POWERING **SUSTAINABLE** GROWTH

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2022 QUARTERLY REVIEW SECOND QUARTER

Press Release

North America's Railroad

CN Reports Second Quarter Results

Record Results Reflect Improved Operational Performance and Solid Top-Line Growth

MONTREAL, July 26, 2022 — CN (TSX: CNR) (NYSE: CNI) today reported its financial and operating results for the second quarter ended June 30, 2022. Financial performance improved year-over-year with record adjusted diluted earnings per share (EPS) of C$1.93, up 30%. (1) For the same period, the Company reported diluted EPS up 32% to C$1.92. CN also delivered solid operational performance with improvements in key operating metrics such as origin train performance, car velocity, through dwell and record fuel efficiency, resulting in a lower operating ratio.

"I am proud of our team of railroaders and pleased with our solid performance this quarter. Our team has the network running well, demonstrating improvements in service levels to our customers, driving greater velocity and generating strong financial results. We are preparing for a busy fall and are well positioned to achieve our 2022 outlook."

— Tracy Robinson, President and Chief Executive Officer, CN

Financial results and operating highlights

Second-quarter 2022 compared to second-quarter 2021

- Record revenues of C$4,344 million, an increase of C$746 million or 21%.
- Record operating income of C$1,769 million, an increase of 28%, and record adjusted operating income of C$1,781 million, an increase of 29%. (1)
- Diluted EPS of C$1.92, an increase of 32%, and record adjusted diluted EPS of C$1.93, an increase of 30%. (1)
- Operating ratio, defined as operating expenses as a percentage of revenues, of 59.3%, an improvement of 2.3-points, and adjusted operating ratio of 59.0%, an improvement of 2.6-points. (1)
- Free cash flow for the first six months of 2022 was C$1,568 million compared to C$1,280 million for the same period in 2021. (1)
- Injury frequency rate (3) increased by 43% and the accident rate (4) decreased by 24%.
- Car velocity (car miles per day) improved by 2% and through dwell (entire railroad, hours) improved by 6%.
- Fuel efficiency improved by 4% to a record of 0.838 US gallons of locomotive fuel consumed per 1,000 gross ton miles (GTMs).
- For the month of June, origin train performance, defined as the percentage of actual train departure time compared to designed train departure time at selected yards, reached 91%, an improvement of 14% compared to 80% for the same period in 2021.

Reaffirming 2022 financial outlook (2)

CN confirms its 2022 outlook targeting to deliver approximately 15-20% adjusted diluted EPS growth in 2022. (1) CN continues to target an operating ratio below 60% for 2022 as well as a ROIC of approximately 15%. (1) CN maintains its free cash flow target in the range of C$3.7 billion - C$4.0 billion in 2022. (1)

Second-quarter 2022 revenues, traffic volumes and expenses

Revenues for the second quarter of 2022 were C$4,344 million, an increase of C$746 million, or 21%, when compared to the same period in 2021. The increase was mainly due to higher applicable fuel surcharge rates, freight rate increases, higher Canadian export volumes of coal via west coast ports, higher volumes of U.S. grain and the positive translation impact of a weaker Canadian dollar; partly offset by significantly lower export volumes of Canadian grain.

Revenue ton miles (RTMs), measuring the weight and distance of freight transported by CN, increased by 2% compared to the year-earlier period. Freight revenue per RTM increased by 19% compared to the year-earlier period, mainly driven by higher applicable fuel surcharge rates, freight rate increases and the positive translation impact of a weaker Canadian dollar.

Operating expenses for the second quarter of 2022 increased by 16% to C$2,575 million, mainly driven by higher fuel prices and the negative translation impact of a weaker Canadian dollar; partly offset by lower average headcount.

(1) Non-GAAP Measures
CN reports its financial results in accordance with United States generally accepted accounting principles (GAAP). CN may also use non-GAAP measures in this news release that do not have any standardized meaning prescribed by GAAP, including adjusted net income, adjusted earnings per share, adjusted operating income and adjusted operating ratio (referred to as adjusted performance measures) and free cash flow. These non-GAAP measures may not be comparable to similar measures presented by other companies. For further details of these non-GAAP measures, including a reconciliation to the most directly comparable GAAP financial measures, refer to the attached supplementary schedule, Non-GAAP Measures.

CN's full-year adjusted diluted EPS outlook (2), ROIC outlook (2) and free cash flow outlook (2) exclude certain adjustments, which are expected to be comparable to adjustments made in prior years. However, management cannot individually quantify on a forward-looking basis the impact of these adjustments on its adjusted diluted EPS, ROIC or free cash flow because these items, which could be significant, are difficult to predict and may be highly variable. As a result, CN does not provide a corresponding GAAP measure for, or reconciliation to, its adjusted diluted EPS outlook, its ROIC outlook or its free cash flow outlook.

(2) Forward-Looking Statements
Certain statements included in this news release constitute "forward-looking statements" within the meaning of the *United States Private Securities Litigation Reform Act of 1995* and under Canadian securities laws, including statements based on management's assessment and assumptions and publicly available information with respect to CN. By their nature, forward-looking statements involve risks, uncertainties and assumptions. CN cautions that its assumptions may not materialize and that current economic conditions render such assumptions, although reasonable at the time they were made, subject to greater uncertainty. Forward-looking statements may be identified by the use of terminology such as "believes," "expects," "anticipates," "assumes," "outlook," "plans," "targets", or other similar words.

Forward-looking statements are not guarantees of future performance and involve risks, uncertainties and other factors which may cause actual results, performance or achievements of CN to be materially different from the outlook or any future results, performance or achievements 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 in this news release include, but are not limited to, general economic and business conditions, including factors impacting global supply chains such as pandemics and geopolitical conflicts and tensions; 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 illegal blockades of rail networks, and 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 United States. Reference should also be made to Management's Discussion and Analysis (MD&A) in CN's annual and interim reports, Annual Information Form and Form 40-F, filed with Canadian and U.S. securities regulators and available on CN's website, for a description of major risk factors relating to CN.

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.

(3) Per 200,000 person hours, based on Federal Railroad Administration (FRA) reporting criteria.

(4) Per million train miles, based on FRA reporting criteria.

2022 key assumptions
CN has made a number of economic and market assumptions in preparing its 2022 outlook. The Company assumes that North American industrial production for the year will increase in the mid single-digit range and assumes U.S. housing starts of approximately 1.6 million units and U.S. motor vehicle sales of approximately 15.5 million units. For the 2021/2022 crop year, the grain crop in Canada was below its three-year average and the U.S. grain crop was in line with its three-year average. The Company assumes that the 2022/2023 grain crop in Canada will be above its three-year average (or in line when excluding the significantly lower 2021/2022 crop year) and that the 2022/2023 U.S. grain crop will be in line with its three-year average. CN assumes total RTMs in 2022 will increase in the low single-digit range versus 2021. CN assumes continued pricing above rail inflation upon contract renewals. CN assumes that in 2022, the value of the Canadian dollar in U.S. currency will be approximately $0.80, and assumes that in 2022 the average price of crude oil (West Texas Intermediate) will be in the range of US$90 - US$100 per barrel. In 2022, CN plans to invest approximately 17% of revenues in its capital program.

This earnings news release, as well as additional information, including the Financial Statements, Notes thereto and MD&A, is contained in CN's Quarterly Review available on the Company's website at www.cn.ca/financial-results and on SEDAR at www.sedar.com as well as on the U.S. Securities and Exchange Commission's website at www.sec.gov through EDGAR.

About CN

CN is a world-class transportation leader and trade-enabler. Essential to the economy, to the customers, and to the communities it serves, CN safely transports more than 300 million tons of natural resources, manufactured products, and finished goods throughout North America every year. As the only railroad connecting Canada's Eastern and Western coasts with the U.S. South through a 18,600-mile rail network, CN and its affiliates have been contributing to community prosperity and sustainable trade since 1919. CN is committed to programs supporting social responsibility and environmental stewardship.

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Selected Railroad Statistics – unaudited

	Three months ended June 30		Six months ended June 30	
	2022	2021	**2022**	2021
Financial measures				
Key financial performance indicators [1]				
Total revenues *($ millions)*	**4,344**	3,598	**8,052**	7,133
Freight revenues *($ millions)*	**4,195**	3,452	**7,803**	6,875
Operating income *($ millions)*	**1,769**	1,382	**2,996**	2,709
Adjusted operating income *($ millions)* [2][3]	**1,781**	1,382	**3,018**	2,572
Net income *($ millions)* [4]	**1,325**	1,036	**2,243**	2,012
Adjusted net income *($ millions)* [2][3][4]	**1,334**	1,060	**2,259**	1,934
Diluted earnings per share *($)* [4]	**1.92**	1.46	**3.22**	2.83
Adjusted diluted earnings per share *($)* [2][3][4]	**1.93**	1.49	**3.25**	2.72
Free cash flow *($ millions)* [2][5]	**997**	741	**1,568**	1,280
Gross property additions *($ millions)*	**707**	729	**1,086**	1,141
Share repurchases *($ millions)*	**1,173**	123	**2,466**	414
Dividends per share *($)*	**0.7325**	0.6150	**1.4650**	1.2300
Financial ratio				
Operating ratio *(%)* [6]	**59.3**	61.6	**62.8**	62.0
Adjusted operating ratio *(%)* [2][3]	**59.0**	61.6	**62.5**	63.9
Operational measures [7]				
Statistical operating data				
Gross ton miles (GTMs) *(millions)*	**120,742**	116,735	**231,808**	237,515
Revenue ton miles (RTMs) *(millions)*	**60,551**	59,246	**117,105**	120,700
Carloads *(thousands)*	**1,474**	1,469	**2,820**	2,900
Route miles *(includes Canada and the U.S.)*	**18,600**	19,500	**18,600**	19,500
Employees *(end of period)*	**22,783**	24,376	**22,783**	24,376
Employees *(average for the period)*	**23,137**	24,410	**22,928**	24,459
Key operating measures				
Freight revenue per RTM *(cents)*	**6.93**	5.83	**6.66**	5.70
Freight revenue per carload *($)*	**2,846**	2,350	**2,767**	2,371
GTMs per average number of employees *(thousands)*	**5,219**	4,782	**10,110**	9,711
Operating expenses per GTM *(cents)*	**2.13**	1.90	**2.18**	1.86
Labor and fringe benefits expense per GTM *(cents)*	**0.56**	0.59	**0.62**	0.62
Diesel fuel consumed *(US gallons in millions)*	**101.2**	101.4	**202.3**	211.8
Average fuel price *($ per US gallon)*	**5.82**	3.24	**5.12**	3.06
Fuel efficiency *(US gallons of locomotive fuel consumed per 1,000 GTMs)*	**0.838**	0.869	**0.873**	0.892
Train weight *(tons)*	**9,512**	9,840	**9,478**	9,623
Train length *(feet)*	**8,427**	8,749	**8,320**	8,536
Car velocity *(car miles per day)*	**209**	205	**185**	195
Through dwell *(entire railroad, hours)*	**7.2**	7.7	**8.1**	8.0
Through network train speed *(miles per hour)*	**19.3**	19.5	**18.0**	18.8
Locomotive utilization *(trailing GTMs per total horsepower)*	**203**	204	**195**	201
Safety indicators [8]				
Injury frequency rate *(per 200,000 person hours)*	**1.39**	0.97	**1.36**	1.30
Accident rate *(per million train miles)*	**1.52**	1.99	**2.03**	1.68

(1) Amounts expressed in Canadian dollars and prepared in accordance with United States generally accepted accounting principles (GAAP), unless otherwise noted.

(2) These Non-GAAP measures do not have any standardized meaning prescribed by GAAP and therefore, may not be comparable to similar measures presented by other companies.

(3) See the supplementary schedule entitled Non-GAAP Measures – Adjusted performance measures for an explanation of these non-GAAP measures.

(4) In the first quarter of 2022, the Company changed its method of calculating market-related values of pension assets for its defined benefit plans using a retrospective approach. Comparative figures have been restated to conform to the change in methodology. See Note 2 – Change in accounting policy to CN's unaudited Interim Consolidated Financial Statements for additional information.

(5) See the supplementary schedule entitled Non-GAAP Measures – Free cash flow for an explanation of this non-GAAP measure.

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

(7) 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 gross ton miles, fuel efficiency, train weight, train length, car velocity, through dwell and through network train speed are included within the Company's Management's Discussion and Analysis. Definitions of all other indicators are provided on CN's website, www.cn.ca/glossary.

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

Supplementary Information – unaudited

	Three months ended June 30				Six months ended June 30			
	2022	2021	% Change Fav (Unfav)	% Change at constant currency Fav (Unfav) [1]	**2022**	2021	% Change Fav (Unfav)	% Change at constant currency Fav (Unfav) [1]
Revenues *($ millions)* [2]								
Petroleum and chemicals	**829**	685	21%	18%	**1,585**	1,346	18%	16%
Metals and minerals	**466**	377	24%	20%	**872**	745	17%	15%
Forest products	**513**	451	14%	11%	**939**	880	7%	5%
Coal	**249**	158	58%	56%	**444**	284	56%	55%
Grain and fertilizers	**604**	609	(1%)	(3%)	**1,208**	1,322	(9%)	(10%)
Intermodal	**1,326**	1,037	28%	26%	**2,382**	2,005	19%	18%
Automotive	**208**	135	54%	50%	**373**	293	27%	25%
Total freight revenues	**4,195**	3,452	22%	19%	**7,803**	6,875	13%	12%
Other revenues	**149**	146	2%	—%	**249**	258	(3%)	(5%)
Total revenues	**4,344**	3,598	21%	18%	**8,052**	7,133	13%	12%
Revenue ton miles (RTMs) *(millions)* [3]								
Petroleum and chemicals	**12,330**	10,054	23%	23%	**23,889**	20,786	15%	15%
Metals and minerals	**7,149**	6,652	7%	7%	**13,412**	12,945	4%	4%
Forest products	**6,650**	6,957	(4%)	(4%)	**12,469**	13,627	(8%)	(8%)
Coal	**6,127**	4,648	32%	32%	**11,495**	8,674	33%	33%
Grain and fertilizers	**12,453**	14,922	(17%)	(17%)	**25,804**	32,763	(21%)	(21%)
Intermodal	**15,070**	15,409	(2%)	(2%)	**28,626**	30,642	(7%)	(7%)
Automotive	**772**	604	28%	28%	**1,410**	1,263	12%	12%
Total RTMs	**60,551**	59,246	2%	2%	**117,105**	120,700	(3%)	(3%)
Freight revenue / RTM *(cents)* [2][3]								
Petroleum and chemicals	**6.72**	6.81	(1%)	(4%)	**6.63**	6.48	2%	1%
Metals and minerals	**6.52**	5.67	15%	12%	**6.50**	5.76	13%	11%
Forest products	**7.71**	6.48	19%	16%	**7.53**	6.46	17%	15%
Coal	**4.06**	3.40	19%	18%	**3.86**	3.27	18%	17%
Grain and fertilizers	**4.85**	4.08	19%	16%	**4.68**	4.04	16%	15%
Intermodal	**8.80**	6.73	31%	29%	**8.32**	6.54	27%	26%
Automotive	**26.94**	22.35	21%	17%	**26.45**	23.20	14%	12%
Total freight revenue / RTM	**6.93**	5.83	19%	16%	**6.66**	5.70	17%	16%
Carloads *(thousands)* [3]								
Petroleum and chemicals	**162**	143	13%	13%	**321**	293	10%	10%
Metals and minerals	**236**	241	(2%)	(2%)	**445**	464	(4%)	(4%)
Forest products	**86**	90	(4%)	(4%)	**164**	176	(7%)	(7%)
Coal	**129**	100	29%	29%	**247**	169	46%	46%
Grain and fertilizers	**142**	162	(12%)	(12%)	**287**	338	(15%)	(15%)
Intermodal	**664**	691	(4%)	(4%)	**1,253**	1,367	(8%)	(8%)
Automotive	**55**	42	31%	31%	**103**	93	11%	11%
Total carloads	**1,474**	1,469	—%	—%	**2,820**	2,900	(3%)	(3%)
Freight revenue / carload *($)* [2][3]								
Petroleum and chemicals	**5,117**	4,790	7%	4%	**4,938**	4,594	7%	6%
Metals and minerals	**1,975**	1,564	26%	23%	**1,960**	1,606	22%	20%
Forest products	**5,965**	5,011	19%	16%	**5,726**	5,000	15%	13%
Coal	**1,930**	1,580	22%	21%	**1,798**	1,680	7%	6%
Grain and fertilizers	**4,254**	3,759	13%	11%	**4,209**	3,911	8%	6%
Intermodal	**1,997**	1,501	33%	32%	**1,901**	1,467	30%	29%
Automotive	**3,782**	3,214	18%	14%	**3,621**	3,151	15%	13%
Total freight revenue / carload	**2,846**	2,350	21%	19%	**2,767**	2,371	17%	15%

(1) This Non-GAAP measure does not have any standardized meaning prescribed by GAAP and therefore, may not be comparable to similar measures presented by other companies. See the supplementary schedule entitled Non-GAAP Measures – Constant currency for an explanation of this non-GAAP measure.

(2) Amounts expressed in Canadian dollars.

(3) Statistical operating data and related key operating measures are unaudited and based on estimated data available at such time and are subject to change as more complete information becomes available.

Non-GAAP Measures – unaudited

In this supplementary schedule, the "Company" or "CN" refers to Canadian National Railway Company, together with its wholly-owned subsidiaries. Financial information included in this schedule is expressed in Canadian dollars, unless otherwise noted.

CN reports its financial results in accordance with United States generally accepted accounting principles (GAAP). The Company also uses non-GAAP measures that do not have any standardized meaning prescribed by GAAP, including adjusted performance measures, constant currency, free cash flow and adjusted debt-to-adjusted EBITDA multiple. These non-GAAP measures may not be comparable to similar measures presented by other companies. From management's perspective, these non-GAAP measures are useful measures of performance and provide investors with supplementary information to assess the Company's results of operations and liquidity. These non-GAAP measures should not be considered in isolation or as a substitute for financial measures prepared in accordance with GAAP.

Adjusted performance measures

Adjusted net income, adjusted earnings per share, adjusted operating income, adjusted operating expenses and adjusted operating ratio are non-GAAP measures that are used to set performance goals and to measure CN's performance. Management believes that these adjusted performance measures provide additional insight to management and investors into the Company's operations and underlying business trends as well as facilitate period-to-period comparisons, as they exclude certain significant items that are not reflective of CN's underlying business operations and could distort the analysis of trends in business performance. These items may include:

i. operating expense adjustments: workforce reduction program, depreciation expense on the deployment of replacement system, advisory fees related to shareholder matters, losses and recoveries from assets held for sale, business acquisition-related costs;
ii. non-operating expense adjustments: business acquisition-related financing fees, merger termination income, gains and losses on disposal of property; and
iii. the effect of tax law changes and rate enactments.

These non-GAAP 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 three and six months ended June 30, 2022, the Company's adjusted net income was $1,334 million, or $1.93 per diluted share, and $2,259 million, or $3.25 per diluted share, respectively. The adjusted figures for the three and six months ended June 30, 2022 exclude advisory fees related to shareholder matters of $12 million, or $9 million after-tax ($0.01 per diluted share), and $22 million, or $16 million after-tax ($0.03 per diluted share), respectively, recorded in Casualty and other within the Consolidated Statements of Income.

For the three and six months ended June 30, 2021, the Company's adjusted net income was $1,060 million, or $1.49 per diluted share, and $1,934 million, or $2.72 per diluted share, respectively. [1] The adjusted figures for the three and six months ended June 30, 2021 exclude amortization of bridge financing and other fees of $32 million, or $24 million after-tax ($0.03 per diluted share) recorded in the second quarter, resulting from the Kansas City Southern ("KCS") transaction, recorded in Interest expense within the Consolidated Statements of Income. The adjusted figures for the six months ended June 30, 2021 also exclude the recovery of $137 million, or $102 million after-tax ($0.14 per diluted share) recorded in the first quarter related to the loss on assets held for sale in the second quarter of 2020, to reflect an agreement for the sale of on-going rail operations, certain non-core rail lines in Wisconsin, Michigan and Ontario to a short line operator.

(1) In the first quarter of 2022, the Company changed its method of calculating market-related values of pension assets for its defined benefit plans using a retrospective approach. Comparative figures have been restated to conform to the change in methodology. See Note 2 – Change in accounting policy to CN's unaudited Interim Consolidated Financial Statements for additional information.

