) See the section of this MD&A entitled *Liquidity and capital resources - Free cash flow* for an explanation of this non-GAAP measure.

## 2016 compared to 2015

Net income for the year ended December 31, 2016 was \$3,640 million, an increase of \$102 million, or 3%, when compared to 2015, with diluted earnings per share rising 6% to \$4.67.

Operating income for the year ended December 31, 2016 increased by \$46 million, to \$5,312 million. The operating ratio, defined as operating expenses as a percentage of revenues, was 55.9% in 2016, compared to 58.2% in 2015, a 2.3-point improvement.

Revenues for the year ended December 31, 2016, totaled \$12,037 million compared to \$12,611 million in 2015. The decrease of \$574 million, or 5%, was mainly attributable to lower volumes of crude oil, coal, and frac sand; as well as lower applicable fuel surcharge rates. These factors were partly offset by the positive translation impact of the weaker Canadian dollar and freight rate increases.

Operating expenses for the year ended December 31, 2016 amounted to \$6,725 million compared to \$7,345 million in 2015. The decrease of \$620 million, or 8%, was mainly due to lower costs resulting from operating productivity gains, including cost-management initiatives and decreased volumes of traffic; lower pension expense; and lower fuel prices, partly offset by the negative translation impact of a weaker Canadian dollar on US dollar-denominated expenses.

## Non-GAAP measures

This MD&A makes reference to non-GAAP measures including adjusted performance measures, constant currency, free cash flow, and adjusted debt-to-adjusted EBITDA multiple, 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.

For further details of these non-GAAP measures, including a reconciliation to the most directly comparable GAAP financial measures, refer to the sections entitled *Adjusted performance measures*, *Constant currency* and *Liquidity and capital resources*.

## Management's Discussion and Analysis

### 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. These measures do not have any standardized meaning prescribed by GAAP and therefore, may not be comparable to similar measures presented by other companies.

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 (collectively the "Viaduc du Sud"), of \$76 million, or \$66 million after-tax (\$0.09 per diluted share) that was recorded 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 that was recorded in the second 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 that was recorded in the second quarter.

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 (collectively the "Deux-Montagnes"), of \$80 million, or \$72 million after-tax (\$0.09 per diluted share) that was recorded in the first quarter.

The following table provides a reconciliation of net income and earnings per share, as reported for the years ended December 31, 2016, 2015 and 2014 to the adjusted performance measures presented herein:

<i>In millions, except per share data</i>	<i>Year ended December 31,</i>		
	<b>2016</b>	2015	2014
Net income as reported	\$ 3,640	\$ 3,538	\$ 3,167
<i>Adjustments:</i>			
Other income	(76)	-	(80)
Income tax expense	17	42	8
<b>Adjusted net income</b>	<b>\$ 3,581</b>	<b>\$ 3,580</b>	<b>\$ 3,095</b>
Basic earnings per share as reported	\$ 4.69	\$ 4.42	\$ 3.86
Impact of adjustments, per share	(0.08)	0.05	(0.09)
<b>Adjusted basic earnings per share</b>	<b>\$ 4.61</b>	<b>\$ 4.47</b>	<b>\$ 3.77</b>
Diluted earnings per share as reported	\$ 4.67	\$ 4.39	\$ 3.85
Impact of adjustments, per share	(0.08)	0.05	(0.09)
<b>Adjusted diluted earnings per share</b>	<b>\$ 4.59</b>	<b>\$ 4.44</b>	<b>\$ 3.76</b>

### Constant currency

Financial results at constant currency allow results to be viewed without the impact of fluctuations in foreign currency exchange rates, thereby facilitating period-to-period comparisons in the analysis of trends in business performance. Measures at constant currency are considered non-GAAP measures and do not have any standardized meaning prescribed by GAAP and therefore, may not be comparable to similar measures presented by other companies. Financial results at constant currency are obtained by translating the current period results denominated in US dollars at the foreign exchange rates of the comparable period of the prior year. The average foreign exchange rates were \$1.33 and \$1.28 per US\$1.00, for the years ended December 31, 2016 and 2015, respectively.

On a constant currency basis, the Company's net income for the year ended December 31, 2016 would have been lower by \$85 million (\$0.11 per diluted share).

## Management's Discussion and Analysis

### Revenues

<i>In millions, unless otherwise indicated</i>	<i>Year ended December 31,</i>		<i>2016</i>	<i>2015</i>	<i>% Change</i>	<i>% Change at constant currency</i>
Rail freight revenues	\$	11,326	\$	11,905	(5%)	(7%)
Other revenues		711		706	1%	(1%)
<b>Total revenues</b>	<b>\$</b>	<b>12,037</b>	<b>\$</b>	<b>12,611</b>	<b>(5%)</b>	<b>(7%)</b>
<b>Rail freight revenues</b>						
Petroleum and chemicals	\$	2,174	\$	2,442	(11%)	(13%)
Metals and minerals		1,218		1,437	(15%)	(17%)
Forest products		1,797		1,728	4%	1%
Coal		434		612	(29%)	(30%)
Grain and fertilizers		2,098		2,071	1%	-
Intermodal		2,846		2,896	(2%)	(3%)
Automotive		759		719	6%	3%
<b>Total rail freight revenues</b>	<b>\$</b>	<b>11,326</b>	<b>\$</b>	<b>11,905</b>	<b>(5%)</b>	<b>(7%)</b>
Revenue ton miles (RTMs) ( <i>millions</i> )		214,327		224,710	(5%)	(5%)
Rail freight revenue/RTM ( <i>cents</i> )		5.28		5.30	-	(2%)
Carloads ( <i>thousands</i> )		5,205		5,485	(5%)	(5%)
Rail freight revenue/carload ( <i>dollars</i> )		2,176		2,170	-	(2%)

Revenues for the year ended December 31, 2016, totaled \$12,037 million compared to \$12,611 million in 2015. The decrease of \$574 million, or 5%, was mainly attributable to lower volumes of crude oil, coal, and frac sand; as well as lower applicable fuel surcharge rates. These factors were partly offset by the positive translation impact of the weaker Canadian dollar and freight rate increases.

Fuel surcharge revenues decreased by \$316 million in 2016, mainly as a result of lower applicable fuel surcharge rates.

In 2016, revenue ton miles (RTMs), measuring the relative weight and distance of rail freight transported by the Company, declined by 5% relative to 2015.

Rail freight revenue per RTM, a measurement of yield defined as revenue earned on the movement of a ton of freight over one mile, remained flat when compared to 2015, mainly driven by lower applicable fuel surcharge rates and an increase in the average length of haul; offset by the positive translation impact of a weaker Canadian dollar and freight rate increases.

### Petroleum and chemicals

	<i>Year ended December 31,</i>		<i>2016</i>	<i>2015</i>	<i>% Change</i>	<i>% Change at constant currency</i>
Revenues ( <i>millions</i> )	\$	2,174	\$	2,442	(11%)	(13%)
RTMs ( <i>millions</i> )		43,395		51,103	(15%)	(15%)
Revenue/RTM ( <i>cents</i> )		5.01		4.78	5%	2%

The petroleum and chemicals commodity group comprises a wide range of commodities, including chemicals and plastics, refined petroleum products, natural gas liquids, crude oil and sulfur. The primary markets for these commodities are within North America, and as such, the performance of this commodity group is closely correlated with the North American economy as well as oil and gas production. Most of the Company's petroleum and chemicals shipments originate in the Louisiana petrochemical corridor between New Orleans and Baton Rouge; in Western Canada, a key oil and gas development area and a major center for natural gas feedstock and world-scale petrochemicals and plastics; and in eastern Canadian regional plants.

For the year ended December 31, 2016, revenues for this commodity group decreased by \$268 million, or 11%, when compared to 2015. The decrease was mainly due to lower shipments of crude oil due to increased pipeline capacity, and reduced shipments of sulfur; as well as lower applicable fuel surcharge rates. These factors were partly offset by the positive translation impact of a weaker Canadian dollar; higher volumes of refined petroleum products; and freight rate increases.

Revenue per RTM increased by 5% in 2016, mainly due to a decrease in the average length of haul, the positive translation impact of a weaker Canadian dollar, and freight rate increases, partly offset by lower applicable fuel surcharge rates.

## Management's Discussion and Analysis

### Percentage of 2016 revenues

Chemicals and plastics	46%
Refined petroleum products	33%
Crude and condensate	17%
Sulfur	4%

	Year ended December 31,	2016	2015	2014
Carloads (thousands)		599	640	655

### Metals and minerals

	Year ended December 31,	2016	2015	% Change	% Change at constant currency
Revenues (millions)		\$ 1,218	\$ 1,437	(15%)	(17%)
RTMs (millions)		20,233	21,828	(7%)	(7%)
Revenue/RTM (cents)		6.02	6.58	(9%)	(11%)

The metals and minerals commodity group consists primarily of materials related to oil and gas development, steel, iron ore, non-ferrous base metals and ores, construction materials and machinery and dimensional (large) loads. The Company provides unique rail access to base metals, iron ore and frac sand mining as well as aluminum and steel producing regions, which are among the most important in North America. This strong origin franchise, coupled with the Company's access to port facilities and the end markets for these commodities, has made CN a leader in the transportation of metals and minerals products. The key drivers for this market segment are oil and gas development, automotive production, and non-residential construction.

For the year ended December 31, 2016, revenues for this commodity group decreased by \$219 million, or 15%, when compared to 2015. The decrease was mainly due to decreased shipments of energy-related commodities including frac sand, drilling pipe, and semi-finished steel products; and lower applicable fuel surcharge rates, partly offset by the positive translation impact of a weaker Canadian dollar.

Revenue per RTM decreased by 9% in 2016, mainly due to an increase in the average length of haul and lower applicable fuel surcharge rates, partly offset by the positive translation impact of a weaker Canadian dollar.

### Percentage of 2016 revenues

Metals	33%
Minerals	27%
Energy materials	21%
Iron ore	19%

	Year ended December 31,	2016	2015	2014
Carloads (thousands)		807	886	1,063

### Forest products

	Year ended December 31,	2016	2015	% Change	% Change at constant currency
Revenues (millions)		\$ 1,797	\$ 1,728	4%	1%
RTMs (millions)		31,401	30,097	4%	4%
Revenue/RTM (cents)		5.72	5.74	-	(3%)

The forest products commodity group includes various types of lumber, panels, paper, wood pulp and other fibers such as logs, recycled paper, wood chips, and wood pellets. The Company has extensive rail access to the western and eastern Canadian fiber-producing regions, which are among the largest fiber source areas in North America. In the U.S., the Company is strategically located to serve both the Midwest and southern U.S. corridors with interline connections to other Class I railroads. The key drivers for the various commodities are: for lumber and panels, housing starts and renovation activities primarily in the U.S.; for fibers (mainly wood pulp), the consumption of paper, pulpboard and tissue in North American and offshore markets; and for newsprint, advertising lineage, non-print media and overall economic conditions, primarily in the U.S.

## Management's Discussion and Analysis

For the year ended December 31, 2016, revenues for this commodity group increased by \$69 million, or 4%, when compared to 2015. The increase was mainly due to higher shipments of lumber and panels to the U.S. due to continued improvement in the U.S. housing market; freight rate increases; and the positive translation impact of a weaker Canadian dollar. These factors were partly offset by lower applicable fuel surcharge rates and decreased shipments of paper products amidst weak market conditions.

Revenue per RTM remained flat in 2016, mainly due to lower applicable fuel surcharge rates and an increase in the average length of haul, offset by the positive translation impact of a weaker Canadian dollar and freight rate increases.

### Percentage of 2016 revenues

Lumber and panels	53%
Pulp and paper	47%

	Year ended December 31,	2016	2015	2014
Carloads (thousands)		440	441	433

### Coal

	Year ended December 31,	2016	2015	% Change	% Change at constant currency
Revenues (millions)		\$ 434	\$ 612	(29%)	(30%)
RTMs (millions)		11,032	15,956	(31%)	(31%)
Revenue/RTM (cents)		3.93	3.84	2%	1%

The coal commodity group consists of thermal grades of bituminous coal, metallurgical coal and petroleum coke. Canadian thermal and metallurgical coal are largely exported via terminals on the west coast of Canada to offshore markets. In the U.S., thermal coal is transported from mines served in southern Illinois, or from western U.S. mines via interchange with other railroads, to major utilities in the Midwest and Southeast U.S., as well as offshore markets via terminals in the Gulf of Mexico.

For the year ended December 31, 2016, revenues for this commodity group decreased by \$178 million, or 29%, when compared to 2015. The decrease was mainly due to lower volumes of thermal coal to U.S. coal-fired utilities, continued global oversupply impacting export shipments of thermal coal via the U.S. Gulf Coast and metallurgical coal via west coast ports; as well as lower applicable fuel surcharge rates. These factors were partly offset by freight rate increases and the positive translation impact of a weaker Canadian dollar.

Revenue per RTM increased by 2% in 2016, mainly due to a decrease in the average length of haul, freight rate increases, and the positive translation impact of a weaker Canadian dollar, partly offset by lower applicable fuel surcharge rates.

### Percentage of 2016 revenues

Coal	78%
Petroleum coke	22%

	Year ended December 31,	2016	2015	2014
Carloads (thousands)		333	438	519

### Grain and fertilizers

	Year ended December 31,	2016	2015	% Change	% Change at constant currency
Revenues (millions)		\$ 2,098	\$ 2,071	1%	-
RTMs (millions)		51,485	50,001	3%	3%
Revenue/RTM (cents)		4.07	4.14	(2%)	(3%)

## Management's Discussion and Analysis

The grain and fertilizers commodity group depends primarily on crops grown and fertilizers processed in Western Canada and the U.S. Midwest. The grain segment consists of three primary segments: food grains (mainly wheat, oats and malting barley), feed grains and feed grain products (including feed barley, feed wheat, peas, corn, ethanol and dried distillers grains), and oilseeds and oilseed products (primarily canola seed, oil and meal, and soybeans). Production of grain varies considerably from year to year, affected primarily by weather conditions, seeded and harvested acreage, the mix of grains produced and crop yields. Grain exports are sensitive to the size and quality of the crop produced, international market conditions and foreign government policy. The majority of grain produced in Western Canada and moved by CN is exported via the ports of Vancouver, Prince Rupert and Thunder Bay. These rail movements are subject to government regulation and to a revenue cap, which effectively establishes a maximum revenue entitlement that railways can earn. In the U.S., grain grown in Illinois and Iowa is exported as well as transported to domestic processing facilities and feed markets. The Company also serves major producers of potash in Canada, as well as producers of ammonium nitrate, urea and other fertilizers across Canada and the U.S.

For the year ended December 31, 2016, revenues for this commodity group increased by \$27 million, or 1%, when compared to 2015. The increase was mainly due to higher volumes of Canadian oilseeds and oilseed products, and higher export volumes of U.S. soybeans and corn; the positive translation impact of a weaker Canadian dollar; and freight rate increases. These factors were partly offset by lower volumes of Canadian wheat and lower applicable fuel surcharge rates.

Revenue per RTM decreased by 2% in 2016, mainly due to an increase in the average length of haul and lower applicable fuel surcharge rates, partly offset by the positive translation impact of a weaker Canadian dollar and freight rate increases.

### Percentage of 2016 revenues

Oilseeds	36%
Food grains	22%
Feed grains	22%
Fertilizers	20%

	Year ended December 31,	2016	2015	2014
Carloads (thousands)		602	607	640

### Intermodal

	Year ended December 31,	2016	2015	% Change	% Change at constant currency
Revenues (millions)		\$ 2,846	\$ 2,896	(2%)	(3%)
RTMs (millions)		53,056	52,144	2%	2%
Revenue/RTM (cents)		5.36	5.55	(3%)	(5%)

The intermodal commodity group includes rail and trucking services and is comprised of two segments: domestic and international. The domestic segment transports consumer products and manufactured goods, serving both retail and wholesale channels, within domestic Canada, domestic U.S., Mexico and transborder, while the international segment handles import and export container traffic, serving the major ports of Vancouver, Prince Rupert, Montreal, Halifax, New Orleans and Mobile. The domestic segment is driven by consumer markets, with growth generally tied to the economy. The international segment is driven by North American economic and trade conditions.

For the year ended December 31, 2016, revenues for this commodity group decreased by \$50 million, or 2%, when compared to 2015. The decrease was mainly due to lower applicable fuel surcharge rates and decreased international volumes via the Port of Vancouver. These factors were partly offset by increased international volumes via the Port of Halifax, and higher domestic retail volumes in the industrial and grocery products segments; freight rate increases; and the positive translation impact of a weaker Canadian dollar.

Revenue per RTM decreased by 3% in 2016, mainly due to lower applicable fuel surcharge rates, partly offset by the positive translation impact of a weaker Canadian dollar and freight rate increases.

### Percentage of 2016 revenues

International	63%
Domestic	37%

	Year ended December 31,	2016	2015	2014
Carloads (thousands)		2,163	2,232	2,086

## Management's Discussion and Analysis

### Automotive

	<i>Year ended December 31,</i>	<b>2016</b>	2015	% Change	% Change at constant currency
Revenues ( <i>millions</i> )	\$	<b>759</b>	\$ 719	6%	3%
RTMs ( <i>millions</i> )		<b>3,725</b>	3,581	4%	4%
Revenue/RTM ( <i>cents</i> )		<b>20.38</b>	20.08	1%	(1%)

The automotive commodity group moves both domestic finished vehicles and parts throughout North America, providing rail access to certain vehicle assembly plants in Canada, and Michigan and Mississippi in the U.S. The Company also serves vehicle distribution facilities in Canada and the U.S., as well as parts production facilities in Michigan and Ontario. The Company serves shippers of import finished vehicles via the ports of Halifax and Vancouver, and through interchange with other railroads. The Company's automotive revenues are closely correlated to automotive production and sales in North America.

For the year ended December 31, 2016, revenues for this commodity group increased by \$40 million, or 6%, when compared to 2015. The increase was mainly due to higher volumes of domestic finished vehicle traffic and increased finished vehicle imports via the Port of Halifax; the positive translation impact of a weaker Canadian dollar; and freight rate increases. These factors were partly offset by lower applicable fuel surcharge rates.

Revenue per RTM increased by 1% in 2016, mainly due to a decrease in the average length of haul, the positive translation impact of a weaker Canadian dollar and freight rate increases, partly offset by lower applicable fuel surcharge rates.

#### ***Percentage of 2016 revenues***

Finished vehicles	<b>93%</b>
Auto parts	<b>7%</b>

	<i>Year ended December 31,</i>	<b>2016</b>	2015	2014
Carloads ( <i>thousands</i> )		<b>261</b>	241	229

### Other revenues

	<i>Year ended December 31,</i>	<b>2016</b>	2015	% Change	% Change at constant currency
Revenues ( <i>millions</i> )	\$	<b>711</b>	\$ 706	1%	(1%)

Other revenues are largely derived from non-rail services that support CN's rail business including vessels and docks, warehousing and distribution, automotive logistic services, freight forwarding and transportation management; as well as other revenues including commuter train revenues.

