

## Selected Railroad Statistics - unaudited

	2018	2017	2016
<b>Financial</b>			
<b>Key financial performance indicators</b>			
Total revenues (\$ millions)	14,321	13,041	12,037
Rail freight revenues (\$ millions)	13,548	12,293	11,326
Operating income (\$ millions) <sup>(1)</sup>	5,493	5,243	5,032
Net income (\$ millions)	4,328	5,484	3,640
Adjusted net income (\$ millions) <sup>(2)</sup>	4,056	3,778	3,581
Diluted earnings per share (\$)	5.87	7.24	4.67
Adjusted diluted earnings per share (\$) <sup>(2)</sup>	5.50	4.99	4.59
Free cash flow (\$ millions) <sup>(3)</sup>	2,514	2,778	2,520
Gross property additions (\$ millions)	3,531	2,703	2,752
Share repurchases (\$ millions)	2,000	2,000	2,000
Dividends per share (\$)	1.82	1.65	1.50
<b>Financial position</b>			
Total assets (\$ millions)	41,214	37,629	37,057
Total liabilities (\$ millions)	23,573	20,973	22,216
Shareholders' equity (\$ millions)	17,641	16,656	14,841
<b>Financial ratios</b>			
Operating ratio (%) <sup>(1)</sup>	61.6	59.8	58.2
Adjusted debt-to-adjusted EBITDA (times) <sup>(4)</sup>	1.94	1.75	1.85
Return on invested capital (ROIC) (%) <sup>(5)</sup>	16.7	22.4	16.0
Adjusted ROIC (%) <sup>(5)</sup>	15.7	15.9	15.8
<b>Operations <sup>(6)</sup></b>			
<b>Statistical operating data</b>			
Gross ton miles (GTMs) (millions)	490,414	469,200	423,426
Revenue ton miles (RTMs) (millions)	248,383	237,098	214,327
Carloads (thousands)	5,976	5,737	5,205
Route miles (includes Canada and the U.S.)	19,500	19,500	19,600
Employees (end of year)	25,720	23,945	22,249
Employees (average for the year)	25,423	23,074	22,322
<b>Key operating measures</b>			
Rail freight revenue per RTM (cents)	5.45	5.18	5.28
Rail freight revenue per carload (\$)	2,267	2,143	2,176
GTMs per average number of employees (thousands)	19,290	20,335	18,969
Operating expenses per GTM (cents) <sup>(1)</sup>	1.80	1.66	1.65
Labor and fringe benefits expense per GTM (cents) <sup>(1)</sup>	0.58	0.54	0.57
Diesel fuel consumed (US gallons in millions)	462.7	441.4	398.9
Average fuel price (\$/US gallon)	3.32	2.74	2.34
GTMs per US gallon of fuel consumed	1,060	1,063	1,061
Car velocity (car miles per day)	188	211	236
Through dwell (hours) <sup>(7)</sup>	8.3	7.7	6.9
Through network train speed (miles per hour) <sup>(7)</sup>	18.0	20.3	22.5
Locomotive utilization (trailing GTMs per total horsepower)	208	225	230
<b>Safety indicators <sup>(8)</sup></b>			
Injury frequency rate (per 200,000 person hours)	1.81	1.83	1.70
Accident rate (per million train miles)	2.02	1.83	1.42

(1) The Company adopted Accounting Standards Update (ASU) 2017-07: Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost in the first quarter of 2018 on a retrospective basis. Comparative figures have been adjusted to conform to the current presentation. See Note 2 - Recent accounting pronouncements to CN's 2018 Annual Consolidated Financial Statements for additional information.

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

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

(4) 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.

(5) See the section entitled Return on invested capital (ROIC) and Adjusted ROIC in the MD&A for an explanation of these non-GAAP measures.

(6) 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. Definitions of these indicators are provided on our website, [www.cn.ca/glossary](http://www.cn.ca/glossary).

(7) The Company no longer reports Terminal dwell and Train velocity and has replaced these measures with Through dwell and Through network train speed, respectively. Comparative figures have been adjusted to conform to the current presentation.

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

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## Management's Discussion and Analysis

This Management's Discussion and Analysis (MD&A) dated February 1, 2019, 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 2018 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 2018 Annual Information Form and Form 40-F, may be found online on SEDAR at [www.sedar.com](http://www.sedar.com), on the SEC's website at [www.sec.gov](http://www.sec.gov) through EDGAR, 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 Canada, the United States (U.S.) and Mexico. A true backbone of the economy, CN handles over \$250 billion worth of goods annually and carries over 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. For the year ended December 31, 2018, no individual commodity group accounted for more than 25% of total revenues. From a geographic standpoint, 15% of revenues relate to U.S. domestic traffic, 34% transborder traffic, 17% Canadian domestic traffic and 34% overseas traffic. The Company is the originating carrier for over 85%, and the originating and terminating carrier for over 65%, 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 19 – Segmented information* to the Company's 2018 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, improving supply chains through collaboration, potential acquisitions and other opportunities, 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 repurchases.

CN's success and long-term economic viability depend 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

## Management's Discussion and Analysis

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, increase the capacity and the fluidity of the network, promote service excellence and support growth at low incremental cost. The acquisition of new locomotives and railcars generates several key benefits. New locomotives increase capacity, fuel productivity and efficiency, and improve the reliability of service. 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.

CN operates 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, through dwell, through network train speed and locomotive utilization. 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. 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 operating ratio, earnings growth and return on invested capital (ROIC).

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 focused on 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, as well as being the best service innovator.

### 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®), 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.

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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 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 (CDP) 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., 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. 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. It is also why the Company embraces diversity, as working with a broad range of strengths, perspectives and experiences makes CN better. It helps the Company attract and retain qualified talent, and it fosters innovation by bringing the best solutions to the table. 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.

### **2018 Highlights**

As part of its record 2018 capital expenditure program, CN completed significant initiatives to increase capacity and improve network resiliency, such as track infrastructure expansion projects and investments in yards. With expanded infrastructure that came into full service, mainly in the second half of the year, CN added capacity to support volume growth on its key corridors between the West Coast and Chicago. The Company improved network fluidity with the completion of these projects as well as the qualification of new train crews and the addition of new locomotives and equipment.

Driven by solid demand across multiple commodity groups and the Company's increased capacity, in 2018, CN added approximately \$1.3 billion in top-line growth with revenues up 10% and volumes up 5% in terms of revenue ton miles (RTMs), compared to the prior year.

## Management's Discussion and Analysis

### Financial highlights

- CN attained record revenues and operating income in 2018.
- Net income decreased by \$1,156 million, or 21%, to \$4,328 million, and diluted earnings per share decreased by 19% to \$5.87 in 2018, compared to the prior year. Included in net income in 2017 was a deferred income tax recovery of \$1,764 million (\$2.33 per diluted share) resulting from the enactment of a lower U.S. federal corporate income tax rate due to the *Tax Cuts and Jobs Act* ("U.S. Tax Reform").
- Adjusted net income increased by \$278 million, or 7%, to \$4,056 million, and adjusted diluted earnings per share increased by 10% to \$5.50 in 2018, compared to the prior year. <sup>(1)</sup>
- Operating income increased by \$250 million, or 5%, to \$5,493 million in 2018. <sup>(2)</sup>
- Adjusted operating income increased by \$277 million, or 5%, to \$5,520 million in 2018. <sup>(1)</sup>
- Operating ratio of 61.6%, an increase of 1.8 points over 2017. <sup>(2)</sup>
- Adjusted operating ratio of 61.5%, an increase of 1.7 points over 2017. <sup>(1)</sup>
- Revenues increased by \$1,280 million, or 10%, to \$14,321 million in 2018, compared to the prior year.
- Operating expenses increased by \$1,030 million, or 13%, to \$8,828 million in 2018. <sup>(2)</sup>
- ROIC of 16.7%, a decrease of 5.7 points over 2017. <sup>(3)</sup>
- Adjusted ROIC of 15.7%, a decrease of 0.2 points over 2017. <sup>(3)</sup>
- The Company generated free cash flow of \$2,514 million, a 10% decrease compared to 2017. <sup>(4)</sup>

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

(2) The Company adopted Accounting Standards Update (ASU) 2017-07: *Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost* in the first quarter of 2018 on a retrospective basis. Comparative figures have been adjusted to conform to the current presentation. The adoption of ASU 2017-07 had the effect of increasing the Company's operating ratio by 2.1 percentage points for the year ended December 31, 2018 (2017 - 2.4 percentage points). Additional information is provided in the section of this MD&A entitled *Recent accounting pronouncements*.

(3) See the section of this MD&A entitled *Return on invested capital (ROIC) and adjusted ROIC* for an explanation of these non-GAAP measures.

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

### Reinvestment in the business

In 2018, CN spent approximately \$3.5 billion in its capital program, with \$1.6 billion invested to maintain the safety and integrity of the network, particularly track infrastructure. CN's capital spending also included \$1.0 billion on strategic initiatives to increase capacity, enable growth and improve network resiliency, including line capacity upgrades and information technology initiatives, \$0.5 billion on equipment capital expenditures, including the acquisition of 500 new centerbeam cars and 65 new high-horsepower locomotives, and \$0.4 billion on implementation of Positive Train Control (PTC), the safety technology mandated by the U.S. Congress.

### Acquisition

On October 30, 2018, the Company announced it had reached an agreement to acquire the TransX Group of Companies ("TransX"). TransX provides various transportation and logistics services, including intermodal, truckload, less than truckload and specialized services. The acquisition positions CN to strengthen its intermodal business and provide transportation options that bring supply chain flexibility to its customers. The acquisition is subject to regulatory review by the Competition Bureau Canada and Canada's Ministry of Transportation. As at February 1, 2019, the regulatory review was not yet completed.

### Shareholder returns

The Company repurchased 19.0 million of its common shares during the year, returning \$2.0 billion to its shareholders. CN also increased its quarterly dividend per share by 10% to \$0.4550 from \$0.4125 in 2017, effective for the first quarter of 2018, and paid \$1.3 billion in dividends in 2018.

### 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 2018.

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### **Leadership change**

On March 5, 2018, CN announced the departure of Luc Jobin from his role as President and Chief Executive Officer (CEO) of the Company, as well as the appointment of Executive Vice-President and Chief Marketing Officer Jean-Jacques Ruest to Interim President and CEO. On July 24, 2018, the Company announced that Jean-Jacques Ruest had been appointed as President and CEO and a member of the Board of Directors of the Company, effective as of that day.

### **2019 Business outlook and assumptions**

For 2019, the Company expects growth across a range of commodities, particularly in petroleum crude, Canadian and U.S. coal exports, intermodal traffic, lumber and panels, and Canadian grain; as well as lower volumes of potash and U.S. grain.

Underpinning the 2019 business outlook, the Company assumes that North American industrial production will increase by approximately two percent. For the 2018/2019 crop year, the grain crops in both Canada and the U.S. were in line with their respective three-year averages. The Company assumes that the 2019/2020 grain crops in both Canada and the U.S. will be in line with their respective three-year averages.

### **Future value creation**

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

In 2019, CN plans to invest approximately \$3.9 billion in its capital program, of which \$1.6 billion is targeted toward track and railway infrastructure maintenance to support safe and efficient operations. A further \$1.2 billion is expected to be spent on initiatives to increase capacity and enable growth, such as track infrastructure expansion; investments in yards and intermodal terminals; and on information technology to improve safety performance, operational efficiency and customer service. CN's equipment capital expenditures are targeted to reach \$0.8 billion in 2019, allowing the Company to tap growth opportunities and improve the quality of the fleet. In order to handle expected traffic increase and improve operational efficiency, CN expects to take delivery of 140 new high-horsepower locomotives and 500 new grain hopper cars. In 2019, the Company plans to invest \$0.3 billion to advance the implementation of PTC along parts of its network in the U.S.

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

On January 29, 2019, the Company's Board of Directors approved a new Normal Course Issuer Bid that allows for the repurchase of up to 22 million common shares between February 1, 2019 and January 31, 2020, at prevailing market prices plus brokerage fees, or such other prices as may be permitted by the Toronto Stock Exchange (TSX). In addition, on that same day, the Company's Board of Directors approved an increase of 18% to the quarterly dividend to common shareholders, from \$0.4550 per share in 2018 to \$0.5375 per share in 2019, effective for the first quarter.

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.



### 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 the forward-looking statements. See also the section of this MD&A entitled *Strategy overview - 2019 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 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; increases in maintenance and operating costs; security threats; reliance on technology and related cybersecurity risk; trade restrictions or other changes to international trade arrangements; transportation of hazardous materials; various events which could disrupt operations, including natural events such as severe weather, droughts, fires, 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; timing and completion of capital programs; 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 2018 financial outlook. The 2018 actual results were higher than the Company's last 2018 financial outlook that was issued on October 23, 2018, mainly driven by sequential operating improvements enabled by significant capacity investments and a weaker than expected Canadian dollar in the fourth quarter.



Financial highlights

In millions, except percentage and per share data	2018	2017	2016	Change	
				Favorable/(Unfavorable)	2018 vs 2017
Revenues	\$ 14,321	\$ 13,041	\$ 12,037	10%	8%
Operating income <sup>(1)</sup>	\$ 5,493	\$ 5,243	\$ 5,032	5%	4%
Net income	\$ 4,328	\$ 5,484	\$ 3,640	(21%)	51%
Adjusted net income <sup>(2)</sup>	\$ 4,056	\$ 3,778	\$ 3,581	7%	6%
Basic earnings per share	\$ 5.89	\$ 7.28	\$ 4.69	(19%)	55%
Adjusted basic earnings per share <sup>(2)</sup>	\$ 5.52	\$ 5.02	\$ 4.61	10%	9%
Diluted earnings per share	\$ 5.87	\$ 7.24	\$ 4.67	(19%)	55%
Adjusted diluted earnings per share <sup>(2)</sup>	\$ 5.50	\$ 4.99	\$ 4.59	10%	9%
Dividends declared per share	\$ 1.82	\$ 1.65	\$ 1.50	10%	10%
Total assets	\$ 41,214	\$ 37,629	\$ 37,057	10%	2%
Total long-term liabilities	\$ 20,073	\$ 16,990	\$ 19,208	(18%)	12%
Operating ratio <sup>(1)</sup>	61.6%	59.8%	58.2%	(1.8)-pts	(1.6)-pts
Free cash flow <sup>(3)</sup>	\$ 2,514	\$ 2,778	\$ 2,520	(10%)	10%

(1) The Company adopted ASU 2017-07: Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost in 2018 on a retrospective basis. Comparative figures have been adjusted to conform to the current presentation. The adoption of ASU 2017-07 had the effect of increasing the Company's operating ratio by 2.1 percentage points for the year ended December 31, 2018 (2017 - 2.4 percentage points; 2016 - 2.3 percentage points). Additional information is provided in the section of this MD&A entitled Recent accounting pronouncements.

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

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

2018 compared to 2017

Net income for the year ended December 31, 2018 was \$4,328 million, a decrease of \$1,156 million, or 21%, when compared to 2017, and diluted earnings per share decreased by 19% to \$5.87. The decrease was primarily due to a deferred income tax recovery of \$1,764 million (\$2.33 per diluted share) resulting from the enactment of a lower U.S. federal corporate income tax rate due to the U.S. Tax Reform in 2017, partly offset by an increase in Operating income and Other income.