Non-GAAP Measures – unaudited

Adjusted net income is defined as Net income in accordance with GAAP adjusted for certain significant items. Adjusted diluted earnings per share is defined as adjusted net income divided by the weighted-average diluted shares outstanding. The following table provides a reconciliation of Net income and Earnings per share in accordance with GAAP, as reported for the three and six months ended June 30, 2022 and 2021, to the non-GAAP adjusted performance measures presented herein:

	Three months ended June 30		Six months ended June 30	
In millions, except per share data	**2022**	2021	**2022**	2021
Net income (1)	**$ 1,325**	$ 1,036	**$ 2,243**	$ 2,012
Adjustments:				
Operating expense adjustments:				
Advisory fees related to shareholder matters	**12**	—	**22**	—
Recovery of loss on assets held for sale	**—**	—	**—**	(137)
Non-operating expense adjustments:				
Amortization of bridge financing and other fees	**—**	32	**—**	32
Tax adjustments:				
Tax effect of adjustments (2)	**(3)**	(8)	**(6)**	27
Total adjustments	**9**	24	**16**	(78)
Adjusted net income (1)	**$ 1,334**	$ 1,060	**$ 2,259**	$ 1,934
Diluted earnings per share (1)	**$ 1.92**	$ 1.46	**$ 3.22**	$ 2.83
Impact of adjustments, per share	**0.01**	0.03	**0.03**	(0.11)
Adjusted diluted earnings per share (1)	**$ 1.93**	$ 1.49	**$ 3.25**	$ 2.72

(1) *In the first quarter of 2022, the Company changed its method of calculating market-related values of pension assets for its defined benefit plans using a retrospective approach. Comparative figures have been restated to conform to the change in methodology. See Note 2 – Change in accounting policy to CN's unaudited Interim Consolidated Financial Statements for additional information.*

(2) *The tax impact of adjustments is based on the nature of the item for tax purposes and related tax rates in the applicable jurisdiction.*

Adjusted operating income is defined as Operating income in accordance with GAAP adjusted for certain significant operating expense items. Adjusted operating expenses is defined as Operating expenses in accordance with GAAP adjusted for certain significant operating expense items. Adjusted operating ratio is defined as adjusted operating expenses as a percentage of revenues. The following table provides a reconciliation of Operating income, Operating expenses and operating ratio, as reported for the three and six months ended June 30, 2022 and 2021, to the non-GAAP adjusted performance measures presented herein:

	Three months ended June 30		Six months ended June 30	
In millions, except percentages	**2022**	2021	**2022**	2021
Operating income	**$ 1,769**	$ 1,382	**$ 2,996**	$ 2,709
Operating expense adjustments:				
Advisory fees related to shareholder matters	**12**	—	**22**	—
Recovery of loss on assets held for sale	**—**	—	**—**	(137)
Total operating expense adjustments	**12**	—	**22**	(137)
Adjusted operating income	**$ 1,781**	$ 1,382	**$ 3,018**	$ 2,572
Operating expenses	**$ 2,575**	$ 2,216	**$ 5,056**	$ 4,424
Total operating expense adjustments	**(12)**	—	**(22)**	137
Adjusted operating expenses	**$ 2,563**	$ 2,216	**$ 5,034**	$ 4,561
Operating ratio	**59.3 %**	61.6 %	**62.8 %**	62.0 %
Impact of adjustments	**(0.3 %)**	— %	**(0.3 %)**	1.9 %
Adjusted operating ratio	**59.0 %**	61.6 %	**62.5 %**	63.9 %

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 weighted average foreign exchange rates used to translate transactions denominated in US dollars of the comparable period of the prior year.

The average foreign exchange rates were $1.28 and $1.27 per US$1.00 for the three and six months ended June 30, 2022, respectively, and $1.23 and $1.25 per US$1.00 for the three and six months ended June 30, 2021, respectively.

On a constant currency basis, the Company's Net income would have been lower by $20 million ($0.03 per diluted share) for both the three and six months ended June 30, 2022.

The following table provides a reconciliation of the impact of constant currency and related percentage change at constant currency on the financial results, as reported for the three and six months ended June 30, 2022:

	Three months ended June 30				Six months ended June 30			
In millions, except per share data	**2022**	Constant currency impact	2021	% Change at constant currency Fav (Unfav)	**2022**	Constant currency impact	2021	% Change at constant currency Fav (Unfav)
Revenues								
Petroleum and chemicals	**$ 829**	$ (19)	$ 685	18%	**$ 1,585**	$ (19)	$ 1,346	16%
Metals and minerals	**466**	(13)	377	20%	**872**	(13)	745	15%
Forest products	**513**	(14)	451	11%	**939**	(14)	880	5%
Coal	**249**	(3)	158	56%	**444**	(3)	284	55%
Grain and fertilizers	**604**	(13)	609	(3%)	**1,208**	(13)	1,322	(10%)
Intermodal	**1,326**	(15)	1,037	26%	**2,382**	(15)	2,005	18%
Automotive	**208**	(6)	135	50%	**373**	(6)	293	25%
Total freight revenues	**4,195**	(83)	3,452	19%	**7,803**	(83)	6,875	12%
Other revenues	**149**	(3)	146	—%	**249**	(3)	258	(5%)
Total revenues	**4,344**	(86)	3,598	18%	**8,052**	(86)	7,133	12%
Operating expenses								
Labor and fringe benefits	**681**	(10)	692	3%	**1,434**	(10)	1,477	4%
Purchased services and material	**557**	(8)	527	(4%)	**1,095**	(8)	1,076	(1%)
Fuel	**672**	(23)	380	(71%)	**1,197**	(23)	744	(58%)
Depreciation and amortization	**423**	(6)	406	(3%)	**843**	(6)	810	(3%)
Equipment rents	**87**	(3)	83	(1%)	**182**	(3)	172	(4%)
Casualty and other	**155**	(5)	128	(17%)	**305**	(5)	282	(6%)
Recovery of loss on assets held for sale	**—**	—	—	—%	**—**	—	(137)	(100%)
Total operating expenses	**2,575**	(55)	2,216	(14%)	**5,056**	(55)	4,424	(13%)
Operating income	**1,769**	(31)	1,382	26%	**2,996**	(31)	2,709	9%
Interest expense	**(128)**	4	(158)	22%	**(254)**	4	(288)	13%
Other components of net periodic benefit income (1)	**124**	—	98	27%	**249**	—	197	26%
Other loss	**(10)**	—	51	(120%)	**(24)**	—	49	(149%)
Income before income taxes (1)	**1,755**	(27)	1,373	26%	**2,967**	(27)	2,667	10%
Income tax expense (1)	**(430)**	7	(337)	(26%)	**(724)**	7	(655)	(9%)
Net income (1)	**$ 1,325**	$ (20)	$ 1,036	26%	**$ 2,243**	$ (20)	$ 2,012	10%
Diluted earnings per share (1)	**$ 1.92**	$ (0.03)	$ 1.46	29%	**$ 3.22**	$ (0.03)	$ 2.83	13%

(1) In the first quarter of 2022, the Company changed its method of calculating market-related values of pension assets for its defined benefit plans using a retrospective approach. Comparative figures have been restated to conform to the change in methodology. See Note 2 – Change in accounting policy to CN's unaudited Interim Consolidated Financial Statements for additional information.

Non-GAAP Measures – unaudited

Free cash flow

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 (i) business acquisitions and (ii) merger transaction-related payments, cash receipts and cash income taxes, which are items that are not indicative of operating trends. 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 in accordance with GAAP, as reported for the three and six months ended June 30, 2022 and 2021, to the non-GAAP free cash flow presented herein:

	Three months ended June 30		Six months ended June 30	
In millions	**2022**	2021	**2022**	2021
Net cash provided by operating activities	**$ 1,713**	$ 1,475	**$ 2,283**	$ 2,427
Net cash used in investing activities	**(716)**	(1,642)	**(817)**	(2,055)
Net cash provided before financing activities	**997**	(167)	**1,466**	372
Adjustments:				
Cash income taxes for merger transaction-related payments and cash receipts (1)	**—**	—	**102**	—
Transaction-related costs (2)	**—**	63	**—**	63
Advance for acquisition (2)	**—**	845	**—**	845
Total adjustments	**—**	908	**102**	908
Free cash flow	**$ 997**	$ 741	**$ 1,568**	$ 1,280

(1) Relates to income tax payments of $102 million for KCS merger transaction-related payments and cash receipts. See Note 3 – Acquisitions, Terminated CN KCS merger agreement, to the Company's 2021 Annual Consolidated Financial Statements and the section entitled Adjusted performance measures to the Company's 2021 Annual MD&A filed on February 1, 2022 which may be found online on SEDAR at www.sedar.com, on the SEC's website at www.sec.gov through EDGAR, and on the Company's website at www.cn.ca in the Investors section for additional information.

(2) Relates to an advance to KCS and other transaction costs paid. See Note 4 – Acquisition to the Company's unaudited Interim Consolidated Financial Statements for further information.

Adjusted debt-to-adjusted EBITDA multiple

Management believes that the adjusted debt-to-adjusted 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 the last twelve months of adjusted EBITDA. Adjusted debt is defined as the sum of Long-term debt and Current portion of long-term debt as reported on the Company's Consolidated Balance Sheets as well as Operating lease liabilities, including current portion and pension plans in deficiency recognized on the Company's Consolidated Balance Sheets due to the debt-like nature of their contractual and financial obligations. Adjusted EBITDA is calculated as Net income excluding Interest expense, Income tax expense, Depreciation and amortization, operating lease cost, Other components of net periodic benefit income, Other income (loss), and other significant items that are not reflective of CN's underlying business operations and which could distort the analysis of trends in business performance. Adjusted debt and adjusted EBITDA are non-GAAP measures used to compute the Adjusted debt-to-adjusted EBITDA multiple. 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 in accordance with GAAP, reported as at and for the twelve months ended June 30, 2022 and 2021, to the adjusted measures presented herein, which have been used to calculate the non-GAAP adjusted debt-to-adjusted EBITDA multiple:

In millions, unless otherwise indicated	*As at and for the twelve months ended June 30,*	**2022**		2021
Debt	**$**	**14,372**	$	13,719
Adjustments:				
Operating lease liabilities, including current portion (1)		**419**		379
Pension plans in deficiency (2)		**443**		545
Adjusted debt	**$**	**15,234**	$	14,643
Net income (3)	**$**	**5,130**	$	4,010
Interest expense		**576**		559
Income tax expense (3)		**1,512**		1,308
Depreciation and amortization		**1,631**		1,603
Operating lease cost (4)		**135**		135
Other components of net periodic benefit income (3)		**(459)**		(343)
Other loss (income)		**30**		(48)
Adjustments:				
Workforce reduction program (5)		**39**		—
Advisory fees related to shareholder matters (6)		**42**		—
Recovery of loss on assets held for sale (7)		**—**		(137)
Transaction-related costs (8)		**84**		—
Merger termination fee (9)		**(886)**		—
Adjusted EBITDA	**$**	**7,834**	$	7,087
Adjusted debt-to-adjusted EBITDA multiple *(times)*		**1.94**		2.07

(1) Represents the present value of operating lease payments.

(2) Represents the total funded deficit of all defined benefit pension plans with a projected benefit obligation in excess of plan assets.

(3) In the first quarter of 2022, the Company changed its method of calculating market-related values of pension assets for its defined benefit plans using a retrospective approach. Comparative figures have been restated to conform to the change in methodology. See Note 2 – Change in accounting policy to CN's unaudited Interim Consolidated Financial Statements for additional information.

(4) Represents the operating lease costs recorded in Purchased services and material and Equipment rents within the Consolidated Statements of Income.

(5) Relates to employee termination benefits and severance costs related to a workforce reduction program, recorded in Labor and fringe benefits within the Consolidated Statements of Income.

(6) Relates to advisory fees related to shareholder matters recorded in Casualty and other within the Consolidated Statements of Income.

(7) Relates to the recovery of $137 million of the $486 million loss on assets held for sale recorded in the second quarter of 2020, resulting from the Company entering into an agreement for the sale of non-core lines. See Note 6 – Assets held for sale to the Company's unaudited Interim Consolidated Financial Statements for further information.

(8) Relates to transaction costs incurred as a result of the terminated CN Merger Agreement of $84 million, consisting of $125 million of transaction-related costs, partially offset by $41 million of income generated as a result of the applicable foreign exchange rates prevailing at the time of payment and related receipt of the US$700 million advance to KCS. See Note 4 –Acquisitions to the Company's unaudited Interim Consolidated Financial Statements for further information.

(9) Relates to the termination fee resulting from KCS terminating the CN Merger Agreement and entering into a merger agreement with CP. See Note 4 –Acquisitions to the Company's unaudited Interim Consolidated Financial Statements for further information.

Consolidated Statements of Income – unaudited

In millions, except per share data	Three months ended June 30		Six months ended June 30	
	2022	2021	**2022**	2021
Revenues *(Note 5)*	**$ 4,344**	$ 3,598	**$ 8,052**	$ 7,133
Operating expenses				
Labor and fringe benefits	**681**	692	**1,434**	1,477
Purchased services and material	**557**	527	**1,095**	1,076
Fuel	**672**	380	**1,197**	744
Depreciation and amortization	**423**	406	**843**	810
Equipment rents	**87**	83	**182**	172
Casualty and other	**155**	128	**305**	282
Recovery of loss on assets held for sale *(Note 6)*	**—**	—	**—**	(137)
Total operating expenses	**2,575**	2,216	**5,056**	4,424
Operating income	**1,769**	1,382	**2,996**	2,709
Interest expense	**(128)**	(158)	**(254)**	(288)
Other components of net periodic benefit income *(Note 7)* (1)	**124**	98	**249**	197
Other income (loss)	**(10)**	51	**(24)**	49
Income before income taxes (1)	**1,755**	1,373	**2,967**	2,667
Income tax expense (1)	**(430)**	(337)	**(724)**	(655)
Net income (1)	**$ 1,325**	$ 1,036	**$ 2,243**	$ 2,012
Earnings per share *(Note 8)*				
Basic (1)	**$ 1.92**	$ 1.46	**$ 3.23**	$ 2.83
Diluted (1)	**$ 1.92**	$ 1.46	**$ 3.22**	$ 2.83
Weighted-average number of shares *(Note 8)*				
Basic	**690.0**	709.0	**694.2**	710.0
Diluted	**691.7**	710.6	**696.0**	711.7
Dividends declared per share	**$ 0.7325**	$ 0.6150	**$ 1.4650**	$ 1.2300

(1) In the first quarter of 2022, the Company changed its method of calculating market-related values of pension assets for its defined benefit plans using a retrospective approach. Comparative figures have been restated to conform to the change in methodology. See Note 2 – Change in accounting policy for additional information.

See accompanying notes to unaudited consolidated financial statements.

Consolidated Statements of Comprehensive Income – unaudited

In millions	Three months ended June 30		Six months ended June 30	
	2022	2021	**2022**	2021
Net income (1)	**$ 1,325**	$ 1,036	**$ 2,243**	$ 2,012
Other comprehensive income (loss) *(Note 12)*				
Net loss on foreign currency translation	**156**	(81)	**101**	(138)
Net change in pension and other postretirement benefit plans *(Note 7)* (1)	**69**	75	**109**	148
Derivative instruments (*Note 14*)	**25**	—	**25**	—
Other comprehensive income (loss) before income taxes (1)	**250**	(6)	**235**	10
Income tax recovery (expense) (1)	**11**	(32)	**(13)**	(65)
Other comprehensive income (loss) (1)	**261**	(38)	**222**	(55)
Comprehensive income (1)	**$ 1,586**	$ 998	**$ 2,465**	$ 1,957

(1) In the first quarter of 2022, the Company changed its method of calculating market-related values of pension assets for its defined benefit plans using a retrospective approach. Comparative figures have been restated to conform to the change in methodology. See Note 2 – Change in accounting policy for additional information.

See accompanying notes to unaudited consolidated financial statements.

Consolidated Balance Sheets – unaudited

In millions		**June 30 2022**		December 31 2021
Assets				
Current assets				
Cash and cash equivalents	**$**	**465**	$	838
Restricted cash and cash equivalents *(Note 9)*		**555**		503
Accounts receivable		**1,358**		1,074
Material and supplies		**731**		589
Other current assets *(Note 10)*		**245**		422
Total current assets		**3,354**		3,426
Properties		**41,761**		41,178
Operating lease right-of-use assets		**429**		445
Pension asset		**3,331**		3,050
Intangible assets, goodwill and other		**410**		439
Total assets	**$**	**49,285**	$	48,538
Liabilities and shareholders' equity				
Current liabilities				
Accounts payable and other	**$**	**2,309**	$	2,612
Current portion of long-term debt		**2,447**		508
Total current liabilities		**4,756**		3,120
Deferred income taxes		**9,503**		9,303
Other liabilities and deferred credits		**435**		427
Pension and other postretirement benefits		**610**		645
Long-term debt		**11,925**		11,977
Operating lease liabilities		**312**		322
Shareholders' equity				
Common shares		**3,660**		3,704
Common shares in Share Trusts		**(88)**		(103)
Additional paid-in capital		**374**		397
Accumulated other comprehensive loss *(Note 12)* (1)		**(2,019)**		(2,241)
Retained earnings (1)		**19,817**		20,987
Total shareholders' equity		**21,744**		22,744
Total liabilities and shareholders' equity	**$**	**49,285**	$	48,538

(1) In the first quarter of 2022, the Company changed its method of calculating market-related values of pension assets for its defined benefit plans using a retrospective approach. Comparative figures have been restated to conform to the change in methodology. See Note 2 – Change in accounting policy for additional information.

See accompanying notes to unaudited consolidated financial statements.

Consolidated Statements of Changes in Shareholders' Equity – unaudited

In millions	Number of common shares Outstanding	Number of common shares Share Trusts	Common shares	Common shares in Share Trusts	Additional paid-in capital	Accumulated other comprehensive loss	Retained earnings	Total shareholders' equity
Balance at March 31, 2022	693.3	0.9	$ 3,695	$ (88)	$ 382	$ (2,280)	$ 20,143	$ 21,852
Net income							1,325	1,325
Stock options exercised	—		7		(1)			6
Settlement of equity settled awards	0.1	(0.1)		6	(25)		(15)	(34)
Stock-based compensation expense and other					18		(1)	17
Repurchase of common shares *(Note 9)*	(7.8)		(42)				(1,131)	(1,173)
Share purchases by Share Trusts	(0.1)	0.1		(6)				(6)
Other comprehensive income *(Note 12)*						261		261
Dividends							(504)	(504)
Balance at June 30, 2022	**685.5**	**0.9**	**$ 3,660**	**$ (88)**	**$ 374**	**$ (2,019)**	**$ 19,817**	**$ 21,744**

In millions	Number of common shares Outstanding	Number of common shares Share Trusts	Common shares	Common shares in Share Trusts	Additional paid-in capital	Accumulated other comprehensive loss	Retained earnings	Total shareholders' equity
Balance at December 31, 2021 (1)	700.9	1.1	$ 3,704	$ (103)	$ 397	$ (2,241)	$ 20,987	$ 22,744
Net income							2,243	2,243
Stock options exercised	0.4		41		(6)			35
Settlement of equity settled awards	0.3	(0.3)		27	(66)		(18)	(57)
Stock-based compensation expense and other					49		(1)	48
Repurchase of common shares (Note 9*)*	(16.0)		(85)				(2,381)	(2,466)
Share purchases by Share Trusts	(0.1)	0.1		(12)				(12)
Other comprehensive income *(Note 12)*						222		222
Dividends							(1,013)	(1,013)
Balance at June 30, 2022	**685.5**	**0.9**	**$ 3,660**	**$ (88)**	**$ 374**	**$ (2,019)**	**$ 19,817**	**$ 21,744**

(1) In the first quarter of 2022, the Company changed its method of calculating market-related values of pension assets for its defined benefit plans using a retrospective approach. Comparative figures have been restated to conform to the change in methodology. See Note 2 – Change in accounting policy for additional information.

See accompanying notes to unaudited consolidated financial statements.

Consolidated Statements of Changes in Shareholders' Equity – unaudited

In millions	Number of common shares Outstanding	Share Trusts	Common shares	Common shares in Share Trusts	Additional paid-in capital	Accumulated other comprehensive loss	Retained earnings	Total shareholders' equity
Balance at March 31, 2021 (1)	708.7	1.0	$ 3,710	$ (96)	$ 368	$ (3,728)	$ 19,640	$ 19,894
Net income (1)							1,036	1,036
Stock options exercised	0.1		3		(1)			2
Settlement of equity settled awards	—	—		6	(5)		(1)	—
Stock-based compensation expense and other					17		(1)	16
Repurchase of common shares *(Note 9)*	(0.8)		(4)				(119)	(123)
Share purchases by Share Trusts	(0.1)	0.1		(7)				(7)
Other comprehensive loss *(Note 12)* (1)						(38)		(38)
Dividends							(436)	(436)
Balance at June 30, 2021 (1)	707.9	1.1	$ 3,709	$ (97)	$ 379	$ (3,766)	$ 20,119	$ 20,344

In millions	Number of common shares Outstanding	Share Trusts	Common shares	Common shares in Share Trusts	Additional paid-in capital	Accumulated other comprehensive loss	Retained earnings	Total shareholders' equity
Balance at December 31, 2020 (1)	710.3	1.3	$ 3,698	$ (115)	$ 379	$ (3,711)	$ 19,400	$ 19,651
Net income (1)							2,012	2,012
Stock options exercised	0.3		26		(4)			22
Settlement of equity settled awards	0.3	(0.3)		32	(38)		(21)	(27)
Stock-based compensation expense and other					42		(1)	41
Repurchase of common shares *(Note 9)*	(2.9)		(15)				(399)	(414)
Share purchases by Share Trusts	(0.1)	0.1		(14)				(14)
Other comprehensive loss *(Note 12)* (1)						(55)		(55)
Dividends							(872)	(872)
Balance at June 30, 2021 (1)	707.9	1.1	$ 3,709	$ (97)	$ 379	$ (3,766)	$ 20,119	$ 20,344

(1) In the first quarter of 2022, the Company changed its method of calculating market-related values of pension assets for its defined benefit plans using a retrospective approach. Comparative figures have been restated to conform to the change in methodology. See Note 2 – Change in accounting policy for additional information.

See accompanying notes to unaudited consolidated financial statements.