For the year ended December 31, 2016, Other revenues increased by \$5 million, or 1%, when compared to 2015, mainly due to higher revenues from automotive logistic services and the positive translation impact of a weaker Canadian dollar, partly offset by lower revenues from freight forwarding and docks.

#### ***Percentage of 2016 revenues***

Vessels and docks	<b>50%</b>
Other non-rail services	<b>39%</b>
Other revenues	<b>11%</b>

## Management's Discussion and Analysis

### Operating expenses

Operating expenses for the year ended December 31, 2016 amounted to \$6,725 million compared to \$7,345 million in 2015. The decrease of \$620 million, or 8%, in 2016 was mainly due to lower costs resulting from operating productivity gains, including cost-management initiatives and decreased volumes of traffic; lower pension expense; and lower fuel prices, partly offset by the negative translation impact of a weaker Canadian dollar on US dollar-denominated expenses.

<i>In millions</i>	<i>Year ended December 31,</i>	<b>2016</b>	<b>2015</b>	<b>% Change</b>	<b>% Change at constant currency</b>
Labor and fringe benefits	\$	2,119	\$ 2,406	12%	13%
Purchased services and material		1,592	1,729	8%	9%
Fuel		1,051	1,285	18%	20%
Depreciation and amortization		1,225	1,158	(6%)	(4%)
Equipment rents		375	373	(1%)	3%
Casualty and other		363	394	8%	11%
<b>Total operating expenses</b>	<b>\$</b>	<b>6,725</b>	<b>\$ 7,345</b>	<b>8%</b>	<b>10%</b>

#### Labor and fringe benefits

Labor and fringe benefits expense includes wages, payroll taxes, and employee benefits such as incentive compensation, including stock-based compensation; health and welfare; and pension and other postretirement benefits. Certain incentive and stock-based compensation plans are based on financial and market performance targets and the related expense is recorded in relation to the attainment of such targets.

Labor and fringe benefits expense decreased by \$287 million, or 12%, in 2016 when compared to 2015. The decrease was primarily a result of a lower average headcount due to lower volumes of traffic and increased productivity, and lower pension expense, partly offset by the negative translation impact of the weaker Canadian dollar.

#### Purchased services and material

Purchased services and material expense primarily includes the cost of services purchased from outside contractors; materials used in the maintenance of the Company's track, facilities and equipment; transportation and lodging for train crew employees; utility costs; and the net costs of operating facilities jointly used by the Company and other railroads.

Purchased services and material expense decreased by \$137 million, or 8%, in 2016 when compared to 2015. The decrease was mainly due to lower repairs and maintenance costs, resulting from lower volumes of traffic and cost-management initiatives, as well as favorable winter conditions in the first quarter, and lower accident costs. The decrease was partly offset by the negative translation impact of the weaker Canadian dollar.

#### Fuel

Fuel expense includes fuel consumed by assets, including locomotives, vessels, vehicles and other equipment as well as federal, provincial and state fuel taxes.

Fuel expense decreased by \$234 million, or 18%, in 2016 when compared to 2015. The decrease was primarily due to lower fuel prices, lower volumes of traffic, and productivity gains, partly offset by the negative translation impact of the weaker Canadian dollar.

#### Depreciation and amortization

Depreciation expense is affected by capital additions, railroad property retirements from disposal, sale and/or abandonment and other adjustments including asset impairments.

Depreciation and amortization expense increased by \$67 million, or 6%, in 2016 when compared to 2015. The increase was mainly due to net capital additions and the negative translation impact of the weaker Canadian dollar, partly offset by the net favorable impact of depreciation studies.

#### Equipment rents

Equipment rents expense includes rental expense for the use of freight cars owned by other railroads or private companies and for the short- or long-term lease of freight cars, locomotives and intermodal equipment, net of rental income from other railroads for the use of the Company's cars and locomotives.

## Management's Discussion and Analysis

Equipment rents expense increased by \$2 million, or 1%, in 2016 when compared to 2015. The increase was primarily due to higher costs for the use of locomotives from other railroads, and the negative translation impact of the weaker Canadian dollar, partly offset by lower car and equipment lease expenses.

### Casualty and other

Casualty and other expense includes expenses for personal injuries, environmental, freight and property damage, insurance, bad debt, operating taxes, and travel expenses.

Casualty and other expense decreased by \$31 million, or 8%, in 2016 when compared to 2015. The decrease was mainly due to lower accident costs, and the favorable impacts of a legal settlement and an insurance recovery, partly offset by a bad debt provision related to the bankruptcy of an international intermodal customer, an increase in U.S. personal injury and other claims pursuant to a recent actuarial study, an increase in property taxes and the negative translation impact of the weaker Canadian dollar.

## Other income and expenses

### Interest expense

Interest expense was \$480 million compared to \$439 million in 2015. The increase was mainly due to a higher level of debt and the negative translation impact of the weaker Canadian dollar on US dollar-denominated interest expense.

### Other income

In 2016, the Company recorded other income of \$95 million compared to \$47 million in 2015. Included in Other income for 2016 was a gain on disposal of the Viaduc du Sud of \$76 million.

### Income tax expense

The Company recorded income tax expense of \$1,287 million for the year ended December 31, 2016, compared to \$1,336 million in 2015. Included in the 2016 figure was deferred income tax expense of \$7 million resulting from the enactment of a higher provincial corporate income tax rate. Included in the 2015 figure was a deferred income tax expense of \$42 million resulting from the enactment of a higher provincial corporate income tax rate.

The effective tax rate for 2016 was 26.1% compared to 27.4% in 2015. Excluding the net deferred income tax expense of \$7 million and \$42 million in 2016 and 2015, respectively, the effective tax rate for 2016 was 26.0% compared to 26.5% in 2015. The decrease in the effective tax rate is primarily due to the impact of a lower proportion of the Company's pre-tax income being earned in higher tax rate jurisdictions. For 2017, the Company does not anticipate the effective tax rate to be significantly different from those in 2016 and 2015, estimated at approximately 26.5%.

## 2015 compared to 2014

In 2015, net income was \$3,538 million, an increase of \$371 million, or 12%, when compared to 2014, with diluted earnings per share rising 14% to \$4.39. The \$371 million increase was mainly due to higher operating income net of the related income taxes, partly offset by an increase in Interest expense and a decrease in Other income.

Operating income for the year ended December 31, 2015 increased by \$642 million, or 14%, to \$5,266 million. The operating ratio, defined as operating expenses as a percentage of revenues, was 58.2% in 2015, compared to 61.9% in 2014, a 3.7-point improvement.

Revenues for the year ended December 31, 2015 increased by \$477 million, or 4%, to \$12,611 million, mainly attributable to:

- the positive translation impact of the weaker Canadian dollar on US dollar-denominated revenues;
- freight rate increases; and
- solid overseas intermodal demand, higher volumes of finished vehicle traffic, and increased shipments of lumber and panels to U.S. markets.

These factors were partly offset by a lower applicable fuel surcharge rate; and decreased shipments of energy-related commodities including crude oil, frac sand and drilling pipe, lower volumes of semi-finished steel products and short-haul iron ore, reduced shipments of coal due to weaker North American and global demand, as well as lower U.S. grain exports via the Gulf of Mexico.

Operating expenses for the year ended December 31, 2015 decreased by \$165 million, or 2%, to \$7,345 million, primarily due to lower fuel expense and cost-management efforts, partly offset by the negative translation impact of a weaker Canadian dollar on US dollar-denominated expenses.

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### Revenues

<i>In millions, unless otherwise indicated</i>	<i>Year ended December 31,</i>	2015	2014	% Change	% Change at constant currency
Rail freight revenues	\$	11,905	\$ 11,455	4%	(4%)
Other revenues		706	679	4%	(6%)
<b>Total revenues</b>	<b>\$</b>	<b>12,611</b>	<b>\$ 12,134</b>	<b>4%</b>	<b>(5%)</b>
<b>Rail freight revenues</b>					
Petroleum and chemicals	\$	2,442	\$ 2,354	4%	(6%)
Metals and minerals		1,437	1,484	(3%)	(13%)
Forest products		1,728	1,523	13%	2%
Coal		612	740	(17%)	(25%)
Grain and fertilizers		2,071	1,986	4%	(3%)
Intermodal		2,896	2,748	5%	-
Automotive		719	620	16%	4%
<b>Total rail freight revenues</b>	<b>\$</b>	<b>11,905</b>	<b>\$ 11,455</b>	<b>4%</b>	<b>(4%)</b>
Revenue ton miles (RTMs) ( <i>millions</i> )		224,710	232,138	(3%)	(3%)
Rail freight revenue/RTM ( <i>cents</i> )		5.30	4.93	8%	(1%)
Carloads ( <i>thousands</i> )		5,485	5,625	(2%)	(2%)
Rail freight revenue/carload ( <i>dollars</i> )		2,170	2,036	7%	(2%)

Revenues for the year ended December 31, 2015, totaled \$12,611 million compared to \$12,134 million in 2014. The increase of \$477 million, or 4% was mainly attributable to the positive translation impact of the weaker Canadian dollar on US dollar-denominated revenues; freight rate increases; and solid overseas intermodal demand, higher volumes of finished vehicle traffic, and increased shipments of lumber and panels to U.S. markets. These factors were partly offset by a lower applicable fuel surcharge rate; and decreased shipments of energy-related commodities including crude oil, frac sand and drilling pipe, lower volumes of semi-finished steel products and short-haul iron ore, reduced shipments of coal due to weaker North American and global demand, as well as lower U.S. grain exports via the Gulf of Mexico.

Fuel surcharge revenues decreased by \$575 million in 2015, mainly due to lower applicable fuel surcharge rates and lower freight volumes, partly offset by the positive translation impact of the weaker Canadian dollar.

In 2015, revenue ton miles (RTMs), measuring the relative weight and distance of rail freight transported by the Company, declined by 3% relative to 2014.

Rail freight revenue per RTM, a measurement of yield defined as revenue earned on the movement of a ton of freight over one mile, increased by 8% when compared to 2014, driven by the positive translation impact of the weaker Canadian dollar and freight rate increases, partly offset by a significant increase in the average length of haul, particularly in the second half of the year, and a lower applicable fuel surcharge rate.

### *Petroleum and chemicals*

	<i>Year ended December 31,</i>	2015	2014	% Change	% Change at constant currency
Revenues ( <i>millions</i> )	\$	2,442	\$ 2,354	4%	(6%)
RTMs ( <i>millions</i> )		51,103	53,169	(4%)	(4%)
Revenue/RTM ( <i>cents</i> )		4.78	4.43	8%	(2%)

For the year ended December 31, 2015, revenues for this commodity group increased by \$88 million, or 4%, when compared to 2014. The increase was mainly due to the positive translation impact of a weaker Canadian dollar, freight rate increases and higher shipments of natural gas liquids. These factors were partly offset by decreased shipments of crude oil and a lower applicable fuel surcharge rate.

Revenue per RTM increased by 8% in 2015, mainly due to the positive translation impact of a weaker Canadian dollar and freight rate increases, partly offset by a lower applicable fuel surcharge rate.

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### Metals and minerals

	Year ended December 31,			% Change	% Change at constant currency
	2015	2014			
Revenues (millions)	\$ 1,437	\$ 1,484		(3%)	(13%)
RTMs (millions)	21,828	24,686		(12%)	(12%)
Revenue/RTM (cents)	6.58	6.01		9%	(2%)

For the year ended December 31, 2015, revenues for this commodity group decreased by \$47 million, or 3%, when compared to 2014. The decrease was mainly due to decreased shipments of energy-related commodities including frac sand and drilling pipe due to a reduction in oil and gas activities, and lower volumes of semi-finished steel products and short-haul iron ore; as well as a lower applicable fuel surcharge rate. These factors were partly offset by the positive translation impact of a weaker Canadian dollar and freight rate increases.

Revenue per RTM increased by 9% in 2015, mainly due to the positive translation impact of a weaker Canadian dollar and freight rate increases, partly offset by a significant increase in the average length of haul and a lower applicable fuel surcharge rate.

### Forest products

	Year ended December 31,			% Change	% Change at constant currency
	2015	2014			
Revenues (millions)	\$ 1,728	\$ 1,523		13%	2%
RTMs (millions)	30,097	29,070		4%	4%
Revenue/RTM (cents)	5.74	5.24		10%	(2%)

For the year ended December 31, 2015, revenues for this commodity group increased by \$205 million, or 13%, when compared to 2014. The increase was mainly due to the positive translation impact of a weaker Canadian dollar; freight rate increases; and higher shipments of lumber and panels to U.S. markets, and increased offshore shipments of wood pulp. These factors were partly offset by a lower applicable fuel surcharge rate and decreased shipments of paper products.

Revenue per RTM increased by 10% in 2015, mainly due to the positive translation impact of a weaker Canadian dollar and freight rate increases, partly offset by a lower applicable fuel surcharge rate.

### Coal

	Year ended December 31,			% Change	% Change at constant currency
	2015	2014			
Revenues (millions)	\$ 612	\$ 740		(17%)	(25%)
RTMs (millions)	15,956	21,147		(25%)	(25%)
Revenue/RTM (cents)	3.84	3.50		10%	(1%)

For the year ended December 31, 2015, revenues for this commodity group decreased by \$128 million, or 17%, when compared to 2014. The decrease was mainly due to lower shipments of metallurgical and thermal coal through west coast ports, and decreased volumes of thermal coal to U.S. utilities, and a lower applicable fuel surcharge rate. These factors were partly offset by the positive translation impact of a weaker Canadian dollar and freight rate increases.

Revenue per RTM increased by 10% in 2015, mainly due to a significant decrease in the average length of haul, the positive translation impact of a weaker Canadian dollar, and freight rate increases, partly offset by a lower applicable fuel surcharge rate.

### Grain and fertilizers

	Year ended December 31,			% Change	% Change at constant currency
	2015	2014			
Revenues (millions)	\$ 2,071	\$ 1,986		4%	(3%)
RTMs (millions)	50,001	51,326		(3%)	(3%)
Revenue/RTM (cents)	4.14	3.87		7%	-

## Management's Discussion and Analysis

For the year ended December 31, 2015, revenues for this commodity group increased by \$85 million, or 4%, when compared to 2014. The increase was mainly due to the positive translation impact of a weaker Canadian dollar and freight rate increases, as well as higher shipments of potash and lentils. These factors were partly offset by lower U.S. corn and soybeans exports via the Gulf of Mexico, lower volumes of corn to domestic processing facilities, and reduced export shipments of Canadian wheat and barley; as well as a lower applicable fuel surcharge rate.

Revenue per RTM increased by 7% in 2015, mainly due to the positive translation impact of a weaker Canadian dollar and freight rate increases, partly offset by a lower applicable fuel surcharge rate and an increase in the average length of haul.

### Intermodal

	Year ended December 31,	2015	2014	% Change	% Change at constant currency
Revenues (millions)	\$	2,896	\$ 2,748	5%	-
RTMs (millions)		52,144	49,581	5%	5%
Revenue/RTM (cents)		5.55	5.54	-	(5%)

For the year ended December 31, 2015, revenues for this commodity group increased by \$148 million, or 5%, when compared to 2014. The increase was primarily due to higher international shipments, mainly through the Port of Prince Rupert, the positive translation impact of a weaker Canadian dollar, and freight rate increases. These factors were partly offset by a lower applicable fuel surcharge rate.

Revenue per RTM remained flat in 2015, mainly due to the positive translation impact of a weaker Canadian dollar and freight rate increases, partly offset by a lower applicable fuel surcharge rate and an increase in the average length of haul.

### Automotive

	Year ended December 31,	2015	2014	% Change	% Change at constant currency
Revenues (millions)	\$	719	\$ 620	16%	4%
RTMs (millions)		3,581	3,159	13%	13%
Revenue/RTM (cents)		20.08	19.63	2%	(9%)

For the year ended December 31, 2015, revenues for this commodity group increased by \$99 million, or 16%, when compared to 2014. The increase was mainly due to the positive translation impact of a weaker Canadian dollar; and higher volumes of domestic finished vehicle traffic in the first half, as a result of new business, and higher import volumes via the Port of Vancouver. These factors were partly offset by a lower applicable fuel surcharge rate.

Revenue per RTM increased by 2% in 2015, mainly due to the positive translation impact of a weaker Canadian dollar, partly offset by a significant increase in the average length of haul and a lower applicable fuel surcharge rate.

### Other revenues

	Year ended December 31,	2015	2014	% Change	% Change at constant currency
Revenues (millions)	\$	706	\$ 679	4%	(6%)

For the year ended December 31, 2015, Other revenues increased by \$27 million, or 4%, when compared to 2014, mainly due to the positive translation impact of a weaker Canadian dollar partly offset by lower revenues from vessels.

## Management's Discussion and Analysis

### Operating expenses

Operating expenses for the year ended December 31, 2015 amounted to \$7,345 million compared to \$7,510 million in 2014. The decrease of \$165 million, or 2%, in 2015 was mainly due to lower fuel expense and cost-management efforts, partly offset by the negative translation impact of a weaker Canadian dollar on US dollar-denominated expenses.

<i>In millions</i>	<i>Year ended December 31,</i>	<i>2015</i>	<i>2014</i>	<i>% Change</i>	<i>% Change at constant currency</i>
Labor and fringe benefits	\$	2,406	\$ 2,319	(4%)	2%
Purchased services and material		1,729	1,598	(8%)	(1%)
Fuel		1,285	1,846	30%	39%
Depreciation and amortization		1,158	1,050	(10%)	(4%)
Equipment rents		373	329	(13%)	-
Casualty and other		394	368	(7%)	3%
<i>Total operating expenses</i>	\$	7,345	\$ 7,510	2%	9%

### **Labor and fringe benefits**

Labor and fringe benefits expense increased by \$87 million, or 4%, in 2015 when compared to 2014. The increase was primarily a result of the negative translation impact of the weaker Canadian dollar, general wage increases and higher payroll taxes, as well as increased pension expense, partly offset by lower incentive-based compensation expense.

### **Purchased services and material**

Purchased services and material expense increased by \$131 million, or 8%, in 2015 when compared to 2014. The increase was mainly due to the negative translation impact of the weaker Canadian dollar as well as higher cost for repairs and maintenance and for materials.

### **Fuel**

Fuel expense decreased by \$561 million, or 30%, in 2015 when compared to 2014. The decrease was primarily due to lower fuel prices, partly offset by the negative translation impact of the weaker Canadian dollar.

### **Depreciation and amortization**

Depreciation and amortization expense increased by \$108 million, or 10%, in 2015 when compared to 2014. The increase was mainly due to net capital additions and the negative translation impact of the weaker Canadian dollar, partly offset by the favorable impact of depreciation studies.