Operating income for the year ended December 31, 2018 increased by \$250 million, or 5%, to \$5,493 million. The increase mainly reflects increased revenues from freight rate increases, higher applicable fuel surcharge rates and higher volumes, partly offset by higher costs from higher fuel prices and higher labor costs. The operating ratio, defined as operating expenses as a percentage of revenues, was 61.6% in 2018, compared to 59.8% in 2017.

Revenues for the year ended December 31, 2018 were \$14,321 million compared to \$13,041 million in 2017. The increase of \$1,280 million, or 10%, was mainly attributable to freight rate increases, higher applicable fuel surcharge rates and higher volumes of petroleum crude, refined petroleum products, coal, international container traffic and Canadian grain.

Operating expenses for the year ended December 31, 2018 were \$8,828 million compared to \$7,798 million in 2017. The increase of \$1,030 million, or 13%, was mainly due to higher fuel prices, higher costs as a result of increased volumes of traffic and operating performance below 2017 levels.

### Non-GAAP measures

This MD&A makes reference to non-GAAP measures including adjusted performance measures, constant currency, ROIC and adjusted ROIC, 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*, *Return on invested capital (ROIC) and adjusted ROIC*, and *Liquidity and capital resources*.

### Adjusted performance measures

Management believes that adjusted net income, adjusted earnings per share, adjusted operating income, adjusted operating ratio and adjusted operating margin 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. In 2018, the Company began disclosing adjusted operating income, adjusted operating ratio and adjusted operating margin. Management uses adjusted performance 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 such income and expense items in these measures 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, 2018, the Company reported adjusted net income of \$4,056 million, or \$5.50 per diluted share, which excludes employee termination benefits and severance costs related to a workforce reduction program of \$27 million, or \$20 million after-tax (\$0.03 per diluted share) in the fourth quarter and the gains on disposals of property of \$338 million, or \$292 million after-tax (\$0.40 per diluted share), consisting of the following:

- in the fourth quarter, a gain previously deferred on the 2014 disposal of a segment of the Guelph subdivision located between Georgetown and Kitchener, Ontario, together with the rail fixtures and certain passenger agreements (the "Guelph"), of \$79 million, or \$70 million after-tax (\$0.10 per diluted share);
- in the third quarter, a gain on disposal of property located in Montreal, Quebec (the "Doney and St-Francois Spurs") of \$36 million, or \$32 million after-tax (\$0.04 per diluted share); and
- in the second quarter, a gain on transfer of the Company's capital lease in the passenger rail facilities in Montreal, Quebec, together with its interests in related railway operating agreements (the "Central Station Railway Lease"), of \$184 million, or \$156 million after-tax (\$0.21 per diluted share), and a gain on disposal of land located in Calgary, Alberta, excluding the rail fixtures (the "Calgary Industrial Lead"), of \$39 million, or \$34 million after-tax (\$0.05 per diluted share).

For the year ended December 31, 2017, the Company reported adjusted net income of \$3,778 million, or \$4.99 per diluted share, which excludes a net deferred income tax recovery of \$1,706 million (\$2.25 per diluted share) consisting of the following:

- in the fourth quarter, a deferred income tax recovery of \$1,764 million (\$2.33 per diluted share) resulting from the enactment of the U.S. Tax Reform and a deferred income tax expense of \$50 million (\$0.07 per diluted share) resulting from the enactment of higher provincial corporate income tax rates;
- in the third quarter, a deferred income tax expense of \$31 million (\$0.04 per diluted share) resulting from the enactment of a higher state corporate income tax rate;
- in the second quarter, a deferred income tax recovery of \$18 million (\$0.02 per diluted share) resulting from the enactment of a lower provincial corporate income tax rate; and
- in the first quarter, a deferred income tax recovery of \$5 million (\$0.01 per diluted share) resulting from the enactment of a lower provincial corporate income tax rate.

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 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) in the fourth quarter, and a deferred income tax expense of \$7 million (\$0.01 per diluted share) in the second quarter, resulting from the enactment of a higher provincial corporate income tax rate.

## Management's Discussion and Analysis

The following table provides a reconciliation of net income and earnings per share, as reported for the years ended December 31, 2018, 2017 and 2016, to the adjusted performance measures presented herein:

<i>In millions, except per share data</i>	<i>Year ended December 31,</i>		
	<b>2018</b>	2017	2016
Net income	\$ 4,328	\$ 5,484	\$ 3,640
<i>Adjustments:</i>			
Operating expenses	27	—	—
Other income	(338)	—	(76)
Income tax expense (recovery) <sup>(1)</sup>	39	(1,706)	17
<b>Adjusted net income</b>	<b>\$ 4,056</b>	<b>\$ 3,778</b>	<b>\$ 3,581</b>
Basic earnings per share	\$ 5.89	\$ 7.28	\$ 4.69
<i>Impact of adjustments, per share</i>	<b>(0.37)</b>	<b>(2.26)</b>	<b>(0.08)</b>
<b>Adjusted basic earnings per share</b>	<b>\$ 5.52</b>	<b>\$ 5.02</b>	<b>\$ 4.61</b>
Diluted earnings per share	\$ 5.87	\$ 7.24	\$ 4.67
<i>Impact of adjustments, per share</i>	<b>(0.37)</b>	<b>(2.25)</b>	<b>(0.08)</b>
<b>Adjusted diluted earnings per share</b>	<b>\$ 5.50</b>	<b>\$ 4.99</b>	<b>\$ 4.59</b>

(1) The tax effect of adjustments to Other income reflects tax rates in the applicable jurisdiction and the nature of the item for tax purposes.

The following table provides a reconciliation of operating income, operating ratio and operating margin, as reported for the years ended December 31, 2018, 2017 and 2016, to the adjusted performance measures presented herein:

<i>In millions, except percentage</i>	<i>Year ended December 31,</i>		
	<b>2018</b>	2017	2016
Operating income <sup>(1)</sup>	\$ 5,493	\$ 5,243	\$ 5,032
<i>Adjustment: Operating expenses</i>	27	—	—
<b>Adjusted operating income</b>	<b>\$ 5,520</b>	<b>\$ 5,243</b>	<b>\$ 5,032</b>
Operating ratio <sup>(1) (2)</sup>	61.6%	59.8%	58.2%
<i>Impact of adjustment</i>	<b>(0.1)-pts</b>	—	—
<b>Adjusted operating ratio</b>	<b>61.5%</b>	<b>59.8%</b>	<b>58.2%</b>
Operating margin <sup>(1) (3)</sup>	38.4%	40.2%	41.8%
<i>Impact of adjustment</i>	<b>0.1-pts</b>	—	—
<b>Adjusted operating margin</b>	<b>38.5%</b>	<b>40.2%</b>	<b>41.8%</b>

(1) The Company adopted ASU 2017-07: Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost in 2018 on a retrospective basis. Comparative figures have been adjusted to conform to the current presentation. Additional information is provided in the section of this MD&A entitled Recent accounting pronouncements.

(2) Operating ratio is defined as operating expenses as a percentage of revenues.

(3) Operating margin is defined as operating income as a percentage of revenues.

## 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 \$1.296 and \$1.298 per US\$1.00, for the years ended December 31, 2018 and 2017, respectively.

On a constant currency basis, the Company's net income for the year ended December 31, 2018 would have been higher by \$4 million (\$0.01 per diluted share).

## Return on invested capital (ROIC) and adjusted ROIC

In 2018, the Company began disclosing ROIC and adjusted ROIC, which management believes are useful measures of the efficiency in the use of capital funds. The Company calculates ROIC as return divided by average invested capital. Return is defined as net income plus interest expense after tax, calculated using the Company's effective tax rate. Average invested capital is defined as the sum of total shareholders' equity, long-term debt and current portion of long-term debt less cash and cash equivalents, and restricted cash and cash equivalents, averaged between the beginning and ending balance over a twelve-month period. The Company calculates adjusted ROIC as adjusted return divided by average invested capital. Adjusted return is defined as adjusted net income plus interest expense after-tax, calculated using the Company's effective tax rate, excluding the tax effect of adjustments used to determine adjusted net income. ROIC and adjusted ROIC 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 net income and adjusted net income to return and adjusted return, respectively, as well as the calculation of average invested capital, which have been used to calculate ROIC and adjusted ROIC:

<i>In millions, except percentage</i>	<i>As at and for the year ended December 31,</i>		
	<b>2018</b>	2017	2016
Net income	\$ 4,328	\$ 5,484	\$ 3,640
Interest expense	489	481	480
Tax on interest expense <sup>(1)</sup>	(116)	(124)	(125)
<b>Return</b>	<b>\$ 4,701</b>	<b>\$ 5,841</b>	<b>\$ 3,995</b>
Average total shareholders' equity	\$ 17,149	\$ 15,749	\$ 14,896
Average long-term debt	10,067	9,098	9,217
Average current portion of long-term debt	1,632	1,785	1,466
Less: Average cash, cash equivalents, restricted cash and restricted cash equivalents	(656)	(613)	(674)
<b>Average invested capital</b>	<b>\$ 28,192</b>	<b>\$ 26,019</b>	<b>\$ 24,905</b>
<b>ROIC</b>	<b>16.7%</b>	22.4%	16.0%
Adjusted net income <sup>(2)</sup>	\$ 4,056	\$ 3,778	\$ 3,581
Interest expense	489	481	480
Adjusted tax on interest expense <sup>(3)</sup>	(120)	(124)	(126)
<b>Adjusted return</b>	<b>\$ 4,425</b>	<b>\$ 4,135</b>	<b>\$ 3,935</b>
Average invested capital	\$ 28,192	\$ 26,019	\$ 24,905
<b>Adjusted ROIC</b>	<b>15.7%</b>	15.9%	15.8%

(1) The effective tax rate for 2018 used to calculate the tax on interest expense was 23.8% (2017 - 25.8%; 2016 - 26.1%). Due to the negative effective tax rate reported by the Company in 2017, tax on interest expense for 2017 was calculated using an adjusted effective tax rate.

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

(3) The adjusted effective tax rate for 2018 used to calculate the adjusted tax on interest expense was 24.5% (2017 - 25.8%; 2016 - 26.2%).

## Revenues

<i>In millions, unless otherwise indicated</i>	<i>Year ended December 31,</i>				<i>% Change</i>	<i>% Change at constant currency</i>
	<b>2018</b>	<b>2017</b>	<b>% Change</b>			
Rail freight revenues	\$ 13,548	\$ 12,293	10%			10%
Other revenues	773	748	3%			3%
<b>Total revenues</b>	<b>\$ 14,321</b>	<b>\$ 13,041</b>	<b>10%</b>			<b>10%</b>
<b>Rail freight revenues</b>						
Petroleum and chemicals	\$ 2,660	\$ 2,208	20%			20%
Metals and minerals	1,689	1,523	11%			11%
Forest products	1,886	1,788	5%			6%
Coal	661	535	24%			24%
Grain and fertilizers	2,357	2,214	6%			7%
Intermodal	3,465	3,200	8%			8%
Automotive	830	825	1%			1%
<b>Total rail freight revenues</b>	<b>\$ 13,548</b>	<b>\$ 12,293</b>	<b>10%</b>			<b>10%</b>
Revenue ton miles (RTMs) ( <i>millions</i> )	248,383	237,098	5%			5%
Rail freight revenue/RTM ( <i>cents</i> )	5.45	5.18	5%			5%
Carloads ( <i>thousands</i> )	5,976	5,737	4%			4%
Rail freight revenue/carload (\$)	2,267	2,143	6%			6%

Revenues for the year ended December 31, 2018, totaled \$14,321 million compared to \$13,041 million in 2017. The increase of \$1,280 million, or 10%, was mainly attributable to freight rate increases, higher applicable fuel surcharge rates and higher volumes of petroleum crude, refined petroleum products, coal, international container traffic and Canadian grain. Fuel surcharge revenues increased by \$395 million in 2018, as a result of higher applicable fuel surcharge rates.

In 2018, RTMs, measuring the weight and distance of rail freight transported by the Company, increased by 5% relative to 2017. Rail freight revenue per RTM increased by 5% in 2018 when compared to 2017, mainly driven by freight rate increases and higher applicable fuel surcharge rates.

## Petroleum and chemicals

	<i>Year ended December 31,</i>				<i>% Change</i>	<i>% Change at constant currency</i>
	<b>2018</b>	<b>2017</b>	<b>% Change</b>			
Revenues ( <i>millions</i> )	\$ 2,660	\$ 2,208	20%			20%
RTMs ( <i>millions</i> )	50,722	44,375	14%			14%
Revenue/RTM ( <i>cents</i> )	5.24	4.98	5%			5%
Carloads ( <i>thousands</i> )	653	614	6%			6%

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, 2018, revenues for this commodity group increased by \$452 million, or 20%, when compared to 2017, mainly due to higher volumes of petroleum crude due to limited pipeline capacity and increased volumes of refined petroleum products, freight rate increases, and higher applicable fuel surcharge rates; partly offset by lower volumes of condensate.

Revenue per RTM increased by 5% in 2018 when compared to 2017, mainly due to freight rate increases and higher applicable fuel surcharge rates; partly offset by an increase in the average length of haul.

## Management's Discussion and Analysis

<i>Percentage of commodity group revenues</i>	2018	2017
Chemicals and plastics	39%	45%
Refined petroleum products	36%	36%
Crude and condensate	21%	15%
Sulfur	4%	4%

### Metals and minerals

	<i>Year ended December 31,</i>	2018	2017	% Change	% Change at constant currency
Revenues ( <i>millions</i> )	\$	1,689	\$ 1,523	11%	11%
RTMs ( <i>millions</i> )		27,993	27,938	—%	—%
Revenue/RTM ( <i>cents</i> )		6.03	5.45	11%	11%
Carloads ( <i>thousands</i> )		1,030	995	4%	4%

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, 2018, revenues for this commodity group increased by \$166 million, or 11%, when compared to 2017, mainly due to freight rate increases; higher volumes of semi-finished steel products, and increased shipments of industrial materials and iron ore; and higher applicable fuel surcharge rates; partly offset by lower volumes of frac sand.

Revenue per RTM increased by 11% in 2018 when compared to 2017, mainly due to freight rate increases and higher applicable fuel surcharge rates.

<i>Percentage of commodity group revenues</i>	2018	2017
Energy materials	30%	32%
Metals	30%	29%
Minerals	24%	23%
Iron ore	16%	16%

### Forest products

	<i>Year ended December 31,</i>	2018	2017	% Change	% Change at constant currency
Revenues ( <i>millions</i> )	\$	1,886	\$ 1,788	5%	6%
RTMs ( <i>millions</i> )		29,918	30,510	(2%)	(2%)
Revenue/RTM ( <i>cents</i> )		6.30	5.86	8%	8%
Carloads ( <i>thousands</i> )		418	424	(1%)	(1%)

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.

For the year ended December 31, 2018, revenues for this commodity group increased by \$98 million, or 5%, when compared to 2017, mainly due to freight rate increases and higher applicable fuel surcharge rates, partly offset by decreased volumes of lumber and woodpulp.

## Management's Discussion and Analysis

Revenue per RTM increased by 8% in 2018 when compared to 2017, mainly due to freight rate increases and higher applicable fuel surcharge rates.