Consolidated Statements of Cash Flows – unaudited

	Three months ended June 30		Six months ended June 30	
In millions	**2022**	2021	**2022**	2021
Operating activities				
Net income [(1)]	**$ 1,325**	$ 1,036	**$ 2,243**	$ 2,012
Adjustments to reconcile net income to net cash provided by operating activities:				
Depreciation and amortization	**423**	406	**843**	810
Pension income and funding [(1)]	**(92)**	(52)	**(204)**	(164)
Amortization of bridge financing and other fees (*Note 4*)	**—**	32	**—**	32
Deferred income taxes [(1)]	**120**	98	**108**	250
Recovery of loss on assets held for sale *(Note 6)*	**—**	—	**—**	(137)
Changes in operating assets and liabilities:				
Accounts receivable	**(29)**	(49)	**(284)**	(178)
Material and supplies	**(65)**	(5)	**(132)**	(54)
Accounts payable and other	**(52)**	(10)	**(421)**	(222)
Other current assets	**25**	18	**(18)**	19
Other operating activities, net	**58**	1	**148**	59
Net cash provided by operating activities	**1,713**	1,475	**2,283**	2,427
Investing activities				
Property additions	**(707)**	(729)	**(1,086)**	(1,141)
Advance for acquisition and other transaction-related costs (*Note 4*)	**—**	(908)	**—**	(908)
Proceeds from assets held for sale *(Note 6)*	**—**	—	**273**	—
Other investing activities, net	**(9)**	(5)	**(4)**	(6)
Net cash used in investing activities	**(716)**	(1,642)	**(817)**	(2,055)
Financing activities				
Issuance of debt *(Note 9)*	**—**	14	**—**	403
Repayment of debt	**(12)**	(16)	**(29)**	(274)
Change in commercial paper, net *(Note 9)*	**686**	903	**1,706**	916
Bridge financing and other fees (*Note 4*)	**—**	(93)	**—**	(93)
Settlement of foreign exchange forward contracts on debt	**13**	(15)	**12**	(24)
Issuance of common shares for stock options exercised	**6**	2	**35**	22
Withholding taxes remitted on the net settlement of equity settled awards *(Note 11)*	**(18)**	—	**(41)**	(27)
Repurchase of common shares *(Note 9)*	**(1,172)**	(137)	**(2,430)**	(414)
Purchase of common shares for settlement of equity settled awards	**(16)**	—	**(16)**	—
Purchase of common shares by Share Trusts	**(6)**	(7)	**(12)**	(14)
Dividends paid	**(504)**	(436)	**(1,013)**	(872)
Net cash used in financing activities	**(1,023)**	215	**(1,788)**	(377)
Effect of foreign exchange fluctuations on cash, cash equivalents, restricted cash and restricted cash equivalents	**1**	(1)	**1**	(1)
Net increase (decrease) in cash, cash equivalents, restricted cash, and restricted cash equivalents	**(25)**	47	**(321)**	(6)
Cash, cash equivalents, restricted cash, and restricted cash equivalents, beginning of period	**1,045**	1,047	**1,341**	1,100
Cash, cash equivalents, restricted cash, and restricted cash equivalents, end of period	**$ 1,020**	$ 1,094	**$ 1,020**	$ 1,094
Cash and cash equivalents, end of period	**$ 465**	$ 569	**$ 465**	$ 569
Restricted cash and cash equivalents, end of period	**555**	525	**555**	525
Cash, cash equivalents, restricted cash, and restricted cash equivalents, end of period	**$ 1,020**	$ 1,094	**$ 1,020**	$ 1,094
Supplemental cash flow information				
Interest paid	**$ (86)**	$ (85)	**$ (257)**	$ (259)
Income taxes paid	**$ (370)**	$ (193)	**$ (690)**	$ (381)

(1) In the first quarter of 2022, the Company changed its method of calculating market-related values of pension assets for its defined benefit plans using a retrospective approach. Comparative figures have been restated to conform to the change in methodology. See Note 2 – Change in accounting policy for additional information.

See accompanying notes to unaudited consolidated financial statements.

Notes to Unaudited Consolidated Financial Statements

1 – Basis of presentation

In these notes, the "Company" or "CN" refers to Canadian National Railway Company, together with its wholly-owned subsidiaries.

The accompanying unaudited Interim Consolidated Financial Statements, expressed in Canadian dollars, have been prepared in accordance with United States generally accepted accounting principles (GAAP) for interim financial statements. Accordingly, they do not include all of the disclosures required by GAAP for complete financial statements. In management's opinion, all adjustments (consisting of normal recurring accruals) considered necessary for fair presentation have been included. Interim operating results are not necessarily indicative of the results that may be expected for the full year.

These unaudited Interim Consolidated Financial Statements have been prepared using accounting policies consistent with those used in preparing CN's 2021 Annual Consolidated Financial Statements, except as disclosed in *Note 2 – Change in accounting policy*, and should be read in conjunction with such statements and Notes thereto.

2 – Change in accounting policy

Change in accounting policy for determining net periodic pension cost (income)

Effective January 1, 2022, CN elected to change its accounting methodology for determining the market-related value of assets for the Company's defined benefit pension plans. The new accounting method changes the calculation of market-related value of pension plan assets used to determine net periodic benefit cost but has no impact on the annual funded status of the plans. The Company's previous methodology calculated market-related value for pensions whereby realized and unrealized gains/losses and appreciation/depreciation in the value of the investments were recognized over a period of five years. The Company's new methodology will apply a corridor approach so that the market-related value does not result in a value that deviates excessively from its fair value. Specifically, the market-related value will not exceed 110% or be less than 90% of the fair value. This change establishes a corridor approach whereby the amount causing the market-related value to be outside of the 10% corridor will be recognized immediately in the market-related value of assets and will not be subject to the five year period of recognition. There is no change in the recognition approach for investment income.

CN considers the use of a calculated value with a corridor approach preferable to the previous calculated value approach as it results in a more current reflection of impacts of changes in value of these plan assets in the determination of net periodic benefit cost. The new accounting method to calculate the market-related value for pensions also aligns with the prevailing guidance issued by the Office of the Superintendent of Financial Institutions (OSFI) for the preparation of actuarial valuations for funding purposes for all registered Canadian defined benefit pension plans, whereby the Company has adopted and applied the updated OSFI guidance starting with the December 31, 2021 funding valuations that were filed during the second quarter of 2022.

The change in accounting method was applied retrospectively to all periods presented within CN's financial statements. The change did not impact Operating income or Net cash provided by operating activities but did impact the previously reported portion of Other components of net periodic benefit cost (income) for defined benefit pension plans along with related consolidated income items such as Net income and Earnings per share. Other impacts included related changes to previously reported consolidated Other comprehensive income (loss), Retained earnings, Accumulated other comprehensive income (loss), and associated line items within the determination of Net cash provided (used) by operating activities.

The election of this change impacted previously reported amounts included herein as indicated in the tables below:

Consolidated Statements of Income

	Three months ended June 30, 2021		Six months ended June 30, 2021	
In millions, except per share data	Under prior method	As restated	Under prior method	As restated
Other components of net periodic benefit income	$ 96	$ 98	$ 192	$ 197
Income before income taxes	$ 1,371	$ 1,373	$ 2,662	$ 2,667
Income tax expense	(337)	(337)	(654)	(655)
Net income	$ 1,034	$ 1,036	$ 2,008	$ 2,012
Earnings per share:				
Basic	$ 1.46	$ 1.46	$ 2.83	$ 2.83
Diluted	$ 1.46	$ 1.46	$ 2.82	$ 2.83

In millions, except per share data	Year ended December 31, 2021 Under prior method	Year ended December 31, 2021 As restated	Year ended December 31, 2020 Under prior method	Year ended December 31, 2020 As restated
Net income	$ 4,892	$ 4,899	$ 3,562	$ 3,545
Basic earnings per share	$ 6.90	$ 6.91	$ 5.01	$ 4.98
Diluted earnings per share	$ 6.89	$ 6.90	$ 5.00	$ 4.97

Consolidated Statements of Other Comprehensive Income

In millions	Three months ended June 30, 2021 Under prior method	Three months ended June 30, 2021 As restated	Six months ended June 30, 2021 Under prior method	Six months ended June 30, 2021 As restated
Net income	$ 1,034	$ 1,036	$ 2,008	$ 2,012
Net change in pension and other postretirement benefit plans	$ 73	$ 75	$ 145	$ 148
Other comprehensive income (loss) before income taxes	$ (8)	$ (6)	$ 7	$ 10
Income tax expense	(31)	(32)	(64)	(65)
Other comprehensive loss	$ (39)	$ (38)	$ (57)	$ (55)
Comprehensive income	$ 995	$ 998	$ 1,951	$ 1,957

Consolidated Balance Sheet

In millions	As at December 31, 2021 Under prior method	As at December 31, 2021 As restated
Accumulated other comprehensive loss	$ (1,995)	$ (2,241)
Retained earnings	$ 20,741	$ 20,987

Consolidated Statements of Changes in Shareholders' Equity

	Under prior method			As restated		
In millions	Accumulated other comprehensive loss	Retained earnings	Total shareholders' equity	Accumulated other comprehensive loss	Retained earnings	Total shareholders' equity
Balance at December 31, 2020 [(1)]	$ (3,472)	$ 19,161	$ 19,651	$ (3,711)	$ 19,400	$ 19,651
Net income		4,892	4,892		4,899	4,899
Other comprehensive income	1,477		1,477	1,470		1,470
Balance at December 31, 2021	$ (1,995)	$ 20,741	$ 22,744	$ (2,241)	$ 20,987	$ 22,744
Balance at March 31, 2021	$ (3,490)	$ 19,399	$ 19,891	$ (3,728)	$ 19,640	$ 19,894
Net income		1,034	1,034		1,036	1,036
Other comprehensive loss	(39)		(39)	(38)		(38)
Balance at June 30, 2021	$ (3,529)	$ 19,876	$ 20,338	$ (3,766)	$ 20,119	$ 20,344
Balance at December 31, 2020 [(1)]	$ (3,472)	$ 19,161	$ 19,651	$ (3,711)	$ 19,400	$ 19,651
Net income		2,008	2,008		2,012	2,012
Other comprehensive loss	(57)		(57)	(55)		(55)
Balance at June 30, 2021	$ (3,529)	$ 19,876	$ 20,338	$ (3,766)	$ 20,119	$ 20,344

(1) *The cumulative restatement as of December 31, 2020, the beginning of the earliest period presented in the consolidated financial statements included herein, was a $239 million increase to each of Retained earnings and Accumulated other comprehensive loss.*

Consolidated Statements of Cash Flows

In millions	Three months ended June 30, 2021 Under prior method	Three months ended June 30, 2021 As restated	Six months ended June 30, 2021 Under prior method	Six months ended June 30, 2021 As restated
Net income	$ 1,034	$ 1,036	$ 2,008	$ 2,012
Pension income and funding	$ (50)	$ (52)	$ (159)	$ (164)
Deferred income taxes	$ 98	$ 98	$ 249	$ 250

3 – Recent accounting pronouncements

The following recent Accounting Standards Update (ASU) issued by the Financial Accounting Standards Board (FASB) has an effective date after June 30, 2022 and has not been adopted by the Company:

ASU 2021-10 Disclosures by business entities about government assistance (Topic 832)
The ASU will increase the transparency of government assistance including the disclosure of types of assistance, an entity's accounting for the assistance, and the effect of the assistance on an entity's financial statements.

The ASU is effective for annual periods beginning after December 15, 2021. Early adoption is permitted.

The Company is currently evaluating whether the amendment will have a significant impact on the Company's Consolidated Financial Statement disclosures.

The following recent ASU issued by the FASB came into effect in 2020, was amended in 2021 and has not been adopted by the Company:

ASU 2020-04 Reference rate reform (Topic 848): Facilitation of the effects of reference rate reform on financial reporting and related amendments
USD London Interbank Offered Rate (LIBOR) and Canadian Dollar Offered Rate (CDOR) are benchmark interest rates referenced in a variety of agreements. The administrators of LIBOR and CDOR have ceased the publication of certain LIBOR and CDOR rates in January 2022 and May 2021, respectively, and intend to discontinue the remaining LIBOR and CDOR rates on June 30, 2023 and June 30, 2024, respectively.

The ASU provides optional expedients and exceptions for applying generally accepted accounting principles to transactions affected by reference rate reform if certain criteria are met. These transactions include contract modifications, hedging relationships, and sale or transfer of debt securities classified as held-to-maturity.

The ASU was effective starting on March 12, 2020, and is available to be adopted on a prospective basis no later than December 31, 2022. The Company has a non-revolving credit facility that references LIBOR and CDOR. As at June 30, 2022, the Company has equipment loans made under the non-revolving credit facility referencing LIBOR with outstanding borrowings of US$557 million. The equipment loans would be affected by the provisions of this ASU and were not impacted by the administrator of LIBOR ceasing publication of certain LIBOR rates. The Company also has revolving credit facilities that reference CDOR and an accounts receivable securitization program that references LIBOR and CDOR. The Company had no outstanding borrowing under these credit facilities or the accounts receivable securitization program as at June 30, 2022 (see *Note 9 - Financing activities*). Within all of these agreements, the Company has fallback language that allows for the succession of an alternative reference rate. The Company is evaluating the effects that the adoption of the ASU will have on its Consolidated Financial Statements and related disclosures, and whether it will elect to apply any of the optional expedients and exceptions provided in the ASU.

Other recently issued ASUs required to be applied on or after June 30, 2022 have been evaluated by the Company and are not expected to have a significant impact on the Company's Consolidated Financial Statements.

4 – Acquisition

2021

Terminated CN KCS merger agreement
On May 21, 2021, the Company and Kansas City Southern ("KCS") entered into a definitive merger agreement (the "CN Merger Agreement") that provided for the acquisition of KCS by CN (the "Acquisition").

In the second quarter of 2021, the Company incurred $76 million of costs related to the Acquisition which was recorded in Advance to KCS and other transaction costs within the Consolidated Balance Sheets in accordance with the expected application of equity method accounting. In addition, pursuant to the CN Merger Agreement, Brooklyn US Holdings, Inc. ("Holdco"), a wholly owned subsidiary of the Company, advanced US$700 million ($845 million) to KCS in connection with KCS's payment of the termination fee ("break fee") to Canadian Pacific Railway Limited ("CP") under the original merger agreement with CP that was terminated on May 21, 2021. This advance was recorded in Advance to KCS and other transaction costs within the Consolidated Balance Sheets. The advance, along with $63 million of transaction-related costs paid in the second quarter of 2021, were reflected in Investing activities within the Consolidated Statements of Cash Flows. The Company also paid $93 million of bridge financing fees of which $32 million was amortized in Interest expense within the Consolidated Statements of Income.

In the third quarter of 2021, KCS and its Board of Directors notified CN that it terminated the CN Merger Agreement and announced that the revised acquisition proposal of September 12, 2021 from CP constituted a "Company Superior Proposal" as defined in the CN Merger Agreement. As a result, CN received from KCS a merger termination fee of US$700 million ($886 million) recorded in Merger termination fee within the Consolidated Statements of Income and reflected in Operating activities within the Consolidated Statements of Cash Flows. In addition, KCS refunded Holdco US$700 million ($886 million) that CN had previously paid as an advance to KCS. The refund was recorded in Transaction-related costs within the Consolidated Statements of Income and reflected in Investing activities within the Consolidated Statements of Cash Flows. Total Transaction-related costs recorded within the Consolidated Statements of Income in the third quarter of 2021 was $84 million, consisting of $76 million previously capitalized and an additional $49 million incurred in the third quarter of 2021; partially offset by $41 million of income generated as a result of the applicable foreign exchange rates prevailing at the time of payment of the US dollar denominated advance to KCS and receipt of the related refund. Additionally, the remaining $65 million of bridge financing fees paid in the second quarter of 2021 were amortized in Interest expense within the Consolidated Statements of Income.

5 – Revenues

The following table provides disaggregated information for revenues for the three and six months ended June 30, 2022 and 2021:

	Three months ended June 30		Six months ended June 30	
In millions	**2022**	2021	**2022**	2021
Freight revenues				
Petroleum and chemicals	**$ 829**	$ 685	**$ 1,585**	$ 1,346
Metals and minerals	**466**	377	**872**	745
Forest products	**513**	451	**939**	880
Coal	**249**	158	**444**	284
Grain and fertilizers	**604**	609	**1,208**	1,322
Intermodal	**1,326**	1,037	**2,382**	2,005
Automotive	**208**	135	**373**	293
Total freight revenues	**4,195**	3,452	**7,803**	6,875
Other revenues	**149**	146	**249**	258
Total revenues (1)	**$ 4,344**	$ 3,598	**$ 8,052**	$ 7,133
Revenues by geographic area				
Canada	**$ 2,953**	$ 2,510	**$ 5,446**	$ 4,995
United States (U.S.)	**1,391**	1,088	**2,606**	2,138
Total revenues (1)	**$ 4,344**	$ 3,598	**$ 8,052**	$ 7,133

(1) As at June 30, 2022, the Company had remaining performance obligations related to freight in-transit, for which revenues of $102 million ($82 million as at June 30, 2021) are expected to be recognized in the next period.

Contract liabilities

The following table provides a reconciliation of the beginning and ending balances of contract liabilities for the three and six months ended June 30, 2022 and 2021:

	Three months ended June 30		Six months ended June 30	
In millions	**2022**	2021	**2022**	2021
Beginning balance	**$ 43**	$ 172	**$ 74**	$ 200
Revenue recognized included in the beginning balance	**(42)**	(72)	**(74)**	(100)
Increase due to consideration received, net of revenue recognized	**16**	88	**17**	88
Ending balance	**$ 17**	$ 188	**$ 17**	$ 188
Current portion - Ending balance	**$ 17**	$ 146	**$ 17**	$ 146

6 – Assets held for sale

In the first quarter of 2021, CN entered into an agreement with a short line operator, for the sale of non-core lines in Wisconsin, Michigan and Ontario representing 850 miles that were classified as assets held for sale plus an additional 50 miles of track and roadway assets, resulting in a $137 million recovery ($102 million after-tax) of the $486 million loss ($363 million after-tax) recorded in the second quarter of 2020 to adjust the carrying amount of the track and roadway assets to their then estimated net selling price.

As at December 31, 2021, the carrying amount of assets held for sale of $260 million was included in Other current assets in the Consolidated Balance Sheets.

In the fourth quarter of 2021, the Surface Transportation Board (STB) approved the Company's agreement with the short line operator without condition and the transaction closed on January 28, 2022 and January 31, 2022 for the U.S. and Canadian assets, respectively. The resulting difference between the net selling price and what was estimated was insignificant.

7 – Pensions and other postretirement benefits

The Company has various retirement benefit plans under which substantially all of its employees are entitled to benefits at retirement age, generally based on compensation and length of service and/or contributions. Additional information relating to the retirement benefit plans is provided in *Note 17 – Pensions and other postretirement benefits* to the Company's 2021 Annual Consolidated Financial Statements.

The following table provides the components of net periodic benefit cost (income) for defined benefit pension and other postretirement benefit plans for the three and six months ended June 30, 2022 and 2021:

	Three months ended June 30				**Six months ended June 30**			
	Pensions		**Other postretirement benefits**		**Pensions**		**Other postretirement benefits**	
In millions	**2022**	2021	**2022**	2021	**2022**	2021	**2022**	2021
Current service cost	**$ 38**	$ 51	**$ —**	$ —	**$ 79**	$ 105	**$ 1**	$ 1
Other components of net periodic benefit income								
Interest cost	**117**	93	**1**	1	**234**	186	**2**	2
Expected return on plan assets (1)	**(283)**	(267)	**—**	—	**(566)**	(533)	**—**	—
Amortization of prior service cost	**—**	—	**—**	—	**—**	—	**—**	—
Amortization of net actuarial loss (gain) (1)	**42**	76	**(1)**	(1)	**83**	150	**(2)**	(2)
Total Other components of net periodic benefit income (1)	**(124)**	(98)	**—**	—	**(249)**	(197)	**—**	—
Net periodic benefit cost (income) (1)(2)	**$ (86)**	$ (47)	**$ —**	$ —	**$ (170)**	$ (92)	**$ 1**	$ 1

(1) In the first quarter of 2022, the Company changed its method of calculating market-related values of pension assets for its defined benefit plans using a retrospective approach. Comparative figures have been restated to conform to the change in methodology. Expected return on plan assets was restated by $4 million from $263 million under the prior method to $267 million in the second quarter of 2021 and by $8 million from $525 million under the prior method to $533 million for the six months ended June 30, 2021. Amortization of net actuarial loss on pensions was restated by $2 million from $74 million under the prior method to $76 million in the second quarter of 2021 and by $3 million from $147 million under the prior method to $150 million for the six months ended June 30, 2021 . See Note 2 – Change in accounting policy for additional information.

(2) In the second quarters of 2022 and 2021, the Company revised its estimate of full year net periodic benefit cost (income) for pensions to reflect updated plan demographic information.

Pension contributions

Pension contributions for the six months ended June 30, 2022 and 2021 of $45 million and $84 million, respectively, primarily represent contributions to the CN Pension Plan for the current service cost as determined under the Company's applicable actuarial valuations for funding purposes. Based on the results of the December 31, 2021 valuations, the CN Pension Plan is fully funded and at a level such that the Company was prohibited from making contributions to the CN Pension Plan as of April 2022 once the actuarial valuation report was filed. In 2022, the Company expects to make total cash contributions of approximately $70 million for all of the Company's pension plans.

Amendments to postretirement medical benefits plans in the U.S.

In June 2022, CN approved changes affecting members participating in the Company's postretirement medical benefits plans in the U.S. Beginning in 2023, Medicare-eligible retirees will be covered by a health reimbursement arrangement, which is an employer-funded account that can be used for reimbursement of eligible medical expenses. Non-Medicare eligible retirees will continue to be covered by the existing self-insured program. This change constitutes a plan amendment event resulting in a $28 million reduction to the affected plans' Accumulated projected benefit obligation, recorded in Other comprehensive income, and is composed of a prior service credit of $21 million and an actuarial gain of $7 million, substantially all due to lower expected future benefit payments and to the approximate 130 basis point increase in the end of period discount rates between the prior year end and May 31, 2022, respectively.

8 – Earnings per share

The following table provides a reconciliation between basic and diluted earnings per share for the three and six months ended June 30, 2022 and 2021:

	Three months ended June 30		Six months ended June 30	
In millions, except per share data	**2022**	2021	**2022**	2021
Net income [1]	**$ 1,325**	$ 1,036	**$ 2,243**	$ 2,012
Weighted-average basic shares outstanding	**690.0**	709.0	**694.2**	710.0
Dilutive effect of stock-based compensation	**1.7**	1.6	**1.8**	1.7
Weighted-average diluted shares outstanding	**691.7**	710.6	**696.0**	711.7
Basic earnings per share	**$ 1.92**	$ 1.46	**$ 3.23**	$ 2.83
Diluted earnings per share [1]	**$ 1.92**	$ 1.46	**$ 3.22**	$ 2.83
Units excluded from the calculation as their inclusion would not have a dilutive effect				
Stock options	**0.6**	0.7	**0.6**	0.7
Performance share units	**0.2**	0.1	**0.3**	0.1

(1) In the first quarter of 2022, the Company changed its method of calculating market-related values of pension assets for its defined benefit plans using a retrospective approach. Comparative figures have been restated to conform to the change in methodology. See Note 2 – Change in accounting policy for additional information.

