

# ***RAIL TRENDS 2023***



Railway Association  
of Canada





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## MEMBER COMPANIES 2022

<b>ACR</b>	Agawa Canyon Railroad, ULC (incl. Agawa Canyon Tour Train, ACTT)
<b>AMC</b>	ArcelorMittal Infrastructure Canada S.E.N.C.
<b>AMTK</b>	Amtrak
<b>APR</b>	Alberta Prairie Railway Excursions
<b>BCR</b>	BCR Properties Ltd.
<b>BCRY</b>	Barrie-Collingwood Railway
<b>BNSF</b>	BNSF Railway Company
<b>BRR</b>	Battle River Railway NGC Inc.
<b>BSR</b>	Big Sky Rail Corp.
<b>BTRC</b>	Boundary Trail Railway Co.
<b>CBNS</b>	Cape Breton & Central Nova Scotia Railway
<b>CEMR</b>	Central Manitoba Railway Inc.
<b>CFC</b>	Train Touristique de Charlevoix Inc.
<b>CFL</b>	Compagnie du Chemin de Fer Lanaudière Inc.
<b>CN</b>	Canadian National Railway
<b>CPKC</b>	Canadian Pacific Kansas City
<b>CR</b>	Capital Railway
<b>CRR</b>	Romaine River Railway Company
<b>CSX</b>	CSX Transportation Inc.
<b>CTRW</b>	Carlton Trail Railway
<b>EMRY</b>	Eastern Maine Railway Company
<b>ETR</b>	Essex Terminal Railway Company
<b>EXO</b>	exo
<b>GEXR</b>	Goderich-Exeter Railway Company Limited
<b>GIO</b>	GIO Rail Holdings Corporation (incl. Trillium Railway (TRRY) and St. Thomas, Aylmer, Tillsonburg Railway (STTY))
<b>GO</b>	Metrolinx
<b>GWRS</b>	Great Western Railway Ltd.
<b>HBRY</b>	Hudson Bay Railway
<b>HCRY</b>	Huron Central Railway Inc.

<b>KLTR</b>	Knob Lake and Timmins Railway
<b>KRC</b>	Keewatin Railway Company
<b>LMR</b>	Last Mountain Railway
<b>NBSR</b>	New Brunswick Southern Railway Company Limited
<b>NCR</b>	Nipissing Central Railway Company
<b>NS</b>	Norfolk Southern Railway
<b>ONR</b>	Ontario Northland Transportation Commission
<b>OSR</b>	Ontario Southland Railway Inc.
<b>OVR</b>	Ottawa Valley Railway
<b>PDCR</b>	Prairie Dog Central Railway — Vintage Locomotive Society Inc.
<b>QGRY</b>	Québec Gatineau Railway Inc.
<b>QIO</b>	Quebec Iron Ore Inc.
<b>QNSL</b>	Québec North Shore and Labrador Railway Company Inc.
<b>RMR</b>	Great Canadian Railtour Company Ltd.
<b>RS</b>	Roberval and Saguenay Railway Company
<b>SFG</b>	Société du chemin de fer de la Gaspésie
<b>SFP</b>	SFP Pointe-Noire (Chemin de fer Arnaud Québec )
<b>SLQ</b>	St. Lawrence & Atlantic Railroad (Québec) Inc.
<b>SOR</b>	Southern Ontario Railway
<b>SRV</b>	Southern Railway of British Columbia Ltd. (incl. Southern Railway of Vancouver Island (SVI))
<b>SSHR</b>	South Simcoe Railway
<b>STPP</b>	St. Paul & Pacific Northwest Railroad Company LLC
<b>TRT</b>	Tshuetin Rail Transportation Inc.
<b>TTR</b>	Toronto Terminals Railway Company Limited
<b>UP</b>	Union Pacific Railroad Company
<b>VIA</b>	VIA Rail Canada Inc.
<b>WCE</b>	West Coast Express Ltd.
<b>WP&amp;YR</b>	White Pass and Yukon Route Railroad