<i>Percentage of commodity group revenues</i>	2018	2017
Lumber	40%	41%
Pulp	29%	30%
Paper	18%	17%
Panels	13%	12%

### Coal

	<i>Year ended December 31,</i>	2018	2017	% Change	% Change at constant currency
Revenues ( <i>millions</i> )	\$	661	\$ 535	24%	24%
RTMs ( <i>millions</i> )		17,927	14,539	23%	23%
Revenue/RTM ( <i>cents</i> )		3.69	3.68	—%	—%
Carloads ( <i>thousands</i> )		346	303	14%	14%

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 on the U.S. Gulf Coast. Petroleum coke, a by-product of the oil refining process, is exported to offshore markets via terminals on the west coast of Canada and the U.S. Gulf Coast, as well as shipped to industrial users in domestic markets. The key drivers for this market segment are weather conditions, environmental regulations, global supply and demand conditions, and for U.S. domestic coal, the price of natural gas.

For the year ended December 31, 2018, revenues for this commodity group increased by \$126 million, or 24%, when compared to 2017, mainly due to increased exports of U.S. thermal coal via the Gulf Coast, higher metallurgical coal exports via west coast ports, higher applicable fuel surcharge rates as well as freight rate increases.

Revenue per RTM remained flat in 2018 when compared to 2017, mainly due to higher applicable fuel surcharge rates and freight rate increases, offset by an increase in the average length of haul.

<i>Percentage of commodity group revenues</i>	2018	2017
U.S. coal - export	33%	27%
Canadian coal - export	30%	28%
Petroleum coke	21%	26%
U.S. coal - domestic	16%	19%

### Grains and fertilizers

	<i>Year ended December 31,</i>	2018	2017	% Change	% Change at constant currency
Revenues ( <i>millions</i> )	\$	2,357	\$ 2,214	6%	7%
RTMs ( <i>millions</i> )		57,819	56,123	3%	3%
Revenue/RTM ( <i>cents</i> )		4.08	3.94	4%	4%
Carloads ( <i>thousands</i> )		632	619	2%	2%

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 wheat, oats, barley, flaxseed, rye, peas, lentils, corn, ethanol, dried distillers grain, canola seed and canola products, soybeans and soybean products. 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



## Management's Discussion and Analysis

regulation that establishes a maximum revenue entitlement that railways can earn. Although railway companies are free to set freight rates for western grain shipments, total revenue is limited based on a formula that takes into account tonnage, length of haul, and a specified price index. Shipments of grain that are exported to the U.S. are not regulated. 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. The key drivers for fertilizers are input prices, demand, government policies, and international competition.

For the year ended December 31, 2018, revenues for this commodity group increased by \$143 million, or 6%, when compared to 2017, mainly due to freight rate increases, higher export volumes of Canadian wheat, peas and lentils, and higher applicable fuel surcharge rates; partly offset by reduced Canadian canola volumes, as well as lower export volumes of U.S. soybeans.

Revenue per RTM increased by 4% in 2018 when compared to 2017, mainly due to freight rate increases and higher applicable fuel surcharge rates.

<i>Percentage of commodity group revenues</i>	2018	2017
Canadian grain - regulated	40%	39%
U.S. grain - domestic	19%	20%
Canadian grain - commercial	14%	14%
Fertilizers - potash	13%	12%
Fertilizers - other	9%	10%
U.S. grain - exports	5%	5%

### Intermodal

	<i>Year ended December 31,</i>	2018	2017	% Change	% Change at constant currency
Revenues ( <i>millions</i> )	\$	3,465	\$ 3,200	8%	8%
RTMs ( <i>millions</i> )		60,120	59,356	1%	1%
Revenue/RTM ( <i>cents</i> )		5.76	5.39	7%	7%
Carloads ( <i>thousands</i> )		2,634	2,514	5%	5%

The intermodal commodity group includes rail and trucking services and is comprised of two markets: domestic intermodal and international intermodal. Domestic intermodal transports consumer products and manufactured goods, serving both retail and wholesale channels, within domestic Canada, domestic U.S., Mexico and transborder, while international intermodal handles import and export container traffic, serving the major ports of Vancouver, Prince Rupert, Montreal, Halifax, New Orleans and Mobile. CN's network of inland intermodal terminals are located near ports and large urban centers, which connects customers to major markets in North America and overseas. Domestic intermodal is driven by consumer markets, with growth generally tied to the economy. International intermodal is driven by North American economic and trade conditions.

For the year ended December 31, 2018, revenues for this commodity group increased by \$265 million, or 8%, when compared to 2017, mainly due to higher applicable fuel surcharge rates, increased international container traffic via the ports of Prince Rupert and Montreal, and freight rate increases; partly offset by lower international container traffic via the port of Vancouver, as well as reduced domestic retail shipments.

Revenue per RTM increased by 7% in 2018 when compared to 2017, mainly due to higher applicable fuel surcharge rates and freight rate increases.

<i>Percentage of commodity group revenues</i>	2018	2017
International	67%	66%
Domestic	33%	34%

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### Automotive

	<i>Year ended December 31,</i>	<b>2018</b>	2017	% Change	% Change at constant currency
Revenues ( <i>millions</i> )	\$	<b>830</b>	\$ 825	1%	1%
RTMs ( <i>millions</i> )		<b>3,884</b>	4,257	(9%)	(9%)
Revenue/RTM ( <i>cents</i> )		<b>21.37</b>	19.38	10%	11%
Carloads ( <i>thousands</i> )		<b>263</b>	268	(2%)	(2%)

The automotive commodity group moves both domestic finished vehicles and parts throughout North America, providing service to certain vehicle assembly plants in Ontario, Michigan and Mississippi. 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 finished vehicle imports via the ports of Halifax and Vancouver, and through interchange with other railroads. CN's broad network of auto compounds is used to facilitate distribution of vehicles throughout Canada and the U.S. Midwest. The primary drivers for this market are automotive production and sales in North America, the average age of vehicles in North America, and the price of fuel.

For the year ended December 31, 2018, revenues for this commodity group increased by \$5 million, or 1%, when compared to 2017, mainly due to higher applicable fuel surcharge rates and freight rate increases; partly offset by lower volumes of domestic finished vehicles.

Revenue per RTM increased by 10% in 2018 when compared to 2017, mainly due to a decrease in the average length of haul, higher applicable fuel surcharge rates and freight rate increases.

<i>Percentage of commodity group revenues</i>	<b>2018</b>	2017
Finished vehicles	<b>94%</b>	94%
Auto parts	<b>6%</b>	6%

### Other revenues

	<i>Year ended December 31,</i>	<b>2018</b>	2017	% Change	% Change at constant currency
Revenues ( <i>millions</i> )	\$	<b>773</b>	\$ 748	3%	3%

Other revenues are derived from non-rail logistics services that support the Company's rail business including vessels and docks, transloading and distribution, automotive logistics, and freight forwarding and transportation management.

For the year ended December 31, 2018, Other revenues increased by \$25 million, or 3%, when compared to 2017, mainly due to higher revenues from freight forwarding and transportation management services, and vessels and docks.

<i>Percentage of other revenues</i>	<b>2018</b>	2017
Vessels and docks	<b>50%</b>	50%
Other non-rail services	<b>42%</b>	40%
Other revenues	<b>8%</b>	10%

## Operating expenses

Operating expenses for the year ended December 31, 2018, amounted to \$8,828 million compared to \$7,798 million in 2017. The increase of \$1,030 million, or 13%, was mainly due to higher fuel prices, higher costs as a result of increased volumes of traffic and operating performance below 2017 levels.

<i>In millions</i>	<i>Year ended December 31,</i>	<b>2018</b>	2017	% Change	% Change at constant currency
Labor and fringe benefits <sup>(1)</sup>	\$	<b>2,860</b>	\$ 2,536	(13%)	(13%)
Purchased services and material		<b>1,971</b>	1,769	(11%)	(11%)
Fuel		<b>1,732</b>	1,362	(27%)	(27%)
Depreciation and amortization		<b>1,329</b>	1,281	(4%)	(4%)
Equipment rents		<b>467</b>	418	(12%)	(12%)
Casualty and other		<b>469</b>	432	(9%)	(9%)
<b>Total operating expenses <sup>(1)</sup></b>	<b>\$</b>	<b>8,828</b>	<b>\$ 7,798</b>	<b>(13%)</b>	<b>(13%)</b>

(1) The Company adopted ASU 2017-07: Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost in the first quarter of 2018 on a retrospective basis. Comparative figures have been adjusted to conform to the current presentation. Additional information is provided in the section of this MD&A entitled Recent accounting pronouncements.

### 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 performance targets and the related expense is recorded in relation to the attainment of such targets.

Labor and fringe benefits expense increased by \$324 million, or 13%, in 2018 when compared to 2017. The increase was primarily due to higher headcount, general wage increases, higher overtime costs and training costs for new employees, higher pension expense, and employee termination benefits and severance costs related to a workforce reduction program in the fourth quarter.

### Purchased services and material

Purchased services and material expense 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 increased by \$202 million, or 11%, in 2018 when compared to 2017. The increase was mainly due to higher costs of services purchased from outside contractors, higher trucking and transload costs, and higher repairs, maintenance and materials costs resulting mainly from increased volumes of traffic.

### 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 increased by \$370 million, or 27%, in 2018 when compared to 2017. The increase was primarily due to higher fuel prices and increased volumes of traffic.

### Depreciation and amortization

Depreciation and amortization expense includes the costs associated with the use of properties and intangible assets over their estimated service lives. Depreciation and amortization 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 \$48 million, or 4%, in 2018 when compared to 2017. The increase was mainly due to net asset additions, partly offset by the favorable impact of depreciation studies.

### Equipment rents

Equipment rents expense includes rental expense for the use of freight cars owned by other railroads (car hire) or private companies and for the lease of freight cars, locomotives and intermodal equipment, net of rental income from other railroads for the use of the Company's freight cars (car hire) and locomotives.

Equipment rents expense increased by \$49 million, or 12%, in 2018 when compared to 2017. The increase was primarily due to higher costs for leased locomotives and higher car hire expense.

## Management's Discussion and Analysis

### 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 increased by \$37 million, or 9%, in 2018 when compared to 2017. The increase was mainly due to higher incident costs and higher legal provisions.

### Other income and expenses

#### Interest expense

In 2018, interest expense was \$489 million compared to \$481 million in 2017. The increase was mainly due to a higher average level of debt, partly offset by a lower weighted-average interest rate.

#### Other components of net periodic benefit income

In 2018, Other components of net periodic benefit income was \$302 million compared to \$315 million in 2017.

#### Other income

In 2018, Other income was \$376 million compared to \$12 million in 2017. Included in Other income for 2018 was a gain previously deferred on the 2014 disposal of the Guelph of \$79 million, a gain on disposal of the Doney and St-Francois Spurs of \$36 million, a gain on the transfer of the Central Station Railway Lease of \$184 million, and a gain on disposal of the Calgary Industrial Lead of \$39 million.

#### Income tax recovery (expense)

On December 22, 2017, the President of the United States signed into law the *Tax Cuts and Jobs Act* ("U.S. Tax Reform"). The U.S. Tax Reform reduces the U.S. federal corporate income tax rate from 35% to 21%, effective as of January 1, 2018. The U.S. Tax Reform also allows for immediate capital expensing of new investments in certain qualified depreciable assets made after September 27, 2017, which will be phased down starting in year 2023. As a result of the U.S. Tax Reform, the Company's net deferred income tax liability decreased by \$1,764 million for the year ended December 31, 2017.

The U.S. Tax Reform introduced other important changes to U.S. corporate income tax laws that may significantly affect CN in future years including the creation of a new Base Erosion Anti-abuse Tax (BEAT) that subjects certain payments from U.S. corporations to foreign related parties to additional taxes, and limitations to the deduction for net interest expense incurred by U.S. corporations. Since the enactment of the U.S. Tax Reform, U.S. authorities have issued various proposed regulations and preliminary guidance interpreting its provisions. These interpretations have been taken into account and did not affect the calculation of the Company's current year income tax provision and tax payments. However, the U.S. Tax Reform and these proposed regulations are expected to impact the Company's income tax provisions and tax payments in future years.

In 2018, the Company recorded an income tax expense of \$1,354 million compared to an income tax recovery of \$395 million in 2017. Included in the 2017 figure was a net deferred income tax recovery of \$1,706 million consisting of a deferred income tax recovery of \$1,764 million recorded in the fourth quarter, resulting from the enactment of the U.S. Tax Reform, deferred income tax expenses of \$50 million recorded in the fourth quarter and \$31 million recorded in the third quarter, resulting from the enactment of higher provincial corporate income tax rates and a higher state corporate income tax rate, respectively, and deferred income tax recoveries of \$18 million recorded in the second quarter and \$5 million recorded in the first quarter, both resulting from the enactment of lower provincial corporate income tax rates.

The effective tax rate for 2018 was 23.8% compared to (7.8)% in 2017. Excluding the aforementioned deferred income tax recoveries and expenses, the effective tax rate for 2018 was 23.8% compared to 25.8% in 2017. The decrease in the effective tax rate was mainly attributable to a lower U.S. Federal corporate tax rate and gains on disposal of property taxed at the lower capital gain inclusion rate.

For 2019, the Company anticipates the estimated annual effective tax rate to be 26.5%. The anticipated increase is due to the U.S. Tax Reform, and the related proposed regulations and interpretations issued in December 2018.

2017 compared to 2016

The Company adopted Accounting Standards Update (ASU) 2017-07: Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost in the first quarter of 2018 on a retrospective basis. As a result, the comparative figures for Labor and fringe benefits, Operating expenses, Operating income and operating ratio have been adjusted to conform to the current presentation. The adoption of ASU 2017-07 had the effect of increasing the Company's operating ratio by 2.4 percentage points and 2.3 percentage points for the years ended December 31, 2017 and 2016, respectively. Additional information is provided in the section of this MD&A entitled *Recent accounting pronouncements*.

Net income for the year ended December 31, 2017 was \$5,484 million, an increase of \$1,844 million, or 51%, when compared to 2016, and diluted earnings per share increased by 55% to \$7.24. The increase was primarily due to a deferred income tax recovery of \$1,764 million (\$2.33 per diluted share) resulting from the enactment of the U.S. Tax Reform and the impact of higher volumes.

Operating income for the year ended December 31, 2017 increased by \$211 million, or 4%, to \$5,243 million. The increase mainly reflects increased revenues from higher volumes, freight rate increases and higher applicable fuel surcharge rates, partly offset by higher costs from increased volumes and higher fuel prices. The operating ratio was 59.8% in 2017, compared to 58.2% in 2016. Higher fuel prices had a 0.9-point impact on the increase for the year.

Revenues for the year ended December 31, 2017 totaled \$13,041 million compared to \$12,037 million in 2016. The increase of \$1,004 million, or 8%, was mainly attributable to higher volumes of traffic in overseas intermodal, frac sand, coal and petroleum coke exports, and Canadian grain; freight rate increases; and higher applicable fuel surcharge rates; partly offset by the negative translation impact of a stronger Canadian dollar.

Operating expenses for the year ended December 31, 2017 amounted to \$7,798 million compared to \$7,005 million in 2016. The increase of \$793 million, or 11%, was mainly due to higher costs from increased volumes and higher fuel prices, partly offset by the positive translation impact of a stronger Canadian dollar.