9 – Financing activities

Shelf prospectus and registration statement

On May 4, 2022, the Company filed a new shelf prospectus with Canadian securities regulators and a registration statement with the United States Securities and Exchange Commission (SEC), pursuant to which CN may issue up to $6.0 billion of debt securities in the Canadian and U.S. capital markets over a 25 month period following the filing date. This shelf prospectus and registration statement replaced CN's previous shelf prospectus and registration statement that expired on March 11, 2022. Access to the Canadian and U.S. capital markets under the shelf prospectus and registration statement is dependent on market conditions.

Notes and debentures

For the six months ended June 30, 2022, there was no activity.

For the six months ended June 30, 2021, the Company repaid the following:

- On January 18, 2021, early redemption of $250 million 2.75% Notes due 2021.

Revolving credit facilities

The Company has an unsecured revolving credit facility with a consortium of lenders which is available for general corporate purposes including backstopping the Company's commercial paper programs. The revolving credit facility agreement adopts a sustainability linked loan structure whereby its applicable margins are adjusted upon achievement of certain sustainability targets, starting in 2022. The credit facility of $2.5 billion consists of a $1.25 billion tranche maturing on March 31, 2025 and a $1.25 billion tranche maturing on March 31, 2027. Subject to the consent of the individual lenders, the Company has the option to increase the facility by an additional $500 million during its term and to request an extension once a year to maintain the tenors of three year and five year of the respective tranches. The credit facility provides for borrowings at various benchmark interest rates, such as Secured Overnight Financing Rate (SOFR) and the CDOR, plus applicable margins, based on CN's credit ratings and sustainability targets.

As at June 30, 2022 and December 31, 2021, the Company had no outstanding borrowings under this revolving credit facility and there were no draws during the six months ended June 30, 2022.

On March 18, 2022, the Company entered into a $1.0 billion two-year unsecured revolving credit facility agreement with a consortium of lenders. The credit facility is available for working capital and general corporate purposes and provides for borrowings at various benchmark interest rates, such as SOFR and CDOR, plus applicable margins, based on CN's credit ratings. As at June 30, 2022, the Company had no outstanding borrowings under this revolving credit facility and there were no draws during the six months ended June 30, 2022.

Both revolving credit facility agreements have one financial covenant, which limits debt as a percentage of total capitalization. The Company is in compliance as of June 30, 2022.

Equipment loans

The Company has a non-revolving term loan credit facility for financing or refinancing the purchase of equipment. The equipment loans made under the non-revolving credit facility have a tenor of 20 years, bear interest at variable rates such as LIBOR and CDOR plus a margin, are repayable in equal quarterly installments, are prepayable at any time without penalty, and are secured by rolling stock.

The Company repaid US$15 million ($19 million) on its equipment loans during the first six months of 2022.

As at June 30, 2022, the Company had outstanding borrowings of US$557 million ($717 million), at a weighted-average interest rate of 2.41% and had no further amount available under this non-revolving term loan facility. As at December 31, 2021, the Company had outstanding borrowings of US$572 million ($723 million), at a weighted-average interest rate of 0.81% and had no further amount available under this non-revolving term loan facility.

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. The maximum aggregate principal amount of commercial paper that can be issued is $2.5 billion, or the equivalent amount in US dollars.

As at June 30, 2022 and December 31, 2021, the Company had total commercial paper borrowings of US$1,465 million ($1,886 million) and US$111 million ($140 million), respectively, at a weighted-average interest rate of 1.25% and 0.18%, respectively, presented in Current portion of long-term debt on the Consolidated Balance Sheets.

The following table provides a summary of cash flows associated with the issuance and repayment of commercial paper for the three and six months ended June 30, 2022 and 2021:

	Three months ended June 30		Six months ended June 30	
In millions	**2022**	2021	**2022**	2021
Commercial paper with maturities less than 90 days				
Issuance	**$ 3,823**	$ 2,058	**$ 5,503**	$ 3,295
Repayment	**(3,506)**	(1,293)	**(4,054)**	(2,486)
Change in commercial paper with maturities less than 90 days, net	**$ 317**	$ 765	**$ 1,449**	$ 809
Commercial paper with maturities of 90 days or greater				
Issuance	**$ 398**	$ 138	**$ 427**	$ 138
Repayment	**(29)**	—	**(170)**	(31)
Change in commercial paper with maturities of 90 days or greater, net	**$ 369**	$ 138	**$ 257**	$ 107
Change in commercial paper, net	**$ 686**	$ 903	**$ 1,706**	$ 916

Accounts receivable securitization program

The Company has an agreement, expiring on February 1, 2024, to sell an undivided co-ownership interest in a revolving pool of accounts receivable to unrelated trusts for maximum cash proceeds of $450 million. The Company has retained the responsibility for servicing, administering and collecting the receivables sold. The average servicing period is approximately one month and the interest on borrowings under the Accounts receivable securitization program is renewed based on commercial paper, LIBOR or CDOR rates then in effect.

As at June 30, 2022, and December 31, 2021 the Company had no borrowings under the accounts receivable securitization program and there were no activities for the six months ended June 30, 2022.

Bilateral letter of credit facilities

The Company has a series of committed and uncommitted bilateral letter of credit facility agreements. On March 31, 2022, the Company extended the maturity date of certain committed bilateral letter of credit facility agreements to April 28, 2025. 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 these agreements, the Company has the option from time to time to pledge collateral in the form of cash or cash equivalents, for a minimum term of one month, equal to at least the face value of the letters of credit issued.

As at June 30, 2022, the Company had outstanding letters of credit of $448 million ($394 million as at December 31, 2021) under the committed facilities from a total available amount of $509 million ($518 million as at December 31, 2021) and $105 million ($158 million as at December 31, 2021) under the uncommitted facilities.

As at June 30, 2022, included in Restricted cash and cash equivalents was $447 million ($396 million as at December 31, 2021) and $100 million ($100 million as at December 31, 2021) which were pledged as collateral under the committed and uncommitted bilateral letter of credit facilities, respectively.

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 Toronto Stock Exchange. Under its current NCIB, the Company may repurchase up to 42.0 million common shares between February 1, 2022 and January 31, 2023. As at June 30, 2022, the Company had repurchased 15.2 million common shares for $2,348 million under its current NCIB.

The Company repurchased 11.1 million common shares under its previous NCIB effective between February 1, 2021 and January 31, 2022, which allowed for the repurchase of up to 14.0 million common shares.

The following table provides the information related to the share repurchases for the three and six months ended June 30, 2022 and 2021:

	Three months ended June 30		Six months ended June 30	
In millions, except per share data	**2022**	2021	**2022**	2021
Number of common shares repurchased	**7.8**	0.8	**16.0**	2.9
Weighted-average price per share (1)	**$ 149.16**	$ 143.80	**$ 153.95**	$ 141.61
Amount of repurchase (1)(2)	**$ 1,173**	$ 123	**$ 2,466**	$ 414

(1) Includes brokerage fees.

(2) Includes settlements in subsequent periods.

10 – Other current assets

The following table provides a breakdown of Other current assets as at June 30, 2022 and December 31, 2021:

In millions	**June 30 2022**	December 31 2021
Prepaid expenses	**$ 178**	$ 142
Assets held for sale *(Note 6)*	**—**	260
Other	**67**	20
Total other current assets	**$ 245**	$ 422

11 – Stock-based compensation

The Company has various stock-based compensation plans for eligible employees. A description of the major plans is provided in *Note 19 – Stock-based compensation* to the Company's 2021 Annual Consolidated Financial Statements.

The following table provides the Company's total stock-based compensation expense for awards under all employee plans, as well as the related tax benefit and excess tax benefit recognized in income, for the three and six months ended June 30, 2022 and 2021:

	Three months ended June 30		Six months ended June 30	
In millions	**2022**	2021	**2022**	2021
Share Units Plan [1]	**$ 7**	$ 8	**$ 19**	$ 21
Voluntary Incentive Deferral Plan (VIDP) [2]	**(1)**	(1)	**—**	—
Stock option awards	**3**	3	**5**	6
Employee Share Investment Plan (ESIP)	**6**	5	**12**	9
Total stock-based compensation expense	**$ 15**	$ 15	**$ 36**	$ 36
Income tax impacts of stock-based compensation				
Tax benefit recognized in income	**$ 3**	$ 3	**$ 9**	$ 8
Excess tax benefit recognized in income	**$ 7**	$ —	**$ 12**	$ 9

(1) Performance share unit (PSU) awards are granted under the Share Units Plan.

(2) Deferred share unit (DSU) awards are granted under the Voluntary Incentive Deferral Plan.

Share Units Plan

The following table provides a summary of the activity related to PSU awards for the six months ended June 30, 2022:

	Equity settled			
	PSUs-ROIC [1]		PSUs-TSR [2]	
	Units	Weighted-average grant date fair value	Units	Weighted-average grant date fair value
	In millions		*In millions*	
Outstanding at December 31, 2021	0.8	$ 69.84	0.4	$ 144.37
Granted	0.2	$ 78.96	0.1	$ 176.86
Settled [3]	(0.3)	$ 70.79	(0.1)	$ 128.22
Forfeited	—	$ 71.34	—	$ 155.91
Outstanding at June 30, 2022	**0.7**	**$ 72.38**	**0.4**	**$ 159.01**

(1) The grant date fair value of equity settled PSUs-ROIC granted in 2022 of $18 million is calculated using a lattice-based valuation model. As at June 30, 2022, total unrecognized compensation cost related to all outstanding awards was $25 million and is expected to be recognized over a weighted-average period of 2.0 years.

(2) The grant date fair value of equity settled PSUs-TSR granted in 2022 of $21 million is calculated using a Monte Carlo simulation model. As at June 30, 2022, total unrecognized compensation cost related to all outstanding awards was $24 million and is expected to be recognized over a weighted-average period of 2.1 years.

(3) Equity settled PSUs-ROIC granted in 2019 met the minimum share price condition for settlement and attained a performance vesting factor of 83%. Equity settled PSUs-TSR granted in 2019 attained a performance vesting factor of 72%. In the first quarter of 2022, these awards were settled, net of the remittance of the participants' withholding tax obligation of $23 million, by way of disbursement from the Share Trusts of 0.2 million common shares.

Voluntary Incentive Deferral Plan

The following table provides a summary of the activity related to DSU awards for the six months ended June 30, 2022:

	Equity settled DSUs (1)			Cash settled DSUs (2)
	Units	Weighted-average grant date fair value		Units
	In millions			In millions
Outstanding at December 31, 2021	0.5	$	87.24	0.1
Granted	0.1	$	159.13	—
Settled (3)	(0.3)	$	82.65	(0.1)
Outstanding at June 30, 2022 (4)	**0.3**	**$**	**104.34**	**—**

(1) *The grant date fair value of equity settled DSUs granted in 2022 of $8 million is calculated using the Company's stock price on the grant date. As at June 30, 2022, the aggregate intrinsic value of all equity settled DSUs outstanding amounted to $49 million.*

(2) *The fair value of cash settled DSUs as at June 30, 2022 is based on the intrinsic value. As at June 30, 2022, the liability for all cash settled DSUs was $7 million ($9 million as at December 31, 2021). The closing stock price used to determine the liability was $144.79.*

(3) *For the six months ended June 30, 2022, the Company purchased 0.1 million common shares for the settlement of equity settled DSUs, net of the remittance of the participants' withholding tax obligation of $18 million.*

(4) *The total fair value of equity settled DSU awards vested, the number of units outstanding that were nonvested, unrecognized compensation cost and the remaining recognition period for cash and equity settled DSUs have not been quantified as they relate to a minimal number of units.*

Stock option awards

The following table provides the activity of stock option awards for options outstanding and the weighted-average exercise price for the six months ended June 30, 2022:

	Options outstanding		
	Number of options	Weighted-average exercise price	
	In millions		
Outstanding at December 31, 2021 (1)	3.6	$	105.32
Granted (2)	0.6	$	152.73
Exercised	(0.4)	$	89.16
Forfeited	(0.1)	$	130.28
Outstanding at June 30, 2022 (1)(2)(3)	**3.7**	**$**	**115.48**
Exercisable at June 30, 2022 (1)(3)	**2.0**	**$**	**98.34**

(1) *Stock options with a US dollar exercise price have been translated into Canadian dollars using the foreign exchange rate in effect at the balance sheet date.*

(2) *The grant date fair value of options granted in 2022 of $16 million ($26.86 per option) is calculated using the Black-Scholes option-pricing model. As at June 30, 2022, total unrecognized compensation cost related to all outstanding awards was $21 million and is expected to be recognized over a weighted-average period of 3.5 years.*

(3) *The weighted-average term to expiration of options outstanding was 6.8 years and the weighted-average term to expiration of exercisable stock options was 5.3 years. As at June 30, 2022, the aggregate intrinsic value of in-the-money stock options outstanding amounted to $115 million and the aggregate intrinsic value of stock options exercisable amounted to $94 million.*

Employee Share Investment Plan

The following table provides a summary of the activity related to the ESIP for the six months ended June 30, 2022:

	ESIP		
	Number of shares	Weighted-average share price	
	In millions		
Unvested contributions at December 31, 2021	0.2	$	142.80
Company contributions	0.1	$	153.69
Forfeited	—	$	151.86
Vested (1)	(0.1)	$	138.47
Unvested contributions at June 30, 2022 (2)	**0.2**	**$**	**150.16**

(1) *As at June 30, 2022, total fair value of units purchased with Company contributions that vested in 2022 was $12 million.*

(2) *As at June 30, 2022, total unrecognized compensation cost related to all outstanding awards was $13 million and is expected to be recognized over the next twelve months.*

12 – Accumulated other comprehensive loss

The following tables present the changes in accumulated other comprehensive loss by component for the three and six months ended June 30, 2022 and 2021:

In millions	Foreign currency translation adjustments [(1)]	Pension and other postretirement benefit plans	Derivative instruments [(1)]	Total before tax	Income tax recovery (expense) [(2)]	Total net of tax
Balance at March 31, 2022	$ (491)	$ (2,379)	$ 5	$ (2,865)	$ 585	$ (2,280)
Other comprehensive income (loss) before reclassifications:						
Translation of net investment [(3)]	423			423	—	423
Translation of US dollar debt [(4)]	(267)			(267)	36	(231)
Derivative instruments [(5)]			25	25	(6)	19
Actuarial gain arising during the period [(6)]		7		7	(2)	5
Amounts reclassified from Accumulated other comprehensive loss:						
Amortization of net actuarial loss [(7)]		41		41	(12)	29
Prior service credit arising during the period [(6)]		21		21	(5)	16
Other comprehensive income	156	69	25	250	11	261
Balance at June 30, 2022	**$ (335)**	**$ (2,310)**	**$ 30**	**$ (2,615)**	**$ 596**	**$ (2,019)**

In millions	Foreign currency translation adjustments [(1)]	Pension and other postretirement benefit plans	Derivative instruments [(1)]	Total before tax	Income tax recovery (expense) [(2)]	Total net of tax
Balance at December 31, 2021 [(8)]	$ (436)	$ (2,419)	$ 5	$ (2,850)	$ 609	$ (2,241)
Other comprehensive income (loss) before reclassifications:						
Translation of net investment [(3)]	272			272	—	272
Translation of US dollar debt [(4)]	(171)			(171)	22	(149)
Derivative instruments [(5)]			25	25	(6)	19
Actuarial gain arising during the period [(6)]		7		7	(2)	5
Amounts reclassified from Accumulated other comprehensive loss:						
Amortization of net actuarial loss [(7)]		81		81	(22)	59
Prior service credit arising during the period [(6)]		21		21	(5)	16
Other comprehensive income (loss)	101	109	25	235	(13)	222
Balance at June 30, 2022	**$ (335)**	**$ (2,310)**	**$ 30**	**$ (2,615)**	**$ 596**	**$ (2,019)**

Footnotes to the tables follow on the next page.

In millions	Foreign currency translation adjustments [1]	Pension and other postretirement benefit plans	Derivative instruments [1]	Total before tax	Income tax recovery (expense) [2]	Total net of tax
Balance at March 31, 2021 [8]	$ (441)	$ (4,412)	$ 5	$ (4,848)	$ 1,120	$ (3,728)
Other comprehensive income (loss) before reclassifications:						
Translation of net investment [3]	(171)			(171)	—	(171)
Translation of US dollar debt [4]	90			90	(12)	78
Amounts reclassified from Accumulated other comprehensive loss:						
Amortization of net actuarial loss [7][8]		75		75	(20)	55
Other comprehensive income (loss)	(81)	75	—	(6)	(32)	(38)
Balance at June 30, 2021 [8]	$ (522)	$ (4,337)	$ 5	$ (4,854)	$ 1,088	$ (3,766)

In millions	Foreign currency translation adjustments [1]	Pension and other postretirement benefit plans	Derivative instruments [1]	Total before tax	Income tax recovery (expense) [2]	Total net of tax
Balance at December 31, 2020 [8]	$ (384)	$ (4,485)	$ 5	$ (4,864)	$ 1,153	$ (3,711)
Other comprehensive income (loss) before reclassifications:						
Translation of net investment [3]	(337)			(337)	—	(337)
Translation of US dollar debt [4]	199			199	(26)	173
Amounts reclassified from Accumulated other comprehensive loss:						
Amortization of net actuarial loss [7][8]		148		148	(39)	109
Other comprehensive income (loss)	(138)	148	—	10	(65)	(55)
Balance at June 30, 2021 [8]	$ (522)	$ (4,337)	$ 5	$ (4,854)	$ 1,088	$ (3,766)

(1) Certain 2021 and 2020 balances have been reclassified to conform with 2022 presentation of Derivative instruments as part of a cash flow hedge.

(2) The Company releases stranded tax effects from Accumulated other comprehensive loss to Net income upon the liquidation or termination of the related item.

(3) Foreign exchange gain/(loss) on translation of net investment in foreign operations.

(4) Foreign exchange gain/(loss) on translation of US dollar-denominated debt designated as a hedge of the net investment in foreign operations. The Company designates US dollar-denominated debt of the parent company as a foreign currency hedge of its net investment in foreign operations. Accordingly, 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 the volatility of earnings resulting from the conversion of US dollar-denominated debt into Canadian dollars.

(5) Cumulative gains or losses of the treasury locks are included in Derivative instruments. See Note 14 – Financial instruments for additional information.

(6) Prior service credit of $21 million and an actuarial gain of $7 million due to amendments to postretirement medical benefits plans in the U.S. See Note 7 – Pensions and other postretirement benefits for additional information.

(7) Total before tax reclassified to Other components of net periodic benefit income in the Consolidated Statements of Income and included in net periodic benefit cost. See Note 7 – Pensions and other postretirement benefits for additional information.

(8) In the first quarter of 2022, the Company changed its method of calculating market-related values of pension assets for its defined benefit plans using a retrospective approach. Comparative figures have been restated to conform to the change in methodology. Amortization of net actuarial loss on pension and other postretirement benefit plans was restated by $2 million from $73 million under the prior method to $75 million in the second quarter of 2021 and by $3 million from $145 million under the prior method to $148 million for the six months ended June 30, 2021. See Note 2 – Change in accounting policy for additional information.

13 – Major commitments and contingencies

Purchase commitments

As at June 30, 2022, the Company had fixed and variable commitments to purchase information technology services and licenses, railroad cars, locomotives, wheels, rail, engineering services, rail ties as well as other equipment and services with a total estimated cost of $2,270 million. Costs of variable commitments were estimated using forecasted prices and volumes.

Contingencies

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.

As at June 30, 2022, the Company had aggregate reserves for personal injury and other claims of $317 million, of which $59 million was recorded as a current liability ($307 million as at December 31, 2021, of which $75 million was recorded as a current liability).

Although the Company considers such provisions to be adequate for all its outstanding and pending claims, the final outcome with respect to actions outstanding or pending as at June 30, 2022, or with respect to future claims, cannot be reasonably determined. When establishing provisions for contingent liabilities the Company considers, where a probable loss estimate cannot be made with reasonable certainty, a range of potential probable losses for each such matter, and records the amount it considers the most reasonable estimate within the range. However, when no amount within the range is a better estimate than any other amount, the minimum amount in the range is accrued. For matters where a loss is reasonably possible but not probable, a range of potential losses cannot be estimated due to various factors which may include the limited availability of facts, the lack of demand for specific damages and the fact that proceedings were at an early stage. Based on information currently available, the Company believes that the eventual outcome of the actions against the Company will not, individually or in the aggregate, have a material adverse effect on the Company's financial position. However, due to the inherent inability to predict with certainty unforeseeable future developments, there can be no assurance that the ultimate resolution of these actions will not have a material adverse effect on the Company's results of operations, financial position or liquidity.

Environmental matters

A description of the Company's environmental matters is provided in *Note 21 – Major commitments and contingencies* to the Company's 2021 Annual Consolidated Financial Statements.

The Company's provision for specific environmental sites is undiscounted and includes costs for remediation and restoration of sites, as well as monitoring costs. Costs related to any unknown existing or future contamination will be accrued in the period in which they become probable and reasonably estimable.

As at June 30, 2022, the Company had aggregate accruals for environmental costs of $56 million, of which $39 million was recorded as a current liability ($56 million as at December 31, 2021, of which $38 million was recorded as a current liability).

The Company anticipates that the majority of the liability at June 30, 2022 will be paid out over the next five years. Based on the information currently available, the Company considers its accruals to be adequate.

Guarantees and indemnifications

A description of the Company's guarantees and indemnifications is provided in *Note 21 – Major commitments and contingencies* to the Company's 2021 Annual Consolidated Financial Statements.

As at June 30, 2022, the Company had outstanding letters of credit of $448 million ($394 million as at December 31, 2021) under the committed bilateral letter of credit facilities and $105 million ($158 million as at December 31, 2021) under the uncommitted bilateral letter of credit facilities, and surety and other bonds of $150 million ($150 million as at December 31, 2021), all issued by financial institutions with investment grade credit ratings to third parties to indemnify them in the event the Company does not perform its contractual obligations.

As at June 30, 2022, the maximum potential liability under these guarantee instruments was $703 million ($702 million as at December 31, 2021), of which $660 million ($659 million as at December 31, 2021) related to other employee benefit liabilities and workers' compensation and $43 million ($43 million as at December 31, 2021) related to other liabilities. The guarantee instruments expire at various dates between 2022 and 2025.