Current membership: <https://www.railcan.ca/membership/member-railways/>

## ASSOCIATE MEMBERS 2022

Absopulse Electronics Ltd.	L.A. Hébert Ltée
Ashcroft Terminal	McCarthy Tétrault
Atlantic Industries Limited	Messer Canada Inc.
Bayside Canadian Railway	NARSTCO
British Columbia Institute of Technology	Ontario Steel Haulers Inc.
CAD Railway Industries Ltd.	PNR Railworks Inc.
Canadian Heartland Training Railway Services Inc.	Rail Cantech
Canadian Rail Research Laboratory	Rail-Werx Inc.
Canadian Urban Transit Association	Red River College
Cando Rail & Terminals Ltd	RTC Rail Solutions Ltd
Cégep de Sept-Iles	Sait Polytechnic
Colliers Project Leaders	Sands Bulk Transport
Confederation College of Applied Arts and Technology	Sandy Cooke Consulting Inc.
CPCS Transcom Limited	SC3 Automation Inc
Crescent Point Energy	Siemens Mobility Limited
CSTP Inc.	Société du port ferroviaire de Baie-Comeau (SOPOR)
Davanac Inc.	Soulanges Railway Services Inc.
Dillon Consulting Limited	Standard Rail Corporation
Dominion Railway Services Ltd.	Stantec Inc.
Drain-All Ltd.	Stein Monast
Forma-Train	Suncor Energy Products Partnership
Frauscher Sensor Technology USA Inc.	Toromont Cat
GATX Rail Canada Corporation	Torq Transloading
Greeman Asset Management Solutions Inc.	T-Rail Products Inc.
Groupe Pelletier Entretien	Tybo Contracting Ltd.
Harsco Rail	Universal Rail Systems
IMTT Quebec Inc.	VIP Rail ULC
J Lanfranco Fastener Systems Inc	Wabtec Corporation
Jade Acoustics Inc.	Whiting Equipment Canada
Jones Rail Industries Ltd.	X-Rail Signalisation Inc.
Koch Fertilizer Canada ULC	

Current associate membership: <https://www.railcan.ca/membership/rac-associate-members/>

## FOREWORD

This is the 31<sup>st</sup> edition of *Rail Trends*. For three decades and counting, the Railway Association of Canada (RAC) has issued its annual report on Canada's rail industry. This publication contains a rolling 10-year review of financial and statistical results, reflecting multiple aspects of railway performance in Canada.<sup>1</sup> This edition covers the 2013 to 2022 period.

The data in *Rail Trends* are reported by RAC member railways,<sup>2</sup> including:

- 38 shortline freight railways
- 6 Class 1 freight railways<sup>3</sup>
- 6 tourist railways
- 5 commuter railways
- 2 intercity passenger railways

Canadian Class 1 freight railways (CN and CPKC<sup>4</sup>) account for the majority of freight rail activity in Canada. For this reason, most of the freight data presented in *Rail Trends* reflect the performance of these two Class 1 carriers.

RAC members account for the vast majority of smaller (non-Class 1) railway activity in Canada. However, this report does not capture data from non-members; it is therefore not representative of the entire sector. Data pertaining to non-Class 1 railways in this report should be viewed with that lens.

*Rail Trends* data are categorized into the following sections:

- Freight Transportation
- Fuel
- Passenger transportation
- Safety
- Operating finances, investments, and taxes
- Employment
- Track and equipment

Data reflects performance in Canada only. All monetary statistics are in Canadian dollars. Figures may not add up to totals due to rounding. Definitions of terms that are capitalized are included in the glossary in *Appendix A*, conversion factors can be found in *Appendix B*, safety-specific definitions are provided in *Appendix C*, and notes on statistical revisions are provided in *Appendix D*.

<sup>1</sup> In some cases, relative variations over time reflect a change in the way certain members report data, or a change in membership.

<sup>2</sup> Some railways perform more than one service (e.g., shortline freight and intercity passenger). To avoid double-counting, railways are listed by their primary service.

<sup>3</sup> Data from the four U.S. Class 1 railways are treated as shortline data in the Rail Trends Reports.

<sup>4</sup> The data for CPKC in *Rail Trends 2023* reflect the position of Canadian Pacific (CP) before consolidation with Kansas City Southern Railway.



## READERS' COMMENTS

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## EXECUTIVE SUMMARY

Canada's railways are pulling for Canada. Day in, day out, more than 35,000 dedicated railroaders work tirelessly to deliver for Canadians and the Canadian economy. That was as true in 2022 as it has ever been.

Despite several challenges, including the reintroduction of COVID-related public health restrictions early in the year, lingering global supply chain issues, and high diesel fuel costs, Canada's railways persevered. They added jobs, increased the diversity of their workforces, boosted ridership, maintained freight rates that are amongst the lowest anywhere, led in supply chain performance, set records in fuel efficiency, and paid a record amount of taxes to Canadian governments supporting social programs we all rely on.

Canadian railways remained reliable links in integrated supply chains. Canadian freight railways transported half of our country's exports in 2022 and a total of more than \$380 billion worth of goods. In 2022 (and every year throughout the pandemic) Canadian Class 1 railways' average terminal dwell time remained below eight hours. Yet Canadian ports' average terminal dwell time more than doubled, from 72 hours in 2019 to 158 hours in 2022, and global marine vessel on-time performance decreased from 78% to 42%.

Rail freight rates remained amongst the most competitive in the world, at just 4.07 cents per revenue tonne-kilometre. In 2022, rising fuel costs were a significant driver of inflation and railways were not immune. Despite a 64.1% increase in the cost of diesel fuel for Canadian railways, rail freight rates increased by just 14.1%—providing stability for shippers, limiting consumer impacts, and driving the Canadian economy. The increase in rail freight rates was much lower than the 22.9% increase in truck transportation prices and the 26.8% increase in commodity prices.