**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 \$1.30 and \$1.33 per US\$1.00, for the years ended December 31, 2017 and 2016, respectively.

On a constant currency basis, the Company's net income for the year ended December 31, 2017 would have been higher by \$42 million (\$0.06 per diluted share).

**Revenues**

<i>In millions, unless otherwise indicated</i>	<i>Year ended December 31,</i>		<i>% Change</i>	<i>% Change at constant currency</i>
	2017	2016		
Rail freight revenues	\$ 12,293	\$ 11,326	9%	10%
Other revenues	748	711	5%	6%
<b>Total revenues</b>	<b>\$ 13,041</b>	<b>\$ 12,037</b>	<b>8%</b>	<b>10%</b>
<b>Rail freight revenues</b>				
Petroleum and chemicals	\$ 2,208	\$ 2,174	2%	3%
Metals and minerals	1,523	1,218	25%	27%
Forest products	1,788	1,797	(1%)	1%
Coal	535	434	23%	25%
Grain and fertilizers	2,214	2,098	6%	7%
Intermodal	3,200	2,846	12%	13%
Automotive	825	759	9%	10%
<b>Total rail freight revenues</b>	<b>\$ 12,293</b>	<b>\$ 11,326</b>	<b>9%</b>	<b>10%</b>
Revenue ton miles (RTMs) ( <i>millions</i> )	237,098	214,327	11%	11%
Rail freight revenue/RTM ( <i>cents</i> )	5.18	5.28	(2%)	(1%)
Carloads ( <i>thousands</i> )	5,737	5,205	10%	10%
Rail freight revenue/carload ( <i>\$</i> )	2,143	2,176	(2%)	—%

## Management's Discussion and Analysis

Revenues for the year ended December 31, 2017, totaled \$13,041 million compared to \$12,037 million in 2016. The increase of \$1,004 million, or 8%, was mainly attributable to higher volumes of traffic in overseas intermodal, frac sand, coal and petroleum coke exports, and Canadian grain; freight rate increases; and higher applicable fuel surcharge rates; partly offset by the negative translation impact of a stronger Canadian dollar. Fuel surcharge revenues increased by \$189 million in 2017, as a result of higher applicable fuel surcharge rates and higher freight volumes.

In 2017, RTMs increased by 11% relative to 2016. Rail freight revenue per RTM decreased by 2% in 2017 when compared to 2016, mainly driven by an increase in the average length of haul and the negative translation impact of a stronger Canadian dollar; partly offset by freight rate increases and higher applicable fuel surcharge rates.

### Petroleum and chemicals

	Year ended December 31,	2017	2016	% Change	% Change at constant currency
Revenues (millions)	\$	2,208	\$ 2,174	2%	3%
RTMs (millions)		44,375	43,395	2%	2%
Revenue/RTM (cents)		4.98	5.01	(1%)	1%
Carloads (thousands)		614	599	3%	3%

For the year ended December 31, 2017, revenues for this commodity group increased by \$34 million, or 2%, when compared to 2016, mainly due to higher volumes of refined petroleum products and propane; freight rate increases; and higher applicable fuel surcharge rates; partly offset by lower volumes of plastic pellets and condensate, and the negative translation impact of a stronger Canadian dollar.

Revenue per RTM decreased by 1% in 2017 when compared to 2016, mainly due to the negative translation impact of a stronger Canadian dollar, partly offset by freight rate increases and higher applicable fuel surcharge rates.

### Metals and minerals

	Year ended December 31,	2017	2016	% Change	% Change at constant currency
Revenues (millions)	\$	1,523	\$ 1,218	25%	27%
RTMs (millions)		27,938	20,233	38%	38%
Revenue/RTM (cents)		5.45	6.02	(9%)	(8%)
Carloads (thousands)		995	807	23%	23%

For the year ended December 31, 2017, revenues for this commodity group increased by \$305 million, or 25%, when compared to 2016, mainly due to higher volumes of frac sand and drilling pipe resulting from increased oil and gas drilling activity along with higher frac sand usage per well; freight rate increases; and higher applicable fuel surcharge rates; partly offset by the negative translation impact of a stronger Canadian dollar.

Revenue per RTM decreased by 9% in 2017 when compared to 2016, mainly due to an increase in the average length of haul from higher volumes of frac sand and the negative translation impact of a stronger Canadian dollar, partly offset by freight rate increases and higher applicable fuel surcharge rates.

### Forest products

	Year ended December 31,	2017	2016	% Change	% Change at constant currency
Revenues (millions)	\$	1,788	\$ 1,797	(1%)	1%
RTMs (millions)		30,510	31,401	(3%)	(3%)
Revenue/RTM (cents)		5.86	5.72	2%	4%
Carloads (thousands)		424	440	(4%)	(4%)

## Management's Discussion and Analysis

For the year ended December 31, 2017, revenues for this commodity group decreased by \$9 million, or 1%, when compared to 2016, mainly due to lower volumes of a broad range of forest products and the negative translation impact of a stronger Canadian dollar, partly offset by freight rate increases and higher applicable fuel surcharge rates.

Revenue per RTM increased by 2% in 2017 when compared to 2016, mainly due to freight rate increases and higher applicable fuel surcharge rates, partly offset by the negative translation impact of a stronger Canadian dollar.

### Coal

	Year ended December 31,				% Change at constant currency
	2017	2016			
Revenues (millions)	\$ 535	\$ 434		23%	25%
RTMs (millions)	14,539	11,032		32%	32%
Revenue/RTM (cents)	3.68	3.93		(6%)	(5%)
Carloads (thousands)	303	333		(9%)	(9%)

For the year ended December 31, 2017, revenues for this commodity group increased by \$101 million, or 23%, when compared to 2016. The increase was mainly due to increased exports of U.S. thermal coal via the Gulf Coast, higher metallurgical coal exports via west coast ports following the reopening of two mines in British Columbia, and increased exports of Canadian petroleum coke due to improved market conditions; as well as freight rate increases. These factors were partly offset by reduced volumes of U.S. domestic thermal coal to U.S. Midwest utilities, mainly due to the loss of a utility customer.

Revenue per RTM decreased by 6% in 2017 when compared to 2016, mainly due to a significant increase in the average length of haul, partly offset by higher volumes of Canadian metallurgical coal and freight rate increases.

### Grain and fertilizers

	Year ended December 31,				% Change at constant currency
	2017	2016			
Revenues (millions)	\$ 2,214	\$ 2,098		6%	7%
RTMs (millions)	56,123	51,485		9%	9%
Revenue/RTM (cents)	3.94	4.07		(3%)	(2%)
Carloads (thousands)	619	602		3%	3%

For the year ended December 31, 2017, revenues for this commodity group increased by \$116 million, or 6%, when compared to 2016, mainly due to higher volumes of Canadian wheat to North American and export markets, higher export volumes of Canadian canola and barley, and higher export volumes of potash driven by strong offshore demand; freight rate increases; and higher applicable fuel surcharge rates; partly offset by lower export volumes of U.S. soybeans and the negative translation impact of a stronger Canadian dollar.

Revenue per RTM decreased by 3% in 2017 when compared to 2016, mainly due to an increase in the average length of haul and the negative translation impact of a stronger Canadian dollar; partly offset by freight rate increases and higher applicable fuel surcharge rates.

### Intermodal

	Year ended December 31,				% Change at constant currency
	2017	2016			
Revenues (millions)	\$ 3,200	\$ 2,846		12%	13%
RTMs (millions)	59,356	53,056		12%	12%
Revenue/RTM (cents)	5.39	5.36		1%	1%
Carloads (thousands)	2,514	2,163		16%	16%

For the year ended December 31, 2017, revenues for this commodity group increased by \$354 million, or 12%, when compared to 2016, mainly due to higher international container traffic via the ports of Vancouver and Prince Rupert; and higher applicable fuel surcharge rates; partly offset by the negative translation impact of a stronger Canadian dollar.



## Management's Discussion and Analysis

Revenue per RTM increased by 1% in 2017 when compared to 2016, mainly due to higher applicable fuel surcharge rates, partly offset by the negative translation impact of a stronger Canadian dollar.

### Automotive

	Year ended December 31,	2017	2016	% Change	% Change at constant currency
Revenues (millions)	\$	825	\$ 759	9%	10%
RTMs (millions)		4,257	3,725	14%	14%
Revenue/RTM (cents)		19.38	20.38	(5%)	(3%)
Carloads (thousands)		268	261	3%	3%

For the year ended December 31, 2017, revenues for this commodity group increased by \$66 million, or 9%, when compared to 2016, mainly due to higher volumes of finished vehicle imports via the Port of Vancouver resulting from new business, and higher volumes of domestic finished vehicle traffic; higher applicable fuel surcharge rates; and freight rate increases; partly offset by the negative translation impact of a stronger Canadian dollar.

Revenue per RTM decreased by 5% in 2017 when compared to 2016, mainly due to a significant increase in the average length of haul and the negative translation impact of a stronger Canadian dollar, partly offset by higher applicable fuel surcharge rates and freight rate increases.

### Other revenues

	Year ended December 31,	2017	2016	% Change	% Change at constant currency
Revenues (millions)	\$	748	\$ 711	5%	6%

For the year ended December 31, 2017, Other revenues increased by \$37 million, or 5%, when compared to 2016, mainly due to higher revenues from vessels and docks and automotive logistic services, partly offset by the negative translation impact of a stronger Canadian dollar.

### Operating expenses

Operating expenses for the year ended December 31, 2017 amounted to \$7,798 million compared to \$7,005 million in 2016. The increase of \$793 million, or 11%, was mainly due to higher costs from increased volumes and higher fuel prices, partly offset by the positive translation impact of a stronger Canadian dollar.

In millions	Year ended December 31,	2017	2016	% Change	% Change at constant currency
Labor and fringe benefits <sup>(1)</sup>	\$	2,536	\$ 2,399	(6%)	(7%)
Purchased services and material		1,769	1,592	(11%)	(12%)
Fuel		1,362	1,051	(30%)	(32%)
Depreciation and amortization		1,281	1,225	(5%)	(5%)
Equipment rents		418	375	(11%)	(14%)
Casualty and other		432	363	(19%)	(21%)
<b>Total operating expenses <sup>(1)</sup></b>	<b>\$</b>	<b>7,798</b>	<b>\$ 7,005</b>	<b>(11%)</b>	<b>(13%)</b>

(1) The Company adopted ASU 2017-07: Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost in the first quarter of 2018 on a retrospective basis. Comparative figures have been adjusted to conform to the current presentation. Additional information is provided in the section of this MD&A entitled Recent accounting pronouncements.

### Labor and fringe benefits

Labor and fringe benefits expense increased by \$137 million, or 6%, in 2017 when compared to 2016. The increase was primarily due to higher headcount and overtime costs due to increased volumes of traffic, general wage increases, increased U.S. health and welfare rates and higher incentive-based compensation, partly offset by the positive translation impact of a stronger Canadian dollar.

## Management's Discussion and Analysis

### ***Purchased services and material***

Purchased services and material expense increased by \$177 million, or 11%, in 2017 when compared to 2016. The increase was mainly due to higher costs of services purchased from outside contractors and higher materials and repairs and maintenance costs resulting from increased volumes of traffic, partly offset by the positive translation impact of a stronger Canadian dollar.

### ***Fuel***

Fuel expense increased by \$311 million, or 30%, in 2017 when compared to 2016. The increase was primarily due to higher fuel prices and increased volumes of traffic, partly offset by the positive translation impact of a stronger Canadian dollar.

### ***Depreciation and amortization***

Depreciation and amortization expense increased by \$56 million, or 5%, in 2017 when compared to 2016. The increase was mainly due to net capital additions, partly offset by the positive translation impact of a stronger Canadian dollar.

### ***Equipment rents***

Equipment rents expense increased by \$43 million, or 11%, in 2017 when compared to 2016. The increase was primarily due to higher car hire expense resulting from increased volumes of traffic, partly offset by lower car and equipment lease expense and the positive translation impact of a stronger Canadian dollar.

### ***Casualty and other***

Casualty and other expense increased by \$69 million, or 19%, in 2017 when compared to 2016. The increase was mainly due to higher legal and personal injury expenses, incident costs and worker's compensation expense, partly offset by lower bad debt expense and the positive translation impact of a stronger Canadian dollar.

### ***Other income and expenses***

#### ***Interest expense***

In 2017, interest expense was \$481 million compared to \$480 million in 2016. The increase was mainly due to a higher average level of debt, partly offset by the positive translation impact of a stronger Canadian dollar.

#### ***Other components of net periodic benefit income***

In 2017, Other components of net periodic benefit income was \$315 million compared to \$280 million in 2016.

#### ***Other income***

In 2017, the Company recorded other income of \$12 million compared to \$95 million in 2016. Included in Other income for 2016 was a gain on disposal of the Viaduc du Sud of \$76 million.

#### ***Income tax recovery (expense)***

The Company recorded an income tax recovery of \$395 million for the year ended December 31, 2017, compared to an income tax expense of \$1,287 million in 2016. Included in the 2017 figure was a net deferred income tax recovery of \$1,706 million consisting of a deferred income tax recovery of \$1,764 million recorded in the fourth quarter, resulting from the enactment of the U.S. Tax Reform, deferred income tax expenses of \$50 million recorded in the fourth quarter and \$31 million recorded in the third quarter, resulting from the enactment of higher provincial corporate income tax rates and a higher state corporate income tax rate, respectively, and deferred income tax recoveries of \$18 million recorded in the second quarter and \$5 million recorded in the first quarter, both resulting from the enactment of lower provincial corporate income tax rates. Included in the 2016 figure was a deferred income tax expense of \$7 million recorded in the second quarter, resulting from the enactment of a higher provincial corporate income tax rate.

The effective tax rate for 2017 was (7.8%) compared to 26.1% in 2016. Excluding the aforementioned deferred income tax recoveries and expenses, the effective tax rate for 2017 was 25.8% compared to 26.0% in 2016. The variance in the effective tax rate was mainly attributable to a lower proportion of the Company's pre-tax income being earned in higher tax rate jurisdictions, and the impact of a higher excess tax benefit resulting from the settlement of equity settled awards in 2017 compared to 2016.

Summary of quarterly financial data

In millions, except per share data	2018 Quarters				2017 Quarters			
	Fourth	Third	Second	First	Fourth	Third	Second	First
Revenues	\$ 3,808	\$ 3,688	\$ 3,631	\$ 3,194	\$ 3,285	\$ 3,221	\$ 3,329	\$ 3,206
Net income <sup>(1)</sup>	\$ 1,143	\$ 1,134	\$ 1,310	\$ 741	\$ 2,611	\$ 958	\$ 1,031	\$ 884
Basic earnings per share	\$ 1.57	\$ 1.55	\$ 1.78	\$ 1.00	\$ 3.50	\$ 1.28	\$ 1.36	\$ 1.16
Diluted earnings per share	\$ 1.56	\$ 1.54	\$ 1.77	\$ 1.00	\$ 3.48	\$ 1.27	\$ 1.36	\$ 1.16
Dividends per share	\$ 0.4550	\$ 0.4550	\$ 0.4550	\$ 0.4550	\$ 0.4125	\$ 0.4125	\$ 0.4125	\$ 0.4125
<b>Reconciliation of operating income <sup>(2)</sup></b>								
Operating income as originally reported	NA	NA	NA	NA	\$ 1,301	\$ 1,459	\$ 1,495	\$ 1,303
Adjustment: Other components of net periodic benefit income	NA	NA	NA	NA	(76)	(80)	(80)	(79)
Operating income	\$ 1,452	\$ 1,492	\$ 1,519	\$ 1,030	\$ 1,225	\$ 1,379	\$ 1,415	\$ 1,224

(1) Net income may include items that management believes do not necessarily arise as part of CN's normal day-to-day operations and could distort the analysis of trends in business performance. See the section of this MD&A entitled *Adjusted performance measures* for additional information on these items.