As at June 30, 2022, the Company had not recorded a liability with respect to guarantees and indemnifications as the Company did not expect to make any payments under its guarantees and indemnifications.

14 – Financial instruments

Derivative financial instruments

The Company uses derivative financial instruments from time to time in the management of its foreign currency and interest rate exposures. 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.

Foreign currency risk

As at June 30, 2022, the Company had outstanding foreign exchange forward contracts with a notional value of US$1,732 million (US$910 million as at December 31, 2021) at a weighted-average exchange rate of $1.27 per US$1.00 ($1.27 per US$1.00 as at December 31, 2021) for a weighted-average term of 134 days (251 days as at December 31, 2021). 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 three and six months ended June 30, 2022, the Company recorded gains of $60 million and $36 million, respectively, related to foreign exchange forward contracts compared to losses of $13 million and $26 million, respectively, for the same periods in 2021. These gains were largely offset by the re-measurement of US dollar-denominated monetary assets and liabilities recorded in Other income.

As at June 30, 2022, the fair value of outstanding foreign exchange forward contracts included in Other current assets and Accounts payable and other was $26 million and $4 million, respectively ($nil and $2 million, respectively, as at December 31, 2021).

Interest rate risk

As at June 30, 2022, the aggregate notional amount of treasury lock agreements entered into was US$550 million to hedge US Treasury benchmark rates related to an expected debt issuance in 2022. The treasury locks are designated as cash flow hedging instruments. The cumulative gains or losses of the treasury locks are recorded in Accumulated other comprehensive loss in derivative instruments.The treasury locks will be settled in 2022 upon the issuance of debt at which point the cumulative gains or losses recorded in Accumulated other comprehensive loss will be amortized in earnings as a reduction or increase of interest expense over the term of the corresponding debt.

As at June 30, 2022, the fair value of outstanding treasury lock agreements included in Other current assets and Accounts payable and other was $26 million and $1 million, respectively.

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 due to their short maturity, unless otherwise specified. The fair value of derivative financial instruments, included in Other current assets and Accounts payable and other is classified as Level 2 and is used to manage the Company's exposure to foreign currency risk and interest rate risk. The fair value 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 June 30, 2022, the Company's debt, excluding finance leases, had a carrying amount of $14,369 million ($12,475 million as at December 31, 2021) and a fair value of $13,672 million ($14,424 million as at December 31, 2021).

Management's Discussion and Analysis

This Management's Discussion and Analysis (MD&A), dated July 26, 2022, 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 2022 unaudited Interim Consolidated Financial Statements and Notes thereto. It should also be read in conjunction with the Company's 2021 audited Annual Consolidated Financial Statements and Notes thereto, and the 2021 Annual MD&A. 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 2021 Annual Information Form and Form 40-F, may be found online on SEDAR at www.sedar.com, on the SEC's website at www.sec.gov through EDGAR, and on the Company's website at www.cn.ca in the Investors section. Printed copies of such documents may be obtained by contacting CN's Corporate Secretary's Office.

Strategy overview

A description of the Company's strategy is provided in the section entitled *Strategy overview* of the Company's 2021 Annual MD&A.

Second quarter 2022 compared to second quarter 2021

- CN’s focus on operational efficiency and scheduled railroading with an emphasis on velocity resulted in improved operating results, including record fuel efficiency.
- Record revenues of $4,344 million, an increase of $746 million or 21%, mainly due to higher fuel surcharge revenues.
- Operating expenses of $2,575 million, an increase of $359 million or 16%, mainly due to higher fuel prices.
- Record operating income of $1,769 million, an increase of $387 million or 28%, and record adjusted operating income of $1,781 million, an increase of $399 million, or 29%. (1)(2)
- Operating ratio (3) of 59.3%, an improvement of 2.3-points and adjusted operating ratio of 59.0%, an improvement of 2.6-points. (1)(2)
- Net income of $1,325 million, an increase of $289 million or 28%, and diluted earnings per share (EPS) of $1.92, an increase of 32%. (4)
- Record adjusted net income of $1,334 million, an increase of $274 million or 26%, and record adjusted diluted EPS of $1.93, an increase of 30%. (1)(2)(4)
- Free cash flow for the second quarter and first six months of 2022 was $997 million and $1,568 million, respectively, an increase of $256 million and $288 million, respectively, compared to the same periods in 2021. (1)(5)
- Share repurchases for the second quarter and first six months of 2022 were $1,173 million and $2,466 million, respectively, an increase of $1,050 million and $2,052 million, respectively, compared to the same periods in 2021.
- CN paid a quarterly dividend of $0.7325 per share, representing an increase of 19%, amounting to $504 million.

(1) These Non-GAAP measures do not have any standardized meaning prescribed by GAAP and therefore, may not be comparable to similar measures presented by other companies.

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

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

(4) In the first quarter of 2022, the Company changed its method of calculating market-related values of pension assets for its defined benefit plans using a retrospective approach. Comparative figures have been restated to conform to the change in methodology. See Note 2 – Change in accounting policy to CN's unaudited Interim Consolidated Financial Statements for additional information.

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

COVID-19 pandemic

The COVID-19 pandemic necessitated governments, institutions and communities to take actions that resulted in a partial economic shutdown beginning in March 2020. Significant vaccination campaigns, as well as Canadian federal mandates requiring federally-regulated railways to establish employee vaccination policies, which have since been lifted by the Canadian government, have resulted in the vaccination of substantially all active CN employees. New variants of the virus led to the re-imposition of restrictive measures across North America and in other parts of the world in late 2021, however, in 2022, many North American jurisdictions have relaxed or eliminated pandemic-related restrictions and mandates. While certain parts of the world have experienced outbreaks of new variants of the virus, resulting in further pandemic-related lockdowns and restrictive measures, the future impact on North American jurisdictions is unknown.

The long-term implications of the COVID-19 pandemic, including the extent of the impact on the business, financial position, results of operations and liquidity of the Company, remain unknown and will depend on future developments, which are highly uncertain and cannot be predicted, including the scope and duration of the pandemic as well as additional actions taken by governmental authorities and other parties in response to the pandemic.

Acquisition

Massena rail line

On April 6, 2020, the STB issued its decision conditionally approving the acquisition of the Massena rail line in New York from CSX Corporation ("CSX"), which the Company announced its agreement to purchase on August 29, 2019. On June 6, 2020, CN and CSX sought reconsideration asking the STB to remove its condition which requires the parties to propose a change to the line sale agreement for the STB's review. On February 25, 2021, the STB denied the parties' petitions for reconsideration. On April 23, 2021, the Company appealed the STB's condition in its April 6, 2020 and February 25, 2021 decisions. The purchase and sale agreement was terminated and on June 7, 2022, the Company, CSX, and the STB filed a joint motion for dismissal of the appeal with the United States Court of Appeals for the Seventh Circuit because the appeal was rendered moot and the Court dismissed the appeal.

2022 Business outlook and assumptions

For 2022, the Company continues to expect volume growth, in terms of Revenue ton miles (RTMs) in the low single-digit range, across a range of commodities including Canadian coal exports, U.S grain exports, refined petroleum products, crude oil, plastics and chemicals, and frac sand. The Company continues to expect significantly lower volumes of Canadian grain and lower volumes of potash as well as lumber and panels for 2022 compared to 2021.

Underpinning the 2022 business outlook, the Company assumes that North American industrial production will increase in the mid single-digit range. For the 2021/2022 crop year, the grain crop in Canada was below its three-year average and the U.S. grain crop was in line with its three-year average. The Company assumes that the 2022/2023 grain crop in Canada will be above its three-year average (or in line when excluding the significantly lower 2021/2022 crop year) and that the 2022/2023 U.S. grain crop will be in line with its three-year average.

In 2022, the Company continues to expect to invest approximately 17% of revenues in its capital program.

The forward-looking statements discussed in this Strategy overview 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, including statements based on management's assessment and assumptions and publicly available information with respect to CN. By their nature, forward-looking statements involve risks, uncertainties and assumptions. CN 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 - 2022 Business outlook and assumptions*.

Forward-looking statements	Key assumptions
Statements relating to revenue growth opportunities, including those referring to general economic and business conditions	• North American and global economic growth • Long-term growth opportunities being less affected by current economic conditions • No material disruption of CN's operations or of the economy's supply chains in the short term
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	• Adequate credit ratios • Investment-grade credit ratings • Access to capital markets • Adequate cash generated from operations and other sources of financing
Statements relating to pension contributions	• Adequate cash generated from operations and other sources of financing • Adequate long-term return on investment on pension plan assets • Level of funding as determined by actuarial valuations, particularly influenced by discount rates for funding purposes

Forward-looking statements are not guarantees of future performance and involve risks, uncertainties and other factors which may cause actual results, performance or achievements of CN to be materially different from the outlook or any future results, performance or achievements 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, general economic and business conditions, including factors impacting global supply chains such as pandemics and geopolitical conflicts and tensions; 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 illegal blockades of rail networks, and 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 and the Company's 2021 Annual MD&A for a description of major risk factors relating to CN.

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 highlights

The following table lists key measures of the Company's financial performance and liquidity for the three and six months ended June 30, 2022 and 2021 and financial position measures as at June 30, 2022 and December 31, 2021:

	Three months ended June 30			Six months ended June 30		
In millions, except percentages and per share data	**2022**	2021	% Change Fav (Unfav)	**2022**	2021	% Change Fav (Unfav)
Financial performance and liquidity						
Revenues	**$ 4,344**	$ 3,598	21%	**$ 8,052**	$ 7,133	13%
Operating income	**$ 1,769**	$ 1,382	28%	**$ 2,996**	$ 2,709	11%
Adjusted operating income (1)(2)	**$ 1,781**	$ 1,382	29%	**$ 3,018**	$ 2,572	17%
Net income (3)	**$ 1,325**	$ 1,036	28%	**$ 2,243**	$ 2,012	11%
Adjusted net income (1)(2)(3)	**$ 1,334**	$ 1,060	26%	**$ 2,259**	$ 1,934	17%
Basic earnings per share	**$ 1.92**	$ 1.46	32%	**$ 3.23**	$ 2.83	14%
Diluted earnings per share (3)	**$ 1.92**	$ 1.46	32%	**$ 3.22**	$ 2.83	14%
Adjusted diluted earnings per share (1)(2)(3)	**$ 1.93**	$ 1.49	30%	**$ 3.25**	$ 2.72	19%
Dividends per share	**$ 0.7325**	$ 0.6150	19%	**$ 1.4650**	$ 1.2300	19%
Operating ratio (4)	**59.3%**	61.6%	2.3 -pts	**62.8%**	62.0%	(0.8)-pts
Adjusted operating ratio (1)(2)	**59.0%**	61.6%	2.6 -pts	**62.5%**	63.9%	1.4 -pts
Net cash provided by operating activities	**$ 1,713**	$ 1,475	16%	**$ 2,283**	$ 2,427	(6%)
Net cash used in investing activities	**$ 716**	$ 1,642	56%	**$ 817**	$ 2,055	60%
Free cash flow (1)(5)	**$ 997**	$ 741	35%	**$ 1,568**	$ 1,280	23%

In millions, except percentages	**As at June 30, 2022**	As at December 31, 2021	% Change Fav (Unfav)
Financial position			
Total assets	**$ 49,285**	$ 48,538	2%
Total long-term financial liabilities (6)	**$ 22,785**	$ 22,674	—%

(1) *These non-GAAP measures do not have any standardized meaning prescribed by GAAP and therefore, may not be comparable to similar measures presented by other companies.*

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

(3) *In the first quarter of 2022, the Company changed its method of calculating market-related values of pension assets for its defined benefit plans using a retrospective approach. Comparative figures have been restated to conform to the change in methodology. See Note 2 – Change in accounting policy to CN's unaudited Interim Consolidated Financial Statements for additional information.*

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

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

(6) *Total long-term financial liabilities is the sum of deferred income taxes, other liabilities and deferred credits, pension and other postretirement benefits, long-term debt (excluding the current portion) and operating lease liabilities.*

Financial results

Second quarter and first half of 2022 compared to corresponding periods in 2021

Revenues for the second quarter of 2022 were $4,344 million compared to $3,598 million in the same period in 2021, an increase of $746 million, or 21%. Revenues for the first half of 2022 were $8,052 million compared to $7,133 million in the same period in 2021, an increase of $919 million, or 13%. The increases in both periods were mainly due to higher applicable fuel surcharge rates, freight rate increases, higher Canadian export volumes of coal via west coast ports, higher volumes of U.S. grain and the positive translation impact of a weaker Canadian dollar; partly offset by significantly lower export volumes of Canadian grain.

Operating expenses for the second quarter of 2022 were $2,575 million compared to $2,216 million for the same period in 2021, an increase of $359 million, or 16%. Operating expenses for the first half of 2022 were $5,056 million compared to $4,424 million for the same period in 2021, an increase of $632 million, or 14%. The increases in both periods were mainly driven by higher fuel prices and the negative translation impact of a weaker Canadian dollar; partly offset by lower average headcount. In addition, the increase in the first half of 2022 was also due to the Recovery of the loss on assets held for sale of $137 million recorded in the first quarter of 2021 resulting from the Company entering into an agreement for the sale of non-core lines.

Operating income for the second quarter of 2022 increased by $387 million, or 28%, to $1,769 million when compared to the same period in 2021. Operating income for the first half of 2022 increased by $287 million, or 11%, to $2,996 million when compared to the same period in 2021.

The operating ratio, defined as operating expenses as a percentage of revenues, was 59.3% in the second quarter of 2022 compared to 61.6% in the second quarter of 2021, a 2.3-point improvement. The operating ratio for the first half of 2022 was 62.8% compared to 62.0% in 2021, a 0.8-point increase.

Net income for the second quarter of 2022 was $1,325 million, an increase of $289 million, or 28%, and diluted earnings per share increased by 32% to $1.92, when compared to the same period in 2021. (1) Net income for the first half of 2022 was $2,243 million, an increase of $231 million, or 11%, and diluted earnings per share increased by 14% to $3.22, when compared to the same period in 2021. (1)

(1) *In the first quarter of 2022, the Company changed its method of calculating market-related values of pension assets for its defined benefit plans using a retrospective approach. Comparative figures have been restated to conform to the change in methodology. See Note 2 – Change in accounting policy to CN's unaudited Interim Consolidated Financial Statements for additional information.*

Operating highlights

The following table lists key measures of the Company's operating performance, for the purpose of measuring the efficiency and effectiveness of train operations, for the three and six months ended June 30, 2022 and 2021:

	Three months ended June 30			Six months ended June 30		
	2022	2021	% Change Fav (Unfav)	**2022**	2021	% Change Fav (Unfav)
Gross ton miles (GTMs) *(millions)* (1)	**120,742**	116,735	3%	**231,808**	237,515	(2%)
Train weight *(tons)* (2)	**9,512**	9,840	(3%)	**9,478**	9,623	(2%)
Train length *(feet)* (3)	**8,427**	8,749	(4%)	**8,320**	8,536	(3%)
Through network train speed *(miles per hour)* (4)	**19.3**	19.5	(1%)	**18.0**	18.8	(4%)
Fuel efficiency *(US gallons of locomotive fuel consumed per 1,000 GTMs)* (5)	**0.838**	0.869	4%	**0.873**	0.892	2%
Through dwell *(entire railroad, hours)* (6)	**7.2**	7.7	6%	**8.1**	8.0	(1%)
Car velocity *(car miles per day)* (7)	**209**	205	2%	**185**	195	(5%)

(1) *GTMs: The workload performed by system trains in hauling freight or equipment. GTMs are calculated by multiplying the trailing weight by the distance the train moved. A larger number is an indicator of more traffic (and thus more revenue) being moved.*

(2) *Train weight: An efficiency measurement on how much tonnage each mainline train handles on average as it crosses the network. Calculated as the total of GTMs and divided by total train miles, this measure provides insight on how well each train was maximized in terms of its capacity to move traffic. This operating measure was formerly named Train productivity.*

(3) *Train length: An efficiency measurement on average trailing length of each mainline train on the network. Calculated as the total of car foot miles (the sum of car length multiplied by miles travelled for each trailing car) divided by total train miles, this measure provides insight on how well each train was maximized in terms of its capacity to move traffic.*

(4) *Through network train speed: A measure of the line-haul movement from origin to destination, including time at terminals. The average speed is calculated by dividing train miles by total hours operated, excluding yard and local trains, passenger trains, maintenance of way trains, and foreign trains. This measure represents the fluidity of trains on the network, with a higher value also indicating a more fluid network.*

(5) *Fuel efficiency: This measure represents how efficient the Company is in the generation and utilization of locomotive horsepower in freight train operations, with a lower number indicating improved performance. Fuel efficiency is defined as US gallons of locomotive fuel consumed per 1,000 GTMs. Quarterly fuel efficiency metrics for 2021 have been revised based on more complete information.*

(6) *Through dwell: The average time a car resides within terminal boundaries expressed in hours. The measurement begins with a customer release, received interchange, or train arrival event and ends with a customer placement (actual or constructive), delivered or offered in interchange, or train departure event. This excludes stored, bad ordered, maintenance of way cars, or cars with dwell greater than 10 days. This measure represents the efficiency of handling cars within the terminal, with a lower value indicating higher performance.*

(7) *Car velocity: The average miles per day traveled by loaded and empty cars (including all active cars whether private, foreign or CN owned) on company lines. This measure represents the fluidity of cars on the network, calculated by the sum of miles each car traveled divided by the sum of all of the cars' active time, with a higher value indicating a smoother and more fluid operation.*

Operating performance improved in the second quarter when compared to the same period in 2021, as the Company's focus on running a scheduled railroad drove improvements in velocity and dwell that outweighed the year-over-year decreases in train length and weight. The Company also achieved record fuel efficiency for the quarter and first half of 2022. Operating performance was negatively impacted in the first half of 2022 when compared to 2021, mainly due to harsher winter weather in the first quarter.

Non-GAAP measures

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

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

Adjusted performance measures

Adjusted net income, adjusted earnings per share, adjusted operating income, adjusted operating expenses and adjusted operating ratio are non-GAAP measures that are used to set performance goals and to measure CN's performance. Management believes that these adjusted performance measures provide additional insight to management and investors into the Company's operations and underlying business trends as well as facilitate period-to-period comparisons, as they exclude certain significant items that are not reflective of CN's underlying business operations and could distort the analysis of trends in business performance. These items may include:

i. operating expense adjustments: workforce reduction program, depreciation expense on the deployment of replacement system, advisory fees related to shareholder matters, losses and recoveries from assets held for sale, business acquisition-related costs;
ii. non-operating expense adjustments: business acquisition-related financing fees, merger termination income, gains and losses on disposal of property; and
iii. the effect of tax law changes and rate enactments.

These non-GAAP 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 three and six months ended June 30, 2022, the Company's adjusted net income was $1,334 million, or $1.93 per diluted share, and $2,259 million, or $3.25 per diluted share, respectively. The adjusted figures for the three and six months ended June 30, 2022 exclude advisory fees related to shareholder matters of $12 million, or $9 million after-tax ($0.01 per diluted share), and $22 million, or $16 million after-tax ($0.03 per diluted share), respectively, recorded in Casualty and other within the Consolidated Statements of Income.

For the three and six months ended June 30, 2021, the Company's adjusted net income was $1,060 million, or $1.49 per diluted share, and $1,934 million, or $2.72 per diluted share, respectively. [(1)] The adjusted figures for the three and six months ended June 30, 2021 exclude amortization of bridge financing and other fees of $32 million, or $24 million after-tax ($0.03 per diluted share) recorded in the second quarter, resulting from the Kansas City Southern ("KCS") transaction, recorded in Interest expense within the Consolidated Statements of Income. The adjusted figures for the six months ended June 30, 2021 also exclude the recovery of $137 million, or $102 million after-tax ($0.14 per diluted share) recorded in the first quarter related to the loss on assets held for sale in the second quarter of 2020, to reflect an agreement for the sale of on-going rail operations, certain non-core rail lines in Wisconsin, Michigan and Ontario to a short line operator.

(1) In the first quarter of 2022, the Company changed its method of calculating market-related values of pension assets for its defined benefit plans using a retrospective approach. Comparative figures have been restated to conform to the change in methodology. See Note 2 – Change in accounting policy to CN's unaudited Interim Consolidated Financial Statements for additional information.