### **Equipment rents**

Equipment rents expense increased by \$44 million, or 13%, in 2015 when compared to 2014. The increase was primarily due to the negative translation impact of the weaker Canadian dollar and increased car hire expense, partly offset by higher income from the use of the Company's equipment by other railroads.

### **Casualty and other**

Casualty and other expense increased by \$26 million, or 7%, in 2015 when compared to 2014. The increase was mainly due to the negative translation impact of the weaker Canadian dollar.

### **Other income and expenses**

#### **Interest expense**

In 2015, Interest expense was \$439 million compared to \$371 million in 2014. The increase was mainly due to the negative translation impact of the weaker Canadian dollar on US dollar-denominated interest expense and a higher level of debt.

#### **Other income**

In 2015, the Company recorded other income of \$47 million compared to \$107 million in 2014. Included in Other income for 2014 was a gain on disposal of the Deux-Montagnes of \$80 million.

## Management's Discussion and Analysis

### Income tax expense

The Company recorded income tax expense of \$1,336 million for the year ended December 31, 2015, compared to \$1,193 million in 2014. Included in the 2015 figure was a deferred income tax expense of \$42 million resulting from the enactment of a higher provincial corporate income tax rate. Included in the 2014 figure was an income tax recovery of \$18 million resulting from a change in estimate of the deferred income tax liability related to properties.

The effective tax rate was 27.4% in 2015 and 2014. Excluding the net deferred income tax expense of \$42 million in 2015 and the net income tax recovery of \$18 million in 2014, the effective tax rate for 2015 was 26.5% compared to 27.8% in 2014, partially due to a lower proportion of profit in higher tax rate jurisdictions.

### Summary of quarterly financial data

In millions, except per share data	2016 Quarters				2015 Quarters			
	Fourth <sup>(1)</sup>	Third	Second <sup>(2)</sup>	First	Fourth	Third	Second <sup>(3)</sup>	First
Revenues	\$ 3,217	\$ 3,014	\$ 2,842	\$ 2,964	\$ 3,166	\$ 3,222	\$ 3,125	\$ 3,098
Operating income	\$ 1,395	\$ 1,407	\$ 1,293	\$ 1,217	\$ 1,354	\$ 1,487	\$ 1,362	\$ 1,063
Net income	\$ 1,018	\$ 972	\$ 858	\$ 792	\$ 941	\$ 1,007	\$ 886	\$ 704
Basic earnings per share	\$ 1.33	\$ 1.26	\$ 1.10	\$ 1.01	\$ 1.19	\$ 1.26	\$ 1.10	\$ 0.87
Diluted earnings per share	\$ 1.32	\$ 1.25	\$ 1.10	\$ 1.00	\$ 1.18	\$ 1.26	\$ 1.10	\$ 0.86
Dividends per share	\$ 0.3750	\$ 0.3750	\$ 0.3750	\$ 0.3750	\$ 0.3125	\$ 0.3125	\$ 0.3125	\$ 0.3125

(1) Included in net income in the fourth quarter of 2016 was a gain on disposal of the Viaduc du Sud of \$76 million, or \$66 million after-tax, which was recorded in Other income.

(2) Included in net income in the second quarter of 2016 was an income tax expense of \$7 million that resulted from the enactment of a higher corporate income tax rate.

(3) Included in net income in the second quarter of 2015 was an income tax expense of \$42 million that resulted from the enactment of a higher corporate income tax rate.

Revenues generated by the Company during the year are influenced by seasonal weather conditions, general economic conditions, cyclical demand for rail transportation, and competitive forces in the transportation marketplace (see the section entitled *Business risks* of this MD&A). Operating expenses reflect the impact of freight volumes, seasonal weather conditions, labor costs, fuel prices, and the Company's productivity initiatives. Fluctuations in the Canadian dollar relative to the US dollar have also affected the conversion of the Company's US dollar-denominated revenues and expenses and resulted in fluctuations in net income in the rolling eight quarters presented above.

### Summary of fourth quarter 2016

Fourth quarter 2016 net income was \$1,018 million, an increase of \$77 million, or 8%, when compared to the same period in 2015, with diluted earnings per share rising 12% to \$1.32. Included in net income in the fourth quarter of 2016 was a gain on disposal of the Viaduc du Sud of \$76 million, or \$66 million after-tax, which was recorded in Other income.

Operating income for the quarter ended December 31, 2016 increased by \$41 million, or 3%, to \$1,395 million, when compared to the same period in 2015. The operating ratio was 56.6% in the fourth quarter of 2016 compared to 57.2% in the fourth quarter of 2015, a 0.6-point improvement.

Revenues for the fourth quarter of 2016 increased by \$51 million, or 2%, to \$3,217 million, when compared to the same period in 2015. The increase was mainly attributable to higher volumes of Canadian grains and U.S. soybeans, refined petroleum products, finished vehicles, and petroleum coke; as well as freight rate increases. These factors were partly offset by lower volumes of crude oil, U.S. thermal coal, and drilling pipe; and lower applicable fuel surcharge rates. Fuel surcharge revenues decreased by \$13 million in the fourth quarter of 2016, mainly due to lower fuel surcharge rates.

Operating expenses for the fourth quarter of 2016 increased by \$10 million, or 1%, to \$1,822 million, when compared to the same period in 2015. The increase was primarily due to higher casualty and other expenses relating to U.S. personal injury and other claims, higher depreciation and amortization expense as a result of net capital additions and the unfavorable impact of depreciation studies, partly offset by lower pension expense and lower costs resulting from operating productivity gains, including cost-management initiatives.

## Management's Discussion and Analysis

### Financial position

The following tables provide an analysis of the Company's balance sheet as at December 31, 2016 as compared to 2015. Assets and liabilities denominated in US dollars have been translated to Canadian dollars using the foreign exchange rate in effect at the balance sheet date. As at December 31, 2016 and 2015, the foreign exchange rates were \$1.3427 and \$1.3840 per US\$1.00, respectively.

<i>In millions</i>	<i>December 31,</i>	<b>2016</b>	<b>2015</b>	Foreign exchange impact	Variance excluding foreign exchange	Explanation of variance, other than foreign exchange impact
<b>Total assets</b>	\$	<b>37,057</b>	\$ 36,402	\$ (412)	\$ 1,067	
Variance mainly due to:						
Properties		<b>33,755</b>	32,624	(457)	1,588	Increase primarily due to gross property additions of \$2,695 million, partly offset by depreciation of \$1,225 million.
Pension asset		<b>907</b>	1,305	-	(398)	Decrease primarily due to lower actual returns as well as the decrease in the year-end discount rate from 3.99% in 2015 to 3.81% in 2016.
<b>Total liabilities</b>	\$	<b>22,216</b>	\$ 21,452	\$ (371)	\$ 1,135	
Variance mainly due to:						
Deferred income taxes		<b>8,473</b>	8,105	(145)	513	Increase due to deferred income tax expense of \$704 million recorded in Net income that was partially offset by a deferred income tax recovery of \$148 million recorded in Other comprehensive income (loss).
Pension and other postretirement benefits		<b>694</b>	720	(7)	(19)	Decrease primarily due to increased voluntary contributions made for U.S. plans, partially offset by the decrease in the year-end discount rate from 3.99% in 2015 to 3.81% in 2016.
Total long-term debt, including the current portion		<b>10,937</b>	10,427	(251)	761	Increase primarily due to the issuance of notes of \$1,509 million, partly offset by repayment of notes of \$726 million.

<i>In millions</i>	<i>December 31,</i>	<b>2016</b>	<b>2015</b>	Variance	Explanation of variance
<b>Total shareholders' equity</b>	\$	<b>14,841</b>	\$ 14,950	\$ (109)	
Variance mainly due to:					
Additional paid-in capital		<b>364</b>	475	(111)	Decrease is primarily due to the settlement of other equity settled awards.
Accumulated other comprehensive loss		<b>(2,358)</b>	(1,767)	(591)	Increase in comprehensive loss due to after-tax amounts of \$511 million resulting mainly from actuarial losses arising during the year and the amortization of actuarial losses for the Company's defined benefit pension and other postretirement benefit plans as well as \$80 million from net foreign exchange losses.
Retained earnings		<b>13,242</b>	12,637	605	Increase due to current year net income of \$3,640 million, partly offset by share repurchases of \$1,873 million and dividends paid of \$1,159 million.

## Management's Discussion and Analysis

### Liquidity and capital resources

The Company's principal source of liquidity is cash generated from operations, which is supplemented by borrowings in the money markets and capital markets. To meet its short-term liquidity needs, the Company has access to various financing sources, including an unsecured revolving credit facility, a commercial paper program, and an accounts receivable securitization program. In addition to these sources, the Company can issue debt securities to meet its longer-term liquidity needs. The Company's access to long-term funds in the debt capital markets depends on its credit rating and market conditions. The Company believes that it continues to have access to the long-term debt capital markets. If the Company were unable to borrow funds at acceptable rates in the long-term debt capital markets, the Company could borrow under its revolving credit facility, draw down on its accounts receivable securitization program, raise cash by disposing of surplus properties or otherwise monetizing assets, reduce discretionary spending or take a combination of these measures to assure that it has adequate funding for its business. The strong focus on cash generation from all sources gives the Company increased flexibility in terms of meeting its financing requirements.

The Company's primary uses of funds are for working capital requirements, including income tax installments, pension contributions, and contractual obligations; capital expenditures relating to track infrastructure and other; acquisitions; dividend payouts; and the repurchase of shares through share repurchase programs. The Company sets priorities on its uses of available funds based on short-term operational requirements, expenditures to continue to operate a safe railway and pursue strategic initiatives, while also considering its long-term contractual obligations and returning value to its shareholders; and as part of its financing strategy, the Company regularly reviews its optimal capital structure, cost of capital, and the need for additional debt financing.

The Company has a working capital deficit, which is considered common in the rail industry because it is capital-intensive, and not an indication of a lack of liquidity. The Company maintains adequate resources to meet daily cash requirements, and has sufficient financial capacity to manage its day-to-day cash requirements and current obligations. As at December 31, 2016 and December 31, 2015, the Company had Cash and cash equivalents of \$176 million and \$153 million, respectively; Restricted cash and cash equivalents of \$496 million and \$523 million, respectively; and a working capital deficit of \$901 million and \$845 million, respectively. The working capital deficit increased by \$56 million in 2016 primarily as a result of an increase in Current portion of long-term debt mainly due to the issuance of commercial paper, and decreased Other current assets; partly offset by decreased Accounts payable and other. The cash and cash equivalents pledged as collateral for a minimum term of one month pursuant to the Company's bilateral letter of credit facilities are recorded as Restricted cash and cash equivalents. There are currently no specific requirements relating to working capital other than in the normal course of business as discussed herein.

The Company's U.S. and other foreign subsidiaries hold cash to meet their respective operational requirements. If the Company should require more liquidity in Canada than is generated by its domestic operations, the Company could decide to repatriate funds associated with undistributed earnings of its foreign operations, including its U.S. and other foreign subsidiaries. The impact on liquidity resulting from the repatriation of funds held outside Canada would not be significant as such repatriation of funds would not cause significant tax implications to the Company under the tax laws of Canada and the U.S. and other foreign tax jurisdictions, and the tax treaties currently in effect between them.

The Company expects cash from operations and its various sources of financing to be sufficient to meet its ongoing obligations. The Company is not aware of any trends or expected fluctuations in its liquidity that would impact its ongoing operations or financial condition as of the date of this MD&A.

#### Available financing sources

##### *Shelf prospectus and registration statement*

During 2016, the Company issued US\$1,150 million of debt securities in the U.S. capital markets under its current shelf prospectus and registration statement. The Company has remaining capacity available of \$4,466 million under its shelf prospectus and registration statement, for which CN can issue debt securities in the Canadian and U.S. capital markets over the next 13 months. Access to the Canadian and U.S. capital markets under the shelf prospectus and registration statement is dependent on market conditions.

##### *Revolving credit facility*

On March 11, 2016, the Company's revolving credit facility agreement was amended, which increased the credit facility from \$800 million to \$1.3 billion, effective May 5, 2016. The increased capacity provides the Company with additional financial flexibility. The amended credit facility of \$1.3 billion consists of a tranche for \$420 million maturing on May 5, 2019 and a tranche for \$880 million maturing on May 5, 2021. The accordion feature, which provides for an additional \$500 million subject to the consent of individual lenders, remains unchanged. The credit facility is available for working capital and general corporate purposes, including backstopping the Company's commercial paper programs.

As at December 31, 2016 and December 31, 2015, the Company had no outstanding borrowings under its revolving credit facility and there were no draws during the years ended December 31, 2016 and 2015.

## Management's Discussion and Analysis

### **Commercial paper**

The Company has a commercial paper program in Canada and in the U.S. Both programs are backstopped by the Company's revolving credit facility, enabling it to issue commercial paper up to a maximum aggregate principal amount of \$1.3 billion, or the US dollar equivalent, on a combined basis, which increased from \$800 million, effective May 5, 2016. The commercial paper programs, which are subject to market rates in effect at the time of financing, provide the Company with a flexible financing alternative at a low cost, and can be used for general corporate purposes. The cost of commercial paper and access to the commercial paper market in Canada and the U.S. are dependent on credit ratings and market conditions. If the Company were to lose access to its commercial paper program for an extended period of time, the Company could rely on its \$1.3 billion revolving credit facility to meet its short-term liquidity needs.

As at December 31, 2016, the Company had total commercial paper borrowings of US\$451 million (\$605 million) (2015 - US\$331 million (\$458 million)), presented in Current portion of long-term debt on the Consolidated Balance Sheets.

### **Accounts receivable securitization program**

The Company has an agreement to sell an undivided co-ownership interest in a revolving pool of accounts receivable to unrelated trusts for maximum cash proceeds of \$450 million. On October 25, 2016, the Company extended the term of its agreement by one year to February 1, 2019. The trusts are multi-seller trusts and the Company is not the primary beneficiary. Funding for the acquisition of these assets is customarily through the issuance of asset-backed commercial paper notes by the unrelated trusts.

The Company has retained the responsibility for servicing, administering and collecting the receivables sold. The average servicing period is approximately one month and is renewed at market rates in effect. Subject to customary indemnifications, each trust's recourse is limited to the accounts receivable transferred.

The Company is subject to customary credit rating requirements, which if not met, could result in termination of the program. The necessary credit rating requirements have been met as of the date of this MD&A. The Company is also subject to customary reporting requirements for which failure to perform could also result in termination of the program. The Company monitors the reporting requirements and is currently not aware of any trends, events or conditions that could cause such termination.

The accounts receivable securitization program provides the Company with readily available short-term financing for general corporate use. In the event the program is terminated before its scheduled maturity, the Company expects to meet its future payment obligations through its various sources of financing including its revolving credit facility and commercial paper program, and/or access to capital markets.

As at December 31, 2016 and 2015, the Company had no proceeds received under the accounts receivable securitization program.

### **Bilateral letter of credit facilities**

The Company has a series of committed bilateral letter of credit facility agreements. During 2016, the Company extended the expiry date of the majority of these agreements by one year to April 28, 2019, and entered into various uncommitted bilateral letter of credit facility agreements. These agreements are held with various banks to support the Company's requirements to post letters of credit in the ordinary course of business. Under these agreements, the Company has the option from time to time to pledge collateral in the form of cash or cash equivalents, for a minimum term of one month, equal to at least the face value of the letters of credit issued.

As at December 31, 2016, the Company had outstanding letters of credit of \$451 million (2015 - \$551 million) under the committed facilities from a total available amount of \$508 million (2015 - \$575 million) and \$68 million (2015 - \$nil) under the uncommitted facilities.

As at December 31, 2016, included in Restricted cash and cash equivalents was \$426 million (2015 - \$523 million) and \$68 million (2015 - \$nil) which were pledged as collateral under the committed and uncommitted bilateral letter of credit facilities, respectively.

Additional information relating to the Company's financing sources is provided in *Note 10 – Long-term debt* to the Company's 2016 Annual Consolidated Financial Statements.

## Management's Discussion and Analysis

### Credit ratings

The Company's ability to access funding in the debt capital markets and the cost and amount of funding available depends in part on its credit ratings. Rating downgrades could limit the Company's access to the capital markets, or increase its borrowing costs.

The following table provides the credit ratings that CN has received from credit rating agencies as of the date of this MD&A:

	Long-term debt rating	Commercial paper rating
Dominion Bond Rating Service	A	R-1 (low)
Moody's Investors Service	A2	P-1
Standard & Poor's	A	A-1

These credit ratings are not recommendations to purchase, hold, or sell the securities referred to above. Ratings may be revised or withdrawn at any time by the credit rating agencies. Each credit rating should be evaluated independently of any other credit rating.

### Cash flows

<i>In millions</i>	<i>Year ended December 31,</i>	<b>2016</b>	2015	Variance
Net cash provided by operating activities	\$	<b>5,202</b>	\$ 5,140	\$ 62
Net cash used in investing activities		<b>(2,655)</b>	(2,827)	172
Net cash used in financing activities		<b>(2,539)</b>	(2,223)	(316)
Effect of foreign exchange fluctuations on US dollar-denominated cash and cash equivalents		<b>15</b>	11	4
<i>Net increase (decrease) in cash and cash equivalents</i>		<b>23</b>	101	(78)
Cash and cash equivalents, beginning of year		<b>153</b>	52	101
<i>Cash and cash equivalents, end of year</i>	\$	<b>176</b>	\$ 153	\$ 23

### Operating activities

Net cash provided by operating activities increased by \$62 million in 2016, mainly due to improvements in earnings.

### Pension contributions

The Company's contributions to its various defined benefit pension plans are made in accordance with the applicable legislation in Canada and the U.S. and such contributions follow minimum and maximum thresholds as determined by actuarial valuations. Pension contributions for the year ended December 31, 2016 and 2015 of \$162 million and \$126 million, respectively, primarily represent contributions to the CN Pension Plan, for the current service cost as determined under the Company's current actuarial valuations for funding purposes and voluntary contributions to the U.S. qualified defined benefit plans. The Company expects to make total cash contributions of approximately \$115 million for all pension plans in 2017.

See the section of this MD&A entitled *Critical accounting estimates – Pensions and other postretirement benefits* for additional information pertaining to the funding of the Company's pension plans. Additional information relating to the pension plans is provided in *Note 12 – Pensions and other postretirement benefits* to the Company's 2016 Annual Consolidated Financial Statements.

### Income tax payments

The Company is required to make scheduled installment payments as prescribed by the tax authorities. In Canada, the Company's domestic jurisdiction, tax installments in a given year are generally based on the prior year's taxable income whereas in the U.S., the Company's predominant foreign jurisdiction, they are based on forecasted taxable income of the current year.

In 2016, net income tax payments were \$653 million (\$725 million in 2015). The decrease was mainly attributable to lower required tax installments, reflecting a lower proportion of the Company's pre-tax income being earned in higher tax rate jurisdictions. For the 2017 fiscal year, the Company's net income tax payments are expected to be approximately \$600 million.