(2) The Company adopted ASU 2017-07: *Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost* in the first quarter of 2018 on a retrospective basis. Comparative figures have been adjusted to conform to the current presentation. Additional information is provided in the section of this MD&A entitled *Recent accounting pronouncements*.

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 2018

Fourth quarter 2018 net income was \$1,143 million, a decrease of \$1,468 million, or 56%, when compared to the same period in 2017, and diluted earnings per share decreased by 55% to \$1.56. The decrease was mainly due to a deferred income tax recovery of \$1,764 million (\$2.35 per diluted share) resulting from the enactment of a lower U.S. federal corporate income tax rate due to the U.S. Tax Reform in the fourth quarter of 2017, partly offset by an increase in Operating income and Other income.

Operating income for the quarter ended December 31, 2018 increased by \$227 million, or 19%, to \$1,452 million, when compared to the same period in 2017. The increase mainly reflects increased revenues from higher volumes, freight rate increases and higher applicable fuel surcharge rates, partly offset by higher labor costs and higher fuel prices. The operating ratio was 61.9% in the fourth quarter of 2018 compared to 62.7% in the fourth quarter of 2017.

Revenues for the fourth quarter of 2018 increased by \$523 million, or 16%, to \$3,808 million, when compared to the same period in 2017. The increase was mainly attributable to higher volumes of petroleum crude and Canadian grain, freight rate increases, higher applicable fuel surcharge rates, and the positive translation impact of a weaker Canadian dollar; partly offset by lower volumes of frac sand. Fuel surcharge revenues increased by \$118 million in the fourth quarter of 2018, mainly due to higher applicable fuel surcharge rates.

Operating expenses for the fourth quarter of 2018 increased by \$296 million, or 14%, to \$2,356 million, when compared to the same period in 2017. The increase was primarily due to higher labor costs mainly as a result of an increase in headcount, and employee termination benefits and severance costs related to a workforce reduction program; higher fuel prices; higher costs as a result of increased volumes of traffic; and the negative translation impact of a weaker Canadian dollar.

## Management's Discussion and Analysis

### Financial position

The following tables provide an analysis of the Company's balance sheet as at December 31, 2018 as compared to 2017. 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, 2018 and 2017, the foreign exchange rates were \$1.3637 and \$1.2571 per US\$1.00, respectively.

<i>In millions</i>	<i>December 31,</i>	<b>2018</b>	<b>2017</b>	Foreign exchange impact	Variance excluding foreign exchange	Explanation of variance, other than foreign exchange impact
<b>Total assets</b>		\$ 41,214	\$ 37,629	\$ 1,660	\$ 1,925	
Variance mainly due to:						
Properties		37,773	34,189	1,378	2,206	Increase primarily due to gross property additions of \$3,531 million, partly offset by depreciation of \$1,327 million.
Pension asset		446	994	—	(548)	Decrease primarily due to lower actual returns partly offset by the increase in the year-end discount rate from 3.51% in 2017 to 3.77% in 2018.
<b>Total liabilities</b>		\$ 23,573	\$ 20,973	\$ 1,233	\$ 1,367	
Variance mainly due to:						
Deferred income taxes		7,480	6,953	291	236	Increase due to deferred income tax expense of \$527 million recorded in Net income, partially offset by a deferred income tax recovery of \$291 million recorded in Other comprehensive income (loss), mostly attributable to new temporary differences generated during the year.
Pension and other postretirement benefits		707	699	16	(8)	Decrease primarily due to the increase in the year-end discount rate from 3.51% in 2017 to 3.77% in 2018.
Total long-term debt, including the current portion		12,569	10,828	809	932	Increase primarily due to issuance of notes of \$2,738 million and net issuance of commercial paper of \$99 million, partly offset by repayment of notes of \$1,399 million, net repayment of accounts receivable securitization of \$420 million and debt related to capital leases of \$44 million.

<i>In millions</i>	<i>December 31,</i>	<b>2018</b>	<b>2017</b>	Variance	Explanation of variance	
<b>Total shareholders' equity</b>		\$ 17,641	\$ 16,656	\$ 985		
Variance mainly due to:						
Accumulated other comprehensive loss		(2,849)	(2,784)		(65)	Increase in Other comprehensive loss due to after-tax amounts of \$489 million from net foreign exchange gains and \$554 million resulting from net actuarial losses on defined benefit pension and post-retirement benefit plans, net of amortization.
Retained earnings		16,623	15,561 <sup>(1)</sup>		1,062	Increase primarily due to current year net income of \$4,328 million, partly offset by share repurchases of \$1,901 million and dividends paid of \$1,333 million.

(1) The Company changed its presentation with respect to equity settled awards settled using shares purchased on the open market in the fourth quarter of 2018 on a retrospective basis. Comparative balances have been reclassified to conform to the current presentation. Additional information is provided in Note 14 - Share capital to the Company's 2018 Annual Consolidated Financial Statements.

### 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, commercial paper programs, 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 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 instalments, pension contributions, and contractual obligations; capital expenditures relating to track infrastructure and other; acquisitions; dividends; and share repurchases. 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 capital structure, cost of capital, and the need for additional debt financing.

The Company has a working capital deficit, which is common in the capital-intensive rail industry, and is 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, 2018 and 2017, the Company had Cash and cash equivalents of \$266 million and \$70 million, respectively; Restricted cash and cash equivalents of \$493 million and \$483 million, respectively; and a working capital deficit of \$772 million and \$1,793 million, respectively. 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 maintain sufficient 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*

On February 13, 2018, the Company filed a new shelf prospectus with Canadian securities regulators and a registration statement with the SEC, pursuant to which CN may issue up to \$6.0 billion of debt securities in the Canadian and U.S. capital markets over the 25 months from the filing date. This shelf prospectus and registration statement replaced CN's previous shelf prospectus and registration statement that expired on February 6, 2018. CN expects to use net proceeds from the sale of debt securities under the shelf prospectus and registration statement for general corporate purposes, including the redemption and refinancing of outstanding indebtedness, share repurchases, acquisitions, and other business opportunities.

During 2018, the Company issued US\$650 million (\$854 million) of debt securities in the U.S. capital markets and \$800 million of debt securities in the Canadian capital markets under its current shelf prospectus and registration statement, and US\$900 million (\$1,123 million) of debt securities in the U.S. capital markets under its previous shelf prospectus and registration statement. As at December 31, 2018, the remaining capacity of the Company's current shelf prospectus and registration statement was \$4.4 billion.

The Company's access to long-term funds in the capital markets depends on its credit ratings and market conditions. The Company believes that it continues to have access to the capital markets. If the Company were unable to borrow funds at acceptable rates in the 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.

## Management's Discussion and Analysis

### ***Revolving credit facility***

On March 15, 2018, the Company's revolving credit facility agreement was amended, which extended the term of the credit facility by one year and increased the credit facility from \$1.3 billion to \$1.8 billion, effective May 5, 2018. The increase in capacity provides the Company with additional financial flexibility. The amended credit facility of \$1.8 billion consists of a \$900 million tranche maturing on May 5, 2021 and a \$900 million tranche maturing on May 5, 2023. The accordion feature included in the credit facility agreement, which provides for an additional \$500 million subject to the consent of individual lenders, remains unchanged. The credit facility is available for general corporate purposes, including backstopping the Company's commercial paper programs.

As at December 31, 2018 and December 31, 2017, the Company had no outstanding borrowings under its revolving credit facility and there were no draws during the years ended December 31, 2018 and 2017.

### ***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. As of May 5, 2018, the maximum aggregate principal amount of commercial paper that could be issued increased from \$1.3 billion to \$1.8 billion, or the US dollar equivalent, on a combined basis. 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, 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 \$1.8 billion revolving credit facility to meet its short-term liquidity needs.

As at December 31, 2018 and 2017, the Company had total commercial paper borrowings of US\$862 million (\$1,175 million) and US\$760 million (\$955 million), respectively, 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 April 30, 2018, the Company extended the term of its agreement by two years to February 1, 2021. 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 then in effect. Subject to customary indemnifications, each trust's recourse is limited to the accounts receivable transferred.

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, 2018, the Company had accounts receivable securitization borrowings of \$nil. As at December 31, 2017, the Company had accounts receivable securitization borrowings of \$421 million, consisting of \$320 million and US\$80 million (\$101 million), secured by and limited to \$476 million of accounts receivable, presented in Current portion of long-term debt on the Consolidated Balance Sheets.

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

The Company has a series of committed and uncommitted bilateral letter of credit facility agreements. On March 15, 2018, the Company extended the maturity date of the committed bilateral letter of credit facility agreements to April 28, 2021. The agreements are held with various banks to support the Company's requirements to post letters of credit in the ordinary course of business. Under the 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, 2018, the Company had outstanding letters of credit of \$410 million (2017 - \$394 million) under the committed facilities from a total available amount of \$447 million (2017 - \$437 million) and \$137 million (2017 - \$136 million) under the uncommitted facilities.

As at December 31, 2018, included in Restricted cash and cash equivalents was \$408 million (2017 - \$400 million) and \$80 million (2017 - \$80 million) 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 11 – Debt* to the Company's 2018 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>2018</b>	<b>2017</b>	<b>Variance</b>
Net cash provided by operating activities	\$	<b>5,918</b>	\$ 5,516	\$ 402
Net cash used in investing activities		<b>(3,404)</b>	(2,738)	(666)
Net cash used in financing activities		<b>(2,308)</b>	(2,895)	587
Effect of foreign exchange fluctuations on cash, cash equivalents, restricted cash, and restricted cash equivalents		—	(2)	2
<i>Net increase (decrease) in cash, cash equivalents, restricted cash, and restricted cash equivalents</i>		<b>206</b>	(119)	325
Cash, cash equivalents, restricted cash, and restricted cash equivalents, beginning of year		<b>553</b>	672	(119)
<i>Cash, cash equivalents, restricted cash, and restricted cash equivalents, end of year</i>	\$	<b>759</b>	\$ 553	\$ 206

### Operating activities

Net cash provided by operating activities increased by \$402 million in 2018 due to higher cash 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 years ended December 31, 2018 and 2017 of \$92 million and \$115 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. The decrease in pension contributions was mainly due to the Company reducing its current service cost contributions for the CN Pension Plan as permitted based on its most recently filed actuarial valuation. The Company expects to make total cash contributions of approximately \$140 million for all pension plans in 2019.

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 13 – Pensions and other postretirement benefits* to the Company's 2018 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 2018, net income tax payments were \$776 million (2017 - \$712 million). The increase was mainly due to a higher final payment made in 2018 for the prior year and higher installment payments in Canada, partly offset by a net refund in the U.S.

For 2019, the Company's net income tax payments are expected to be approximately \$1 billion. The increase is primarily due to higher required U.S. installments in 2019, which includes the impacts of the U.S. Tax Reform, and the related proposed regulations and interpretations issued in December 2018.

### Investing activities

Net cash used in investing activities increased by \$666 million in 2018, mainly as a result of higher property additions, partly offset by proceeds from the disposal of property.



## Management's Discussion and Analysis

### Property additions

In millions	Year ended December 31,	2018	2017
Track and roadway <sup>(1)</sup>	\$	2,341	\$ 1,927
Rolling stock		433	226
Buildings		95	70
Information technology		459	290
Other		203	190
Gross property additions		3,531	2,703
Less: Capital leases		—	30
<b>Property additions <sup>(2)</sup></b>	<b>\$</b>	<b>3,531</b>	<b>\$ 2,673</b>

(1) In 2018, approximately 65% (2017 - 75%) of the Track and roadway property additions were incurred to renew basic infrastructure. Costs relating to normal repairs and maintenance of Track and roadway properties are expensed as incurred, and amounted to approximately 10% of the Company's total operating expenses in 2018 (2017 - 12%).

(2) Includes \$419 million associated with the U.S. federal government legislative PTC implementation in 2018 (2017 - \$417 million).

### Disposal of property

In 2018, cash flows from investing activities included cash proceeds of \$194 million, before transaction costs, from the disposals of the Doney and St-Francois spurs, Central Station Railway lease, and Calgary Industrial Lead. In 2017, there were no significant disposals of property. Additional information relating to disposals of property is provided in Note 4 – Other income to the Company's 2018 Annual Consolidated Financial Statements.

### 2019 Capital expenditure program

In 2019, the Company expects to invest approximately \$3.9 billion in its capital program, which will be financed with cash generated from operations or with cash from financing activities as required, as outlined below:

- \$1.6 billion on track and railway infrastructure maintenance to support safe and efficient operations; including the replacement of rail and ties, bridge improvements, as well as other general track maintenance;
- \$1.2 billion on initiatives to increase capacity and enable growth, such as track infrastructure expansion; investments in yards and intermodal terminals; and on information technology to improve safety performance, operational efficiency and customer service;
- \$0.8 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, CN expects to take delivery of 140 new high-horsepower locomotives and 500 new grain hopper cars; and
- \$0.3 billion associated with the U.S. federal government legislative PTC implementation.

### Financing activities

Net cash used in financing activities decreased by \$587 million in 2018, primarily driven by higher net issuances of long-term debt, partly offset by a lower net issuance of commercial paper.

### Debt financing activities

Debt financing activities in 2018 included the following:

- On November 7, 2018, issuance of US\$650 million (\$854 million) 4.45% Notes due 2049 in the U.S. capital markets, which resulted in net proceeds of \$845 million;
- On August 30, 2018, early redemption of US\$550 million 5.55% Notes due 2019 for US\$558 million (\$720 million), which resulted in a loss of US\$8 million (\$10 million) that was recorded in Other income;
- On July 31, 2018, issuance of \$350 million 3.20% Notes due 2028 and \$450 million 3.60% Notes due 2048 in the Canadian capital markets, which resulted in total net proceeds of \$787 million;
- On July 15, 2018, repayment of US\$200 million (\$264 million) 6.80% Notes due 2018 upon maturity;
- On May 15, 2018, repayment of US\$325 million (\$415 million) 5.55% Notes due 2018 upon maturity;
- On February 6, 2018, issuance of US\$300 million (\$374 million) 2.40% Notes due 2020 and US\$600 million (\$749 million) 3.65% Notes due 2048 in the U.S. capital markets, which resulted in total net proceeds of \$1,106 million;
- Net issuance of commercial paper of \$99 million;
- Proceeds from the accounts receivable securitization program of \$530 million;
- Repayment of accounts receivable securitization borrowings of \$950 million; and
- Repayment of capital leases of \$44 million.