Adjusted net income is defined as Net income in accordance with GAAP adjusted for certain significant items. Adjusted diluted earnings per share is defined as adjusted net income divided by the weighted-average diluted shares outstanding.The following table provides a reconciliation of Net income and Earnings per share in accordance with GAAP, as reported for the three and six months ended June 30, 2022 and 2021, to the non-GAAP adjusted performance measures presented herein:

	Three months ended June 30		Six months ended June 30	
In millions, except per share data	**2022**	2021	**2022**	2021
Net income (1)	**$ 1,325**	$ 1,036	**$ 2,243**	$ 2,012
Adjustments:				
Operating expense adjustments:				
Advisory fees related to shareholder matters	**12**	—	**22**	—
Recovery of loss on assets held for sale	**—**	—	**—**	(137)
Non-operating expense adjustments:				
Amortization of bridge financing and other fees	**—**	32	**—**	32
Tax adjustments:				
Tax effect of adjustments (2)	**(3)**	(8)	**(6)**	27
Total adjustments	**9**	24	**16**	(78)
Adjusted net income (1)	**$ 1,334**	$ 1,060	**$ 2,259**	$ 1,934
Diluted earnings per share (1)	**$ 1.92**	$ 1.46	**$ 3.22**	$ 2.83
Impact of adjustments, per share	**0.01**	0.03	**0.03**	(0.11)
Adjusted diluted earnings per share (1)	**$ 1.93**	$ 1.49	**$ 3.25**	$ 2.72

(1) *In the first quarter of 2022, the Company changed its method of calculating market-related values of pension assets for its defined benefit plans using a retrospective approach. Comparative figures have been restated to conform to the change in methodology. See Note 2 – Change in accounting policy to CN's unaudited Interim Consolidated Financial Statements for additional information.*

(2) *The tax impact of adjustments is based on the nature of the item for tax purposes and related tax rates in the applicable jurisdiction.*

Adjusted operating income is defined as Operating income in accordance with GAAP adjusted for certain significant operating expense items. Adjusted operating expenses is defined as Operating expenses in accordance with GAAP adjusted for certain significant operating expense items. Adjusted operating ratio is defined as adjusted operating expenses as a percentage of revenues. The following table provides a reconciliation of Operating income, Operating expenses and operating ratio, as reported for the three and six months ended June 30, 2022 and 2021, to the non-GAAP adjusted performance measures presented herein:

	Three months ended June 30		Six months ended June 30	
In millions, except percentages	**2022**	2021	**2022**	2021
Operating income	**$ 1,769**	$ 1,382	**$ 2,996**	$ 2,709
Operating expense adjustments:				
Advisory fees related to shareholder matters	**12**	—	**22**	—
Recovery of loss on assets held for sale	**—**	—	**—**	(137)
Total operating expense adjustments	**12**	—	**22**	(137)
Adjusted operating income	**$ 1,781**	$ 1,382	**$ 3,018**	$ 2,572
Operating expenses	**$ 2,575**	$ 2,216	**$ 5,056**	$ 4,424
Total operating expense adjustments	**(12)**	—	**(22)**	137
Adjusted operating expenses	**$ 2,563**	$ 2,216	**$ 5,034**	$ 4,561
Operating ratio	**59.3 %**	61.6 %	**62.8 %**	62.0 %
Impact of adjustments	**(0.3 %)**	— %	**(0.3 %)**	1.9 %
Adjusted operating ratio	**59.0 %**	61.6 %	**62.5 %**	63.9 %

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 weighted average foreign exchange rates used to translate transactions denominated in US dollars of the comparable period of the prior year.

The average foreign exchange rates were $1.28 and $1.27 per US$1.00 for the three and six months ended June 30, 2022, respectively, and $1.23 and $1.25 per US$1.00 for the three and six months ended June 30, 2021, respectively.

On a constant currency basis, the Company's Net income would have been lower by $20 million ($0.03 per diluted share) for both the three and six months ended June 30, 2022.

The following table provides a reconciliation of the impact of constant currency and related percentage change at constant currency on the financial results, as reported for the three and six months ended June 30, 2022:

	Three months ended June 30				Six months ended June 30			
In millions, except per share data	**2022**	Constant currency impact	2021	% Change at constant currency Fav (Unfav)	**2022**	Constant currency impact	2021	% Change at constant currency Fav (Unfav)
Revenues								
Petroleum and chemicals	**$ 829**	$ (19)	$ 685	18%	**$ 1,585**	$ (19)	$ 1,346	16%
Metals and minerals	**466**	(13)	377	20%	**872**	(13)	745	15%
Forest products	**513**	(14)	451	11%	**939**	(14)	880	5%
Coal	**249**	(3)	158	56%	**444**	(3)	284	55%
Grain and fertilizers	**604**	(13)	609	(3%)	**1,208**	(13)	1,322	(10%)
Intermodal	**1,326**	(15)	1,037	26%	**2,382**	(15)	2,005	18%
Automotive	**208**	(6)	135	50%	**373**	(6)	293	25%
Total freight revenues	**4,195**	(83)	3,452	19%	**7,803**	(83)	6,875	12%
Other revenues	**149**	(3)	146	—%	**249**	(3)	258	(5%)
Total revenues	**4,344**	(86)	3,598	18%	**8,052**	(86)	7,133	12%
Operating expenses								
Labor and fringe benefits	**681**	(10)	692	3%	**1,434**	(10)	1,477	4%
Purchased services and material	**557**	(8)	527	(4%)	**1,095**	(8)	1,076	(1%)
Fuel	**672**	(23)	380	(71%)	**1,197**	(23)	744	(58%)
Depreciation and amortization	**423**	(6)	406	(3%)	**843**	(6)	810	(3%)
Equipment rents	**87**	(3)	83	(1%)	**182**	(3)	172	(4%)
Casualty and other	**155**	(5)	128	(17%)	**305**	(5)	282	(6%)
Recovery of loss on assets held for sale	**—**	—	—	—%	**—**	—	(137)	(100%)
Total operating expenses	**2,575**	(55)	2,216	(14%)	**5,056**	(55)	4,424	(13%)
Operating income	**1,769**	(31)	1,382	26%	**2,996**	(31)	2,709	9%
Interest expense	**(128)**	4	(158)	22%	**(254)**	4	(288)	13%
Other components of net periodic benefit income (1)	**124**	—	98	27%	**249**	—	197	26%
Other loss	**(10)**	—	51	(120%)	**(24)**	—	49	(149%)
Income before income taxes (1)	**1,755**	(27)	1,373	26%	**2,967**	(27)	2,667	10%
Income tax expense (1)	**(430)**	7	(337)	(26%)	**(724)**	7	(655)	(9%)
Net income (1)	**$ 1,325**	$ (20)	$ 1,036	26%	**$ 2,243**	$ (20)	$ 2,012	10%
Diluted earnings per share (1)	**$ 1.92**	$ (0.03)	$ 1.46	29%	**$ 3.22**	$ (0.03)	$ 2.83	13%

(1) In the first quarter of 2022, the Company changed its method of calculating market-related values of pension assets for its defined benefit plans using a retrospective approach. Comparative figures have been restated to conform to the change in methodology. See Note 2 – Change in accounting policy to CN's unaudited Interim Consolidated Financial Statements for additional information.

Revenues

The following table provides the components of total revenues and freight revenues, as well as other key operating measures, for the three and six months ended June 30, 2022 and 2021:

	Three months ended June 30				Six months ended June 30			
In millions, unless otherwise indicated	**2022**	2021	% Change	% Change at constant currency	**2022**	2021	% Change	% Change at constant currency
Freight revenues	**$ 4,195**	$ 3,452	22%	19%	**$ 7,803**	$ 6,875	13%	12%
Other revenues	**149**	146	2%	—%	**249**	258	(3%)	(5%)
Total revenues	**$ 4,344**	$ 3,598	21%	18%	**$ 8,052**	$ 7,133	13%	12%
Freight revenues								
Petroleum and chemicals	**$ 829**	$ 685	21%	18%	**$ 1,585**	$ 1,346	18%	16%
Metals and minerals	**466**	377	24%	20%	**872**	745	17%	15%
Forest products	**513**	451	14%	11%	**939**	880	7%	5%
Coal	**249**	158	58%	56%	**444**	284	56%	55%
Grain and fertilizers	**604**	609	(1%)	(3%)	**1,208**	1,322	(9%)	(10%)
Intermodal	**1,326**	1,037	28%	26%	**2,382**	2,005	19%	18%
Automotive	**208**	135	54%	50%	**373**	293	27%	25%
Total freight revenues	**$ 4,195**	$ 3,452	22%	19%	**$ 7,803**	$ 6,875	13%	12%
Revenue ton miles (RTMs) *(millions)*	**60,551**	59,246	2%	2%	**117,105**	120,700	(3%)	(3%)
Freight revenue/RTM *(cents)*	**6.93**	5.83	19%	16%	**6.66**	5.70	17%	16%
Carloads *(thousands)*	**1,474**	1,469	—%	—%	**2,820**	2,900	(3%)	(3%)
Freight revenue/carload *($)*	**2,846**	2,350	21%	19%	**2,767**	2,371	17%	15%

Revenues for the quarter ended June 30, 2022 were $4,344 million compared to $3,598 million in the same period of 2021, an increase of $746 million, or 21%. Revenues for the first half of 2022 were $8,052 million compared to $7,133 million in the same period in 2021, an increase of $919 million, or 13%. The increases in both periods were mainly due to higher applicable fuel surcharge rates, freight rate increases, higher Canadian export volumes of coal via west coast ports, higher volumes of U.S. grain and the positive translation impact of a weaker Canadian dollar; partly offset by significantly lower export volumes of Canadian grain.

Fuel surcharge revenues increased by $426 million in the second quarter and $661 million in the first half of 2022 when compared to the same period in 2021, mainly as a result of higher applicable fuel surcharge rates.

RTMs, measuring the relative weight and distance of freight transported by the Company, increased by 2% in the second quarter and declined by 3% in the first half of 2022 when compared to the same periods in 2021. Freight revenue per RTM increased by 19% in the second quarter and increased by 17% in the first half of 2022 when compared to the same periods in 2021, mainly due to higher applicable fuel surcharge rates, freight rate increases and the positive translation impact of a weaker Canadian dollar. The increase in the first half of the year was also due to a decrease in the average length of haul.

Petroleum and chemicals

	Three months ended June 30				Six months ended June 30			
	2022	2021	% Change	% Change at constant currency	**2022**	2021	% Change	% Change at constant currency
Revenues *(millions)*	**$ 829**	$ 685	21%	18%	**$ 1,585**	$ 1,346	18%	16%
RTMs *(millions)*	**12,330**	10,054	23%	23%	**23,889**	20,786	15%	15%
Revenue/RTM *(cents)*	**6.72**	6.81	(1%)	(4%)	**6.63**	6.48	2%	1%
Carloads *(thousands)*	**162**	143	13%	13%	**321**	293	10%	10%

Revenues for this commodity group increased by $144 million, or 21%, in the second quarter and $239 million, or 18%, in the first half of 2022 when compared to the same periods in 2021, mainly due to higher applicable fuel surcharge rates, increased volumes of refined petroleum products, petroleum crude, freight rate increases and the positive translation impact of a weaker Canadian dollar.

Revenue per RTM decreased by 1% in the second quarter and increased by 2% in the first half of 2022 when compared to the same periods in 2021. The decrease in the second quarter was mainly due to an increase in the average length of haul; partly offset by higher applicable fuel surcharge rates, freight rate increases and the positive translation impact of a weaker Canadian dollar. The increase in the first half of the year was mainly due to higher applicable fuel surcharge rates, freight rate increases and the positive translation impact of a weaker Canadian dollar in the second quarter; partly offset by an increase in the average length of haul.

Metals and minerals

	Three months ended June 30				Six months ended June 30			
	2022	2021	% Change	% Change at constant currency	**2022**	2021	% Change	% Change at constant currency
Revenues *(millions)*	**$ 466**	$ 377	24%	20%	**$ 872**	$ 745	17%	15%
RTMs *(millions)*	**7,149**	6,652	7%	7%	**13,412**	12,945	4%	4%
Revenue/RTM *(cents)*	**6.52**	5.67	15%	12%	**6.50**	5.76	13%	11%
Carloads *(thousands)*	**236**	241	(2%)	(2%)	**445**	464	(4%)	(4%)

Revenues for this commodity group increased by $89 million, or 24%, in the second quarter and $127 million, or 17%, in the first half of 2022 when compared to the same periods in 2021, mainly due to higher applicable fuel surcharge rates, freight rate increases, higher volumes of frac sand and the positive translation impact of a weaker Canadian dollar; partly offset by lower volumes of construction materials.

Revenue per RTM increased by 15% in the second quarter and 13% in the first half of 2022 when compared to the same periods in 2021, mainly due to higher applicable fuel surcharge rates, freight rate increases and the positive translation impact of a weaker Canadian dollar; partly offset by an increase in the average length of haul.

Forest products

	Three months ended June 30				Six months ended June 30			
	2022	2021	% Change	% Change at constant currency	**2022**	2021	% Change	% Change at constant currency
Revenues *(millions)*	**$ 513**	$ 451	14%	11%	**$ 939**	$ 880	7%	5%
RTMs *(millions)*	**6,650**	6,957	(4%)	(4%)	**12,469**	13,627	(8%)	(8%)
Revenue/RTM *(cents)*	**7.71**	6.48	19%	16%	**7.53**	6.46	17%	15%
Carloads *(thousands)*	**86**	90	(4%)	(4%)	**164**	176	(7%)	(7%)

Revenues for this commodity group increased by $62 million, or 14%, in the second quarter and $59 million, or 7%, in the first half of 2022 when compared to the same periods in 2021, mainly due to higher applicable fuel surcharge rates, freight rate increases and the positive translation impact of a weaker Canadian dollar; partly offset by lower volumes of lumber and woodpulp as a result of supply chain challenges.

Revenue per RTM increased by 19% in the second quarter and increased by 17% in the first half of 2022 when compared to the same periods in 2021, mainly due to higher applicable fuel surcharge rates, freight rate increases and the positive translation impact of a weaker Canadian dollar.

Coal

	Three months ended June 30				Six months ended June 30			
	2022	2021	% Change	% Change at constant currency	**2022**	2021	% Change	% Change at constant currency
Revenues *(millions)*	**$ 249**	$ 158	58%	56%	**$ 444**	$ 284	56%	55%
RTMs *(millions)*	**6,127**	4,648	32%	32%	**11,495**	8,674	33%	33%
Revenue/RTM *(cents)*	**4.06**	3.40	19%	18%	**3.86**	3.27	18%	17%
Carloads *(thousands)*	**129**	100	29%	29%	**247**	169	46%	46%

Revenues for this commodity group increased by $91 million, or 58%, in the second quarter and $160 million, or 56% in the first half of 2022 when compared to the same periods in 2021, mainly due to higher Canadian export volumes of thermal and metallurgical coal via west coast ports due to the re-opening of two mines in November 2021 and favorable market conditions due to rising fuel prices and higher applicable fuel surcharge rates.

Revenue per RTM increased by 19% in the second quarter and increased by 18% in the first half of 2022 when compared to the same periods in 2021. The increase in the second quarter was mainly due to higher applicable fuel surcharge rates. The increase in the first half of the year was mainly due to higher applicable fuel surcharge rates and a decrease in the average length of haul.

Grain and fertilizers

	Three months ended June 30				Six months ended June 30			
	2022	2021	% Change	% Change at constant currency	**2022**	2021	% Change	% Change at constant currency
Revenues *(millions)*	**$ 604**	$ 609	(1%)	(3%)	**$ 1,208**	$ 1,322	(9%)	(10%)
RTMs *(millions)*	**12,453**	14,922	(17%)	(17%)	**25,804**	32,763	(21%)	(21%)
Revenue/RTM *(cents)*	**4.85**	4.08	19%	16%	**4.68**	4.04	16%	15%
Carloads *(thousands)*	**142**	162	(12%)	(12%)	**287**	338	(15%)	(15%)

Revenues for this commodity group decreased by $5 million, or 1%, in the second quarter and by $114 million, or 9%, in the first half of 2022 when compared to the same periods in 2021, mainly due to lower export volumes of Canadian grain compared to record volumes in prior year; partly offset by higher volumes of U.S. grain, higher applicable fuel surcharge rates, freight rate increases and the positive translation impact of a weaker Canadian dollar.

Revenue per RTM increased by 19% in the second quarter and increased by 16% in the first half of 2022 when compared to the same periods in 2021, mainly due to a decrease in the average length of haul, higher applicable fuel surcharge rates, freight rate increases and the positive translation impact of a weaker Canadian dollar.

Intermodal

	Three months ended June 30				Six months ended June 30			
	2022	2021	% Change	% Change at constant currency	**2022**	2021	% Change	% Change at constant currency
Revenues *(millions)*	**$ 1,326**	$ 1,037	28%	26%	**$ 2,382**	$ 2,005	19%	18%
RTMs *(millions)*	**15,070**	15,409	(2%)	(2%)	**28,626**	30,642	(7%)	(7%)
Revenue/RTM *(cents)*	**8.80**	6.73	31%	29%	**8.32**	6.54	27%	26%
Carloads *(thousands)*	**664**	691	(4%)	(4%)	**1,253**	1,367	(8%)	(8%)

Revenues for this commodity group increased by $289 million, or 28%, in the second quarter and $377 million, or 19%, in the first half of 2022 when compared to the same periods in 2021, mainly due to higher applicable fuel surcharge rates, an increase in ancillary services including container storage, freight rate increases and the positive translation impact of a weaker Canadian dollar; partly offset by lower international container traffic volumes via the port of Vancouver.

Revenue per RTM increased by 31% in the second quarter and 27% in the first half of 2022 when compared to the same periods in 2021, mainly due to higher applicable fuel surcharge rates, an increase in ancillary services including container storage, freight rate increases and the positive translation impact of a weaker Canadian dollar.

Automotive

	Three months ended June 30				Six months ended June 30			
	2022	2021	% Change	% Change at constant currency	**2022**	2021	% Change	% Change at constant currency
Revenues *(millions)*	**$ 208**	$ 135	54%	50%	**$ 373**	$ 293	27%	25%
RTMs *(millions)*	**772**	604	28%	28%	**1,410**	1,263	12%	12%
Revenue/RTM *(cents)*	**26.94**	22.35	21%	17%	**26.45**	23.20	14%	12%
Carloads *(thousands)*	**55**	42	31%	31%	**103**	93	11%	11%

Revenues for this commodity group increased by $73 million, or 54%, in the second quarter and $80 million, or 27%, in the first half of 2022 when compared to the same periods in 2021, mainly due to higher applicable fuel surcharge rates, higher volumes of finished vehicles and the positive translation impact of a weaker Canadian dollar.

Revenue per RTM increased by 21% in the second quarter and 14% in the first half of 2022 when compared to the same periods in 2021, mainly due to a decrease in the average length of haul, which was significant in the second quarter, higher applicable fuel surcharge rates and the positive translation impact of a weaker Canadian dollar.

Other revenues

	Three months ended June 30				Six months ended June 30			
	2022	2021	% Change	% Change at constant currency	**2022**	2021	% Change	% Change at constant currency
Revenues *(millions)*	**$ 149**	$ 146	2%	—%	**$ 249**	$ 258	(3%)	(5%)

Other revenues increased by $3 million, or 2%, in the second quarter and decreased by $9 million, or 3%, in the first half of 2022 when compared to the same periods in 2021. The increase in the second quarter was mainly due to higher revenues for vessels; partly offset by lower revenues for international freight forwarding. The decrease in the first half of the year was mainly due to lower revenues for international freight forwarding; partly offset by higher revenues for vessels.

Operating expenses

Operating expenses for the second quarter of 2022 were $2,575 million compared to $2,216 million in the same period of 2021. Operating expenses for the first half of 2022 were $5,056 million compared to $4,424 million in the same period of 2021. The increases of $359 million, or 16%, in the second quarter and $632 million, or 14%, in the first half of 2022 were mainly driven by higher fuel prices and the negative translation impact of a weaker Canadian dollar; partly offset by lower average headcount. In addition, the increase in the first half of 2022 was also due to the Recovery of the loss on assets held for sale of $137 million recorded in the first quarter of 2021 resulting from the Company entering into an agreement for the sale of non-core lines.

The following table provides the components of total operating expenses for the three and six months ended June 30, 2022 and 2021:

	Three months ended June 30				Six months ended June 30			
In millions, unless otherwise indicated	**2022**	2021	% Change	% Change at constant currency	**2022**	2021	% Change	% Change at constant currency
Labor and fringe benefits	**$ 681**	$ 692	2%	3%	**$ 1,434**	$ 1,477	3%	4%
Purchased services and material	**557**	527	(6%)	(4%)	**1,095**	1,076	(2%)	(1%)
Fuel	**672**	380	(77%)	(71%)	**1,197**	744	(61%)	(58%)
Depreciation and amortization	**423**	406	(4%)	(3%)	**843**	810	(4%)	(3%)
Equipment rents	**87**	83	(5%)	(1%)	**182**	172	(6%)	(4%)
Casualty and other	**155**	128	(21%)	(17%)	**305**	282	(8%)	(6%)
Recovery of loss on assets held for sale	**—**	—	—%	—%	**—**	(137)	(100%)	(100%)
Total operating expenses	**$ 2,575**	$ 2,216	(16%)	(14%)	**$ 5,056**	$ 4,424	(14%)	(13%)

Labor and fringe benefits

Labor and fringe benefits expense decreased by $11 million, or 2%, in the second quarter and $43 million, or 3%, in the first half of 2022 when compared to the same periods in 2021, mainly due to lower average headcount, incentive compensation and pension expense; partly offset by general wage increases and the negative translation impact of a weaker Canadian dollar.

Purchased services and material

Purchased services and material expense increased by $30 million, or 6%, in the second quarter and $19 million, or 2%, in the first half of 2022 when compared to the same periods in 2021, mainly due to higher material costs and the negative translation impact of a weaker Canadian dollar. In addition, the increase in the first half was also due to higher snow clearing driven by harsher winter operating conditions; partly offset by lower freight forwarding expense.

Fuel

Fuel expense increased by $292 million, or 77%, in the second quarter and $453 million, or 61%, in the first half of 2022 when compared to the same periods in 2021, mainly due to higher fuel prices and the negative translation impact of a weaker Canadian dollar.

Depreciation and amortization

Depreciation and amortization expense increased by $17 million, or 4% in the second quarter and $33 million, or 4%, in the first half of 2022 when compared to the same periods in 2021, mainly due to a higher depreciable asset base and the negative translation impact of a weaker Canadian dollar.

Equipment rents

Equipment rents expense increased by $4 million, or 5%, in the second quarter and $10 million, or 6%, in the first half of 2022 when compared to the same periods in 2021, mainly due to the negative translation impact of a weaker Canadian dollar. In addition, the increase in the first half was also due to higher locomotive horsepower-hour expense.

Casualty and other

Casualty and other expense increased by $27 million, or 21%, in the second quarter and $23 million, or 8%, in the first half of 2022 when compared to the same periods in 2021, mainly due to advisory fees related to shareholder matters of $12 million in the second quarter and $22 million in the first half and the negative translation impact of a weaker Canadian dollar.

Recovery of loss on assets held for sale

Recovery of loss on assets held for sale of $137 million ($102 million after-tax) in the first quarter of 2021 resulting from the Company entering into an agreement with a short line operator, for the sale of non-core lines in Wisconsin, Michigan and Ontario representing 850 miles that were classified as assets held for sale plus an additional 50 miles of track and roadway assets. See *Note 6 – Assets held for sale* to the Company's unaudited Interim Consolidated Financial Statements for further information.