## Management's Discussion and Analysis

### Investing activities

Net cash used in investing activities decreased by \$172 million in 2016, mainly as a result of proceeds received from the disposal of property and a reduction in cash pledged as collateral under the bilateral letter of credit facilities.

### Property additions

<i>In millions</i>	<i>Year ended December 31,</i>	<b>2016</b>	<b>2015</b>
Track and roadway <sup>(1)</sup>	\$	1,834	\$ 1,855
Rolling stock		494	480
Buildings		85	71
Information technology		176	144
Other		163	156
Gross property additions		2,752	2,706
Less: Capital leases		57	-
<b>Property additions <sup>(2)</sup></b>	<b>\$</b>	<b>2,695</b>	<b>\$ 2,706</b>

(1) In 2016, approximately 80% (2015 - 90%) of the Track and roadway property additions were incurred to renew the basic infrastructure. Costs relating to normal repairs and maintenance of Track and roadway properties are expensed as incurred, and amounted to approximately 13% of the Company's total operating expenses in 2016 (2015 - 12%).

(2) Includes \$313 million and \$128 million associated with the U.S. federal government legislative Positive Train Control implementation in 2016 and 2015 respectively.

### 2017 Capital expenditure program

The Company expects to invest approximately \$2.5 billion in its capital program, which will be financed with cash generated from operations, as outlined below:

- \$1.6 billion on track infrastructure to continue operating a safe railway and improve the productivity and fluidity of the network; including the replacement of rail, ties, and other track materials, bridge improvements, as well as various branch line upgrades;
- \$0.4 billion associated with the U.S. federal government legislative PTC implementation;
- \$0.3 billion on initiatives to drive productivity, including information technology to improve service and operating efficiency; and
- \$0.2 billion on equipment capital expenditures, allowing the Company to tap growth opportunities and improve the quality of the fleet; and in order to handle expected traffic increase and improve operational efficiency.

### Disposal of property

In 2016, cash flows included cash proceeds of \$85 million before transaction costs from the disposal of the Viaduc du Sud. In 2015, there were no significant disposals of property. Additional information relating to disposals of property is provided in Note 3 – Other income to the Company's 2016 Annual Consolidated Financial Statements.

### Financing activities

Net cash used in financing activities increased by \$316 million in 2016, driven by higher repurchases of common shares and an increase in dividend payments, partly offset by the net issuance of debt.

### Debt financing activities

Debt financing activities in 2016 included the following:

- On December 15, 2016, repayment of US\$300 million (\$398 million) 1.45% Notes due 2016 upon maturity;
- On August 2, 2016, issuance of US\$650 million (\$848 million) 3.20% Notes due 2046 in the U.S. capital markets, which resulted in net proceeds of \$832 million;
- On June 1, 2016, repayment of US\$250 million (\$328 million) 5.80% Notes due 2016 upon maturity;
- On February 23, 2016, issuance of US\$500 million (\$686 million) 2.75% Notes due 2026 in the U.S. capital markets, which resulted in net proceeds of \$677 million;
- Repayment of debt related to capital leases of \$229 million; and
- Net issuance of commercial paper of \$137 million.

## Management's Discussion and Analysis

Debt financing activities in 2015 included the following:

- On November 6, 2015, repayment of US\$350 million (\$461 million) Floating Rate Notes due 2015 upon maturity;
- On September 22, 2015, issuance of \$350 million 2.80% Notes due 2025, \$400 million 3.95% Notes due 2045 and \$100 million 4.00% Notes due 2065 in the Canadian capital markets, which resulted in total net proceeds of \$841 million;
- Net issuance of commercial paper of \$451 million; and
- Repayment of debt related to capital leases of \$241 million and the accounts receivable securitization program of \$50 million.

Cash obtained from the issuance of debt in 2016 and 2015 was used for general corporate purposes, including the redemption and refinancing of outstanding indebtedness and share repurchases. Additional information relating to the Company's outstanding debt securities is provided in *Note 10 – Long-term debt* to the Company's 2016 Annual Consolidated Financial Statements.

### Share repurchase programs

The Company may repurchase shares pursuant to a Normal Course Issuer Bid (NCIB) at prevailing market prices plus brokerage fees, or such other prices as may be permitted by the Toronto Stock Exchange. Under its current NCIB, the Company may repurchase up to 33.0 million common shares between October 30, 2016 and October 29, 2017. The Company's NCIB notice may be found online on SEDAR at [www.sedar.com](http://www.sedar.com) and on EDGAR at [www.sec.gov](http://www.sec.gov). A printed copy may be obtained by contacting the Corporate Secretary's Office.

Previous share repurchase programs allowed for the repurchase of up to 33.0 million common shares between October 30, 2015 and October 29, 2016, and up to 28.0 million common shares between October 24, 2014 and October 23, 2015, pursuant to the NCIBs.

The following table provides the information related to the share repurchase programs for the years ended December 31, 2016, 2015 and 2014:

<i>In millions, except per share data</i>	<i>Year ended December 31,</i>			<b>Total program</b>	
	<b>2016</b>	<b>2015</b>	<b>2014</b>		
<b>October 2016 - October 2017 program</b>					
Number of common shares <sup>(1)</sup>	<b>3.5</b>	N/A	N/A		<b>3.5</b>
Weighted-average price per share	<b>\$ 84.06</b>	N/A	N/A	\$	<b>84.06</b>
Amount of repurchase	<b>\$ 293</b>	N/A	N/A	\$	<b>293</b>
<b>October 2015 - October 2016 program</b>					
Number of common shares <sup>(1)</sup>	<b>22.9</b>	5.8	N/A		<b>28.7</b>
Weighted-average price per share <sup>(2)</sup>	<b>\$ 74.60</b>	\$ 70.44	N/A	\$	<b>73.76</b>
Amount of repurchase	<b>\$ 1,707</b>	\$ 410	N/A	\$	<b>2,117</b>
<b>October 2014 - October 2015 program</b>					
Number of common shares <sup>(1)</sup>	<b>N/A</b>	17.5	5.6		<b>23.1</b>
Weighted-average price per share <sup>(2)</sup>	<b>N/A</b>	\$ 76.79	\$ 73.29	\$	<b>75.94</b>
Amount of repurchase	<b>N/A</b>	\$ 1,340	\$ 410	\$	<b>1,750</b>
<b>Total for the year</b>					
<i>Number of common shares</i> <sup>(1)</sup>	<b>26.4</b>	23.3	22.4 <sup>(4)</sup>		
<i>Weighted-average price per share</i> <sup>(2)</sup>	<b>\$ 75.85</b>	\$ 75.20	\$ 67.38 <sup>(4)</sup>		
<i>Amount of repurchase</i> <sup>(3)</sup>	<b>\$ 2,000</b>	\$ 1,750	\$ 1,505 <sup>(4)</sup>		

(1) Includes repurchases of common shares in each quarter of 2016 and in the first, third and fourth quarters of 2015, and the first and fourth quarters of 2014 pursuant to private agreements between the Company and arm's-length third-party sellers.

(2) Includes brokerage fees where applicable.

(3) Includes settlements in subsequent periods.

(4) Includes 2014 repurchases from the October 2013 - October 2014 program, which consisted of 16.8 million common shares, a weighted-average price per share of \$65.40 and an amount of repurchase of \$1,095 million.

### Share Trusts

The Company's Employee Benefit Plan Trusts ("Share Trusts") purchase common shares on the open market, which are used to deliver common shares under the Share Units Plan. For the year ended December 31, 2016, the Share Trusts disbursed 0.3 million common shares, which had a historical cost of \$23 million, representing a weighted-average price per share of \$73.31 for settlement under the Share Units Plan, and purchased 0.7 million common shares for \$60 million at a weighted-average price per share of \$84.99, including brokerage fees. For the year ended December 31, 2015, the Share Trusts purchased 1.4 million common shares for \$100 million at a weighted-average price per share of \$73.31, including brokerage fees. Additional information relating to the share purchases by Share Trusts is provided in *Note 13 – Share capital* to the Company's 2016 Annual Consolidated Financial Statements.

## Management's Discussion and Analysis

### Dividends paid

During 2016, the Company paid quarterly dividends of \$0.3750 per share amounting to \$1,159 million, compared to \$996 million, at the rate of \$0.3125 per share in 2015. For 2017, the Company's Board of Directors approved an increase of 10% to the quarterly dividend to common shareholders, from \$0.3750 per share in 2016 to \$0.4125 per share in 2017.

### Contractual obligations

In the normal course of business, the Company incurs contractual obligations. The following table sets forth the Company's contractual obligations for the following items as at December 31, 2016:

<i>In millions</i>	Total	2017	2018	2019	2020	2021	2022 & thereafter
Debt obligations <sup>(1)</sup>	\$ 10,593	\$ 1,277	\$ 697	\$ 730	\$ -	\$ 781	\$ 7,108
Interest on debt obligations <sup>(2)</sup>	7,366	473	438	386	366	363	5,340
Capital lease obligations <sup>(3)</sup>	439	224	24	17	22	12	140
Operating lease obligations	629	140	126	96	66	48	153
Purchase obligations <sup>(4)</sup>	1,115	920	58	43	30	26	38
Other long-term liabilities <sup>(5)</sup>	734	67	44	42	62	47	472
<b>Total contractual obligations</b>	<b>\$ 20,876</b>	<b>\$ 3,101</b>	<b>\$ 1,387</b>	<b>\$ 1,314</b>	<b>\$ 546</b>	<b>\$ 1,277</b>	<b>\$ 13,251</b>

(1) Presented net of unamortized discounts and debt issuance costs and excludes capital lease obligations.

(2) Interest payments on the floating rate note are calculated based on the three-month London Interbank Offered Rate effective as at December 31, 2016.

(3) Includes \$344 million of minimum lease payments and \$95 million of imputed interest at rates ranging from 0.7% to 6.8%.

(4) Includes commitments for railroad ties, rail, freight cars, fuel, and other equipment and services, as well as outstanding information technology service contracts and licenses.

(5) Includes expected payments for workers' compensation, postretirement benefits other than pensions, net unrecognized tax benefits, environmental liabilities and pension obligations that have been classified as contractual settlement agreements.

### 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 changes in restricted cash and cash equivalents and the impact of major acquisitions, if any. Free cash flow does not have any standardized meaning prescribed by GAAP and therefore, may not be comparable to similar measures presented by other companies.

The following table provides a reconciliation of net cash provided by operating activities as reported for the years ended December 31, 2016, 2015 and 2014, to free cash flow:

<i>In millions</i>	Year ended December 31,		
	2016	2015	2014
Net cash provided by operating activities	\$ 5,202	\$ 5,140	\$ 4,381
Net cash used in investing activities	(2,655)	(2,827)	(2,176)
Net cash provided before financing activities	2,547	2,313	2,205
Adjustment: Change in restricted cash and cash equivalents	(27)	60	15
<b>Free cash flow</b>	<b>\$ 2,520</b>	<b>\$ 2,373</b>	<b>\$ 2,220</b>

## Management's Discussion and Analysis

### 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. These measures do not have any standardized meaning prescribed by GAAP and therefore, may not be comparable to similar measures presented by other companies.

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:

<i>In millions, unless otherwise indicated</i>	<i>As at and for the year ended December 31,</i>			<b>2016</b>	<b>2015</b>	<b>2014</b>
Debt	\$	<b>10,937</b>	\$	10,427	\$	8,372
<i>Adjustment: Present value of operating lease commitments</i> <sup>(1)</sup>		<b>533</b>		607		607
<b>Adjusted debt</b>	\$	<b>11,470</b>	\$	11,034	\$	8,979
Net income	\$	<b>3,640</b>	\$	3,538	\$	3,167
Interest expense		<b>480</b>		439		371
Income tax expense		<b>1,287</b>		1,336		1,193
Depreciation and amortization		<b>1,225</b>		1,158		1,050
<b>EBITDA</b>		<b>6,632</b>		6,471		5,781
<i>Adjustments:</i>						
Other income		<b>(95)</b>		(47)		(107)
Deemed interest on operating leases		<b>24</b>		29		28
<b>Adjusted EBITDA</b>	\$	<b>6,561</b>	\$	6,453	\$	5,702
<b>Adjusted debt-to-adjusted EBITDA multiple (times)</b>		<b>1.75</b>		1.71		1.57

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

All forward-looking statements discussed in this section are subject to risks and uncertainties and are based on assumptions about events and developments that may not materialize or that may be offset entirely or partially by other events and developments. See the section of this MD&A entitled *Forward-looking statements* for a discussion of assumptions and risk factors affecting such forward-looking statements.

## Off balance sheet arrangements

### Guarantees and indemnifications

In the normal course of business, the Company, including certain of its subsidiaries, enters into agreements that may involve providing guarantees or indemnifications to third parties and others, which may extend beyond the term of the agreements. These include, but are not limited to, residual value guarantees on operating leases, standby letters of credit, surety and other bonds, and indemnifications that are customary for the type of transaction or for the railway business. As at December 31, 2016, the Company has not recorded a liability with respect to guarantees and indemnifications. Additional information relating to guarantees and indemnifications is provided in *Note 16 – Major commitments and contingencies* to the Company's 2016 Annual Consolidated Financial Statements.

## Outstanding share data

As at February 1, 2017, the Company had 760.3 million common shares and 5.2 million stock options outstanding.

### Financial instruments

#### **Risk management**

In the normal course of business, the Company is exposed to various risks from its use of financial instruments. To manage these risks, the Company follows a financial risk management framework, which is monitored and approved by the Company's Finance Committee, with a goal of maintaining a strong balance sheet, optimizing earnings per share and free cash flow, financing its operations at an optimal cost of capital and preserving its liquidity. The Company has limited involvement with derivative financial instruments in the management of its risks and does not hold or issue them for trading or speculative purposes.

#### **Credit risk**

Credit risk arises from cash and temporary investments, accounts receivable and derivative financial instruments. To manage credit risk associated with cash and temporary investments, the Company places these financial assets with governments, major financial institutions, or other creditworthy counterparties; and performs ongoing reviews of these entities. To manage credit risk associated with accounts receivable, the Company reviews the credit history of each new customer, monitors the financial condition and credit limits of its customers, and keeps the average daily sales outstanding within an acceptable range. The Company works with customers to ensure timely payments, and in certain cases, requires financial security, including letters of credit. Although the Company believes there are no significant concentrations of customer credit risk, economic conditions can affect the Company's customers and can result in an increase to the Company's credit risk and exposure to business failures of its customers. A widespread deterioration of customer credit and business failures of customers could have a material adverse effect on the Company's results of operations, financial position or liquidity. The Company considers the risk due to the possible non-performance by its customers to be remote.

The Company has limited involvement with derivative financial instruments, however from time to time, it may enter into derivative financial instruments to manage its exposure to interest rates or foreign currency exchange rates. To manage the counterparty risk associated with the use of derivative financial instruments, the Company enters into contracts with major financial institutions that have been accorded investment grade ratings. Though the Company is exposed to potential credit losses due to non-performance of these counterparties, the Company considers this risk remote.

#### **Liquidity risk**

Liquidity risk is the risk that sufficient funds will not be available to satisfy financial obligations as they come due. In addition to cash generated from operations, which represents its principal source of liquidity, the Company manages liquidity risk by aligning other external sources of funds which can be obtained upon short notice, such as a revolving credit facility, commercial paper, and an accounts receivable securitization program. As well, the Company has available capacity under its shelf prospectus and registration statement of \$4,466 million. Access to capital markets under the shelf prospectus and registration statement is dependent on market conditions. The Company believes that its investment grade credit ratings contribute to reasonable access to capital markets. See the section of this MD&A entitled *Liquidity and capital resources* for additional information relating to the Company's available financing sources.

#### **Foreign currency risk**

The Company conducts its business in both Canada and the U.S. and as a result, is affected by currency fluctuations. Changes in the exchange rate between the Canadian dollar and the US dollar affect the Company's revenues and expenses. To manage foreign currency risk, the Company designates US dollar-denominated long-term debt of the parent company as a foreign currency hedge of its net investment in U.S. subsidiaries. As a result, from the dates of designation, foreign exchange gains and losses on translation of the Company's US dollar-denominated long-term debt are recorded in Accumulated other comprehensive loss, which minimizes volatility of earnings resulting from the conversion of US dollar-denominated long-term debt into the Canadian dollar.

The Company also enters into foreign exchange forward contracts to manage its exposure to foreign currency risk. As at December 31, 2016, the Company had outstanding foreign exchange forward contracts with a notional value of US\$1,035 million (2015 - US\$361 million). Changes in the fair value of foreign exchange forward contracts, resulting from changes in foreign exchange rates, are recognized in Other income in the Consolidated Statements of Income as they occur. For the year ended December 31, 2016, the Company recorded a loss of \$1 million (2015 - gain of \$61 million; 2014 - gain of \$9 million), related to foreign exchange forward contracts. These losses or gains were largely offset by the re-measurement of other US dollar-denominated monetary assets and liabilities recognized in Other income. As at December 31, 2016, Other current assets included an unrealized gain of \$19 million (2015 - \$4 million) and Accounts payable and other included an unrealized loss of \$1 million (2015 - \$2 million), related to foreign exchange forward contracts.

The estimated annual impact on net income of a year-over-year one-cent change in the Canadian dollar relative to the US dollar is approximately \$30 million.

## Management's Discussion and Analysis

### **Interest rate risk**

The Company is exposed to interest rate risk, which is the risk that the fair value or future cash flows of a financial instrument will vary as a result of changes in market interest rates. Such risk exists in relation to the Company's long-term debt. The Company mainly issues fixed-rate debt, which exposes the Company to variability in the fair value of the debt. The Company also issues debt with variable interest rates, which exposes the Company to variability in interest expense.

To manage interest rate risk, the Company manages its borrowings in line with liquidity needs, maturity schedule, and currency and interest rate profile. In anticipation of future debt issuances, the Company may use derivative instruments such as forward rate agreements. The Company does not currently hold any significant derivative instruments to manage its interest rate risk. As at December 31, 2016, Accumulated other comprehensive loss included an unamortized gain of \$7 million (2015 - \$7 million) relating to treasury lock transactions settled in a prior year, which is being amortized over the term of the related debt.

The estimated annual impact on net income of a year-over-year one-percent change in the interest rate on floating rate debt is approximately \$9 million.

### **Commodity price risk**

The Company is exposed to commodity price risk related to purchases of fuel and the potential reduction in net income due to increases in the price of diesel. Fuel prices are impacted by geopolitical events, changes in the economy or supply disruptions. Fuel shortages can occur due to refinery disruptions, production quota restrictions, climate, and labor and political instability.

The Company manages fuel price risk by offsetting the impact of rising fuel prices with the Company's fuel surcharge program. The surcharge applied to customers is determined in the second calendar month prior to the month in which it is applied, and is generally calculated using the average monthly price of On-Highway Diesel (OHD), and to a lesser extent West-Texas Intermediate crude oil (WTI).