## Management's Discussion and Analysis

Debt financing activities in 2017 included the following:

- On November 15, 2017, repayment of US\$250 million (\$318 million) 5.85% Notes due 2017 upon maturity;
- On November 14, 2017, repayment of US\$250 million (\$317 million) Floating Rate Notes due 2017 upon maturity;
- On August 1, 2017, issuance of \$500 million 3.60% Notes due 2047 in the Canadian capital markets, which resulted in net proceeds of \$493 million;
- Proceeds from the accounts receivable securitization program of \$423 million;
- Net issuance of commercial paper of \$379 million; and
- Repayment of capital leases of \$206 million.

Cash obtained from the issuance of debt in 2018 and 2017 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 11 – Debt* to the Company's 2018 Annual Consolidated Financial Statements.

### Repurchase of common shares

The Company may repurchase its common 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 TSX. The Company repurchased 4.1 million common shares under its NCIB effective from October 30, 2018 and January 31, 2019, which allowed for the repurchase of up to 5.5 million common shares.

Previous NCIBs allowed for the repurchase of up to 31.0 million common shares between October 30, 2017 and October 29, 2018, and up to 33.0 million common shares between October 30, 2016 and October 29, 2017.

The following table provides the information related to the share repurchases for the years ended December 31, 2018, 2017 and 2016:

<i>In millions, except per share data</i>	<i>Year ended December 31,</i>				<b>Total NCIB</b>
	<b>2018</b>	<b>2017</b>	<b>2016</b>		
<b>October 2018 - January 2019 NCIB</b>					
Number of common shares	<b>2.6</b>	N/A	N/A		2.6
Weighted-average price per share	<b>\$ 109.92</b>	N/A	N/A	\$	109.92
Amount of repurchase	<b>\$ 293</b>	N/A	N/A	\$	293
<b>October 2017 - October 2018 NCIB</b>					
Number of common shares	<b>16.4</b>	2.9	N/A		19.3
Weighted-average price per share	<b>\$ 104.19</b>	\$ 102.40	N/A	\$	103.92
Amount of repurchase	<b>\$ 1,707</b>	\$ 293	N/A	\$	2,000
<b>October 2016 - October 2017 NCIB</b>					
Number of common shares <sup>(1)</sup>	<b>N/A</b>	17.5	3.5		21.0
Weighted-average price per share	<b>N/A</b>	\$ 97.60	\$ 84.06	\$	95.35
Amount of repurchase	<b>N/A</b>	\$ 1,707	\$ 293	\$	2,000
<b>Total for the year</b>					
Number of common shares <sup>(1)</sup>	<b>19.0</b>	20.4	26.4 <sup>(3)</sup>		
Weighted-average price per share	<b>\$ 104.99</b>	\$ 98.27	\$ 75.85 <sup>(3)</sup>		
Amount of repurchase <sup>(2)</sup>	<b>\$ 2,000</b>	\$ 2,000	\$ 2,000 <sup>(3)</sup>		

(1) Includes repurchases in the first and second quarters of 2017 and each quarter of 2016, pursuant to private agreements between the Company and arm's-length third-party sellers.

(2) Includes settlements in subsequent periods.

(3) Includes 2016 repurchases from the October 2015 - October 2016 NCIB, which consisted of 22.9 million common shares, a weighted-average price per share of \$74.60 and an amount of repurchase of \$1,707 million.

On January 29, 2019, the Board of Directors of the Company approved a new NCIB, which allows for the repurchase of up to 22 million common shares between February 1, 2019 and January 31, 2020, at prevailing market prices plus brokerage fees, or such other prices as may be permitted by the TSX.

The Company's NCIB notices may be found online on SEDAR at [www.sedar.com](http://www.sedar.com) and on the SEC's website at [www.sec.gov](http://www.sec.gov) through EDGAR. Printed copies may be obtained by contacting the Corporate Secretary's Office.

## Management's Discussion and Analysis

### Share Trusts

The Company's Employee Benefit Plan Trusts ("Share Trusts") purchase CN's common shares on the open market, which are used to deliver common shares under the Share Units Plan. Additional information relating to the share purchases and share settlements by Share Trusts is provided in *Note 14 – Share capital* to the Company's 2018 Annual Consolidated Financial Statements.

The following table provides the information related to the share purchases and settlements by Share Trusts for the years ended December 31, 2018, 2017 and 2016:

<i>In millions, except per share data</i>	<i>Year ended December 31,</i>		<i>2018</i>		<i>2017</i>		<i>2016</i>	
<b>Share purchases by Share Trusts</b>								
Number of common shares			<b>0.4</b>		0.5			0.7
Weighted-average price per share		\$	<b>104.87</b>	\$	102.17	\$		84.99
Amount of purchase		\$	<b>38</b>	\$	55	\$		60
<b>Share settlements by Share Trusts</b>								
Number of common shares			<b>0.4</b>		0.3			0.3
Weighted-average price per share		\$	<b>84.53</b>	\$	77.99	\$		73.31
Amount of settlement		\$	<b>31</b>	\$	24	\$		23

### Dividends paid

During 2018, the Company paid quarterly dividends of \$0.4550 per share amounting to \$1,333 million, compared to \$1,239 million, at the rate of \$0.4125 per share, in 2017. For 2019, the Company's Board of Directors approved an increase of 18% to the quarterly dividend to common shareholders, from \$0.4550 per share in 2018 to \$0.5375 per share in 2019.

### 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, 2018:

<i>In millions</i>	<b>Total</b>	2019	2020	2021	2022	2023	2024 & thereafter
Debt obligations <sup>(1)</sup>	\$ 12,540	\$ 1,175	\$ 400	\$ 787	\$ 333	\$ 197	\$ 9,648
Interest on debt obligations	9,732	484	491	483	464	448	7,362
Capital lease obligations <sup>(2)</sup>	30	10	15	5	—	—	—
Operating lease obligations	663	190	136	103	64	45	125
Purchase obligations <sup>(3)</sup>	2,592	1,551	521	190	133	96	101
Other long-term liabilities <sup>(4)</sup>	742	69	70	53	46	47	457
<b>Total contractual obligations</b>	<b>\$ 26,299</b>	<b>\$ 3,479</b>	<b>\$ 1,633</b>	<b>\$ 1,621</b>	<b>\$ 1,040</b>	<b>\$ 833</b>	<b>\$ 17,693</b>

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

(2) Includes \$29 million of minimum lease payments and \$1 million of imputed interest at rates ranging from 1.8% to 4.3%.

(3) Includes fixed and variable commitments for locomotives, rail, wheels, engineering services, information technology services and licenses, railroad ties, rail cars, as well as other equipment and services. Costs of variable commitments were estimated using forecasted prices and volumes.

(4) 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 the impact of business 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 to free cash flow for the years ended December 31, 2018, 2017 and 2016:

<i>In millions</i>	<i>Year ended December 31,</i>		<i>2018</i>		<i>2017</i>		<i>2016</i>	
Net cash provided by operating activities		\$	<b>5,918</b>	\$	5,516	\$		5,202
Net cash used in investing activities			<b>(3,404)</b>		(2,738)			(2,682)
<b>Free cash flow</b>		\$	<b>2,514</b>	\$	2,778	\$		2,520

## 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>2018</b>	<b>2017</b>	<b>2016</b>	
Debt	\$	<b>12,569</b>	\$	10,828	\$	10,937
<i>Adjustments:</i>						
Present value of operating lease commitments <sup>(1)</sup>		<b>579</b>		478		533
Pension plans in deficiency		<b>477</b>		455		442
<b>Adjusted debt</b> <sup>(2)</sup>	\$	<b>13,625</b>	\$	11,761	\$	11,912
Net income	\$	<b>4,328</b>	\$	5,484	\$	3,640
Interest expense		<b>489</b>		481		480
Income tax expense (recovery)		<b>1,354</b>		(395)		1,287
Depreciation and amortization		<b>1,329</b>		1,281		1,225
<b>EBITDA</b>		<b>7,500</b>		6,851		6,632
<i>Adjustments:</i>						
Other income		<b>(376)</b>		(12)		(95)
Other components of net periodic benefit income		<b>(302)</b>		(315)		(280)
Operating lease expense		<b>218</b>		191		197
<b>Adjusted EBITDA</b> <sup>(2)</sup>	\$	<b>7,040</b>	\$	6,715	\$	6,454
<b>Adjusted debt-to-adjusted EBITDA multiple (times)</b>		<b>1.94</b>		1.75		1.85

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

(2) In the first quarter of 2018, the Company redefined adjusted debt to include the present value of operating lease commitments and pension plans in deficiency, and adjusted EBITDA to exclude other income, other components of net periodic benefit income and operating lease expense, in order to better align the Company's definition of adjusted debt-to-adjusted EBITDA multiple with similar measures used by credit rating agencies. Comparative figures have been adjusted to conform to the current definition.

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 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 of 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, 2018, the Company has not recorded a liability with respect to guarantees and indemnifications. Additional information relating to guarantees and indemnifications is provided in *Note 17 – Major commitments and contingencies* to the Company's 2018 Annual Consolidated Financial Statements.

## Outstanding share data

As at February 1, 2019, the Company had 723.9 million common shares and 4.9 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. CN also obtains credit insurance for certain high risk customers. 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 to be 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 programs, and an accounts receivable securitization program. As well, the Company can issue debt securities in the Canadian and U.S. capital markets under its shelf prospectus and registration statement. The Company's access to long-term funds in the debt capital markets depends on its credit ratings and 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 and its credit ratings.

#### 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 debt of the parent company as a foreign currency hedge of its net investment in foreign operations. As a result, from the dates of designation, foreign exchange gains and losses on translation of the Company's US dollar-denominated debt are recorded in Accumulated other comprehensive loss, which minimizes volatility of earnings resulting from the conversion of US dollar-denominated 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, 2018, the Company had outstanding foreign exchange forward contracts with a notional value of US\$1,465 million (2017 - US\$887 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, 2018, the Company recorded a gain of \$157 million (2017 - loss of \$72 million; 2016 - loss of \$1 million), related to foreign exchange forward contracts. These gains or losses were largely offset by the re-measurement of US dollar-denominated monetary assets and liabilities recognized in Other income. As at December 31, 2018, the fair value of outstanding foreign exchange forward contracts included in Other current assets and Accounts payable and other was \$67 million and \$nil, respectively (2017 - \$nil and \$19 million, respectively).

## Management's Discussion and Analysis

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

### **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 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.

The estimated annual impact on net income of a one-percent change in the interest rate on floating rate debt is approximately \$11 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, and, to a lesser extent, West-Texas Intermediate crude oil.

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 financial instruments that the Company measures at fair value on a recurring basis in periods subsequent to initial recognition are categorized into the following levels of the fair value hierarchy based on the degree to which inputs are observable:

- Level 1: Inputs are quoted prices for identical instruments in active markets
- Level 2: Significant inputs (other than quoted prices included in Level 1) are observable
- Level 3: Significant inputs are unobservable

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.

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, classified as Level 2, 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.

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. The Company classifies debt as Level 2. As at December 31, 2018, the Company's debt had a carrying amount of \$12,569 million (2017 - \$10,828 million) and a fair value of \$13,316 million (2017 - \$12,164 million).

### Recent accounting pronouncements

The following recent ASUs issued by the Financial Accounting Standards Board (FASB) were adopted by the Company during the current year:

#### **ASU 2017-07 Compensation - Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost**

The ASU requires employers that sponsor defined benefit pension plans and/or other postretirement benefit plans to report the service cost component in the same line item or items as other compensation costs. The other components of net periodic benefit cost are required to be presented in the statement of income separately from the service cost component and outside a subtotal of income from operations. The new guidance allows only the service cost component to be eligible for capitalization. The guidance must be applied retrospectively for the presentation of the service cost component and other components of net periodic benefit cost in the statement of income and prospectively for the capitalization of the service cost component of net periodic benefit cost.

The Company adopted this ASU in the first quarter of 2018 with an effective date of January 1, 2018. As a result, the classification of the components of pension and postretirement benefit costs other than current service cost are now shown outside of Operating income in a separate caption entitled Other components of net periodic benefit income in the Company's Consolidated Statements of Income.

As a result of applying this ASU, for the year ended December 31, 2018, operating income was reduced by \$302 million (2017 - \$315 million; 2016 - \$280 million), with a corresponding increase presented in the new caption below Operating income with no impact on Net income. The guidance allowing only the service cost component to be eligible for capitalization did not have a significant impact on the Company's Consolidated Financial Statements.

#### **ASU 2016-01 Financial Instruments - Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities**

The ASU provides guidance for the recognition, measurement, presentation and disclosure of financial instruments. The guidance requires equity investments, except for those accounted for under the equity method or that result in consolidation, to be measured at fair value with changes in fair value recognized in net income. However, an entity may choose to measure equity investments that do not have readily determinable fair value at cost minus impairment, if any, plus or minus changes resulting from observable price changes in orderly transactions for the identical or similar investment of the same issuer. The guidance must be applied prospectively by means of a cumulative-effect adjustment to the balance sheet as of the beginning of the fiscal year of adoption.

The Company adopted this ASU in the first quarter of 2018 on a prospective basis with an effective date of January 1, 2018. As a result of applying this ASU, the Company elected to measure all existing equity investments without readily determinable fair values, other than those accounted for using the equity method or that result in consolidation, at cost minus impairment, if any, plus or minus changes resulting from observable price changes in orderly transactions for the identical or a similar investment of the same issuer. The adoption of the ASU did not have a significant impact on the Company's Consolidated Financial Statements.

#### **ASU 2014-09 Revenue from Contracts with Customers and related amendments (Topic 606)**

The ASU requires entities to recognize revenue when control of the promised goods or services is transferred to customers at an amount that reflects the consideration to which the entity expects to be entitled to in exchange for those goods or services. Additional disclosures are required to assist users of financial statements to understand the nature, amount, timing and uncertainty of revenues and cash flows arising from an entity's contracts. The guidance can be applied using either the retrospective or modified retrospective transition method.

The Company adopted this standard in the first quarter of 2018 with an effective date of January 1, 2018 using the modified retrospective transition method applied to contracts that were not completed as of January 1, 2018. The adoption of this standard did not have an impact on the Company's Consolidated Financial Statements, other than for the new disclosure requirements. See *Note 1 - Summary of significant accounting policies* and *Note 3 - Revenues* to the Company's 2018 Annual Consolidated Financial Statements for additional information.

#### **ASU 2018-02 Income Statement - Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income**

The ASU provides entities the option to reclassify the stranded tax effects resulting from the U.S. Tax Reform from accumulated other comprehensive income to retained earnings. The guidance also requires certain disclosures about stranded tax effects and a description of the accounting policy for releasing income tax effects from accumulated other comprehensive income. The guidance can either be applied prospectively from the beginning of the period of adoption or retrospectively to each period (or periods) in which the effect of the change in the U.S. federal corporate income tax rate in the U.S. Tax Reform is recognized.



## Management's Discussion and Analysis

The Company adopted the amendments of this ASU during the fourth quarter of 2018 with an effective date of October 1, 2018. The Company did not elect to reclassify the income tax effects resulting from the U.S. Tax Reform from Accumulated other comprehensive loss to Retained earnings. The adoption of this standard did not have an impact on the Company's Consolidated Financial Statements, other than for the new disclosure requirements. See *Note 16 - Accumulated other comprehensive loss* to the Company's 2018 Annual Consolidated Financial Statements for additional information.