Other income and expenses

Interest expense

Interest expense was $128 million and $254 million for the three and six months ended June 30, 2022, respectively, compared to $158 million and $288 million, respectively, for the same periods in 2021. The decreases in both periods were mainly due to amortization of bridge financing and other fees of $32 million in 2021 resulting from the KCS transaction. See *Note 4 – Acquisitions* to the Company's unaudited Interim Consolidated Financial Statements for further information.

Other components of net periodic benefit income

Other components of net periodic benefit income were $124 million and $249 million for the three and six months ended June 30, 2022, respectively, compared to $98 million and $197 million for the same periods in 2021 (1). The increases in both periods were due to lower amortization of net actuarial loss and higher expected return on assets; partly offset by higher interest cost. These effects primarily resulted from changes to discount rates, actual returns in excess of expected returns, as well as an increase to the Company’s expected long-term rate of return assumption in 2022.

Other income (loss)

Other loss was $10 million and $24 million for the three and six months ended June 30, 2022 compared to other income of $51 million and $49 million, respectively, for the same periods in 2021. The decreases in both periods were mainly due to fluctuations in the fair value of the equity investment in autonomous driving technology.

Income tax expense (1)

Income tax expense was $430 million and $724 million for the three and six months ended June 30, 2022, respectively, compared to $337 million and $655 million for the same periods in 2021. The effective tax rates for the three and six months ended June 30, 2022 were 24.5% and 24.4%, respectively, compared to 24.5% and 24.6%, respectively, for the same periods in 2021.

(1) In the first quarter of 2022, the Company changed its method of calculating market-related values of pension assets for its defined benefit plans using a retrospective approach. Comparative figures have been restated to conform to the change in methodology. See Note 2 – Change in accounting policy to CN's unaudited Interim Consolidated Financial Statements for additional information.

Summary of quarterly financial data

In millions, except per share data	**2022 Quarters**		2021 Quarters				2020 Quarters	
	Second	First	Fourth	Third	Second	First	Fourth	Third
Revenues	**$ 4,344**	$ 3,708	$ 3,753	$ 3,591	$ 3,598	$ 3,535	$ 3,656	$ 3,409
Operating income (1)	**$ 1,769**	$ 1,227	$ 1,566	$ 1,341	$ 1,382	$ 1,327	$ 1,411	$ 1,366
Dividends per share	**$ 0.7325**	$ 0.7325	$ 0.6150	$ 0.6150	$ 0.6150	$ 0.6150	$ 0.5750	$ 0.5750
Financial measures impacted by change in accounting policy								
Net income (1)(2)	**$ 1,325**	$ 918	$ 1,201	$ 1,686	$ 1,036	$ 976	$ 1,016	$ 982
Net income as previously reported (1)	**N/A**	N/A	$ 1,199	$ 1,685	$ 1,034	$ 974	$ 1,021	$ 985
Basic earnings per share (2)	**$ 1.92**	$ 1.31	$ 1.70	$ 2.38	$ 1.46	$ 1.37	$ 1.43	$ 1.38
Basic earnings per share as previously reported	**N/A**	N/A	$ 1.70	$ 2.38	$ 1.46	$ 1.37	$ 1.44	$ 1.39
Diluted earnings per share (1)(2)	**$ 1.92**	$ 1.31	$ 1.70	$ 2.37	$ 1.46	$ 1.37	$ 1.42	$ 1.38
Diluted earnings per share as previously reported (1)	**N/A**	N/A	$ 1.69	$ 2.37	$ 1.46	$ 1.37	$ 1.43	$ 1.38

(1) *Certain quarters include items that management believes do not necessarily arise as part of CN's normal day-to-day operations and can distort the analysis of trends in business performance. See the section of this MD&A entitled Adjusted performance measures as well as the Company's 2021 Annual MD&A for additional information on these items.*

(2) *In the first quarter of 2022, the Company changed its method of calculating market-related values of pension assets for its defined benefit plans using a retrospective approach. Comparative figures have been restated to conform to the change in methodology. See Note 2 – Change in accounting policy to CN's unaudited Interim Consolidated Financial Statements for additional information.*

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 the Company's 2021 Annual 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.

Liquidity and capital resources

An analysis of the Company's liquidity and capital resources is provided in the section entitled *Liquidity and capital resources* of the Company's 2021 Annual MD&A. There were no significant changes during the first half of 2022, except as noted below.

As at June 30, 2022 and December 31, 2021, the Company had Cash and cash equivalents of $465 million and $838 million, respectively; Restricted cash and cash equivalents of $555 million and $503 million, respectively; and a working capital deficit of $1,402 million and a surplus of $306 million, respectively. (1) There are currently no specific requirements relating to working capital other than in the normal course of business as discussed herein.

The Company expects cash from operations and its various sources of financing to be sufficient to meet its ongoing obligations.

(1) *Working capital is a Non-GAAP measure which management believes is a useful measure of liquidity. The Company defines working capital as current assets less current liabilities. Working capital as at June 30, 2022 was calculated as current assets of $3,354 million less current liabilities of $4,756 million. Working capital as at December 31, 2021 was calculated as current assets of $3,426 million less current liabilities of $3,120 million. Working capital does not have any standardized meaning prescribed by GAAP and therefore, may not be comparable to a similar measure presented by other companies.*

Available financing sources

Shelf prospectus and registration statement

On May 4, 2022, the Company filed a new shelf prospectus with Canadian securities regulators and a registration statement with the United States Securities and Exchange Commission (SEC), pursuant to which CN may issue up to $6.0 billion of debt securities in the Canadian and U.S. capital markets over a 25 month period following the filing date. This shelf prospectus and registration statement replaced CN's previous shelf prospectus and registration statement that expired on March 11, 2022. Access to the Canadian and U.S. capital markets under the shelf prospectus and registration statement is dependent on market conditions.

Revolving credit facilities

The Company has an unsecured revolving credit facility with a consortium of lenders which is available for general corporate purposes including backstopping the Company's commercial paper programs. The revolving credit facility agreement adopts a sustainability linked loan structure whereby its applicable margins are adjusted upon achievement of certain sustainability targets, starting in 2022. The credit facility of $2.5 billion consists of a $1.25 billion tranche maturing on March 31, 2025 and a $1.25 billion tranche maturing on March 31, 2027. The credit facility provides for borrowings at various benchmark interest rates, such as Secured Overnight Financing Rate (SOFR) and the Canadian Dollar Offered Rate (CDOR), plus applicable margins, based on CN's credit ratings and sustainability targets.

As at June 30, 2022 and December 31, 2021, the Company had no outstanding borrowings under this revolving credit facility and there were no draws during the six months ended June 30, 2022.

On March 18, 2022, the Company entered into a $1.0 billion two-year unsecured revolving credit facility agreement with a consortium of lenders. The credit facility is available for working capital and general corporate purposes and provides for borrowings at various benchmark interest rates, such as SOFR and CDOR, plus applicable margins, based on CN's credit ratings. As at June 30, 2022, the Company had no outstanding borrowings under this revolving credit facility and there were no draws during the six months ended June 30, 2022.

Equipment loans

The Company has a non-revolving term loan credit facility for financing or refinancing the purchase of equipment. The equipment loans made under the non-revolving credit facility have a tenor of 20 years, bear interest at variable rates such as LIBOR and CDOR plus a margin, are repayable in equal quarterly installments, are prepayable at any time without penalty, and are secured by rolling stock.

As at June 30, 2022, the Company had outstanding borrowings of US$557 million ($717 million) and had no further amount available under this non-revolving term loan facility. As at December 31, 2021, the Company had outstanding borrowings of US$572 million ($723 million) and had no further amount available under this non-revolving term loan facility.

Commercial paper

The Company's commercial paper programs are backstopped by the Company's $2.5 billion revolving credit facility. The maximum aggregate principal amount of commercial paper that can be issued is $2.5 billion, or the equivalent amount in US dollars.

As at June 30, 2022 and December 31, 2021, the Company had total commercial paper borrowings of US$1,465 million ($1,886 million) and US$111 million ($140 million), respectively, presented in Current portion of long-term debt on the Consolidated Balance Sheets.

Accounts receivable securitization program

The Company has an agreement, expiring on February 1, 2024, to sell an undivided co-ownership interest in a revolving pool of accounts receivable to unrelated trusts for maximum cash proceeds of $450 million. The Company has retained the responsibility for servicing, administering and collecting the receivables sold. The average servicing period is approximately one month and the interest on borrowings under the Accounts receivable securitization program is renewed based on commercial paper, LIBOR or CDOR rates then in effect.

As at June 30, 2022, and December 31, 2021, the Company had no borrowings under the accounts receivable securitization program and there were no activities for the six months ended June 30, 2022.

Bilateral letter of credit facilities

The Company has a series of committed and uncommitted bilateral letter of credit facility agreements. On March 31, 2022, the Company extended the maturity date of certain committed bilateral letter of credit facility agreements to April 28, 2025.

As at June 30, 2022, the Company had outstanding letters of credit of $448 million ($394 million as at December 31, 2021) under the committed facilities from a total available amount of $509 million ($518 million as at December 31, 2021) and $105 million ($158 million as at December 31, 2021) under the uncommitted facilities.

As at June 30, 2022, included in Restricted cash and cash equivalents were $447 million ($396 million as at December 31, 2021) and $100 million ($100 million as at December 31, 2021) which were pledged as collateral under the committed and uncommitted bilateral letter of credit facilities, respectively.

Additional information relating to the Company's financing sources is provided in the section entitled *Liquidity and capital resources – Available financing sources* of the Company's 2021 Annual MD&A as well as *Note 9 – Financing activities* to the Company's unaudited Interim Consolidated Financial Statements.

Credit ratings

The following table provides the Company's long-term debt and commercial paper credit ratings as of the date of this MD&A, which remain unchanged from those described in the section entitled *Liquidity and capital resources – Credit ratings* of the Company's 2021 Annual MD&A.

	Outlook	Long-term debt rating (1)	Commercial paper rating (1)
DBRS Morningstar	Stable	A	R-1 (low)
Moody's Investors Service	Negative	A2	P-1
Standard & Poor's	Negative	A	A-1

(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

The following table provides the cash flows for the three and six months ended June 30, 2022 and 2021:

	Three months ended June 30			Six months ended June 30		
In millions	**2022**	2021	Variance	**2022**	2021	Variance
Net cash provided by operating activities	**$ 1,713**	$ 1,475	$ 238	**$ 2,283**	$ 2,427	$ (144)
Net cash used in investing activities	**(716)**	(1,642)	926	**(817)**	(2,055)	1,238
Net cash used in financing activities	**(1,023)**	215	(1,238)	**(1,788)**	(377)	(1,411)
Effect of foreign exchange fluctuations on cash, cash equivalents, restricted cash, and restricted cash equivalents	**1**	(1)	2	**1**	(1)	2
Net increase (decrease) in cash, cash equivalents, restricted cash, and restricted cash equivalents	**(25)**	47	(72)	**(321)**	(6)	(315)
Cash, cash equivalents, restricted cash, and restricted cash equivalents, beginning of period	**1,045**	1,047	(2)	**1,341**	1,100	241
Cash, cash equivalents, restricted cash, and restricted cash equivalents, end of period	**$ 1,020**	$ 1,094	$ (74)	**$ 1,020**	$ 1,094	$ (74)

Free cash flow

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 (i) business acquisitions and (ii) merger transaction-related payments, cash receipts and cash income taxes, which are items that are not indicative of operating trends. 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 in accordance with GAAP, as reported for the three and six months ended June 30, 2022 and 2021, to the non-GAAP free cash flow presented herein:

	Three months ended June 30		Six months ended June 30	
In millions	**2022**	2021	**2022**	2021
Net cash provided by operating activities	**$ 1,713**	$ 1,475	**$ 2,283**	$ 2,427
Net cash used in investing activities	**(716)**	(1,642)	**(817)**	(2,055)
Net cash provided before financing activities	**997**	(167)	**1,466**	372
Adjustments:				
Cash income taxes for merger transaction-related payments and cash receipts (1)	**—**	—	**102**	—
Transaction-related costs (2)	**—**	63	**—**	63
Advance for acquisition (2)	**—**	845	**—**	845
Total adjustments	**—**	908	**102**	908
Free cash flow	**$ 997**	$ 741	**$ 1,568**	$ 1,280

(1) Relates to income tax payments of $102 million for KCS merger transaction-related payments and cash receipts. See Note 3 – Acquisitions, Terminated CN KCS merger agreement, to the Company's 2021 Annual Consolidated Financial Statements and the section entitled Adjusted performance measures to the Company's 2021 Annual MD&A filed on February 1, 2022 which may be found online on SEDAR at www.sedar.com, on the SEC's website at www.sec.gov through EDGAR, and on the Company's website at www.cn.ca in the Investors section for additional information.

(2) Relates to an advance to KCS and other transaction costs paid. See Note 4 – Acquisition to the Company's unaudited Interim Consolidated Financial Statements for further information.

Operating activities

Net cash provided by operating activities increased by $238 million in the second quarter of 2022 and decreased by $144 million in the first half of 2022 when compared to the same periods in 2021. The increase in the second quarter was mainly due to higher earnings excluding non cash items and favorable changes in working capital, partly offset by higher income tax instalment payments. The decrease in the first half was mainly due to higher income tax instalment payments partly offset by higher earnings excluding non-cash items.

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.

Actuarial valuations are generally required on an annual basis for all Canadian defined benefit pension plans, or when deemed appropriate by the Office of the Superintendent of Financial Institutions (OSFI). Actuarial valuations are also required annually for the Company's U.S. qualified defined benefit pension plans. For accounting purposes, the funded status is calculated under GAAP. For funding purposes, the funded status of the Company's Canadian registered defined benefit pension plans is calculated under going concern and solvency scenarios as prescribed under federal pension legislation and is subject to guidance issued by the Canadian Institute of Actuaries and OSFI. The federal pension legislation requires funding deficits to be paid over a number of years. Alternatively, a letter of credit can be subscribed to fulfill solvency deficit payments.

In November 2021, the OSFI issued a revised instruction guide for the Preparation of Actuarial Reports for Defined Benefit Pension Plans ("Guide") that was used for the December 31, 2021 actuarial valuations. The revised Guide did not have a significant impact on the solvency status of the Company's defined benefit pension plans, and did not trigger additional pension contributions in 2022.

The Company's most recently filed actuarial valuations for funding purposes for its Canadian registered defined benefit pension plans conducted as at December 31, 2021 indicated a funding excess on a going concern basis of approximately $4.2 billion and a funding excess on a solvency basis of approximately $1.1 billion calculated using the three-year average of the plans' hypothetical wind-up ratio.

Pension contributions for the six months ended June 30, 2022 and 2021 of $45 million and $84 million, respectively, primarily represent contributions to the CN Pension Plan for the current service cost as determined under the Company's applicable actuarial valuations for funding purposes. Based on the results of the December 31, 2021 valuations, the CN Pension Plan is fully funded and at a level such that the Company was prohibited from making contributions to the CN Pension Plan as of April 2022 once the actuarial valuation report was filed. In 2022, the Company expects to make total cash contributions of approximately $70 million for all of the Company's pension plans.

Adverse changes to the assumptions used to calculate the Company's funding status, particularly the discount rate, as well as changes to existing federal pension legislation or regulator guidance could significantly impact the Company's future pension contributions.

Additional information relating to the pension plans is provided in *Note 17 – Pensions and other postretirement benefits* to the Company's 2021 Annual Consolidated Financial Statements.

Income tax payments

Net income tax payments for the six months ended June 30, 2022 and 2021 were $690 million and $381 million, respectively. The increase was mostly due to higher required installment payments in Canada and in the U.S. mainly caused by the merger termination fee recorded in 2021 and higher pre-tax income. For 2022, the Company's net income tax payments are expected to be approximately $1.25 billion.

Investing activities

Net cash used in investing activities decreased by $926 million in the second quarter of 2022 and by $1,238 million in the first half of 2022 when compared to the same period in 2021, mainly due to the advance to KCS and other transaction costs in 2021 and lower property additions. In addition, the decrease in the first half was also partly due to the proceeds received from the assets held for sale.

Property additions

The following table provides the property additions for the three and six months ended June 30, 2022 and 2021:

	Three months ended June 30		Six months ended June 30	
In millions	**2022**	2021	**2022**	2021
Track and roadway	**$ 454**	$ 520	**$ 646**	$ 760
Rolling stock	**159**	108	**240**	183
Buildings	**13**	11	**20**	20
Information technology	**67**	64	**131**	114
Other	**14**	26	**49**	64
Property additions	**$ 707**	$ 729	**$ 1,086**	$ 1,141

2022 Capital expenditure program

For 2022, the Company continues to expect to invest approximately 17% of revenues in its capital program, which will be financed with cash generated from operations or with cash from financing activities as required.

Financing activities

Net cash used in financing activities increased by $1,238 million in the second quarter of 2022 and increased by $1,411 million in the first half of 2022 when compared to the same periods in 2021. The increase in the second quarter was primarily driven by higher repurchases of common shares and higher repayments of commercial paper. The increase in the first half was primarily due to higher repurchases of common shares and lower issuance of debt; partly offset by higher issuance of commercial paper.

Debt financing activities

Debt financing activities in the first half of 2022 included the following:

- Net issuance of commercial paper of $686 million in the second quarter and $1,706 in the first half.

Debt financing activities in the first half of 2021 included the following:

- On March 31, 2021, issuance of US$310 million ($389 million) equipment loan under the non-revolving credit facility;
- On January 18, 2021, early redemption of $250 million 2.75% Notes due 2021; and
- Net issuance of commercial paper of $903 million in the second quarter and $916 million in the first half.

Additional information relating to the Company's outstanding debt securities is provided in *Note 15 – Debt* to the Company's 2021 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 Toronto Stock Exchange. Under its current NCIB, the Company may repurchase up to 42.0 million common shares between February 1, 2022 and January 31, 2023. As at June 30, 2022, the Company had repurchased 15.2 million common shares for $2,348 million under its current NCIB.

The Company repurchased 11.1 million common shares under its previous NCIB effective between February 1, 2021 and January 31, 2022, which allowed for the repurchase of up to 14.0 million common shares.

The following table provides the information related to the share repurchases for the three and six months ended June 30, 2022 and 2021:

	Three months ended June 30		Six months ended June 30	
In millions, except per share data	**2022**	2021	**2022**	2021
Number of common shares repurchased	**7.8**	0.8	**16.0**	2.9
Weighted-average price per share (1)	**$ 149.16**	$ 143.80	**$ 153.95**	$ 141.61
Amount of repurchase (1)(2)	**$ 1,173**	$ 123	**$ 2,466**	$ 414

(1) Includes brokerage fees.

(2) Includes settlements in subsequent periods.

Dividends paid

The Company paid quarterly dividends of $0.7325 per share amounting to $504 million and $1,013 million in the second quarter and first half of 2022 compared to $436 million and $872 million, respectively, at the quarterly rate of $0.6150 per share for the same periods in 2021.

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 June 30, 2022:

In millions	**Total**	2022	2023	2024	2025	2026	2027 & thereafter
Debt obligations (1)	**$ 14,369**	$ 2,233	$ 227	$ 484	$ 386	$ 680	$ 10,359
Interest on debt obligations	**9,234**	258	500	492	478	459	7,047
Finance lease obligations	**3**	—	1	—	—	2	—
Operating lease obligations (2)	**459**	62	106	78	64	43	106
Purchase obligations (3)	**2,270**	1,724	313	116	111	1	5
Other long-term liabilities (4)	**611**	56	51	41	42	30	391
Total contractual obligations	**$ 26,946**	**$ 4,333**	**$ 1,198**	**$ 1,211**	**$ 1,081**	**$ 1,215**	**$ 17,908**

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

(2) Includes $70 million related to renewal options reasonably certain to be exercised and $40 million of imputed interest.

(3) Includes fixed and variable commitments for information technology services and licenses, railroad cars, locomotives, wheels, rail, engineering services, rail ties 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.

Adjusted debt-to-adjusted EBITDA multiple

Management believes that the adjusted debt-to-adjusted 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 the last twelve months of adjusted EBITDA. Adjusted debt is defined as the sum of Long-term debt and Current portion of long-term debt as reported on the Company's Consolidated Balance Sheets as well as Operating lease liabilities, including current portion and pension plans in deficiency recognized on the Company's Consolidated Balance Sheets due to the debt-like nature of their contractual and financial obligations. Adjusted EBITDA is calculated as Net income excluding Interest expense, Income tax expense, Depreciation and amortization, operating lease cost, Other components of net periodic benefit income, Other income (loss), and other significant items that are not reflective of CN's underlying business operations and which could distort the analysis of trends in business performance. Adjusted debt and adjusted EBITDA are non-GAAP measures used to compute the Adjusted debt-to-adjusted EBITDA multiple. 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 in accordance with GAAP, reported as at and for the twelve months ended June 30, 2022 and 2021, to the adjusted measures presented herein, which have been used to calculate the non-GAAP adjusted debt-to-adjusted EBITDA multiple:

In millions, unless otherwise indicated	*As at and for the twelve months ended June 30,*		**2022**		2021
Debt		**$**	**14,372**	$	13,719
Adjustments:					
Operating lease liabilities, including current portion (1)			**419**		379
Pension plans in deficiency (2)			**443**		545
Adjusted debt		**$**	**15,234**	$	14,643
Net income (3)		**$**	**5,130**	$	4,010
Interest expense			**576**		559
Income tax expense (3)			**1,512**		1,308
Depreciation and amortization			**1,631**		1,603
Operating lease cost (4)			**135**		135
Other components of net periodic benefit income (3)			**(459)**		(343)
Other loss (income)			**30**		(48)
Adjustments:					
Workforce reduction program (5)			**39**		—
Advisory fees related to shareholder matters (6)			**42**		—
Recovery of loss on assets held for sale (7)			**—**		(137)
Transaction-related costs (8)			**84**		—
Merger termination fee (9)			**(886)**		—
Adjusted EBITDA		**$**	**7,834**	$	7,087
Adjusted debt-to-adjusted EBITDA multiple *(times)*			**1.94**		2.07

(1) *Represents the present value of operating lease payments.*

(2) *Represents the total funded deficit of all defined benefit pension plans with a projected benefit obligation in excess of plan assets.*

(3) *In the first quarter of 2022, the Company changed its method of calculating market-related values of pension assets for its defined benefit plans using a retrospective approach. Comparative figures have been restated to conform to the change in methodology. See Note 2 – Change in accounting policy to CN's unaudited Interim Consolidated Financial Statements for additional information.*

(4) *Represents the operating lease costs recorded in Purchased services and material and Equipment rents within the Consolidated Statements of Income.*

(5) *Relates to employee termination benefits and severance costs related to a workforce reduction program, recorded in Labor and fringe benefits within the Consolidated Statements of Income.*

(6) *Relates to advisory fees related to shareholder matters recorded in Casualty and other within the Consolidated Statements of Income.*

(7) *Relates to the recovery of $137 million of the $486 million loss on assets held for sale recorded in the second quarter of 2020, resulting from the Company entering into an agreement for the sale of non-core lines. See Note 6 – Assets held for sale to the Company's unaudited Interim Consolidated Financial Statements for further information.*

(8) *Relates to transaction costs incurred as a result of the terminated CN Merger Agreement of $84 million, consisting of $125 million of transaction-related costs, partially offset by $41 million of income generated as a result of the applicable foreign exchange rates prevailing at the time of payment and related receipt of the US$700 million advance to KCS. See Note 4 –Acquisitions to the Company's unaudited Interim Consolidated Financial Statements for further information.*

(9) *Relates to the termination fee resulting from KCS terminating the CN Merger Agreement and entering into a merger agreement with CP. See Note 4 –Acquisitions to the Company's unaudited Interim Consolidated Financial Statements for further information.*

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, 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 June 30, 2022, the Company has not recorded a liability with respect to guarantees and indemnifications. Additional information relating to guarantees and indemnifications is provided in *Note 13 – Major commitments and contingencies* to the Company's unaudited Interim Consolidated Financial Statements.