In 2022, Canadian railways set a record for taxes paid to federal and provincial governments—more than \$2.2 billion. They also invested \$2.4 billion into their Canadian assets, bringing the total to over \$21.5 billion over the past decade. These investments in track, rolling stock, technology, and other equipment improve the safety, capacity, efficiency, and fluidity of Canadian supply chains. Railways remain the backbone of Canada's economy.

In 2022, Canada's railways employed more people, supported more jobs, increased wages, and improved the diversity of their workforces. Railways created good jobs, they increased employment by 3.2% and the average industry wage by 2.2% to \$104,443. Railways made progress on their commitments to diversity, equity, and inclusion. In 2022, the representation of women, persons with disabilities, visible minorities, and Indigenous peoples employed in the

rail industry all increased. RAC is now collecting information on diversity representation in leadership teams and on boards of directors.

Safety is job one for every railway and every railroader. Thanks to high levels of investment and commitment to safety culture, in 2022, both the freight accident rate and the dangerous goods accident rate were below the 2017–2021 average.

In 2022, railways continued to build upon their status as the most fuel-efficient means of ground transportation and helped Canada progress on its emissions reduction targets. Total railway fuel consumption and greenhouse gas emissions were reduced by 0.7%. Freight fuel efficiency improved by 1.1% to 711 revenue ton-miles per gallon—setting another consecutive record. Various initiatives contributed to these improvements, including investments in locomotive fleet modernization, fuel saving technologies, and low-carbon fuels, as well as improved operational practices and training employees to optimize fuel efficiency.

Railways are living their commitment to continuously invest, innovate, and improve as they continue to pull for Canada.



## A 10-YEAR SNAPSHOT OF RAIL IN CANADA

	2013	2021	2022
<b>FREIGHT TRAFFIC</b>			
Revenue ton-miles (billions)	271.7	303.9	301.0
Revenue tonne-kilometres (billions)	396.7	443.6	439.4
Gross ton-miles (billions)	504.6	571.7	564.5
Gross tonnes-kilometres (billions)	736.6	834.6	824.0
Freight train-miles (thousands)	67,299.1	61,611.4	62,615.3
Freight train-kilometres (thousands)	108,307.1	99,153.6	100,769.3
Carloads originated (thousands)	4,268.9	5,493.5	5,593.8
Tons originated (thousands)	327,145.3	363,479.4	367,989.6
Tonnes originated (thousands)	296,786.0	329,748.3	333,839.9
Intermodal carloads originated (thousands)	987.2	1,955.8	2,012.0
Freight revenue per ton-mile (cents)	4.43	5.21	5.95
Freight revenue per tonne-km (cents)	3.03	3.57	4.07
Gallons of fuel consumed (millions)	462.9	447.9	444.9
Litres of fuel consumed (millions)	2,104.4	2,036.2	2,022.4
RTM per gallon of fuel consumed	615.4	704.0	711.4
RTK per litre of fuel consumed	197.6	226.1	228.5
<b>PASSENGER TRANSPORTATION</b>			
Total passengers carried (thousands)	76,400	14,901	31,367
<b>FINANCIAL INFORMATION</b>			
Operating expenses (millions)	10,382.6	11,686.5 <sup>r</sup>	13,596.8
Operating revenues (millions)	13,330.8	17,246.4 <sup>r</sup>	20,474.9
Operating income (millions)	2,948.2	5,559.9 <sup>r</sup>	6,878.1
<b>INVESTMENTS</b>			
Total investments (millions)	1,764.6	2,300.1	2,423.6
<b>TAXES</b>			
Taxes paid (millions)	1,209.5	1,919.2 <sup>r</sup>	2,230.5

	2013	2021	2022
<b>EMPLOYMENT</b>			
Employees	33,167	34,318	35,404
Average wage per employee	88,153	102,163 <sup>r</sup>	104,443
<b>TRACK AND EQUIPMENT</b>			
Total miles of freight track operated	27,276	26,490	26,439
Total kilometres of freight track operated	43,897	42,631	42,550
Freight cars (thousands)	59.4	60.0	55.8
Locomotives	3,043	3,606 <sup>r</sup>	3,828

Note: See *Appendix D* for an explanation on revised data (r).



## FREIGHT TRANSPORTATION

### REVENUE TON-MILES, GROSS TON-MILES AND FREIGHT TRAIN-MILES

Over the past decade, the freight rail sector has grown significantly. Freight traffic, measured by REVENUE TON-MILES (RTMs),<sup>5</sup> increased by 10.8% while the freight sector’s total workload, measured by GROSS TON-MILES (GTMs), increased by 11.9%.