While the Company's fuel surcharge program provides effective coverage, residual exposure remains given that fuel price risk cannot be completely managed due to timing and given the volatility in the market. As such, the Company may enter into derivative instruments to manage such risk when considered appropriate.

### **Fair value of financial instruments**

The following table provides the valuation methods and assumptions used by the Company to estimate the fair value of financial instruments and their associated level within the fair value hierarchy:

<b>Level 1</b> <b>Quoted prices for identical instruments in active markets</b>	The carrying amounts of Cash and cash equivalents and Restricted cash and cash equivalents approximate fair value. These financial instruments include highly liquid investments purchased three months or less from maturity, for which the fair value is determined by reference to quoted prices in active markets.
<b>Level 2</b> <b>Significant inputs (other than quoted prices included in Level 1) are observable</b>	<p>The carrying amounts of Accounts receivable, Other current assets, and Accounts payable and other approximate fair value. The fair value of these financial instruments is not determined using quoted prices, but rather from market observable information. The fair value of derivative financial instruments used to manage the Company's exposure to foreign currency risk and included in Other current assets and Accounts payable and other is measured by discounting future cash flows using a discount rate derived from market data for financial instruments subject to similar risks and maturities.</p> <p>The carrying amount of the Company's debt does not approximate fair value. The fair value is estimated based on quoted market prices for the same or similar debt instruments, as well as discounted cash flows using current interest rates for debt with similar terms, company rating, and remaining maturity. As at December 31, 2016, the Company's debt had a carrying amount of \$10,937 million (2015 - \$10,427 million) and a fair value of \$12,084 million (2015 - \$11,720 million).</p>
<b>Level 3</b> <b>Significant inputs are unobservable</b>	The carrying amounts of investments included in Intangible and other assets approximate fair value, with the exception of certain cost investments for which significant inputs are unobservable and fair value is estimated based on the Company's proportionate share of the underlying net assets. As at December 31, 2016, the Company's investments had a carrying amount of \$68 million (2015 - \$69 million) and a fair value of \$220 million (2015 - \$220 million).

## Management's Discussion and Analysis

### Recent accounting pronouncements

The following recent Accounting Standards Updates (ASUs) issued by FASB were adopted by the Company during the current period:

Standard	Description	Impact
<b>ASU 2016-09, Compensation – Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting</b>	Simplifies several aspects of the accounting for share-based payments, including the income tax consequences, classification of awards as either equity or liabilities, and classification in the Statement of Cash Flows. The new guidance includes multiple amendments with differing application methods.	The Company elected to adopt this standard in 2016 on a prospective basis with an effective date of January 1, 2016. The adoption of this standard did not have a significant impact on the Company's Consolidated Financial Statements.
<b>ASU 2015-07, Fair Value Measurement (Topic 820): Disclosures for Investments in Certain Entities That Calculate Net Asset Value per Share (or its Equivalent)</b>	Removes the requirement to categorize within the fair value hierarchy investments for which fair value is measured using the net asset value practical expedient.	The Company adopted this standard in 2016 on a retrospective basis. Investments measured at net asset value of \$3,305 million and \$3,511 million as at December 31, 2016 and 2015, respectively, held by the Company's defined benefit pension plans, are no longer included in the fair value hierarchy.

The following recent ASUs issued by FASB have an effective date after December 31, 2016 and have not been adopted by the Company:

Standard <sup>(1)</sup>	Description	Impact	Effective date <sup>(2)</sup>
<b>ASU 2016-18, Statement of Cash Flows (Topic 230): Restricted Cash</b>	Requires that a Statement of Cash Flows explain the change during the period in the total of cash, cash equivalents, and amounts generally described as restricted cash or restricted cash equivalents. The amendments should be applied using a retrospective transition method to each period presented.	The amendments will affect the classification and presentation of restricted cash in the Company's Statement of Cash Flows.	December 15, 2017. Early adoption is permitted.
<b>ASU 2016-13, Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments</b>	Requires financial assets measured at amortized cost to be presented at the net amount expected to be collected. The amendments replace the current incurred loss impairment methodology with one that reflects expected credit losses and considers a broader range of reasonable and supportable information to determine the expected credit loss estimates.	The Company is evaluating the effects that the adoption of the ASU will have on its Consolidated Financial Statements; no significant impact is expected.	December 15, 2019. Early adoption is permitted.
<b>ASU 2016-02, Leases (Topic 842)</b>	Requires the recognition of lease assets and lease liabilities on the Balance Sheet by lessees for most leases. Lessees and lessors are required to recognize and measure leases at the beginning of the earliest period presented using a modified retrospective approach.	The Company is evaluating the effects that the adoption of the ASU will have on its Consolidated Financial Statements. The Company is reviewing all lease contracts and expects that the majority of operating leases will be recognized on the Consolidated Balance Sheet. CN expects to adopt the requirements of the ASU effective January 1, 2019.	December 15, 2018. Early adoption is permitted.
<b>ASU 2014-09, Revenue from Contracts with Customers (Topic 606)</b>	Establishes principles for reporting the nature, amount, timing and uncertainty of revenues and cash flows arising from an entity's contracts with customers. The basis of the new standard is that an entity recognizes revenue to represent the transfer of goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. The new guidance can be applied using a retrospective or the cumulative effect transition method.	The Company is evaluating the effects that the adoption of the ASU will have on its Consolidated Financial Statements and related disclosures, through the review of customer contracts, in relation to the new standard. In addition, the Company is evaluating the transition method to apply. CN will adopt the requirements of the ASU effective January 1, 2018.	December 15, 2017. Early adoption is permitted.

(1) Other recently issued ASUs required to be applied for periods beginning on or after January 1, 2017 have been evaluated by the Company and will not have a significant impact on the Company's financial statements.

(2) Effective for annual and interim reporting periods beginning after the stated date.

### Critical accounting estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of revenues, expenses, assets and liabilities, and the disclosure of contingent assets and liabilities at the date of the financial statements. On an ongoing basis, management reviews its estimates based upon available information. Actual results could differ from these estimates. The Company's policies for income taxes, depreciation, pensions and other postretirement benefits, personal injury and other claims and environmental matters, require management's more significant judgments and estimates in the preparation of the Company's consolidated financial statements and, as such, are considered to be critical. The following information should be read in conjunction with the Company's 2016 Annual Consolidated Financial Statements and Notes thereto.

Management discusses the development and selection of the Company's critical accounting estimates with the Audit Committee of the Company's Board of Directors, and the Audit Committee has reviewed the Company's related disclosures.

#### Income taxes

The Company follows the asset and liability method of accounting for income taxes. Under the asset and liability method, the change in the net deferred income tax asset or liability is included in the computation of Net income or Other comprehensive income (loss). Deferred income tax assets and liabilities are measured using enacted income tax rates expected to apply to taxable income in the years in which temporary differences are expected to be recovered or settled. As a result, a projection of taxable income is required for those years, as well as an assumption of the ultimate recovery/settlement period for temporary differences. The projection of future taxable income is based on management's best estimate and may vary from actual taxable income.

On an annual basis, the Company assesses the need to establish a valuation allowance for its deferred income tax assets, and if it is deemed more likely than not that its deferred income tax assets will not be realized, a valuation allowance is recorded. The ultimate realization of deferred income tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. Management considers the scheduled reversals of deferred income tax liabilities, the available carryback and carryforward periods, and projected future taxable income in making this assessment. As at December 31, 2016, in order to fully realize all of the deferred income tax assets, the Company will need to generate future taxable income of approximately \$2.1 billion and, based upon the level of historical taxable income and projections of future taxable income over the periods in which the deferred income tax assets are deductible, management believes it is more likely than not that the Company will realize the benefits of these deductible differences. Management has assessed the impacts of the current economic environment and concluded there are no significant impacts to its assertions for the realization of deferred income tax assets.

In addition, Canadian, or domestic, tax rules and regulations, as well as those relating to foreign jurisdictions, are subject to interpretation and require judgment by the Company that may be challenged by the taxation authorities upon audit of the filed income tax returns. Tax benefits are recognized if it is more likely than not that the tax position will be sustained on examination by the taxation authorities. As at December 31, 2016, the total amount of gross unrecognized tax benefits was \$61 million before considering tax treaties and other arrangements between taxation authorities. The amount of net unrecognized tax benefits as at December 31, 2016 was \$54 million. If recognized, \$20 million of the net unrecognized tax benefits as at December 31, 2016 would affect the effective tax rate. The Company believes that it is reasonably possible that approximately \$7 million of the net unrecognized tax benefits as at December 31, 2016 related to various federal, state, and provincial income tax matters, each of which are individually insignificant, may be recognized over the next twelve months as a result of settlements and a lapse of the applicable statute of limitations.

The Company's deferred income tax assets are mainly composed of temporary differences related to the pension liability, accruals for personal injury claims and other reserves, other postretirement benefits liability, and net operating losses and tax credit carryforwards. The Company's deferred income tax liabilities are mainly composed of temporary differences related to properties. The reversal of temporary differences is expected at future-enacted income tax rates which could change due to fiscal budget changes and/or changes in income tax laws. As a result, a change in the timing and/or the income tax rate at which the components will reverse, could materially affect deferred income tax expense as recorded in the Company's results of operations. From time to time, the federal, provincial, and state governments enact new corporate income tax rates resulting in either lower or higher tax liabilities. A one-percentage-point change in the Canadian and U.S. statutory federal tax rate would have the effect of changing the deferred income tax expense by \$130 million and \$116 million in 2016, respectively.

For the year ended December 31, 2016, the Company recorded total income tax expense of \$1,287 million, of which \$704 million was a deferred income tax expense which included a deferred income tax expense of \$7 million resulting from the enactment of a higher provincial corporate income tax rate. For the year ended December 31, 2015, the Company recorded total income tax expense of \$1,336 million, of which \$600 million was a deferred income tax expense which included a deferred income tax expense of \$42 million resulting from the enactment of a higher provincial corporate income tax rate. For the year ended December 31, 2014, the Company recorded total income tax expense of \$1,193 million, of which \$416 million was a deferred income tax expense which included an income tax recovery of \$18 million resulting from a change in the estimate of the deferred income tax liability related to properties. The Company's net deferred income tax liability as at December 31, 2016 was \$8,473 million (2015 - \$8,105 million). Additional disclosures are provided in *Note 4 – Income taxes* to the Company's 2016 Annual Consolidated Financial Statements.

### Depreciation

Properties are carried at cost less accumulated depreciation including asset impairment write-downs. The cost of properties, including those under capital leases, net of asset impairment write-downs, is depreciated on a straight-line basis over their estimated service lives, measured in years, except for rail and ballast which are measured in millions of gross tons. The Company follows the group method of depreciation whereby a single composite depreciation rate is applied to the gross investment in a class of similar assets, despite small differences in the service life or salvage value of individual property units within the same asset class. The Company uses approximately 40 different depreciable asset classes.

For all depreciable assets, the depreciation rate is based on the estimated service lives of the assets. Assessing the reasonableness of the estimated service lives of properties requires judgment and is based on currently available information, including periodic depreciation studies conducted by the Company. The Company's U.S. properties are subject to comprehensive depreciation studies as required by the Surface Transportation Board (STB) and are conducted by external experts. Depreciation studies for Canadian properties are not required by regulation and are conducted internally. Studies are performed on specific asset groups on a periodic basis. Changes in the estimated service lives of the assets and their related composite depreciation rates are implemented prospectively.

The studies consider, among other factors, the analysis of historical retirement data using recognized life analysis techniques, and the forecasting of asset life characteristics. Changes in circumstances, such as technological advances, changes to the Company's business strategy, changes in the Company's capital strategy or changes in regulations can result in the actual service lives differing from the Company's estimates.

A change in the remaining service life of a group of assets, or their estimated net salvage value, will affect the depreciation rate used to amortize the group of assets and thus affect depreciation expense as reported in the Company's results of operations. A change of one year in the composite service life of the Company's fixed asset base would impact annual depreciation expense by approximately \$50 million.

Depreciation studies are a means of ensuring that the assumptions used to estimate the service lives of particular asset groups are still valid and where they are not, they serve as the basis to establish the new depreciation rates to be used on a prospective basis. In the third quarter of 2016, the Company completed depreciation studies for track and roadway properties and as a result, the Company changed the estimated service lives for various types of track and roadway assets and their related composite depreciation rates. The results of these depreciation studies did not materially affect the Company's annual depreciation expense.

For the year ended December 31, 2016, the Company recorded total depreciation expense of \$1,223 million (2015 - \$1,156 million; 2014 - \$1,050 million). As at December 31, 2016, the Company had Properties of \$33,755 million, net of accumulated depreciation of \$12,412 million (2015 - \$32,624 million, net of accumulated depreciation of \$12,203 million). Additional disclosures are provided in Note 7 – *Properties* to the Company's 2016 Annual Consolidated Financial Statements.

GAAP requires the use of historical cost as the basis of reporting in financial statements. As a result, the cumulative effect of inflation, which has significantly increased asset replacement costs for capital-intensive companies such as CN, is not reflected in operating expenses. Depreciation charges on an inflation-adjusted basis, assuming that all operating assets are replaced at current price levels, would be substantially greater than historically reported amounts.

### Pensions and other postretirement benefits

The Company's plans have a measurement date of December 31. The following table provides the Company's pension asset, pension liability and other postretirement benefits liability as at December 31, 2016, and 2015:

<i>In millions</i>	<i>December 31,</i>	<b>2016</b>	<b>2015</b>
Pension asset	\$	<b>907</b>	\$ 1,305
Pension liability	\$	<b>442</b>	\$ 469
Other postretirement benefits liability	\$	<b>270</b>	\$ 269

## Management's Discussion and Analysis

The descriptions in the following paragraphs pertaining to pensions relate generally to the Company's main pension plan, the CN Pension Plan, unless otherwise specified.

### **Calculation of net periodic benefit cost (income)**

In accounting for pensions and other postretirement benefits, assumptions are required for, among other things, the discount rate, the expected long-term rate of return on plan assets, the rate of compensation increase, health care cost trend rates, mortality rates, employee early retirements, terminations and disability. Changes in these assumptions result in actuarial gains or losses, which are recognized in Other comprehensive income (loss). The Company generally amortizes these gains or losses into net periodic benefit cost over the expected average remaining service life of the employee group covered by the plans only to the extent that the unrecognized net actuarial gains and losses are in excess of the corridor threshold, which is calculated as 10% of the greater of the beginning-of-year balances of the projected benefit obligation or market-related value of plan assets. The Company's net periodic benefit cost (income) for future periods is dependent on demographic experience, economic conditions and investment performance. Recent demographic experience has revealed no material net gains or losses on termination, retirement, disability and mortality. Experience with respect to economic conditions and investment performance is further discussed herein.

For the years ended December 31, 2016, 2015 and 2014, the consolidated net periodic benefit cost (income) for pensions and other postretirement benefits were as follows:

<i>In millions</i>	<i>Year ended December 31,</i>	<b>2016</b>	<b>2015</b>	<b>2014</b>
Net periodic benefit cost (income) for pensions		\$ (161)	\$ 34	\$ (4)
Net periodic benefit cost for other postretirement benefits		\$ 7	\$ 10	\$ 12

As at December 31, 2016 and 2015, the projected pension benefit obligation and accumulated other postretirement benefit obligation were as follows:

<i>In millions</i>	<i>December 31,</i>	<b>2016</b>	<b>2015</b>
Projected pension benefit obligation		\$ 17,366	\$ 17,081
Accumulated other postretirement benefit obligation		\$ 270	\$ 269

### **Discount rate assumption**

The Company's discount rate assumption, which is set annually at the end of each year, is determined by management with the aid of third-party actuaries. The discount rate is used to measure the single amount that, if invested at the measurement date in a portfolio of high-quality debt instruments with a rating of AA or better, would provide the necessary cash flows to pay for pension benefits as they become due. For the Canadian pension and other postretirement benefit plans, future expected benefit payments are discounted using spot rates based on a derived AA corporate bond yield curve for each maturity year. A discount rate of 3.81% based on bond yields prevailing at December 31, 2016 (3.99% at December 31, 2015) was considered appropriate by the Company.

In 2016, the Company adopted the spot rate approach to measure current service cost and interest cost for all defined benefit pension and other postretirement benefit plans on a prospective basis as a change in accounting estimate. In 2015 and in prior years, these costs were determined using the discount rate used to measure the projected benefit obligation at the beginning of the period.

The spot rate approach enhances the precision to which current service cost and interest cost are measured by increasing the correlation between projected cash flows and spot discount rates corresponding to their maturity. Under the spot rate approach, individual spot discount rates along the same yield curve used in the determination of the projected benefit obligation are applied to the relevant projected cash flows for current service cost at the relevant maturity. More specifically, current service cost is measured using the cash flows related to benefits expected to be accrued in the following year by active members of a plan and interest cost is measured using the projected cash flows making up the projected benefit obligation multiplied by the corresponding spot discount rate at each maturity. Use of the spot rate approach does not affect the measurement of the projected benefit obligation.

Based on bond yields prevailing at December 31, 2015, the single equivalent discount rates used to determine current service cost and interest cost under the spot rate approach in 2016 were 4.24% and 3.27%, respectively, compared to 3.99% for both costs under the approach applicable in 2015 and prior years. For 2016, the Company estimates the adoption of the spot rate approach increased net periodic benefit income by approximately \$130 million compared to the approach applicable in 2015 and prior years.

Based on bond yields prevailing at December 31, 2016, the single equivalent discount rates used to determine current service cost and interest cost under the spot rate approach in 2017 are 4.11% and 3.15%, respectively.

## Management's Discussion and Analysis

For the year ended December 31, 2016, a 0.25% decrease in the 3.81% discount rate used to determine the projected benefit obligation would have resulted in a decrease of approximately \$550 million to the funded status for pensions and would result in a decrease of approximately \$25 million to the 2017 projected net periodic benefit income. A 0.25% increase in the discount rate would have resulted in an increase of approximately \$520 million to the funded status for pensions and would result in an increase of approximately \$25 million to the 2017 projected net periodic benefit income.

### **Expected long-term rate of return assumption**

The expected long-term rate of return is determined based on expected future performance for each asset class and is weighted based on the investment policy. Consideration is taken of the historical performance, the premium return generated from an actively managed portfolio, as well as current and future anticipated asset allocations, economic developments, inflation rates and administrative expenses. Based on these factors, the rate is determined by the Company. For 2016, the Company used a long-term rate of return assumption of 7.00% on the market-related value of plan assets to compute net periodic benefit cost (income). The Company has elected to use a market-related value of assets, whereby realized and unrealized gains/losses and appreciation/depreciation in the value of the investments are recognized over a period of five years, while investment income is recognized immediately. In 2017, the Company will maintain the expected long-term rate of return on plan assets at 7.00% to reflect management's current view of long-term investment returns.