The following recent ASU issued by FASB has an effective date after December 31, 2018 and has not been adopted by the Company:

### **ASU 2016-02 Leases and related amendments (Topic 842)**

The ASU requires a lessee to recognize a right-of-use asset and a lease liability on the balance sheet for all leases greater than twelve months and requires additional qualitative and quantitative disclosures. The lessor accounting model under the new standard is substantially unchanged. The guidance must be applied using a modified retrospective approach. Entities may elect to apply the guidance to each prior period presented with a cumulative-effect adjustment to retained earnings recognized at the beginning of the earliest period presented or to apply the guidance with a cumulative-effect adjustment to retained earnings recognized at the beginning of the period of adoption. The ASU is effective for annual and interim reporting periods beginning after December 15, 2018.

The standard will have a significant impact on the Company's Consolidated Balance Sheets due to the recognition of right-of-use assets and lease liabilities for leases currently classified as operating leases with a term over twelve months. The Company has identified all contracts that contain a lease and has assembled the data necessary to calculate the estimated impact on transition. The Company has implemented a new lease management system and has made changes to processes and internal controls necessary to meet the reporting and disclosure requirements of this standard.

The new standard provides a number of practical expedients and accounting policy elections upon transition. The Company will not elect the package of three practical expedients that permits the Company not to reassess prior conclusions about lease identification, lease classification and initial direct costs. The Company will elect:

- the use-of-hindsight practical expedient to reassess lease term and the likelihood that a purchase option will be exercised;
- the land easement practical expedient to not evaluate land easements that were not previously accounted for as leases under Topic 840;
- the short-term lease exemption for all asset classes that permits entities not to recognize right-of-use assets and lease liabilities onto the balance sheet; and
- the practical expedient to not separate lease and non-lease components for the freight car asset category.

The Company will adopt the requirements of the ASU effective January 1, 2019, using a modified retrospective approach with a cumulative-effect adjustment to Retained earnings recognized on January 1, 2019, with no restatement of the comparative periods' financial information. As at January 1, 2019, the cumulative-effect adjustment required to adopt the new standard will increase the balance of Retained earnings by approximately \$30 million. The initial adoption transition adjustment to record right-of-use assets and lease liabilities for leases over twelve months on the Company's Consolidated Balance Sheet will be approximately \$750 million.

Other recently issued ASUs required to be applied for periods beginning on or after January 1, 2019 have been evaluated by the Company and will not have a significant impact on the Company's Consolidated Financial Statements.

### 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 2018 Annual Consolidated Financial Statements and Notes thereto.

Management discusses the development and selection of the Company's critical accounting policies, including the underlying estimates and assumptions, with the Audit Committee of the Company's Board of Directors. 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 sufficient future taxable income, of the necessary character, 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, 2018, in order to fully realize all of the deferred income tax assets, the Company will need to generate future taxable income of approximately \$1.8 billion, and, based upon the level of historical taxable income, projections of future taxable income of the necessary character over the periods in which the deferred income tax assets are deductible, and the reversal of taxable temporary differences, management believes, following an assessment of the current economic environment, it is more likely than not that the Company will realize the benefits of these deductible differences. See the section of this MD&A entitled *Other income and expenses - Income tax recovery (expense)* for information about the U.S. Tax Reform.

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, 2018, the total amount of gross unrecognized tax benefits was \$74 million, before considering tax treaties and other arrangements between taxation authorities. The amount of net unrecognized tax benefits as at December 31, 2018 was \$69 million. If recognized, \$18 million of the net unrecognized tax benefits as at December 31, 2018 would affect the effective tax rate. The Company believes that it is reasonably possible that approximately \$4 million of the net unrecognized tax benefits as at December 31, 2018 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. These deferred income tax assets and liabilities are recorded at the enacted tax rates of the periods in which the related temporary differences are expected to reverse. As a result, fiscal budget changes and/or changes in income tax laws that affect a change in the timing, the amount, and/or the income tax rate at which the temporary difference components will reverse, could materially affect deferred income tax expense as recorded in the Company's results of operations. 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 \$137 million and \$143 million in 2018, respectively.

## Management's Discussion and Analysis

For the year ended December 31, 2018, the Company recorded an income tax expense of \$1,354 million, of which \$527 million was a deferred income tax expense. For the year ended December 31, 2017, the Company recorded an income tax recovery of \$395 million, of which \$1,195 million was a deferred income tax recovery. The deferred income tax recovery included a net recovery of \$1,706 million resulting from the enactment of the U.S. Tax Reform, and changes to provincial and state corporate income tax rates. 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. The Company's net deferred income tax liability as at December 31, 2018 was \$7,480 million (2017 - \$6,953 million). Additional disclosures are provided in *Note 5 – Income taxes* to the Company's 2018 Annual Consolidated Financial Statements.

### Depreciation

Properties are carried at cost less accumulated depreciation including asset impairment write-downs. The Company has a process in place to determine whether or not costs qualify for capitalization, which requires judgment. 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 whose services lives 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 \$48 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 2018, the Company completed depreciation studies for road properties and as a result, the Company changed the estimated service lives for various types of road assets and their related composite depreciation rates. The results of these depreciation studies did not materially affect the Company's annual depreciation expense.

Given the nature of the railroad and the composition of its network which is made up of homogeneous long-lived assets, it is impractical to maintain records of specific properties at their lowest unit of property.

Retirements of assets occur through the replacement of an asset in the normal course of business, the sale of an asset or the abandonment of a section of track. For retirements in the normal course of business, generally the life of the retired asset is within a reasonable range of the expected useful life, as determined in the depreciation studies, and, as such, no gain or loss is recognized under the group method. The asset's cost is removed from the asset account and the difference between its cost and estimated related accumulated depreciation (net of salvage proceeds), if any, is recorded as an adjustment to accumulated depreciation and no gain or loss is recognized. The historical cost of the retired asset is estimated by using deflation factors or indices that closely correlate to the properties comprising the asset classes in combination with the estimated age of the retired asset using a first-in, first-out approach, and applying it to the replacement value of the asset.

In each depreciation study, an estimate is made of any excess or deficiency in accumulated depreciation for all corresponding asset classes to ensure that the depreciation rates remain appropriate. The excess or deficiency in accumulated depreciation is amortized over the remaining life of the asset class.

For retirements of depreciable properties that do not occur in the normal course of business, the historical cost, net of salvage proceeds, is recorded as a gain or loss in income. A retirement is considered not to be in the normal course of business if it meets the following criteria: (i) it is unusual, (ii) it is significant in amount, and (iii) it varies significantly from the retirement pattern identified through depreciation studies. A gain or loss is recognized in Other income for the sale of land or disposal of assets that are not part of railroad operations.

## Management's Discussion and Analysis

For the year ended December 31, 2018, the Company recorded total depreciation expense of \$1,327 million (2017 - \$1,279 million; 2016 - \$1,223 million). As at December 31, 2018, the Company had Properties of \$37,773 million, net of accumulated depreciation of \$13,305 million (2017 - \$34,189 million, net of accumulated depreciation of \$12,680 million). Additional disclosures are provided in Note 8 – *Properties* to the Company's 2018 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, 2018, and 2017:

<i>In millions</i>	<i>December 31,</i>		<b>2018</b>	<b>2017</b>
Pension asset	\$	<b>446</b>	\$	994
Pension liability	\$	<b>477</b>	\$	455
Other postretirement benefits liability	\$	<b>247</b>	\$	261

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 (income) 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, 2018, 2017 and 2016, 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>2018</b>	<b>2017</b>	<b>2016</b>
Net periodic benefit income for pensions	\$	<b>(139)</b>	\$	(190)	\$ (161)
Net periodic benefit cost for other postretirement benefits	\$	<b>9</b>	\$	7	\$ 7

As at December 31, 2018 and 2017, the projected pension benefit obligation and accumulated other postretirement benefit obligation were as follows:

<i>In millions</i>	<i>December 31,</i>		<b>2018</b>	<b>2017</b>
Projected pension benefit obligation	\$	<b>17,275</b>	\$	18,025
Accumulated other postretirement benefit obligation	\$	<b>247</b>	\$	261

### 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 year-end discount rate of 3.77% based on bond yields prevailing at December 31, 2018 (2017 - 3.51%) was considered appropriate by the Company.

## Management's Discussion and Analysis

The Company uses the spot rate approach to measure current service cost and interest cost for all defined benefit pension and other postretirement benefit plans. 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.

As at December 31, 2018, a 0.25% decrease in the 3.77% discount rate used to determine the projected benefit obligation would have resulted in a decrease of approximately \$500 million to the funded status for pensions and would result in a decrease of approximately \$25 million to the 2019 projected net periodic benefit income. A 0.25% increase in the discount rate would have resulted in an increase of approximately \$470 million to the funded status for pensions and would result in an increase of approximately \$25 million to the 2019 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 2018, 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 2019, 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 strategy. 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 2018, the Policy was: 3% cash and short-term investments, 42% bonds and mortgages, 40% equities, 4% real estate, 7% oil and gas and 4% infrastructure and private debt investments.

Annually, the CN Investment Division ("Investment Manager"), a division of the Company created to invest and administer the assets of the plans, can also propose an investment strategy ("Strategy") which can lead the Plan's actual asset allocation to deviate from the Policy due to changing market risks and opportunities. The Pension and Investment Committee of the Board of Directors ("Committee") regularly compares the actual asset allocation to the Policy and Strategy and compares the actual performance of the Company's pension plan assets 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, hedge and adjust existing or anticipated exposures. The SIPP prohibits investments in securities of the Company or its subsidiaries.

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

	2018	2017	2016	2015	2014
Actual	(2.4%)	9.2%	4.4%	5.5%	10.1%
Market-related value	5.7%	9.1%	8.2%	7.0%	7.6%
Expected	7.00%	7.00%	7.00%	7.00%	7.00%

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 (income) of approximately \$100 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 2019**

In 2019, the Company expects net periodic benefit income to be approximately \$140 million (2018 - \$139 million) for all its defined benefit pension plans.

### **Plan asset allocation**

Based on the fair value of the assets held as at December 31, 2018, the assets of the Company's various plans are comprised of 3% in cash and short-term investments, 38% in bonds and mortgages, 33% in equities, 2% in real estate, 6% in oil and gas, 6% in infrastructure and private debt, 10% in absolute return investments, and 2% in risk-factor allocation investments. See *Note 13 - Pensions and other postretirement benefits* to the Company's 2018 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 2018, a basic rate of compensation increase of 2.75% was used to determine the projected benefit obligation and the net periodic benefit cost (income).

### **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, 2018, 2017 and 2016.

### **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 defined benefit pension plans, or when deemed appropriate by the OSFI. Actuarial valuations are also required annually for the Company's U.S. qualified defined benefit pension plans.

The Company's most recently filed actuarial valuations for funding purposes for its Canadian registered defined pension plans conducted as at December 31, 2017 indicated a funding excess on a going concern basis of approximately \$3.1 billion and a funding excess on a solvency basis of approximately \$0.5 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, if any, to be paid over a number of years, as calculated under current pension regulations. Alternatively, a letter of credit can be subscribed to fulfill required solvency deficit payments.

The Company's next actuarial valuations for funding purposes for its Canadian registered defined benefit pension plans required as at December 31, 2018 will be performed in 2019. These actuarial valuations are expected to identify a funding excess on a going concern basis of approximately \$3.3 billion, while on a solvency basis a funding excess of approximately \$0.5 billion is expected.

Based on the anticipated results of these valuations, the Company expects to make total cash contributions of approximately \$140 million for all of the Company's pension plans in 2019. The Company expects cash from operations and its other sources of financing to be sufficient to meet its 2019 funding obligations.



## 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, 2018</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	\$	544	\$ 20	\$ 13	\$ 577
Bonds		6,049	307	152	6,508
Mortgages		89	1	—	90
Private debt		357	8	1	366
Public equities		5,111	131	104	5,346
Private equities		267	5	2	274
Real estate		410	9	2	421
Oil and gas		925	19	4	948
Infrastructure		687	14	3	704
Absolute return		1,583	27	7	1,617
Risk-factor allocation		280	5	1	286
Other <sup>(1)</sup>		91	2	14	107
<b>Total plan assets</b>	<b>\$</b>	<b>16,393</b>	<b>\$ 548</b>	<b>\$ 303</b>	<b>\$ 17,244</b>
Projected benefit obligation at end of year	\$	16,004	\$ 491	\$ 780	\$ 17,275
Company contributions in 2018	\$	50	\$ —	\$ 20	\$ 70
Employee contributions in 2018	\$	63	\$ —	\$ —	\$ 63

(1) Other consists of operating assets of \$120 million and liabilities of \$13 million required to administer the Trusts' investment assets and the plans' benefit and funding activities.

Additional disclosures are provided in Note 13 – Pensions and other postretirement benefits to the Company's 2018 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 2018, 2017 and 2016 the Company recorded an increase of \$4 million, an increase of \$2 million and a decrease of \$11 million, respectively, to its provision for personal injuries and other claims in Canada as a result of actuarial valuations for employee injury claims as well as various other legal claims.

As at December 31, 2018, 2017 and 2016, the Company's provision for personal injury and other claims in Canada was as follows:

<i>In millions</i>	<b>2018</b>	<b>2017</b>	<b>2016</b>
Beginning of year	\$ 183	\$ 183	\$ 191
Accruals and other	52	38	24
Payments	(28)	(38)	(32)
<b>End of year</b>	<b>\$ 207</b>	<b>\$ 183</b>	<b>\$ 183</b>
Current portion - End of year	\$ 60	\$ 40	\$ 39



## Management's Discussion and Analysis

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 2018, the Company recorded an increase of \$13 million to its provision for U.S. personal injury and other claims attributable to non-occupational disease claims, third-party claims and occupational disease claims pursuant to the 2018 actuarial valuation. In 2017 and 2016, actuarial valuations resulted in an increase of \$15 million and \$21 million, respectively. The prior years' adjustments from the actuarial valuations were mainly attributable to occupational disease claims, non-occupational disease claims and third-party claims reflecting changes 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, 2018, 2017 and 2016, the Company's provision for personal injury and other claims in the U.S. was as follows:

<i>In millions</i>	2018	2017	2016
Beginning of year	\$ 116	\$ 118	\$ 105
Accruals and other	41	46	51
Payments	(28)	(41)	(34)
Foreign exchange	10	(7)	(4)
<b>End of year</b>	<b>\$ 139</b>	<b>\$ 116</b>	<b>\$ 118</b>
Current portion - End of year	\$ 37	\$ 25	\$ 37

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.

### Environmental matters

#### *Known existing environmental concerns*

The Company has identified approximately 145 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 U.S. 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

## Management's Discussion and Analysis

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, 2018, 2017 and 2016, the Company's provision for specific environmental sites was as follows:

<i>In millions</i>	2018	2017	2016
Beginning of year	\$ 78	\$ 86	\$ 110
Accruals and other	16	16	6
Payments	(34)	(23)	(29)
Foreign exchange	1	(1)	(1)
<b>End of year</b>	<b>\$ 61</b>	<b>\$ 78</b>	<b>\$ 86</b>
Current portion - End of year	\$ 39	\$ 57	\$ 50

The Company anticipates that the majority of the liability at December 31, 2018 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.