Measured in RTMs, overall freight traffic in 2022 was slightly below 2021 levels. In 2022, RTMs decreased by 1.0% from 2021 and was 2.1% below the 2017–2021 average. GTMs decreased by 1.3% from 2021 and was 2.8% below to the 2017–2021 average.

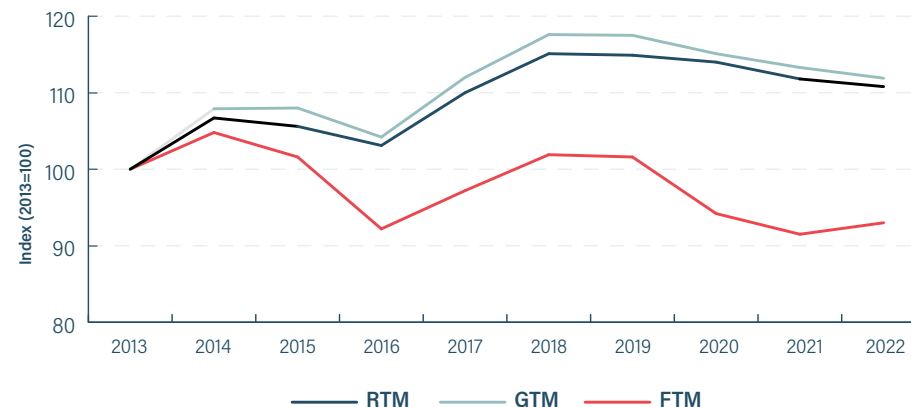
The distance travelled by Canada’s freight trains, measured in freight TRAIN-MILES (FTMs), increased by 1.6% compared to 2021, but was 4.4% below the 2017–2021 average. The general trend over the past decade towards longer and heavier trains, which enable railways to carry more traffic without a corresponding increase in TRAIN MILES, did not continue into 2022 as the average train was slightly shorter and lighter (see [Freight Train Performance on page 23](#)).

### RTMS, GTMS AND FTMS

	RTM (millions)	RTK (millions)	GTM (millions)	GTK (millions)	FTM (thousands)	FTK (thousands)
2013	271,736	396,695	504,553	736,574	67,299	108,307
2014	289,890	423,197	544,443	794,808	70,526	113,500
2015	286,869	418,786	545,136	795,819	68,407	110,091
2016	280,217	409,075	525,771	767,549	62,023	99,816
2017	298,825	436,240	565,148	825,034	65,437	105,310
2018	312,758	456,581	593,461	866,366	68,571	110,354
2019	312,216	455,790	592,862	865,491	68,377	110,041
2020	309,831	452,308	580,971	848,133	63,383	102,004
2021	303,883	443,624	571,720	834,628	61,611	99,154
2022	300,986	439,395	564,452	824,017	62,615	100,769

<sup>5</sup> Definitions of terms that are capitalized are found in *Appendix A – Glossary*.

### RTMS, GTMS AND FTMS



### CARLOADS

Over the past decade, carloads have increased at more than twice the rate of the increase in originating tonnage—leading to lower average carload weights. At first this seems counterintuitive, since railways are investing in higher-capacity railcars, but much of this trend can be attributed to a change in the mix of traffic. From 2013 to 2022, the number of INTERMODAL carloads more than doubled, while non-INTERMODAL carloads increased by just 8.6% (see [Freight Carloads and Revenues by Commodity on page 17](#)). The average weight of an INTERMODAL carload, even with double stacking, is significantly less than that of a non-INTERMODAL carload.<sup>6</sup>

From 2021 to 2022, the number of Canadian originating carloads increased by 1.8%, and the originating tonnage increased by 1.2%.

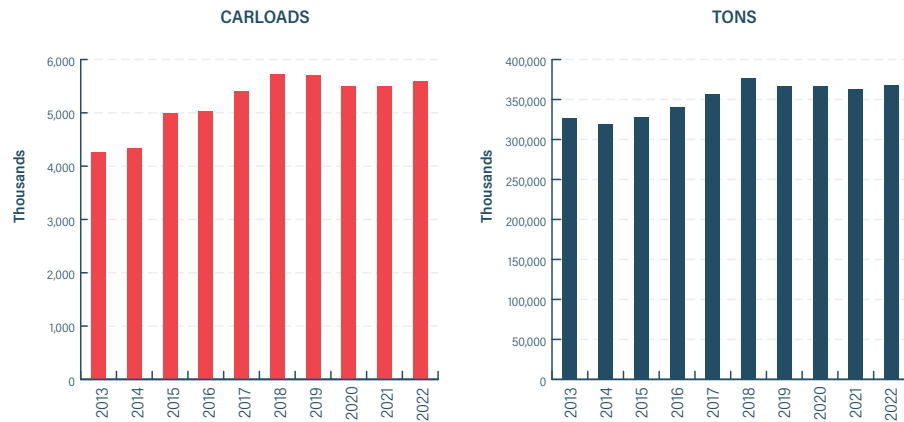
<sup>6</sup> Data from Statistics Canada’s Monthly Railway Carloadings show that in 2022, the average weight of a non-intermodal carload was 85.4 tonnes, compared to 15.0 tonnes for an intermodal unit (or 30.1 tonnes if intermodal units are double stacked on a single railcar).