The assets of the Company's various plans are primarily held in separate trust funds ("Trusts") which are diversified by asset type, country and investment strategies. Each year, the CN Board of Directors reviews and confirms or amends the Statement of Investment Policies and Procedures ("SIPP") which includes the plans' target asset allocation ("Policy") and related benchmark indices. This Policy is based on a long-term forward-looking view of the world economy, the dynamics of the plans' benefit obligations, the market return expectations of each asset class and the current state of financial markets. In 2016, the Policy was: 3% cash and short-term investments, 40% bonds and mortgages, 42% equities, 4% real estate, 7% oil and gas and 4% infrastructure investments.

Annually, the CN Investment Division ("Investment Manager"), a division of the Company created to invest and administer the assets of the plans, proposes an investment strategy ("Strategy") for the coming year, which is expected to differ from the Policy, because of current economic and market conditions and expectations. The Investment Committee of the Board ("Committee") regularly compares the actual asset allocation to the Policy and Strategy and compares the actual performance of the Company's pension plans to the performance of the benchmark indices.

The Committee's approval is required for all major investments in illiquid securities. The SIPP allows for the use of derivative financial instruments to implement strategies or to hedge or adjust existing or anticipated exposures. The SIPP prohibits investments in securities of the Company or its subsidiaries. During the last 10 years ended December 31, 2016, the CN Pension Plan earned an annual average rate of return of 5.41%.

The actual, market-related value, and expected rates of return on plan assets for the last five years were as follows:

	2016	2015	2014	2013	2012
Actual	4.4%	5.5%	10.1%	11.2%	7.7%
Market-related value	8.2%	7.0%	7.6%	7.3%	2.3%
Expected	7.00%	7.00%	7.00%	7.00%	7.25%

The Company's expected long-term rate of return on plan assets reflects management's view of long-term investment returns and the effect of a 1% variation in such rate of return would result in a change to the net periodic benefit cost of approximately \$90 million. Management's assumption of the expected long-term rate of return is subject to risks and uncertainties that could cause the actual rate of return to differ materially from management's assumption. There can be no assurance that the plan assets will be able to earn the expected long-term rate of return on plan assets.

### **Net periodic benefit income for pensions for 2017**

In 2017, the Company expects net periodic benefit income to remain essentially flat at approximately \$165 million, compared to 2016.

## Management's Discussion and Analysis

### **Plan asset allocation**

Based on the fair value of the assets held as at December 31, 2016, the assets of the Company's various plans are comprised of 3% in cash and short-term investments, 33% in bonds and mortgages, 1% in private debt, 38% in equities, 2% in real estate assets, 6% in oil and gas, 5% in infrastructure, 10% in absolute return investments, and 2% in risk-based allocation investments. See *Note 12 - Pensions and other postretirement benefits* to the Company's 2016 Annual Consolidated Financial Statements for information on the fair value measurements of such assets.

A significant portion of the plans' assets are invested in publicly traded equity securities whose return is primarily driven by stock market performance. Debt securities also account for a significant portion of the plans' investments and provide a partial offset to the variation in the pension benefit obligation that is driven by changes in the discount rate. The funded status of the plan fluctuates with market conditions and impacts funding requirements. The Company will continue to make contributions to the pension plans that as a minimum meet pension legislative requirements.

### **Rate of compensation increase**

The rate of compensation increase is determined by the Company based upon its long-term plans for such increases. For 2016, a basic rate of compensation increase of 2.75% was used to determine the projected benefit obligation and the net periodic benefit cost.

### **Mortality**

The Canadian Institute of Actuaries (CIA) published in 2014 a report on Canadian Pensioners' Mortality ("Report"). The Report contained Canadian pensioners' mortality tables and improvement scales based on experience studies conducted by the CIA. The CIA's conclusions were taken into account in selecting management's best estimate mortality assumption used to calculate the projected benefit obligation as at December 31, 2016, 2015 and 2014.

### **Funding of pension plans**

The Company's main Canadian defined benefit pension plan, the CN Pension Plan, accounts for approximately 93% of the Company's pension obligation and can produce significant volatility in pension funding requirements, given the pension fund's size, the many factors that drive the plan's funded status, and Canadian statutory pension funding requirements. Adverse changes to the assumptions used to calculate the plan's funding status, particularly the discount rate used for funding purposes, as well as changes to existing federal pension legislation, regulation and guidance could significantly impact the Company's future contributions.

For accounting purposes, the funded status is calculated under generally accepted accounting principles for all pension plans. For funding purposes, the funded status is also calculated under going concern and solvency scenarios as prescribed under pension legislation and subject to guidance issued by the CIA and the Office of the Superintendent of Financial Institutions (OSFI) for all registered Canadian defined benefit pension plans. The Company's funding requirements are determined upon completion of actuarial valuations. Actuarial valuations are generally required on an annual basis for all Canadian plans, or when deemed appropriate by the OSFI. Actuarial valuations are also required annually for the Company's U.S. qualified pension plans.

The Company's most recently filed actuarial valuations for its Canadian registered pension plans conducted as at December 31, 2015 indicated a funding excess on a going concern basis of approximately \$2.2 billion and a funding excess on a solvency basis of approximately \$0.3 billion, calculated using the three-year average of the plans' hypothetical wind-up ratio in accordance with the *Pension Benefit Standards Regulations, 1985*. The federal pension legislation requires funding deficits, as calculated under current pension regulations, to be paid over a number of years. Alternatively, a letter of credit can be subscribed to fulfill required solvency deficit payments.

The Company's next actuarial valuations for its Canadian registered pension plans required as at December 31, 2016 will be performed in 2017. These actuarial valuations are expected to identify a funding excess on a going concern basis of approximately \$2.5 billion, while on a solvency basis a funding excess of approximately \$0.1 billion is expected.

Based on the anticipated results of these valuations, the Company expects to make total cash contributions of approximately \$115 million for all of the Company's pension plans in 2017. The Company expects cash from operations and its other sources of financing to be sufficient to meet its 2017 funding obligations.

See the section of this MD&A entitled *Liquidity and capital resources – Pension contributions* for additional information relating to pension contributions.

## Management's Discussion and Analysis

### Information disclosed by major pension plan

The following table provides the Company's plan assets by category, projected benefit obligation at end of year, as well as Company and employee contributions by major defined benefit pension plan:

<i>In millions</i>	<i>December 31, 2016</i>	<b>CN Pension Plan</b>	<b>BC Rail Pension Plan</b>	<b>U.S. and other plans</b>	<b>Total</b>
<b>Plan assets by category</b>					
Cash and short-term investments	\$	531	\$ 21	\$ 19	\$ 571
Bonds		5,414	227	145	5,786
Mortgages		102	3	1	106
Private debt		219	6	1	226
Equities		6,377	196	123	6,696
Real estate		371	10	2	383
Oil and gas		1,041	30	5	1,076
Infrastructure		780	21	4	805
Absolute return		1,712	52	8	1,772
Risk-based allocation		301	9	1	311
Other <sup>(1)</sup>		85	2	12	99
<b>Total plan assets</b>	<b>\$</b>	<b>16,933</b>	<b>\$ 577</b>	<b>\$ 321</b>	<b>\$ 17,831</b>
Projected benefit obligation at end of year	\$	16,078	\$ 530	\$ 758	\$ 17,366
Company contributions in 2016	\$	71	\$ -	\$ 73	\$ 144
Employee contributions in 2016	\$	53	\$ -	\$ -	\$ 53

(1) Other consists of operating assets of \$163 million and liabilities of \$64 million required to administer the Trusts' investment assets and the plans' benefit and funding activities.

Additional disclosures are provided in *Note 12 – Pensions and other postretirement benefits* to the Company's 2016 Annual Consolidated Financial Statements.

### Personal injury and other claims

In the normal course of business, the Company becomes involved in various legal actions seeking compensatory and occasionally punitive damages, including actions brought on behalf of various purported classes of claimants and claims relating to employee and third-party personal injuries, occupational disease and property damage, arising out of harm to individuals or property allegedly caused by, but not limited to, derailments or other accidents.

### Canada

Employee injuries are governed by the workers' compensation legislation in each province whereby employees may be awarded either a lump sum or a future stream of payments depending on the nature and severity of the injury. As such, the provision for employee injury claims is discounted. In the provinces where the Company is self-insured, costs related to employee work-related injuries are accounted for based on actuarially developed estimates of the ultimate cost associated with such injuries, including compensation, health care and third-party administration costs. An actuarial study is generally performed at least on a triennial basis. For all other legal actions, the Company maintains, and regularly updates on a case-by-case basis, provisions for such items when the expected loss is both probable and can be reasonably estimated based on currently available information.

In 2016, the Company recorded a decrease of \$11 million to its provision for personal injuries and other claims in Canada as a result of an actuarial valuation for employee injury claims as well as various other claims. In 2015 and 2014, actuarial valuations resulted in a decrease of \$12 million and \$2 million, respectively.

## Management's Discussion and Analysis

As at December 31, 2016, 2015 and 2014 the Company's provision for personal injury and other claims in Canada was as follows:

<i>In millions</i>	2016	2015	2014
Beginning of year	\$ 191	\$ 203	\$ 210
Accruals and other	24	17	28
Payments	(32)	(29)	(35)
<i>End of year</i>	\$ 183	\$ 191	\$ 203
Current portion - End of year	\$ 39	\$ 27	\$ 28

The assumptions used in estimating the ultimate costs for Canadian employee injury claims include, among other factors, the discount rate, the rate of inflation, wage increases and health care costs. The Company periodically reviews its assumptions to reflect currently available information. Over the past three years, the Company has not significantly changed any of these assumptions. Changes in any of these assumptions could materially affect Casualty and other expense as reported in the Company's results of operations.

For all other legal claims in Canada, estimates are based on the specifics of the case, trends and judgment.

### United States

Personal injury claims by the Company's employees, including claims alleging occupational disease and work-related injuries, are subject to the provisions of the *Federal Employers' Liability Act* (FELA). Employees are compensated under FELA for damages assessed based on a finding of fault through the U.S. jury system or through individual settlements. As such, the provision is undiscounted. With limited exceptions where claims are evaluated on a case-by-case basis, the Company follows an actuarial-based approach and accrues the expected cost for personal injury, including asserted and unasserted occupational disease claims, and property damage claims, based on actuarial estimates of their ultimate cost. An actuarial study is performed annually.

For employee work-related injuries, including asserted occupational disease claims, and third-party claims, including grade crossing, trespasser and property damage claims, the actuarial valuation considers, among other factors, the Company's historical patterns of claims filings and payments. For unasserted occupational disease claims, the actuarial valuation includes the projection of the Company's experience into the future considering the potentially exposed population. The Company adjusts its liability based upon management's assessment and the results of the study. On an ongoing basis, management reviews and compares the assumptions inherent in the latest actuarial valuation with the current claim experience and, if required, adjustments to the liability are recorded.

Due to the inherent uncertainty involved in projecting future events, including events related to occupational diseases, which include but are not limited to, the timing and number of actual claims, the average cost per claim and the legislative and judicial environment, the Company's future payments may differ from current amounts recorded.

In 2016, the Company recorded an increase of \$21 million to its provision for U.S. personal injury and other claims attributable to occupational disease claims, non-occupational disease claims and third-party claims and pursuant to the 2016 actuarial valuation. In 2015 and 2014, actuarial valuations resulted in a decrease of \$5 million and \$20 million, respectively. The prior years' decreases from the 2015 and 2014 actuarial valuations were mainly attributable to non-occupational disease claims, occupational disease claims and third-party claims reflecting a decrease in the Company's estimates of unasserted claims and costs related to asserted claims. The Company has an ongoing risk mitigation strategy focused on reducing the frequency and severity of claims through injury prevention and containment; mitigation of claims; and lower settlements of existing claims.

As at December 31, 2016, 2015 and 2014, the Company's provision for personal injury and other claims in the U.S. was as follows:

<i>In millions</i>	2016	2015	2014
Beginning of year	\$ 105	\$ 95	\$ 106
Accruals and other	51	22	2
Payments	(34)	(30)	(22)
Foreign exchange	(4)	18	9
<i>End of year</i>	\$ 118	\$ 105	\$ 95
Current portion - End of year	\$ 37	\$ 24	\$ 20

For the U.S. personal injury and other claims liability, historical claim data is used to formulate assumptions relating to the expected number of claims and average cost per claim for each year. Changes in any one of these assumptions could materially affect Casualty and other expense as reported in the Company's results of operations. A 5% change in the asbestos average claim cost or a 1% change in the inflation trend rate for all injury types would result in an increase or decrease in the liability recorded of approximately \$2 million.

## Management's Discussion and Analysis

### Environmental matters

#### **Known existing environmental concerns**

The Company has identified approximately 170 sites at which it is or may be liable for remediation costs, in some cases along with other potentially responsible parties, associated with alleged contamination and is subject to environmental clean-up and enforcement actions, including those imposed by the United States Federal *Comprehensive Environmental Response, Compensation and Liability Act of 1980* (CERCLA), also known as the Superfund law, or analogous state laws. CERCLA and similar state laws, in addition to other similar Canadian and U.S. laws, generally impose joint and several liability for clean-up and enforcement costs on current and former owners and operators of a site, as well as those whose waste is disposed of at the site, without regard to fault or the legality of the original conduct. The Company has been notified that it is a potentially responsible party for study and clean-up costs at 6 sites governed by the Superfund law (and analogous state laws) for which investigation and remediation payments are or will be made or are yet to be determined and, in many instances, is one of several potentially responsible parties.

The ultimate cost of addressing these known contaminated sites cannot be definitively established given that the estimated environmental liability for any given site may vary depending on the nature and extent of the contamination; the nature of anticipated response actions, taking into account the available clean-up techniques; evolving regulatory standards governing environmental liability; and the number of potentially responsible parties and their financial viability. As a result, liabilities are recorded based on the results of a four-phase assessment conducted on a site-by-site basis. A liability is initially recorded when environmental assessments occur, remedial efforts are probable, and when the costs, based on a specific plan of action in terms of the technology to be used and the extent of the corrective action required, can be reasonably estimated. The Company estimates the costs related to a particular site using cost scenarios established by external consultants based on the extent of contamination and expected costs for remedial efforts. In the case of multiple parties, the Company accrues its allocable share of liability taking into account the Company's alleged responsibility, the number of potentially responsible parties and their ability to pay their respective share of the liability. Adjustments to initial estimates are recorded as additional information becomes available.

The Company's provision for specific environmental sites is undiscounted and includes costs for remediation and restoration of sites, as well as monitoring costs. Environmental expenses, which are classified as Casualty and other in the Consolidated Statements of Income, include amounts for newly identified sites or contaminants as well as adjustments to initial estimates. Recoveries of environmental remediation costs from other parties are recorded as assets when their receipt is deemed probable.

As at December 31, 2016, 2015 and 2014, the Company's provision for specific environmental sites was as follows:

<i>In millions</i>	2016	2015	2014
Beginning of year	\$ 110	\$ 114	\$ 119
Accruals and other	6	81	11
Payments	(29)	(91)	(19)
Foreign exchange	(1)	6	3
<b>End of year</b>	<b>\$ 86</b>	<b>\$ 110</b>	<b>\$ 114</b>
Current portion - End of year	\$ 50	\$ 51	\$ 45

The Company anticipates that the majority of the liability at December 31, 2016 will be paid out over the next five years. Based on the information currently available, the Company considers its provisions to be adequate.

#### **Unknown existing environmental concerns**

While the Company believes that it has identified the costs likely to be incurred for environmental matters based on known information, the discovery of new facts, future changes in laws, the possibility of releases of hazardous materials into the environment and the Company's ongoing efforts to identify potential environmental liabilities that may be associated with its properties may result in the identification of additional environmental liabilities and related costs. The magnitude of such additional liabilities and the costs of complying with future environmental laws and containing or remediating contamination cannot be reasonably estimated due to many factors, including:

- the lack of specific technical information available with respect to many sites;
- the absence of any government authority, third-party orders, or claims with respect to particular sites;
- the potential for new or changed laws and regulations and for development of new remediation technologies and uncertainty regarding the timing of the work with respect to particular sites; and
- the determination of the Company's liability in proportion to other potentially responsible parties and the ability to recover costs from any third parties with respect to particular sites.

## Management's Discussion and Analysis

Therefore, the likelihood of any such costs being incurred or whether such costs would be material to the Company cannot be determined at this time. There can thus be no assurance that liabilities or costs related to environmental matters will not be incurred in the future, or will not have a material adverse effect on the Company's financial position or results of operations in a particular quarter or fiscal year, or that the Company's liquidity will not be adversely impacted by such liabilities or costs, although management believes, based on current information, that the costs to address environmental matters will not have a material adverse effect on the Company's financial position or liquidity. Costs related to any unknown existing or future contamination will be accrued in the period in which they become probable and reasonably estimable.

### **Future occurrences**

In railroad and related transportation operations, it is possible that derailments or other accidents, including spills and releases of hazardous materials, may occur that could cause harm to human health or to the environment. As a result, the Company may incur costs in the future, which may be material, to address any such harm, compliance with laws and other risks, including costs relating to the performance of clean-ups, payment of environmental penalties and remediation obligations, and damages relating to harm to individuals or property.

### **Regulatory compliance**

The Company may incur significant capital and operating costs associated with environmental regulatory compliance and clean-up requirements, in its railroad operations and relating to its past and present ownership, operation or control of real property. Environmental expenditures that relate to current operations are expensed unless they relate to an improvement to the property. Expenditures that relate to an existing condition caused by past operations and which are not expected to contribute to current or future operations are expensed. Operating expenses related to regulatory compliance activities for environmental matters for the year ended December 31, 2016 amounted to \$19 million (2015 - \$20 million; 2014 - \$20 million). For 2017, the Company expects to incur operating expenses relating to environmental matters in the same range as 2016. In addition, based on the results of its operations and maintenance programs, as well as ongoing environmental audits and other factors, the Company plans for specific capital improvements on an annual basis. Certain of these improvements help ensure facilities, such as fuelling stations and waste water and storm water treatment systems, comply with environmental standards and include new construction and the updating of existing systems and/or processes. Other capital expenditures relate to assessing and remediating certain impaired properties. The Company's environmental capital expenditures for the year ended December 31, 2016 amounted to \$15 million (2015 - \$18 million; 2014 - \$19 million). For 2017, the Company expects to incur capital expenditures relating to environmental matters in the same range as 2016.

## Business risks

In the normal course of business, the Company is exposed to various business risks and uncertainties that can have an effect on the Company's results of operations, financial position, or liquidity. While some exposures may be reduced by the Company's risk management strategies, many risks are driven by external factors beyond the Company's control or are of a nature which cannot be eliminated. The key areas of business risks and uncertainties described in this section are not the only ones that can affect the Company. Additional risks and uncertainties not currently known to management or that may currently not be considered material by management, could nevertheless also have an adverse effect on the Company's business.