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,

## Management's Discussion and Analysis

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, 2018 amounted to \$22 million (2017 - \$20 million; 2016 - \$19 million). For 2019, the Company expects to incur operating expenses relating to environmental matters in the same range as 2018. 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 fueling 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, 2018 amounted to \$19 million (2017 - \$21 million; 2016 - \$15 million). For 2019, the Company expects to incur capital expenditures relating to environmental matters in the same range as 2018.

### **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.

There can be no assurance that the Company will be able to compete effectively against current and future competitors in the transportation industry, or that further consolidation within the transportation industry and 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 such as 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, 2018, 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.

### Labor negotiations

As at December 31, 2018, CN employed a total of 17,976 employees in Canada, of which 13,778, or 77%, were unionized employees and 7,744 employees in the U.S., of which 6,425, or 83%, 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 and related 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 May 23, 2018, the collective agreement with the Teamsters Canada Rail Conference (TCRC) governing approximately 1,800 locomotive engineers was ratified by its members, renewing the collective agreement for a five-year term expiring on December 31, 2022.

## Management's Discussion and Analysis

In September 2018, notices were served to commence bargaining for the renewal of the collective agreements with the TCRC governing approximately 200 rail traffic controllers, with the United Steelworkers governing approximately 2,900 track and bridge workers and with Unifor governing approximately 2,100 shopcraft employees, which expired on December 31, 2018.

The collective agreement with Unifor was renewed for a four-year term, expiring December 31, 2022, and was ratified by its members on January 30, 2019.

On December 19, 2018, CN reached a tentative agreement with the United Steelworkers to renew that collective agreement. Ratification by the membership is expected by February 15, 2019.

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, 2019, 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, which preserve the status quo in respect of the given collective agreement during the terms of such moratoriums. 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.

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 participated in, for collective agreements covering non-operating employees. This national bargaining concluded in 2018 with successor collective bargaining agreements in place for all railroad unions, including all of CN's non-operating craft employees. Collective agreements covering operating employees at GTW, ICC, WC and BLE, and all employees at PCD continue to be bargained on a local (corporate) basis. CN has ratified agreements with 12 of 18 bargaining units covering approximately 1,600 of CN's operating craft employees. The remaining six collective agreements, covering approximately 1,750 operating craft employees and the employees at PCD represented by United Steelworkers, are currently under renegotiation.

## **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*, which provides rate and service remedies, including final offer arbitration, long-haul interswitching rates and mandatory 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, and the Company is subject to government oversight with respect to rate, service and business practice issues.

The *Transportation Modernization Act* (Bill C-49) came into force on May 23, 2018 and introduced a series of amendments to various federal acts respecting transportation. In addition to introducing provisions respecting compensation for expenses incurred by shippers in case of failure by railway companies to meet their level of service obligations and the definition by the Agency of matters which can be subject to service arbitrations, Bill C-49 amended the *Canada Transportation Act* to, among other things:

- expand the Governor in Council's powers to make regulations requiring major railway companies to provide to the federal Minister of Transport (Minister) and the Agency information relating to rates, service and performance;
- clarify the factors that must be applied in determining whether railway companies are fulfilling their service obligations;
- enable shippers to obtain terms in their contracts dealing with amounts to be paid in relation to a failure to comply with conditions related to railway companies' service obligations;
- create a new remedy for shippers who have access to the lines of only one railway company at the point of origin or destination of the movement of traffic in circumstances where interswitching is not available, also called "long-haul interswitching";
- change the process for the transfer and discontinuance of railway lines to, among other things, require railway companies to make certain information available to the Minister and the public and establish a remedy for non-compliance with the process; and
- change provisions respecting the maximum revenue entitlement for the movement of Western grain to support the acquisition by railways of equipment used in the transportation of grain and require certain railway companies to provide to the Minister and the public information respecting the movement of grain.

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 certain 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. Recent proceedings undertaken by the STB in a number of significant matters 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 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, as well as the revenue adequacy component used in judging the reasonableness of rail freight rates. The STB held hearings on these matters in 2015. On October 31, 2016, the STB determined to leave unchanged its method for determining the industry's cost of equity capital. On April 28, 2017, the STB denied a petition for reconsideration of its October 31, 2016 decision. Conclusions on the other portions of the joined proceedings remain pending.

On March 28, 2016, the STB issued a notice of proposed rulemaking to revoke previously granted exemptions of five commodities from regulatory oversight for crushed or broken stone, hydraulic cement, coke produced from coal, primary iron or steel products, and 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. Amtrak filed a complaint in 2012 with the STB to commence such an investigation, including a request for damages for preference failures, for allegedly sub-standard performance of Amtrak trains and in 2014 amended the complaint to limit the investigation to CN's IC line. After the U.S. Supreme Court denied petitions for review of the U.S. Court of Appeals determination that the STB exceeded its authority in adopting its final rule, on March 29, 2018, CN filed a motion to dismiss Amtrak's Section 213 complaint. On April 13, 2018, the STB dismissed without prejudice Amtrak's Section 213 complaint against CN.

In a separate proceeding, the rail industry had previously challenged as unconstitutional Congress' delegation to Amtrak and the FRA of joint authority to promulgate the PRIIA performance standards. On March 23, 2017, the U.S. District Court for the District of Columbia concluded that Section 207 of PRIIA was void and unconstitutional and vacated the performance standards. The Government defendants challenged this decision in the U.S. Court of Appeals for the District of Columbia. On July 20, 2018, the U.S. Court of Appeals for the District of Columbia Circuit reversed the judgment of the District Court and held that the constitutional defect could be appropriately remedied by severing the arbitration provision in Section 207(d). The U.S. Court of Appeals noted that the aspect of the District Court's decision that vacated the performance standards is final because the Government defendants did not challenge it on appeal. On October 24, 2018, the U.S. Court of Appeals denied the rail industry's petition for rehearing. On January 22, 2019, the rail industry filed a petition for review with the U.S. Supreme Court.

On August 8, 2018, the U.S. Court of Appeals for the Seventh Circuit denied the Village of Barrington's ("Barrington") petition seeking rehearing of its June 2018 decision, which upheld the STB's decision to deny Barrington's petition to reopen CN's 2009 acquisition of the Elgin, Joliet and Eastern Railway (EJ&E) to impose a condition that would require CN to fund a grade separation. On that same day, Barrington petitioned the STB again to reopen CN's acquisition of the EJ&E to impose a condition that would require CN to fund a grade separation. On December 21, 2018, the STB denied Barrington's most recent petition.

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 Minister 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 adoption 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, the tracking of dangerous goods during transport and the development of an emergency response plan.

Following a significant derailment involving a non-related short-line railroad in the town of Lac-Mégantic, within the province of Quebec 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 *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 were also introduced for railway companies to conduct route assessments for rail corridors handling significant volumes of dangerous goods, have an Emergency Response Assistance Plan in order to ship large volumes of flammable liquids, and provide municipalities and first responders with data on dangerous goods to improve emergency planning, risk assessment, and training.

In 2014, Transport Canada's new *Grade Crossings Regulations* under the *Railway Safety Act* came into force, which establish specific standards for new grade crossings and requirements that existing crossings be upgraded to basic safety standards by November 2021, 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.

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. Protective Direction No. 39 took effect on November 1, 2018 to accelerate the removal of the CPC-1232 unjacketed tank cars from crude oil service in Canada to November 1, 2018 and to accelerate the removal of all TC/DOT-111 and CPC-1232 unjacketed tank cars from condensate service in Canada to January 1, 2019.

On June 1, 2016, the Minister made amendments to the *Transportation of Dangerous Goods Regulations* under 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 April 26, 2017, the Minister initiated the review of the *Railway Safety Act*, which was initially scheduled for 2018, and a panel of three persons was appointed to proceed with the review. On May 31, 2018, the Minister tabled in the House of Commons the report of the three-person panel. The Minister has not indicated how and when he will answer to the panel's report.

On June 9, 2017, Transport Canada's *Locomotive Emissions Regulations* under the *Railway Safety Act* came into force. The regulations seek to limit air pollution by establishing emission standards and test procedures for new locomotives, and align Canadian standards with U.S. regulations. The new regulations require railway companies to meet emission standards, undertake emission testing, and adhere to anti-idling provisions, in addition to requirements for labelling, testing, record keeping and reporting. CN's locomotives in service at this time are not required to meet the emission standards or the testing and labelling requirements, though when they are removed from service to be remanufactured, refurbished or upgraded, they must meet the new requirements before they are placed back into service.

On June 24, 2017, Transport Canada proposed new regulations aimed at lowering the risk of terrorism on the Canadian rail system, entitled *Transportation of Dangerous Goods by Rail Security Regulations*. The proposed regulations would require all rail carriers to proactively engage in security planning processes and manage security risks, by introducing security awareness training for employees, security plans that include measures to address assessed risks, and security plan training for employees with duties related to the security plan or security sensitive dangerous goods. Rail carriers would also have to conduct security inspections of certain railway vehicles containing dangerous goods, report potential security threats and concerns to the Canadian Transport Emergency Centre, and employ a rail security coordinator.

Bill C-49, which came into force on May 23, 2018, contains provisions that amend the *Railway Safety Act* to prohibit a railway company from operating railway equipment unless the equipment is fitted with prescribed recording instruments and prescribed information is recorded using those instruments, collected and preserved. These changes are not yet in force as regulations detailing their conditions must first be enacted by Transport Canada.

On December 20, 2018, the Minister issued an order requesting Canadian railway companies to revise the *Work/Rest Rules* under the *Railway Safety Act* to reflect the latest fatigue science and fatigue management practices and address a series of related elements.



## Management's Discussion and Analysis

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.

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 of certain thresholds are transported. PTC is a collision avoidance technology designed to override locomotive controls and prevent train-to-train collisions, overspeed derailments, misaligned switch derailments, and unauthorized incursions onto established work zones. Pursuant to the *Positive Train Control Enforcement and Implementation Act of 2015* and the *FAST Act of 2015*, Congress extended the PTC installation deadline until December 31, 2018, with the option for a railroad carrier to complete full implementation by no later than December 31, 2020, provided certain milestones were met by the end of 2018. In 2018, the Company completed the milestones required for the extension and the FRA has approved the extension for the Company to complete full implementation by December 31, 2020. The FRA has approved CN to commence provisional revenue operations while the FRA continues its review of CN's PTC Safety Plan. Noncompliance with these or other laws and regulations may subject the Company to fines, penalties and/or service interruptions. The implementation of PTC will result in additional capital expenditures and operating costs. In order to implement PTC, the Company has invested in various information technology applications, including back office systems, aimed to enhance the reliability of PTC operations. The Company continues to evaluate the technical and operational merits of its information technology applications. In the event that such evaluations lead to the identification of better or more reliable technology, the Company may consider implementing such technology, which may result in additional costs. PTC may result in reduced operational efficiency and service levels.

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. 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 December 13, 2017, after completing its review of an updated regulatory impact analysis published by PHMSA in October of 2017, the Department of Transportation determined that the final rule's ECP brake requirements were not economically justified. On September 25, 2018, the Department of Transportation issued a final rule to rescind the final rule's ECP brake requirement on unit trains with 70 or more loaded cars carrying Class 3 flammable liquids.

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

### **Other regulation – Canada**

Bill C-49 amended the *CN Commercialization Act* to increase the maximum proportion of voting shares of CN that can be owned or controlled, directly or indirectly, by any one person together with his or her associates to 25%, up from the 15% limit imposed since CN became a public company in 1995. Bill C-49 also provided that CN's directors may amend CN's Articles to implement this change without shareholder approval. On May 24, 2018, CN filed Articles of Amendment in order to give effect to this new provision.

### **Regulation – Vessels**

The Company's vessel operations are subject to regulation by the U.S. Coast Guard 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 has authority to regulate air emissions from these vessels.

### **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; and
- 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 Association of American Railroads (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.

### **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 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

## Management's Discussion and Analysis

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 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 and related cybersecurity risk

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 security and mitigation programs in place to protect its operations, information and technology assets, a cybersecurity 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, leading to possible litigation and regulatory oversight. Security threats are evolving, and can come from nation states, organized criminals, hackers and others with malicious intent. A security incident could compromise corporate information and assets, as well as operations. If the Company is unable to restore service or to acquire or implement any needed 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. The Company is investing to meet evolving network and data security expectations and regulations, in an effort to mitigate the impact a security incident might have on the Company's results of operations, financial position or liquidity. The final outcome of a potential security incident cannot be predicted with certainty, and therefore there can be no assurance that its resolution will not have a material adverse effect on the Company's reputation, goodwill, results of operations, financial position or liquidity, in a particular quarter or fiscal year.

### 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. or the cost associated therewith. Following the expiration of the Softwood Lumber Agreement (SLA) between Canada and the U.S., including the expiration of the one year moratorium period preventing the U.S. from launching any trade action against Canadian producers, on January 3, 2018, based on affirmative final determinations by both the U.S. Department of Commerce and the U.S. International Trade Commission, antidumping and countervailing duty orders were imposed on imports of Canadian softwood lumber to the U.S. Canada responded to the imposition by the U.S. of antidumping and countervailing duties, in connection with lumber and other commodities, by filing a complaint with the World Trade Organization.

On November 30, 2018, the U.S., Canada and Mexico signed the United States-Mexico-Canada Agreement (USMCA), a new trade agreement to replace the North American Free Trade Agreement, which is subject to ratification by the legislature of each country. The U.S. tariffs on steel and aluminum imports announced March 8, 2018 were unaffected by the USMCA. Additionally, the Government of Canada's retaliatory tariffs on imports of steel, aluminum and other products from the U.S., which came into effect July 1, 2018, remain unchanged.

It is still too early to assess the potential outcome of the legislative path toward ratification of the USMCA, and other ongoing various trade actions taken by governments and agencies. As such, there can be no assurance that the USMCA and other trade actions will not materially adversely affect 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.

### 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.

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### 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/or business failures of customers could have a material adverse effect on the Company's results of operations, financial position or liquidity.

### Liquidity

Disruptions in 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 terms and 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. The supply market could become further concentrated and could result in changes to the product or service offerings by suppliers. 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 and materials. 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 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 conductors, could negatively impact the Company's ability to meet demand for rail service. 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 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 rates

The Company is exposed to interest rate risk relating to the Company's 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 results of operations or liquidity.

### 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.

## Management's Discussion and Analysis

### 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, droughts, fires, 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, and could affect the markets for, or the volume of, the goods the Company carries or otherwise have a material adverse effect on the Company's results of operations, financial position or liquidity. Government action or inaction to address climate change could also affect CN. The Company is currently subject to climate change and other emissions-related laws and regulations that have been proposed and, in some cases adopted, on the federal, provincial, state and local levels. While CN is continually focused on efficiency improvements and reducing its carbon footprint, caps, taxes, or other controls on emissions of greenhouse gasses imposed by various government bodies could increase the Company's capital and operating costs. The Company may not be able to offset such impact, including, for example, through higher freight rates. 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, 2018, have concluded that the Company's disclosure controls and procedures were effective.

During the fourth quarter ended December 31, 2018, 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, 2018, 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 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, 2018, and issued Management's Report on Internal Control over Financial Reporting dated February 1, 2019 to that effect.