## ORIGINATING CARLOADS AND TONNAGE

	Carloads originated (thousands)	Tons originated (thousands)	Tonnes originated (thousands)
2013	4,269	327,145	296,786
2014	4,332	319,781	290,105
2015	4,995	328,212	297,754
2016	5,035	340,628	309,017
2017	5,410	357,152	324,008
2018	5,732	376,625	341,674
2019	5,708	366,956	332,903
2020	5,497	366,396	332,394
2021	5,493	363,479	329,748
2022	5,594	367,990	333,840

## ORIGINATING CARLOADS AND TONNAGE



## FREIGHT CARLOADS AND REVENUES BY COMMODITY

The RAC tracks 11 commodity groupings of freight moved by railways in Canada. Over the past decade, the commodity groupings that experienced the most significant increases in carloads include intermodal (1,024,817 or 103.8%), minerals (334,860 or 41.3%), and manufactured & miscellaneous goods (99,844 or 96.4%).<sup>7</sup>

<sup>7</sup> The largest increases and decreases are listed by absolute number of carloads, and not percentage.

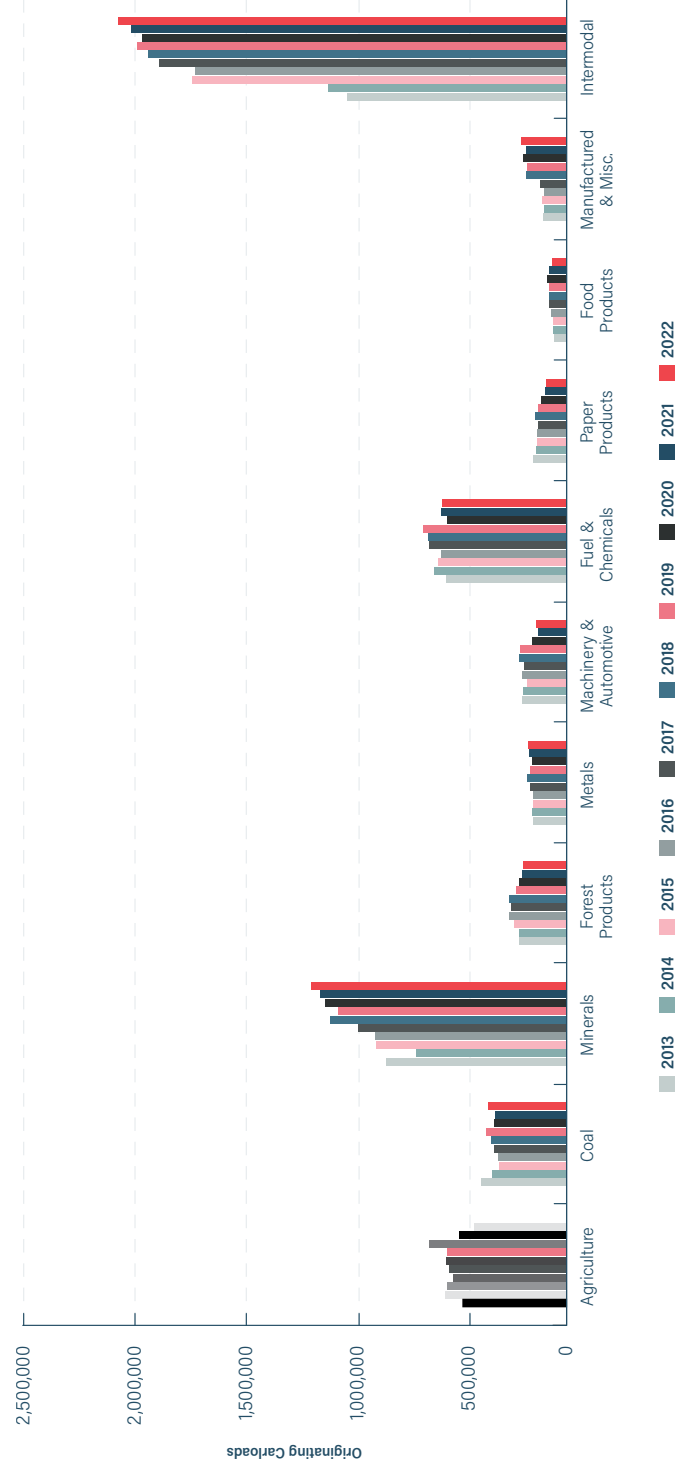


## ORIGINATING CARLOADS BY COMMODITY GROUPING

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total Commodities*
Agriculture	465,816	547,122	537,013	511,228	527,271	542,722	538,726	615,441	483,085	413,939	4,062,442
Coal	383,013	336,632	303,932	309,403	326,228	337,323	361,067	323,880	321,232	352,549	987,186
Minerals	810,750	676,865	854,186	859,479	937,737	1,060,395	1,027,286	1,086,036	1,105,311	1,145,610	4,093,278
Forest products	215,254	213,980	235,169	257,774	251,273	260,377	225,031	213,474	198,714	196,436	4,830,398
Metals	150,906	157,086	150,273	151,609	165,404	178,784	164,230	156,271	168,593	172,511	4,823,956
Machinery & automotive	199,088	193,294	178,429	199,927	189,632	214,592	208,879	154,487	126,451	138,403	5,170,929
Fuel & chemicals	540,411	593,186	579,254	565,331	617,792	622,769	645,268	535,268	565,748	558,806	5,496,976
Paper products	150,029	139,110	133,800	130,882	129,675	140,822	127,821	113,001	87,050	92,140	5,483,989
Food products	56,405	61,993	62,160	68,951	79,041	78,864	80,009	87,050	79,547	65,990	5,385,041
Manufactured & miscellaneous	103,605	101,733	112,194	99,480	118,651	181,935	178,379	194,640	180,944	203,449	5,283,280
Intermodal	987,186	1,072,278	1,683,988	1,669,892	1,828,225	1,878,392	1,927,291	1,905,493	1,955,771	2,012,003	5,351,835

\* Not all RAC member companies report carloads originated by commodity grouping. As a result, the total number of carloads originated by commodity grouping is lower than the total number of carloads originated (page 16).

## ORIGINATING CARLOADS BY COMMODITY GROUPING



In 2022, intermodal, minerals, fuels & chemicals, and agriculture were the largest groupings of carloads transported by Canada's railways, accounting for over three-quarters of total carloads.