### **Competition**

The Company faces significant competition, including from rail carriers and other modes of transportation, and is also affected by its customers' flexibility to select among various origins and destinations, including ports, in getting their products to market. Specifically, the Company faces competition from Canadian Pacific Railway Company (CP), which operates the other major rail system in Canada and services most of the same industrial areas, commodity resources and population centers as the Company; major U.S. railroads and other Canadian and U.S. railroads; long-distance trucking companies, transportation via the St. Lawrence-Great Lakes Seaway and the Mississippi River and transportation via pipelines. In addition, while railroads must build or acquire and maintain their rail systems, motor carriers and barges are able to use public rights-of-way that are built and maintained by public entities without paying fees covering the entire costs of their usage.

Competition is generally based on the quality and the reliability of the service provided, access to markets, as well as price. Factors affecting the competitive position of customers, including exchange rates and energy cost, could materially adversely affect the demand for goods supplied by the sources served by the Company and, therefore, the Company's volumes, revenues and profit margins. Factors affecting the general market conditions for the Company's customers can result in an imbalance of transportation capacity relative to demand. An extended period of supply/demand imbalance could negatively impact market rate levels for all transportation services, and more specifically the Company's ability to maintain or increase rates. This, in turn, could materially and adversely affect the Company's business, results of operations or financial position.

The level of consolidation of rail systems in the U.S. has resulted in larger rail systems that are in a position to compete effectively with the Company in numerous markets.

## Management's Discussion and Analysis

There can be no assurance that the Company will be able to compete effectively against current and future competitors in the transportation industry, and that further consolidation within the transportation industry and that legislation allowing for more leniency in size and weight for motor carriers will not adversely affect the Company's competitive position. No assurance can be given that competitive pressures will not lead to reduced revenues, profit margins or both.

### Environmental matters

The Company's operations are subject to numerous federal, provincial, state, municipal and local environmental laws and regulations in Canada and the U.S. concerning, among other things, emissions into the air; discharges into waters; the generation, handling, storage, transportation, treatment and disposal of waste, hazardous substances and other materials; decommissioning of underground and aboveground storage tanks; and soil and groundwater contamination. A risk of environmental liability is inherent in railroad and related transportation operations; real estate ownership, operation or control; and other commercial activities of the Company with respect to both current and past operations. As a result, the Company incurs significant operating and capital costs, on an ongoing basis, associated with environmental regulatory compliance and clean-up requirements in its railroad operations and relating to its past and present ownership, operation or control of real property.

While the Company believes that it has identified the costs likely to be incurred for environmental matters in the next several years based on known information, the discovery of new facts, future changes in laws, the possibility of releases of hazardous materials into the environment and the Company's ongoing efforts to identify potential environmental liabilities that may be associated with its properties may result in the identification of additional environmental liabilities and related costs.

In railroad and related transportation operations, it is possible that derailments or other accidents, including spills and releases of hazardous materials, may occur that could cause harm to human health or to the environment. In addition, the Company is also exposed to potential catastrophic liability risk, faced by the railroad industry generally, in connection with the transportation of toxic inhalation hazard materials such as chlorine and anhydrous ammonia, or other dangerous commodities like crude oil and propane that the Company may be required to transport as a result of its common carrier obligations. Therefore, the Company may incur costs in the future, which may be material, to address any such harm, compliance with laws or other risks, including costs relating to the performance of clean-ups, payment of environmental penalties and remediation obligations, and damages relating to harm to individuals or property.

The environmental liability for any given contaminated site varies depending on the nature and extent of the contamination; the available clean-up techniques; evolving regulatory standards governing environmental liability; and the number of potentially responsible parties and their financial viability. As such, the ultimate cost of addressing known contaminated sites cannot be definitively established. Also, additional contaminated sites yet unknown may be discovered or future operations may result in accidental releases.

While some exposures may be reduced by the Company's risk mitigation strategies (including periodic audits, employee training programs, emergency plans and procedures, and insurance), many environmental risks are driven by external factors beyond the Company's control or are of a nature which cannot be completely eliminated. Therefore, there can be no assurance, notwithstanding the Company's mitigation strategies, that liabilities or costs related to environmental matters will not be incurred in the future or that environmental matters will not have a material adverse effect on the Company's results of operations, financial position or liquidity, or reputation.

### Personal injury and other claims

In the normal course of business, the Company becomes involved in various legal actions seeking compensatory and occasionally punitive damages, including actions brought on behalf of various purported classes of claimants and claims relating to employee and third-party personal injuries, occupational disease, and property damage, arising out of harm to individuals or property allegedly caused by, but not limited to, derailments or other accidents. The Company maintains provisions for such items, which it considers to be adequate for all of its outstanding or pending claims and benefits from insurance coverage for occurrences in excess of certain amounts. The final outcome with respect to actions outstanding or pending at December 31, 2016, or with respect to future claims, cannot be predicted with certainty, and therefore there can be no assurance that their resolution will not have a material adverse effect on the Company's results of operations, financial position or liquidity, in a particular quarter or fiscal year.

## Management's Discussion and Analysis

### Labor negotiations

As at December 31, 2016, CN employed a total of 15,428 employees in Canada, of which 11,215, or 73%, were unionized employees and 6,821 employees in the U.S., of which 5,406, or 79%, were unionized employees. The Company's relationships with its unionized workforce are governed by, amongst other items, collective agreements which are negotiated from time to time. Disputes relating to the renewal of collective agreements could potentially result in strikes, slowdowns and loss of business. Future labor agreements or renegotiated agreements could increase labor and fringe benefits expenses. There can be no assurance that the Company will be able to renew and have its collective agreements ratified without any strikes or lockouts or that the resolution of these collective bargaining negotiations will not have a material adverse effect on the Company's results of operations or financial position.

### Canadian workforce

On March 23, 2016, the Company served notice to commence bargaining for the renewal of the collective agreements with the Teamsters Canada Rail Conference (TCRC) governing approximately 2,500 train conductors and yard coordinators, which expired on July 22, 2016. On June 29, 2016, the Company filed a notice of dispute seeking conciliation assistance. On July 14, 2016, the Minister of Labour appointed two conciliation officers to assist the parties with their negotiations. On September 16, 2016, the Company and the TCRC agreed to extend the conciliation period on a voluntary basis.

On October 12, 2016, the Company served notice to commence bargaining for the renewal of the collective agreement with the International Brotherhood of Electrical Workers (IBEW) governing approximately 700 signals and communications workers, which expired on December 31, 2016. On December 15, 2016, CN filed a notice of dispute seeking conciliation assistance with the Minister of Labour. On December 29, 2016, the Minister of Labour appointed two conciliation officers to assist the parties in their efforts to renew the collective agreement.

The Company's collective agreements remain in effect until the bargaining process outlined under the *Canada Labour Code* has been exhausted.

### U.S. workforce

As of February 1, 2017, the Company had in place agreements with bargaining units representing the entire unionized workforce at Grand Trunk Western Railroad Company (GTW), companies owned by Illinois Central Corporation (ICC), companies owned by Wisconsin Central Ltd. (WC), Bessemer & Lake Erie Railroad Company (BLE) and The Pittsburgh and Conneaut Dock Company (PCD). Agreements in place have various moratorium provisions up to 2018, which preserve the status quo in respect of the given collective agreement during the terms of such moratoriums. All collective agreements covering non-operating craft employees and six collective agreements covering roughly half of the operating craft population of 3,000 employees are currently under renegotiation.

During 2016, the Company renewed four collective agreements with the United Transportation Union (a division of the International Association of Sheet Metal, Air, Rail, and Transportation Workers - SMART) governing 65 yardmasters at GTW, two WC bargaining units, and a small subset working on the ICC.

The general approach to labor negotiations by U.S. Class I railroads is to bargain on a collective national basis with the industry, which GTW, ICC, WC and BLE have agreed to participate in, for collective agreements covering non-operating employees. Collective agreements covering operating employees at GTW, ICC, WC, BLE and all employees at PCD continue to be bargained on a local (corporate) basis.

Where negotiations are ongoing, the terms and conditions of existing agreements generally continue to apply until new agreements are reached or the processes of the *Railway Labor Act* have been exhausted.

## Regulation

### Economic regulation – Canada

The Company's rail operations in Canada are subject to economic regulation by the Canadian Transportation Agency ("Agency") under the *Canada Transportation Act* (CTA). The CTA provides rate and service remedies, including final offer arbitration (FOA), competitive line rates and compulsory interswitching. It also regulates the maximum revenue entitlement for the movement of regulated grain, charges for railway ancillary services and noise-related disputes. In addition, various Company business transactions must gain prior regulatory approval, with attendant risks and uncertainties.

On May 29, 2014, Bill C-30 came into force, which provides authority to the Government to establish minimum volumes of grain to be moved by the Company and CP and penalties in the event that thresholds are not met. The Government has not imposed any minimum grain volume requirements since March 28, 2015; however, as long as the amendments in Bill C-30 remain in effect, the Government can choose to stipulate volume requirements. Under other provisions of this bill, the Agency also extended the interswitching distance to 160 kilometers from the previous 30 kilometers limits for all commodities in the provinces of Manitoba, Saskatchewan and Alberta; and issued regulations defining what constitutes 'operational terms' for the purpose of rail level of service arbitrations. In the event that a railway fails to fulfill its service level obligations, Bill C-30 also allows the Agency to order a railway company to pay shippers for expenses incurred. On June 15, 2016, the Government of Canada announced that the provisions introduced by Bill C-30, which were set to expire on August 1, 2016, had been extended until August 2017.

## Management's Discussion and Analysis

On June 25, 2014, the Government of Canada launched a statutory review of the CTA. The review concluded on December 21, 2015 when a report was submitted to the Federal Minister of Transport by the Chair of the review panel. The report was tabled in Parliament on February 25, 2016 by the Federal Minister of Transport. On November 3, 2016, the Minister announced that amendments to the CTA would be introduced in 2017 respecting the provisions of Bill C-30, the maximum revenue entitlement, reciprocal monetary penalties, the definition of the statutory level of service obligations and the timelines of Agency decisions.

On June 18, 2016, the liability and compensation regime for rail under the *Safe and Accountable Rail Act* came into force. Under the regime, railway companies are strictly liable for damages resulting from accidents involving crude oil and are required to maintain minimum liability insurance coverage in respect of losses incurred as a result of a railway accident involving crude oil. The Act creates a fund, capitalized through levies payable by crude oil shippers, to compensate for losses exceeding the railway company's minimum insurance level. CN has provided the Agency with submissions respecting the adequacy of its insurance coverage and has started collecting the levy on crude shipments. As a result of this legislation, the Agency also now has jurisdiction to order railway companies to compensate municipalities for the costs incurred in responding to fires caused by railway operations.

No assurance can be given that these and any other current or future regulatory or legislative initiatives by the Canadian federal government and agencies will not materially adversely affect the Company's results of operations or its competitive and financial position.

### ***Economic regulation – U.S.***

The Company's U.S. rail operations are subject to economic regulation by the Surface Transportation Board (STB). The STB serves as both an adjudicatory and regulatory body and has jurisdiction over railroad rate and service issues and rail restructuring transactions such as mergers, line sales, line construction and line abandonments. As such, various Company business transactions must gain prior regulatory approval and aspects of its pricing and service practices may be subject to challenge, with attendant risks and uncertainties. The STB has undertaken proceedings in the past few years in a number of significant matters that remain pending, as noted below.

On December 12, 2013, the STB instituted a proceeding on how to ensure its rate complaint procedures are accessible to grain shippers and provide effective protection against unreasonable grain rates, subsequent to which it received comments and replies. The STB held a hearing on these matters in 2015. On September 7, 2016, the STB issued an advance notice of proposed rulemaking seeking comments on procedures that could comprise a new rate reasonableness methodology for use in very small rate disputes that would be available to shippers of agricultural products and all other commodities.

On December 20, 2013, the STB instituted a rulemaking proceeding to review how it determines the rail industry's cost of equity capital, and on April 2, 2014, joined it with a proceeding to explore its methodology for determining railroad revenue adequacy and the revenue adequacy component used in judging the reasonableness of rail rates. The STB held hearings on these matters in 2015. On October 31, 2016, the STB determined to leave unchanged its current method for determining the industry's cost of equity capital; decisions on the other portions of the joined proceedings remain pending. On September 8, 2016, the STB made its annual revenue adequacy determination for Class I carriers for 2015. The STB determined that four of the seven Class I carriers are revenue adequate, among them Grand Trunk Corporation, which includes CN's U.S. affiliated operations.

On October 8, 2014, the STB issued an interim order requiring all Class I railroads to provide each week a broad range of operational data, starting October 22, 2014. The STB is seeking to provide access to rail performance data sought by shippers and to meet the STB's objective of promoting transparency, accountability, and improvements in rail service. The STB directed individual railroads to provide data specific to Chicago and a narrative summary of operating conditions in Chicago as well as Chicago Transportation Coordination Office (CTCO) contingency protocols and other industry-wide information. On November 29, 2016, the STB issued a final rule requiring all Class I railroads and the CTCO to report this public performance data on a permanent basis. The first weekly report under the final rule is due February 8, 2017.

On March 28, 2016, the STB issued a notice of proposed rulemaking to revoke previously granted exemptions of five commodities from regulatory oversight: (1) crushed or broken stone, (2) hydraulic cement, (3) coke produced from coal, (4) primary iron or steel products, and (5) iron or steel scrap, wastes or tailings.

On August 3, 2016, the STB issued a notice of proposed rulemaking to adopt revised competitive access regulations to allow a party to seek a reciprocal switching prescription on the grounds that it is either practicable and in the public interest or necessary to provide competitive rail service.

Pursuant to the *Passenger Rail Investment and Improvement Act of 2008* (PRIIA), the U.S. Congress authorized the STB to investigate any railroad over whose track Amtrak operates that fails to meet heightened performance standards jointly promulgated by the Federal Railroad Administration (FRA) and Amtrak for Amtrak operations extending over two calendar quarters and to determine the cause of such failures. Should the STB commence an investigation and determine that a failure to meet these standards is due to the host railroad's failure to provide preference to Amtrak, the STB is authorized to assess damages against the host railroad. On January 19, 2012, Amtrak filed a complaint with the STB to commence such an investigation, including a request for damages for preference failures, for allegedly sub-standard performance of Amtrak trains on CN's ICC and GTW lines. On December 19, 2014, the STB granted Amtrak's motion to amend its

## Management's Discussion and Analysis

complaint to limit the STB's investigation to a single Amtrak service on CN's ICC line. That case was held in abeyance for the STB's issuance of a final rule on July 28, 2016, defining Amtrak "on-time performance" under Section 213 of PRIIA for purposes of triggering such investigations, and has now resumed. The rail industry has appealed the STB's final rule in the U.S. Court of Appeals for the Eight Circuit. The industry had previously challenged as unconstitutional Congress' delegation to Amtrak and the FRA of joint authority to promulgate the PRIIA performance standards. On July 2, 2013, the U.S. Court of Appeals for the District of Columbia Circuit (D.C. Circuit) so ruled, but on March 9, 2015, the Supreme Court vacated the D.C. Circuit's decision and returned the case to that court for review of the constitutional claims not previously ruled upon. On April 29, 2016, the D.C. Circuit determined that the joint FRA-Amtrak PRIIA performance standards are unconstitutional on due process grounds; as a result, the performance standards are currently invalid. The Government has until February 6, 2017 to seek Supreme Court review.

The U.S. Congress has had under consideration various pieces of legislation that would increase federal economic regulation of the railroad industry. On March 24, 2015, legislation was introduced in the Senate (S.853) which would (among a number of other provisions) allow for reciprocal switching for junctions within 100 miles, however, no further action was taken in Congress as of the date of this MD&A. On December 18, 2015, STB reauthorization legislation (S.808) was passed by Congress and signed into law by the President. In addition to addressing arbitration and the Board's investigatory authority, the new law further streamlines the STB's rate-case review process, and extends current STB membership from three Commissioners to five.

On January 10, 2017, the Village of Barrington, Illinois and the Illinois Department of Transportation jointly filed a petition seeking to have the STB extend its monitoring and oversight condition on CN's 2009 acquisition of the Elgin, Joliet and Eastern Railway (EJ&E) for two years beyond its scheduled January 23, 2017 expiration and for a grade separation condition at the intersection of U.S. Route 14 and the EJ&E line in Barrington at CN's expense.

No assurance can be given that these and any other current or future regulatory or legislative initiatives by the U.S. federal government and agencies will not materially adversely affect the Company's results of operations or its competitive and financial position.

### **Safety regulation – Canada**

The Company's rail operations in Canada are subject to safety regulation by the Federal Minister of Transport under the *Railway Safety Act* as well as the rail portions of other safety-related statutes, which are administered by Transport Canada. The Company may be required to transport toxic inhalation hazard materials as a result of its common carrier obligations and, as such, is exposed to additional regulatory oversight in Canada. The *Transportation of Dangerous Goods Act*, also administered by Transport Canada, establishes the safety requirements for the transportation of goods classified as dangerous and enables the establishment of regulations for security training and screening of personnel working with dangerous goods, as well as the development of a program to require a transportation security clearance for dangerous goods and that dangerous goods be tracked during transport.

Following a significant derailment involving a non-related short-line railroad within the Province of Quebec ("Lac-Mégantic derailment") on July 6, 2013, several measures have been taken by Transport Canada to strengthen the safety of the railway and transportation of dangerous goods systems in Canada. Amendments to the *Canada Railway Safety Act* and *Transportation of Dangerous Goods Act* include requirements for classification and sampling of crude oil, the provision of yearly aggregate information on the nature and volume of dangerous goods the company transports by rail through designated municipalities, and new speed limit restrictions of 40 miles per hour for certain trains carrying dangerous commodities. Additional requirements for railway companies to conduct route assessments for rail corridors handling significant volumes of dangerous goods and an Emergency Response Assistance Plan in order to ship large volumes of flammable liquids were also put into place. Further to this, on April 28, 2016, Transport Canada issued a Protective Direction under which railways are required to provide municipalities and first responders with data on dangerous goods to improve emergency planning, risk assessment, and training.

In 2014, Transport Canada's *Grade Crossings Regulations* came into force, which establish specific standards for new grade crossings and requirements that existing crossings be upgraded to basic safety standards within seven years, as well as safety related data that must be provided by railway companies on an annual basis. The Company has complied with the information requirements by providing road authorities with specific information respecting public grade crossings, as required by November 27, 2016.

In 2015, Transport Canada issued rules prohibiting the use of certain DOT-111 tank cars for the transportation of dangerous goods, and announced a new standard for tank cars transporting flammable liquid dangerous goods. The new standard, called TC-117, establishes enhanced construction specifications along with a phase out schedule for DOT-111 and CPC-1232 tank cars. On July 25, 2016, Transport Canada issued a Protective Direction which accelerated the phasing out of DOT-111 tank cars in crude oil service by November 1, 2016.