Outstanding share data

As at July 26, 2022, the Company had 683.4 million common shares and 3.7 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, such as credit risk, liquidity risk, and market risks which include foreign currency risk, interest rate risk and commodity price risk. A description of these risks and how the Company manages them, is provided in the section entitled *Financial instruments* of the Company's 2021 Annual MD&A.

Derivative financial instruments

Foreign currency risk

As at June 30, 2022, the Company had outstanding foreign exchange forward contracts with a notional value of US$1,732 million (US$910 million as at December 31, 2021) at a weighted-average exchange rate of $1.27 per US$1.00 ($1.27 per US$1.00 as at December 31, 2021) for a weighted-average term of 134 days (251 days as at December 31, 2021). For the three and six months ended June 30, 2022, the Company recorded gains of $60 million and $36 million, respectively, related to foreign exchange forward contracts compared to losses of $13 million and $26 million, respectively, for the same periods in 2021. These gains were largely offset by the re-measurement of US dollar-denominated monetary assets and liabilities recorded in Other income.

As at June 30, 2022, the fair value of outstanding foreign exchange forward contracts included in Other current assets and Accounts payable and other was $26 million and $4 million, respectively ($nil and $2 million, respectively, as at December 31, 2021).

Interest rate risk

As at June 30, 2022, the aggregate notional amount of treasury lock agreements entered into was US$550 million to hedge US Treasury benchmark rates related to an expected debt issuance in 2022. The treasury locks are designated as cash flow hedging instruments. As at June 30, 2022, the fair value of outstanding treasury lock agreements included in Other current assets and Accounts payable and other was $26 million and $1 million, respectively.

Fair value of financial instruments

As at June 30, 2022, the Company's debt, excluding finance leases, had a carrying amount of $14,369 million ($12,475 million as at December 31, 2021) and a fair value of $13,672 million ($14,424 million as at December 31, 2021).

Additional information relating to financial instruments is provided in *Note 14 – Financial instruments* to the Company's unaudited Interim Consolidated Financial Statements.

Recent accounting pronouncements

The following recent Accounting Standards Update (ASU) issued by the Financial Accounting Standards Board (FASB) has an effective date after June 30, 2022 and has not been adopted by the Company:

ASU 2021-10 Disclosures by business entities about government assistance (Topic 832)
The ASU will increase the transparency of government assistance including the disclosure of types of assistance, an entity's accounting for the assistance, and the effect of the assistance on an entity's financial statements.

The ASU is effective for annual periods beginning after December 15, 2021. Early adoption is permitted.

The Company is currently evaluating whether the amendment will have a significant impact on the Company's Consolidated Financial Statement disclosures.

The following recent ASU issued by the FASB came into effect in 2020, was amended in 2021 and has not been adopted by the Company:

ASU 2020-04 Reference rate reform (Topic 848): Facilitation of the effects of reference rate reform on financial reporting and related amendments
USD London Interbank Offered Rate (LIBOR) and Canadian Dollar Offered Rate (CDOR) are benchmark interest rates referenced in a variety of agreements. The administrators of LIBOR and CDOR have ceased the publication of certain LIBOR and CDOR rates in January 2022 and May 2021, respectively, and intend to discontinue the remaining LIBOR and CDOR rates on June 30, 2023 and June 30, 2024, respectively.

The ASU provides optional expedients and exceptions for applying generally accepted accounting principles to transactions affected by reference rate reform if certain criteria are met. These transactions include contract modifications, hedging relationships, and sale or transfer of debt securities classified as held-to-maturity.

The ASU was effective starting on March 12, 2020, and is available to be adopted on a prospective basis no later than December 31, 2022. The Company has a non-revolving credit facility that references LIBOR and CDOR. As at June 30, 2022, the Company has equipment loans made under the non-revolving credit facility referencing LIBOR with outstanding borrowings of US$557 million. The equipment loans would be affected by the provisions of this ASU and were not impacted by the administrator of LIBOR ceasing publication of certain LIBOR rates. The Company also has revolving credit facilities that reference CDOR and an accounts receivable securitization program that references LIBOR and CDOR, see *Note 9 – Financing activities* to the Company's unaudited Interim Consolidated Financial Statements. The Company had no outstanding borrowing under these credit facilities or the accounts receivable securitization program as at June 30, 2022. Within all of these agreements, the Company has fallback language that allows for the succession of an alternative reference rate. The Company is evaluating the effects that the adoption of the ASU will have on its Consolidated Financial Statements and related disclosures, and whether it will elect to apply any of the optional expedients and exceptions provided in the ASU.

Other recently issued ASUs required to be applied on or after June 30, 2022 have been evaluated by the Company and are not expected to have a significant impact on the Company's Consolidated Financial Statements.

Critical accounting estimates

The preparation of financial statements in accordance with GAAP requires management to make estimates, judgments 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, capital expenditures, 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. Reference is made to the section entitled *Critical accounting estimates* of the Company's 2021 Annual MD&A for a detailed description of the Company's critical accounting estimates. There have not been any material changes to these estimates in the first half of 2022, other than the change in accounting policy for determining net periodic pension cost (income) disclosed below.

Management discusses the development and selection of the Company's critical accounting policies, including the underlying estimates and assumptions, with the Audit, Finance and Risk Committee of the Company's Board of Directors. The Audit, Finance and Risk Committee has reviewed the Company's related disclosures.

Pensions

Effective January 1, 2022, CN elected to change its accounting methodology for determining the market-related value of assets for the Company's defined benefit pension plans. The new accounting method changes the calculation of market-related value of pension plan assets used to determine net periodic benefit cost but has no impact on the annual funded status of the plans. The Company's previous methodology calculated market-related value for pensions whereby realized and unrealized gains/losses and appreciation/depreciation in the value of the investments were recognized over a period of five years. The Company's new methodology will apply a corridor approach so that the market-related value does not result in a value that deviates excessively from its fair value. Specifically, the market-related value will not exceed 110% or be less than 90% of the fair value. This change establishes a corridor approach whereby the amount causing the market-related value to be outside of the 10% corridor will be recognized immediately in the market-related value of assets and will not be subject to the five year period of recognition. There is no change in the recognition approach for investment income.

CN considers the use of a calculated value with a corridor approach preferable to the previous calculated value approach as it results in a more current reflection of impacts of changes in value of these plan assets in the determination of net periodic benefit cost. The new accounting method to calculate the market-related value for pensions also aligns with the prevailing guidance issued by the Office of the Superintendent of Financial Institutions (OSFI) for the preparation of actuarial valuations for funding purposes for all registered Canadian defined benefit pension plans, whereby the Company has adopted and applied the updated OSFI guidance starting with the December 31, 2021 funding valuations that were filed during the second quarter of 2022.

The change in accounting method was applied retrospectively to all periods presented within CN's financial statements. The change did not impact Operating income or Net cash provided by operating activities but did impact the previously reported portion of Other components of net periodic benefit cost (income) for defined benefit pension plans along with related consolidated income items such as Net income and Earnings per share. Other impacts included related changes to previously reported consolidated Other comprehensive income (loss), Retained earnings, Accumulated other comprehensive income (loss), and associated line items within the determination of Net cash provided (used) by operating activities.

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.

Reference is made to the section entitled *Business risks* of the Company's 2021 Annual MD&A for a detailed description of such key areas of business risks and uncertainties with respect to: Pandemic risk and economic downturn, Competition, Environmental matters, Personal injury and other legal claims, Labor negotiations, Regulation, Economic conditions, Pension funding volatility, Reliance on technology and related cybersecurity risk, Trade restrictions, Terrorism and international conflicts, Customer credit risk, Liquidity, Supplier concentration, Availability of qualified personnel, Fuel costs, Foreign exchange, Interest rates, Transportation network disruptions, Severe weather and Climate change, which is incorporated herein by reference. 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.

The following are certain changes to the risks described in the Company's 2021 Annual MD&A, as well as an update on competition, the labor workforce and negotiations, regulatory matters and fuel costs.

Competition

CP-KCS merger agreement

On February 28, 2022, CN filed a responsive application with the Surface Transportation Board (STB) requesting the STB to condition any approval of a CP-KCS merger on the divestiture of the KCS line from Kansas City, Missouri to Springfield and East St. Louis, Illinois ("the Kansas City Speedway") to CN, pursuant to the STB's statutory authority to order "the divestiture of parallel tracks" as a merger condition. Granting CN control of the line will provide customers with a new competitive option to move goods across a key North American economic corridor. On March 16, 2022, the STB suspended the procedural schedule until further notice in order for Applicants to explain an "apparent inconsistency" in baseline 2019 tonnage data presented by the Applicants. On April 27, 2022, the STB required Applicants to amend their operating plan and required parties to submit amended comments and responsive applications. On May 27, 2022, the STB issued a revised procedural schedule. On June 9, 2022, the Company submitted comments on Applicants' amended operating plan, and the Company submitted an amended operating plan in support of the divestiture of the Kansas City Speedway. On July 1, 2022, the STB accepted the Company's responsive application for consideration and consolidated the Company's divestiture request with the primary application. On July 12, 2022, the Company submitted reply comments, and parties of record submitted reply comments to the Company's proposed divestiture of the Kansas City Speedway. On July 22, 2022, the Board scheduled a 3-day hearing for September 28 to 30, 2022.

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, including consolidation arising from the CP-KCS merger, if approved, 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.

Labor workforce and negotiations

As at June 30, 2022, CN employed a total of 16,228 employees in Canada, of which 11,702, or 72%, were unionized employees, and 6,555 employees in the U.S., of which 5,531, or 84%, were unionized employees. The Canadian employee count does not include approximately 700 International Brotherhood of Electrical Workers (IBEW) on strike as at June 30, 2022. The Company's relationships with its unionized workforce are governed by, amongst other items, collective bargaining agreements which are negotiated from time to time. Disputes relating to the renewal of collective bargaining 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 bargaining 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 September 13, 2021, the Company served notice to commence bargaining for the renewal of the collective agreement with the IBEW governing approximately 700 signals and communications workers, which expired on December 31, 2021. After six months of bargaining, the IBEW served notice of impasse with the Minister of Labor which commences the conciliation/mediation process under the Canada Labor Code. On June 15, 2022, the IBEW gave a 72-hour notice of its intention to strike and on June 18, 2022 the IBEW commenced their strike. On July 4, 2022, the IBEW agreed to binding arbitration, bringing the strike to an end. The collective agreement remains in effect until the arbitrator awards the new contract.

On December 1, 2021, CN filed an application with the Canadian Industrial Relations Board (CIRB) pursuant to Section 18.1 of the Canada Labor Code to review the current bargaining unit structure applicable to running trades on its Canadian railway. There are currently 12 bargaining units and 16 collective agreements covering Locomotive Engineers and Conductors. CN believes that this structure is no longer appropriate for labor relations. A consolidated unit of Locomotive Engineers and Conductors governed by one collective agreement will address these issues and would be a more appropriate bargaining unit structure. On April 7, 2022, CN and the Teamsters Canada Rail Conference (TCRC) agreed to enter into mediation on the resolution of the Company's application with the assistance of the CIRB. Mediation is ongoing.

On March 23, 2022, the TCRC served notice to commence bargaining for the renewal of the Conductor and Yard Coordinator collective agreement governing approximately 3,000 employees, which expires on July 22, 2022. In April 2022, CN filed a formal request with the CIRB requesting that the expiry date of the collective agreement be extended until the CIRB has rendered a decision on our application to conduct a bargaining unit review. Decision from the CIRB is pending the outcome of mediation on CN's Section 18.1 application.

U.S. workforce

Collective bargaining agreements covering all non-operating and operating craft employees at Grand Trunk Western Railroad Company (GTW), companies owned by Illinois Central Corporation (ICC), companies owned by Wisconsin Central Ltd. (WC) and Bessemer & Lake Erie Railroad Company (BLE), and all employees at Pittsburgh and Conneaut Dock Company (PCD) are in place. The agreements in place have various moratorium provisions, which preserve the status quo with respect to the applicable collective bargaining 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 currently participate in, for collective bargaining agreements covering all non-operating and operating employees, with the exception of two employee groups working at PCD covering in total fewer than 35 employees. National bargaining has reached the final dispute resolution processes as required under U.S. labor law (Railway Labor Act – “RLA”). On July 15, 2022, the President established a Presidential Emergency Board (PEB) that became effective on July 18, 2022. The PEB has 30 days after the effective date to issue a report with their recommendation for terms of a settlement. Upon receipt of the PEB report, a second 30-day cooling off period will commence.

Regulation

Economic regulation - U.S.

The STB sought comments on a supplemental proposed rulemaking to establish a new rate case method for smaller cases known as Final Offer Rate Review that was originally proposed by the agency in 2019. The STB also sought comments on proposed rules for new voluntary alternative dispute resolution. Comments were submitted in the first quarter of 2022 in both proceedings.

On March 15 and 16, 2022, the STB held a public hearing concerning a proposal by the STB in 2016 to amend its regulations regarding reciprocal switching. Written testimony and post-hearing comments were submitted in February and April 2022. The STB members conducted additional meetings with stakeholders.

On August 8, 2019, the STB issued interim findings and guidance to National Railroad Passenger Corporation (Amtrak) and the Company regarding the terms and conditions for Amtrak's use of the Company's lines. On March 3, 2022, the STB issued a schedule for Amtrak and the Company to submit opening, reply, and rebuttal submissions on the remaining issues in the case. Opening and reply submissions were submitted in May and July 2022, and rebuttal submissions are due in August 2022.

On April 26 and April 27, 2022, the STB held a hearing on "Urgent Issues in Freight Rail Service". The STB required four Class I railroads to attend and invited three other Class I railroads, including the Company, to attend. On May 6, 2022, the STB required all Class I railroads to submit additional weekly service data and additional monthly employment data for six months. The STB also required certain Class I railroads to submit service recovery plans, but the Company is not required to do so.

On April 22, 2022, the STB proposed to revise its existing service emergency rules for rail shippers seeking a directed service order during a service emergency and propose accelerated process for acute service emergencies. Comments were submitted in May and June 2022.

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

On March 10, 2021, the Minister issued two orders respecting railway uncontrolled movements. The first order imposes special interim procedures aimed at reducing the risks of uncontrolled movements. The second order requires the Canadian railway industry to revise existing rules to incorporate design and performance parameters for locomotives with roll-away protection, to develop a precise definition of attended versus unattended equipment as well as incorporate requirements on the use of roll-away protection to reduce the risks of an uncontrolled movement. In accordance with the second order, the Railway Association of Canada filed the requested revisions on March 10, 2022. The Minister approved the revised rules on May 9, 2022 and they will come into force on October 1, 2022.

On November 25, 2020, the Minister approved the new Duty and Rest Period Rules for Operating Employees subject to conditions clarifying some aspects of the Rules. In accordance with the new Rules, CN filed with Transport Canada on November 25, 2021, its Fatigue Management Plan containing an extensive set of prescriptive requirements for processes around scheduling, fitness for duty, deadheading, and other requirements of the new rules. The other provisions of the Rules applicable to CN will come into effect on May 25, 2023. On March 11, 2022, Transport Canada opened pre-consultations on proposed Fatigue Management System Regulations.

On April 1, 2022, the Railway Association of Canada filed with Transport Canada revisions to the Rules Respecting Track Safety. The revisions include requirements to make available to Transport Canada railway track standards and for the confidential treatment of technical sensitive information provided by railway companies. The revisions also provide for the development of a plan for selecting, defining and analyzing key performance indicators; new requirement for crossties and new inspection requirements for Class 1 track where occupied passenger trains are operated. These revisions were approved by the Minister on May 31, 2022 and they will come into force on May 31, 2023.

On July 9 and 11, 2021, Transport Canada issued orders pursuant to the Railway Safety Act in response to wildfires in British Columbia. In addition to requiring the implementation of specific measures aimed at reducing the risk of fires and improving their detection, the Order directed railway companies to complete and implement a Final Extreme Weather Fire Risk Mitigation Plan ("Final Plan") within 60 days following the issuance of these orders. In accordance with this requirement, CN filed its proposed Final Plan on September 9, 2021. On October 14, 2021, the Transportation Safety Board confirmed that its investigation of the Lytton fire had not revealed any evidence to link railway operations to the fire. On June 15, 2022, the Minister approved the *Railway Extreme Heat and Fire Risk Mitigation Rules* requiring railway companies to reduce speed and conduct additional track inspections when temperatures are high, inspect locomotive exhaust systems more frequently, and implement a fire risk reduction plan.

Transport Canada issued an order effective October 30, 2021 requiring employers in the federally regulated rail sectors to either establish mandatory vaccination policies for all employees in their organizations or require rail crew and track employees submit to rigorous testing protocols. Each railway that implements a mandatory vaccination policy must include a provision for employee attestation/declaration of their vaccination status; include a description of consequences for employees who do not comply or who falsify information; and meet standards consistent with the approach taken by the Government of Canada for the Core Public Administration. After November 15, 2021, each railway is required to guarantee employees have at least one shot of a COVID-19 vaccine or they will be unable to work. All employees were required to be fully vaccinated by January 24, 2022. On June 17, 2022, Transport Canada issued an order ending vaccination mandates for railway passengers and employees.

On July 25, 2022, the Minister issued an order requesting railway companies to revise the Railway Freight and Passenger Train Brake Inspection and Safety Rules to incorporate enhanced inspection requirements for the performance of air brakes, including in cold temperatures. The proposed revisions respecting air brake train tests must be filed by November 30, 2022 and those respecting test standards must be filed by May 31, 2023.

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.

On February 18, 2020, the Federal Railroad Administration (FRA) issued a final rule that requires each Class I railroad and certain shortline railroads to develop a Railroad Risk Reduction Program in a written plan that will be reviewed and approved by the FRA and will be subject to audit. CN submitted its plan on August 16, 2021. Rail labor previously challenged aspects of the FRA rule in the United States Court of Appeals for the DC Circuit, including protection from discovery for information compiled by railroads for purposes of implementing the rule. On August 20, 2021, the United States Court of Appeals for the DC Circuit denied the challenge filed by rail labor to the FRA's final rule concerning the risk reduction programs. In November 2021, the FRA denied the Class I risk reduction program plans with comments. CN submitted its revised plan on February 7, 2022 and made further revisions in response to comments from the FRA on March 25, 2022. On July 7, 2022, the FRA approved the Company's risk reduction program plan.

The U.S. government previously announced that it intended to impose vaccine mandates on (1) government contractors and (2) all private sector employers with 100 or more employees. As to government contractors, the Biden Administration issued Executive Order 14042 called "Ensuring Adequate COVID-19 Safety Protocols for Federal Contractors." The Executive Order required federal government contractors and others doing business with federal contractors to require vaccination of their employees. The contractor mandate was originally scheduled to go into effect on January 10, 2022. However, a federal court enjoined the contractor mandate on a nationwide basis. Requests to stay the injunction pending appeal were denied. The Eleventh Circuit Court of Appeals held oral argument on the validity of the contractor mandate on April 8, 2022. The case remains pending. For private sector employers, the Occupational Safety and Health Administration (OSHA) issued an emergency temporary standard (ETS) requiring employers with 100 or more employees to mandate vaccination. After a decision by the United States Supreme Court, OSHA withdrew the ETS.

On March 1, 2021, the FRA implemented an emergency order governing the use of face masks in railroad operations. On April 19, 2022, the FRA announced that it will not enforce its face mask emergency order at this time in light of the court decision concerning the Centers for Disease Control and Prevention (CDC) transportation mask order.

The FRA issued a final rule requiring Class I and other railroads to submit fatigue risk management program plans to the FRA for approval. The plans are due by July 13, 2023. Railroads have 36 months to implement their plans after the FRA approves the plans.

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.

Fuel costs and supply disruptions

The Company is susceptible to the volatility of fuel prices due to changes in the economy or supply disruptions. Rapid rises in fuel prices, such as those experienced in the first half of 2022, or fuel supply disruptions can occur due to refinery disruptions, production quota restrictions, climate, as well as labor and political instability such as the ongoing Russia-Ukraine conflict. Increases in fuel prices or supply disruptions may materially adversely affect the Company's results of operations, financial position or liquidity.

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 June 30, 2022, have concluded that the Company's disclosure controls and procedures were effective.

During the second quarter ended June 30, 2022, there were no changes in the Company's internal control over financial reporting (as defined in *Exchange Act* Rules 13a-15(f) and 15d-15(f)) that materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.