Six commodity groupings experienced increases in carloads from 2021 to 2022, including intermodal (56,232 or 2.9%), minerals (40,299 or 3.6%), coal (31,317 or 9.7%), manufactured & miscellaneous (22,505 or 12.4%), machinery & automotive (11,951 or 9.5%) and metals (3,981 or 2.3%). The other five commodity groupings experienced decreases compared to 2021. Agriculture experienced the most significant decrease in carloads (-69,146 or -14.3%) followed by food products (-13,557 or -17.0%). A small harvest in 2021, following severe drought in the Prairies, resulted in fewer shipments of agricultural and food products throughout most of 2022. Fuel & chemicals experienced a decrease of 6,942 carloads (or -1.2%), while paper products (-5,744 or -5.9%) and forest products (-2,278 or -1.1%) decreased similarly to the decrease in Canada and U.S. housing starts (-3.4% year-over-year).<sup>8</sup>

The commodity groupings with the higher numbers of carloads tend to generate higher revenues, as would be expected; however, there are some notable differences. The top four commodities by carloads are the same as the top four by revenues, but the order and shares are a bit different. As documented in Canadian railways' public reports, freight revenues per carload and per ton-mile vary by commodity, and the average length of haul can vary by commodity as well. In 2022, intermodal, fuel & chemicals, agriculture, and minerals were the largest revenue generators for Canadian railways, accounting for two-thirds of freight revenues.

<sup>8</sup> [https://thoughtleadership.rbc.com/wp-content/uploads/Macro\\_Q3\\_2023.pdf](https://thoughtleadership.rbc.com/wp-content/uploads/Macro_Q3_2023.pdf)

## FREIGHT REVENUE BY COMMODITY GROUPING (\$ MILLIONS)

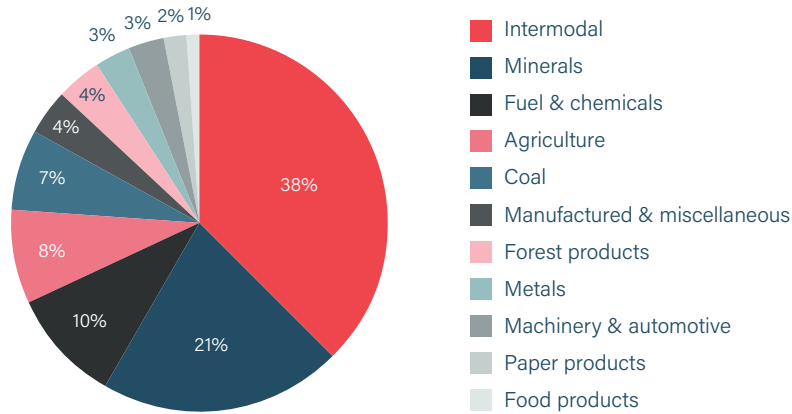
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total Commodities*
Agriculture	1,433	1,725	1,871	1,731	1,865	2,040	2,129	2,431	1,974	1,927	9,002
Coal	833	760	632	628	695	768	837	725	692	829	9,869
Minerals	973	1,030	1,336	1,061	1,101	1,555	1,544	1,390	1,344	1,564	10,682
Forest products	660	702	857	952	918	968	899	868	919	1,039	10,083
Metals	448	501	487	429	478	557	513	481	548	634	10,728
Machinery & automotive	481	481	541	567	552	664	630	489	474	605	12,355
Fuel & chemicals	1,421	1,756	1,934	1,719	1,824	1,944	2,137	1,759	1,905	2,186	12,557
Paper products	406	393	426	423	425	477	445	415	396	427	12,062
Food products	155	181	235	258	295	305	326	373	343	321	11,971
Manufactured & miscellaneous	174	177	192	181	221	510	516	578	645	823	13,659
Intermodal	2,019	2,162	2,171	2,135	2,354	2,566	2,580	2,553	2,731	3,302	