On June 1, 2016, the Minister of Transport proposed amendments to the *Transportation of Dangerous Goods Act* to improve reporting requirements by carriers respecting shipments of dangerous goods to enhance public safety and improve local emergency response.

On June 18, 2016, Transport Canada proposed Locomotive Emissions Regulations under the *Railway Safety Act* to limit air pollution and align Canadian standards with U.S. regulations.

## Management's Discussion and Analysis

On November 3, 2016, the Minister of Transport announced that the review of the *Railway Safety Act* which was initially scheduled for 2018, would be initiated in 2017, in order to further improve railway safety.

No assurance can be given that these and any other current or future regulatory or legislative initiatives by the Canadian federal government and agencies will not materially adversely affect the Company's results of operations or its competitive and financial position.

### **Safety regulation – U.S.**

The Company's U.S. rail operations are subject to safety regulation by the FRA under the *Federal Railroad Safety Act* as well as rail portions of other safety statutes, with the transportation of certain hazardous commodities also governed by regulations promulgated by the Pipeline and Hazardous Materials Safety Administration (PHMSA). PHMSA requires carriers operating in the U.S. to report annually the volume and route-specific data for cars containing these commodities; conduct a safety and security risk analysis for each used route; identify a commercially practicable alternative route for each used route; and select for use the practical route posing the least safety and security risk. In addition, the Transportation Security Administration (TSA) requires rail carriers to provide upon request, within five minutes for a single car and 30 minutes for multiple cars, location and shipping information on cars on their networks containing toxic inhalation hazard materials and certain radioactive or explosive materials; and ensure the secure, attended transfer of all such cars to and from shippers, receivers and other carriers that will move from, to, or through designated high-threat urban areas.

In the aftermath of the July 2013 Lac-Mégantic derailment, the FRA issued Emergency Order No. 28, Notice No. 1 on August 2, 2013 directing that railroads take specific actions regarding unattended trains transporting specified hazardous materials, including securement of these trains. That same day, the FRA and PHMSA issued Safety Advisory 2013-06, which made recommendations to railroads on issues including crew staffing practices and operational testing to ensure employees' compliance with securement-related rules, as well as recommendations to shippers of crude oil to be transported by rail. In addition, the railroad industry has acted on its own to enhance rail safety in light of the Lac-Mégantic derailment and fire. Effective August 5, 2013, the Association of American Railroads (AAR) amended the industry's Recommended Railroad Operating Practices for Transportation of Hazardous Materials by expanding the definition of a "key train" (for which heightened operating safeguards are required).

On May 8, 2015, PHMSA issued a final rule in coordination with the FRA, containing new requirements for tank cars moving in high-hazard flammable trains (HHFTs) and related speed restrictions, as well as other requirements, including the use of electronically controlled pneumatic (ECP) brakes. To be used in an HHFT, new tank cars constructed after October 1, 2015 have to meet enhanced DOT-117 design or performance criteria, while existing tank cars will have to be retrofitted based on a DOT-prescribed schedule. On June 12, 2015, the AAR filed an administrative appeal with PHMSA challenging, among other matters, the agency's requirement for railroads to install ECP brakes on certain HHFTs. On November 6, 2015, the PHMSA denied AAR's administrative appeal. However, as part of the surface transportation reauthorization bill known as the *FAST Act*, which was enacted on December 4, 2015, Congress substituted certain modified requirements supported by the industry, and also provided for re-visitation of the ECP brake requirement through an 18-month independent study of the costs, benefits and operational impacts of ECP brakes to be conducted by the Government Accountability Office, in addition to further testing.

On March 15, 2016, the FRA issued a notice of proposed rulemaking establishing a requirement for a minimum of two crewmembers on most train movements, with the second crewmember needing to be physically located on the train, except in certain circumstances. The FRA will consider possible scenarios for use of a one person crew, but some element of a safety assessment will be involved with each scenario.

On July 13, 2016, in coordination with the FRA, PHMSA announced proposed regulations for oil spill response plans and information sharing for high-hazard flammable trains to improve oil spill response readiness and mitigate effects of oil-related rail incidents.

On January 10, 2017, PHMSA issued an advance notice of proposed rulemaking to consider whether to establish vapor pressure limits for unrefined petroleum-based products and other flammable liquid hazardous materials when transported by rail and other modes.

Rail safety bills have been introduced in the U.S. Congress following the Lac-Mégantic derailment, however these bills have not advanced due to the fact that much of the substance of rail safety was addressed under the recently enacted *FAST Act*, and by the FRA and PHMSA regulatory measures.

No assurance can be given that these and any other current or future regulatory or legislative initiatives by the U.S. federal government and agencies will not materially adversely affect the Company's results of operations or its competitive and financial position.

## Management's Discussion and Analysis

### **Positive Train Control**

On October 16, 2008, the U.S. Congress enacted the *Rail Safety Improvement Act of 2008*, which required all Class I railroads and intercity passenger and commuter railroads to implement a PTC system by December 31, 2015 on mainline track where intercity passenger railroads and commuter railroads operate and where toxic inhalation hazard materials are transported. PTC is a collision avoidance technology intended to override locomotive controls and stop a train before an accident. Pursuant to the *Positive Train Control Enforcement and Implementation Act of 2015* and the *FAST Act of 2015* (collectively the "PTCEIA"), Congress extended the PTC installation deadline until December 31, 2018, with the option for a railroad carrier to finalize full implementation of PTC by no later than December 31, 2020, provided certain benchmarks are met by the end of 2018. Pursuant to the PTCEIA, the Company submitted its revised implementation plan on January 27, 2016 and a request for amendment on December 29, 2016. The Company filed its first annual progress report with the FRA on March 31, 2016, and its initial quarterly progress reports on July 31 and October 31, 2016. The Company is progressing its implementation of PTC pursuant to the law and is working with the FRA and other Class I railroads to satisfy the requirements for U.S. network interoperability. The Company estimates that the total PTC implementation cost will be US\$1.2 billion, of which US\$0.5 billion had been spent as of December 31, 2016.

### **Security**

The Company is subject to statutory and regulatory directives in the U.S. addressing homeland security concerns. In the U.S., safety matters related to security are overseen by the TSA, which is part of the U.S. Department of Homeland Security (DHS) and PHMSA, which, like the FRA, is part of the U.S. Department of Transportation. Border security falls under the jurisdiction of U.S. Customs and Border Protection (CBP), which is part of the DHS. In Canada, the Company is subject to regulation by the Canada Border Services Agency (CBSA). Matters related to agriculture-related shipments crossing the Canada/U.S. border also fall under the jurisdiction of the U.S. Department of Agriculture (USDA) and the Food and Drug Administration (FDA) in the U.S. and the Canadian Food Inspection Agency (CFIA) in Canada. More specifically, the Company is subject to:

- Border security arrangements, pursuant to an agreement the Company and CP entered into with the CBP and the CBSA.
- The CBP's Customs-Trade Partnership Against Terrorism (C-TPAT) program and designation as a low-risk carrier under CBSA's Customs Self-Assessment (CSA) program.
- Regulations imposed by the CBP requiring advance notification by all modes of transportation for all shipments into the U.S. The CBSA is also working on similar requirements for Canada-bound traffic.
- Inspection for imported fruits and vegetables grown in Canada and the agricultural quarantine and inspection (AQI) user fee for all traffic entering the U.S. from Canada.
- Gamma ray screening of cargo entering the U.S. from Canada, and potential security and agricultural inspections at the Canada/U.S. border.

The Company has worked with the AAR to develop and put in place an extensive industry-wide security plan to address terrorism and security-driven efforts by state and local governments seeking to restrict the routings of certain hazardous materials. If such state and local routing restrictions were to go into force, they would be likely to add to security concerns by foreclosing the Company's most optimal and secure transportation routes, leading to increased yard handling, longer hauls, and the transfer of traffic to lines less suitable for moving hazardous materials, while also infringing upon the exclusive and uniform federal oversight over railroad security matters.

While the Company will continue to work closely with the CBSA, CBP, and other Canadian and U.S. agencies, as described above, no assurance can be given that these and future decisions by the U.S., Canadian, provincial, state, or local governments on homeland security matters, legislation on security matters enacted by the U.S. Congress or Parliament, or joint decisions by the industry in response to threats to the North American rail network, will not materially adversely affect the Company's results of operations, or its competitive and financial position.

### **Vessels**

The Company's vessel operations are subject to regulation by the U.S. Coast Guard (USCG) and the Department of Transportation, Maritime Administration, which regulate the ownership and operation of vessels operating on the Great Lakes and in U.S. coastal waters. In addition, the Environmental Protection Agency (EPA) has authority to regulate air emissions from these vessels.

The Federal Maritime Commission, which has authority over oceanborne transport of cargo into and out of the U.S., initiated a Notice of Inquiry in 2011 to examine whether the U.S. Harbor Maintenance Tax (HMT) and other factors may be contributing to the diversion of U.S.-bound cargo to Canadian and Mexican seaports, which could affect CN rail operations. While legislative initiatives have been launched since then, no further action was taken in the Senate or the House of Representatives as of the date of this MD&A.

## Management's Discussion and Analysis

### ***Transportation of hazardous materials***

As a result of its common carrier obligations, the Company is legally required to transport toxic inhalation hazard materials regardless of risk or potential exposure or loss. A train accident involving the transport of these commodities could result in significant costs and claims for personal injury, property damage, and environmental penalties and remediation in excess of insurance coverage for these risks, which may materially adversely affect the Company's results of operations, or its competitive and financial position.

### **Economic conditions**

The Company, like other railroads, is susceptible to changes in the economic conditions of the industries and geographic areas that produce and consume the freight it transports or the supplies it requires to operate. In addition, many of the goods and commodities carried by the Company experience cyclical demand. For example, the volatility in domestic and global energy markets could impact the demand for transportation services as well as impact the Company's fuel costs and surcharges. In addition, the volatility in other commodity markets such as coal and iron ore could have an impact on volumes. Many of the bulk commodities the Company transports move offshore and are affected more by global rather than North American economic conditions. Adverse North American and global economic conditions, or economic or industrial restructuring, that affect the producers and consumers of the commodities carried by the Company, including customer insolvency, may have a material adverse effect on the volume of rail shipments and/or revenues from commodities carried by the Company, and thus materially and negatively affect its results of operations, financial position, or liquidity.

### **Pension funding volatility**

The Company's funding requirements for its defined benefit pension plans are determined using actuarial valuations. See the section of this MD&A entitled *Critical accounting estimates – Pensions and other postretirement benefits* for information relating to the funding of the Company's defined benefit pension plans. Adverse changes with respect to pension plan returns and the level of interest rates from the date of the last actuarial valuations as well as changes to existing federal pension legislation may significantly impact future pension contributions and have a material adverse effect on the funding status of the plans and the Company's results of operations. There can be no assurance that the Company's pension expense and funding of its defined benefit pension plans will not increase in the future and thereby negatively impact earnings and/or cash flow.

### **Reliance on technology**

The Company relies on information technology in all aspects of its business. While the Company has business continuity and disaster recovery plans, as well as other mitigation programs in place to protect its information and operational technology assets, a cyber security attack and significant disruption or failure of its information technology and communications systems could result in service interruptions, safety failures, security violations, regulatory compliance failures or other operational difficulties and compromise corporate information and assets against intruders and, as such, could adversely affect the Company's results of operations, financial position or liquidity. If the Company is unable to acquire or implement new technology, it may suffer a competitive disadvantage, which could also have an adverse effect on the Company's results of operations, financial position or liquidity.

### **Trade restrictions**

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.

On October 12, 2015, the Softwood Lumber Agreement (SLA) between Canada and the U.S. expired. The SLA included a clause that prevented the U.S. from launching any trade action against Canadian producers for one year after the expiration date of the SLA. This moratorium period ended on October 12, 2016 and a new agreement has not been entered into, which presents a risk that Canadian softwood lumber shipments to the U.S. may be impacted by future trade disputes. On November 25, 2016, the U.S. Lumber Coalition filed a petition with the U.S. Department of Commerce (DOC) and the U.S. International Trade Commission to impose duties on imports of Canadian softwood lumber to the U.S. On December 15, 2016, the U.S. DOC agreed to conduct Countervailing Duty (CVD) and Anti-Dumping Duty (AD) investigations of Canadian softwood lumber exports to the U.S. The preliminary CVD determination is expected to occur in February 2017, while the preliminary AD determination is expected in early May 2017.

There can be no assurance that any potential trade actions taken by the Canadian and U.S. federal governments and agencies will not have a material adverse effect on the volume of rail shipments and/or revenues from commodities carried by the Company, and thus materially and negatively impact earnings and/or cash flow.

## Management's Discussion and Analysis

### **Terrorism and international conflicts**

Potential terrorist actions can have a direct or indirect impact on the transportation infrastructure, including railway infrastructure in North America, and can interfere with the free flow of goods. Rail lines, facilities and equipment could be directly targeted or become indirect casualties, which could interfere with the free flow of goods. International conflicts can also have an impact on the Company's markets. Government response to such events could adversely affect the Company's operations. Insurance premiums could also increase significantly or coverage could become unavailable.

### **Customer credit risk**

In the normal course of business, the Company monitors the financial condition and credit limits of its customers and reviews the credit history of each new customer. Although the Company believes there are no significant concentrations of credit risk, economic conditions can affect the Company's customers and can result in an increase to the Company's credit risk and exposure to the business failures of its customers. A widespread deterioration of customer credit and business failures of customers could have a material adverse effect on the Company's results of operations, financial position or liquidity.

### **Liquidity**

Disruptions in the financial markets or deterioration of the Company's credit ratings could hinder the Company's access to external sources of funding to meet its liquidity needs. There can be no assurance that changes in the financial markets will not have a negative effect on the Company's liquidity and its access to capital at acceptable rates.

### **Supplier concentration**

The Company operates in a capital-intensive industry where the complexity of rail equipment limits the number of suppliers available. The supply market could be disrupted if changes in the economy caused any of the Company's suppliers to cease production or to experience capacity or supply shortages. This could also result in cost increases to the Company and difficulty in obtaining and maintaining the Company's rail equipment and materials. Since the Company also has foreign suppliers, international relations, trade restrictions and global economic and other conditions may potentially interfere with the Company's ability to procure necessary equipment. Widespread business failures of, or restrictions on suppliers, could have a material adverse effect on the Company's results of operations or financial position.

### **Availability of qualified personnel**

The Company, like other companies in North America, may experience demographic challenges in the employment levels of its workforce. Changes in employee demographics, training requirements and the availability of qualified personnel, particularly locomotive engineers and trainmen, could negatively impact the Company's ability to meet demand for rail service. The Company expects that approximately 30% of its workforce will be eligible to retire or leave through normal attrition (death, termination, resignation) within the next five-year period. The Company monitors employment levels and seeks to ensure that there is an adequate supply of personnel to meet rail service requirements. However, the Company's efforts to attract and retain qualified personnel may be hindered by specific conditions in the job market. No assurance can be given that demographic or other challenges will not materially adversely affect the Company's results of operations or its financial position.

### **Fuel costs**

The Company, like other railroads, is susceptible to the volatility of fuel prices due to changes in the economy or supply disruptions. Fuel shortages can occur due to refinery disruptions, production quota restrictions, climate, and labor and political instability. Increases in fuel prices or supply disruptions may materially adversely affect the Company's results of operations, financial position or liquidity.

### **Foreign exchange**

The Company conducts its business in both Canada and the U.S. and as a result, is affected by currency fluctuations. Changes in the exchange rate between the Canadian dollar and other currencies (including the US dollar) make the goods transported by the Company more or less competitive in the world marketplace and thereby may adversely affect the Company's revenues and expenses.

### **Interest rate**

The Company is exposed to interest rate risk relating to the Company's long-term debt. The Company mainly issues fixed-rate debt, which exposes the Company to variability in the fair value of the debt. The Company also issues debt with variable interest rates, which exposes the Company to variability in interest expense. Adverse changes to market interest rates may significantly impact the fair value or future cash flows of the Company's financial instruments. There can be no assurance that changes in the market interest rates will not have a negative effect on the Company's liquidity.

## Management's Discussion and Analysis

### Transportation network disruptions

Due to the integrated nature of the North American freight transportation infrastructure, the Company's operations may be negatively affected by service disruptions of other transportation links such as ports and other railroads which interchange with the Company. A significant prolonged service disruption of one or more of these entities could have an adverse effect on the Company's results of operations, financial position or liquidity. Furthermore, deterioration in the cooperative relationships with the Company's connecting carriers could directly affect the Company's operations.

### Severe weather

The Company's success is dependent on its ability to operate its railroad efficiently. Severe weather and natural disasters, such as extreme cold or heat, flooding, drought, hurricanes and earthquakes, can disrupt operations and service for the railroad, affect the performance of locomotives and rolling stock, as well as disrupt operations for both the Company and its customers. Business interruptions resulting from severe weather could result in increased costs, increased liabilities and lower revenues, which could have a material adverse effect on the Company's results of operations, financial condition or liquidity.

### Climate change

Climate change, including the impact of global warming, has the potential physical risk of increasing the frequency of adverse weather events, which can disrupt the Company's operations, damage its infrastructure or properties, or otherwise have a material adverse effect on the Company's results of operations, financial position or liquidity. In addition, in October 2016, the Canadian federal government announced its planned approach to pricing carbon pollution. Under the new plan, all Canadian jurisdictions will be required to have carbon pricing in place by 2018, with the price on carbon pollution starting at a minimum of \$10 per tonne in 2018, rising by \$10 a year to reach \$50 per tonne in 2022. In recent years, the U.S. Congress has considered various bills concerning climate change. Bills that would regulate greenhouse gas emissions have not received sufficient Congressional support for enactment, however, some form of U.S. climate change legislation is possible in the future. While CN is continually focused on efficiency improvements, including by reducing its carbon footprint, caps, taxes, or other controls on emissions of greenhouse gasses, will increase the Company's capital and operating costs (and the company may not be able to offset such impact, including, for example, through higher freight rates) and could affect the markets for, or the volume of, the goods the Company carries thereby resulting in a material adverse effect on operations, financial position, results of operations or liquidity. Climate change legislation and regulation could also affect CN's customers; make it difficult for CN's customers to produce products in a cost-competitive manner due to increased energy costs; and increase legal costs related to defending and resolving legal claims and other litigation related to climate change.

## Controls and procedures

The Company's Chief Executive Officer and its Chief Financial Officer, after evaluating the effectiveness of the Company's disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) as of December 31, 2016, have concluded that the Company's disclosure controls and procedures were effective.

During the fourth quarter ended December 31, 2016, there was no change in the Company's internal control over financial reporting that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting.

As of December 31, 2016, management has assessed the effectiveness of the Company's internal control over financial reporting using the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control – Integrated Framework (2013). Based on this assessment, management has determined that the Company's internal control over financial reporting was effective as of December 31, 2016, and issued Management's Report on Internal Control over Financial Reporting dated February 1, 2017 to that effect.