Note: See Appendix D for an explanation on revised data (r).

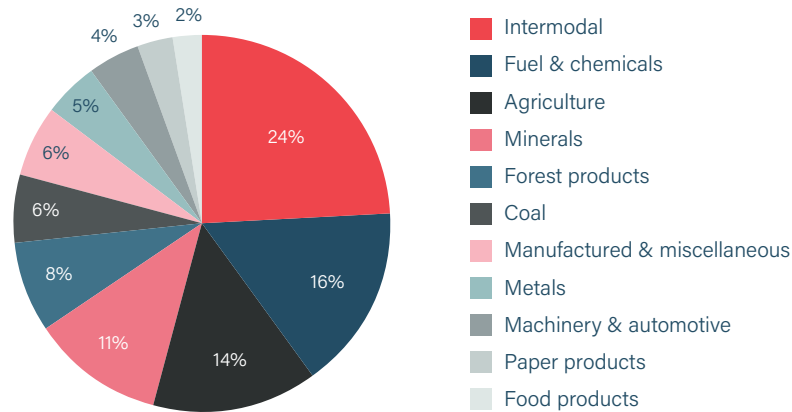
\*Not all RAC member companies report revenue from carloads originated by commodity grouping. The data in this section reflect reported freight revenue from originated carloads grouped by commodity grouping. As a result, total freight revenue from carloads originated by commodity grouping is lower than total freight operating revenue (page 41).

The figures below illustrate the distribution of originating carloads and freight revenues by commodity grouping.

### ORIGINATING CARLOADS BY COMMODITY GROUPING, 2022



### FREIGHT REVENUE BY COMMODITY GROUPING, 2022



## FREIGHT TRAIN PERFORMANCE

### FREIGHT TRAIN PERFORMANCE INDICATORS

	Average length of haul by Class 1 railways		Average length of haul by shortline railways		Average cars per freight train	Average train weight
	Miles	Kilometres	Miles	Kilometres	Cars	Tons
2013	871	1,402	127	204	98	7,499
2014	908	1,462	132	213	100	7,720
2015	943	1,517	142	228	102	7,968
2016	937	1,508	137	220	108	8,477
2017	947	1,524	129	208	114	8,636
2018	930	1,496	120	192	113	8,654
2019	920	1,481	118	190	114	8,670
2020	941	1,515	114	184	120	9,159
2021	913	1,470	106	171	121	9,279
2022	884	1,423	107	172	116	9,014

In 2022, shipments transported by Canada's CLASS 1 RAILWAYS (CN and CPKC) travelled an average distance<sup>9</sup> of 884 miles (1,423 kilometres), which is 3.2% shorter than in 2021. Shipments carried by Canada's SHORTLINE RAILWAYS travelled an average distance of 107 miles (172 kilometres), which is 0.7% longer than in 2021.

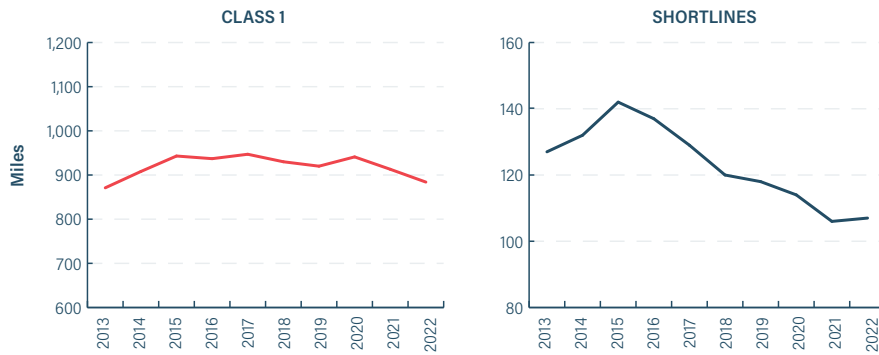
The average length of haul varies significantly across SHORTLINE RAILWAYS due to variations in the length of TRACK OPERATED.<sup>10</sup> Many factors could contribute to changes in the average length of haul. In addition to changes in traffic origin and destination, average haul can be impacted by shifts in traffic shares between railways (that have different average hauls) or shifts in commodity shares (as average haul varies by commodity).

<sup>9</sup> The average length of haul is calculated by dividing revenue ton-miles (revenue tonne-kilometres) by total tons (tonnes). Data from railways that do not report both metrics are excluded from the calculation.

<sup>10</sup> In 2022, the length of track operated by Canadian shortline railways ranged from just a few miles to over 700 miles, with a median length of around 85 miles and average of around 135.

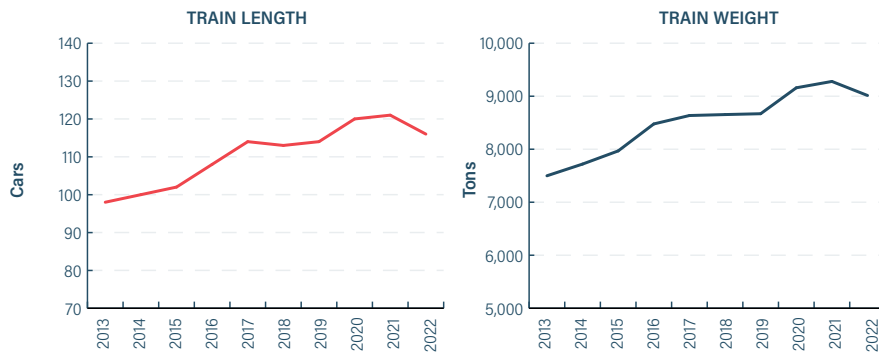


## AVERAGE LENGTH OF HAUL



As mentioned earlier in the report, average train length and weight did not continue their upward trend in 2022. In 2022, the average number of cars<sup>11</sup> per freight train decreased by 4.0% from 2021 but remained 17.9% above the 2013 level. The average train weight<sup>12</sup> decreased by 2.9% from 2021 but remained 20.2% above the 2013 level. In 2021, the average train carried 116 cars and weighed 9,014 tons.

## AVERAGE TRAIN SIZE



<sup>11</sup> The average number of cars per freight train is calculated by dividing loaded & empty car-miles (car-kilometres) by freight train-miles (train-kilometres). Data from railways that do not report both metrics are excluded from the calculation.

<sup>12</sup> Average train weight is calculated by dividing gross ton-miles by freight train-miles. Data from railways that do not report both metrics are excluded from the calculation.

## FREIGHT RATES

Freight revenue per ton-mile is a good measure of railway freight rates. It shows the revenue collected by railways for moving a certain amount of goods over a certain distance.<sup>13</sup> Freight rates must be analyzed in conjunction with costs and other prices at a time of significant general price inflation worldwide. In 2022, in Canada, rising fuel costs were a significant driver of inflation across many indices.

In 2022, despite a 64.1% increase in the cost of diesel fuel for Canadian railways (see [Fuel on page 29](#)), rail freight rates increased by just 14.1%, to 4.07 cents per REVENUE TONNE-KILOMETRE or 5.95 cents per REVENUE TON-MILE. Statistics Canada's data indicate that the truck transportation price index increased by 22.9% (not shown).<sup>14</sup> The consumer price index increased by 6.8%, the industrial product price index increased by 12.8%, and the commodity price index increased by a whopping 26.8%.

Since 1988 (the first year in RAC's *Rail Trends* Database, following enactment of the *National Transportation Act*, 1987), railway freight rates have increased by a total of 63.0%, which is much less than the increases in consumer prices (112.4%), industrial product prices (116.7%), and commodity prices (185.0%).<sup>15</sup>

## FREIGHT RATES AND OTHER PRICE INDICES

	Freight revenue (cents) per		Freight revenue per RTM index	Commodity price index*	Consumer price index	Industrial product price index
	RTM	RTK	1988=100	1988=100	1988=100	1988=100
2013	4.43	3.03	121.4	231.5	172.5	156.2
2014	4.58	3.14	125.6	226.6	175.8	160.0
2015	4.63	3.17	126.7	144.7	177.8	158.7
2016	4.51	3.09	123.7	131.8	180.3	158.4
2017	4.55	3.12	124.8	152.6	183.1	163.3
2018	4.82	3.30	132.0	166.4	187.4	169.6
2019	5.07	3.47	138.8	160.2	191.0	169.4
2020	4.97	3.41	136.2	140.1	192.4	168.7
2021	5.21	3.57	142.9	224.7	198.9	192.1
2022	5.95	4.07	163.0	285.0	212.4	216.7

Note: See *Appendix D* for an explanation on revised data (r).

Sources: Bank of Canada (commodity price index); Statistics Canada (consumer price index; industrial product price index).

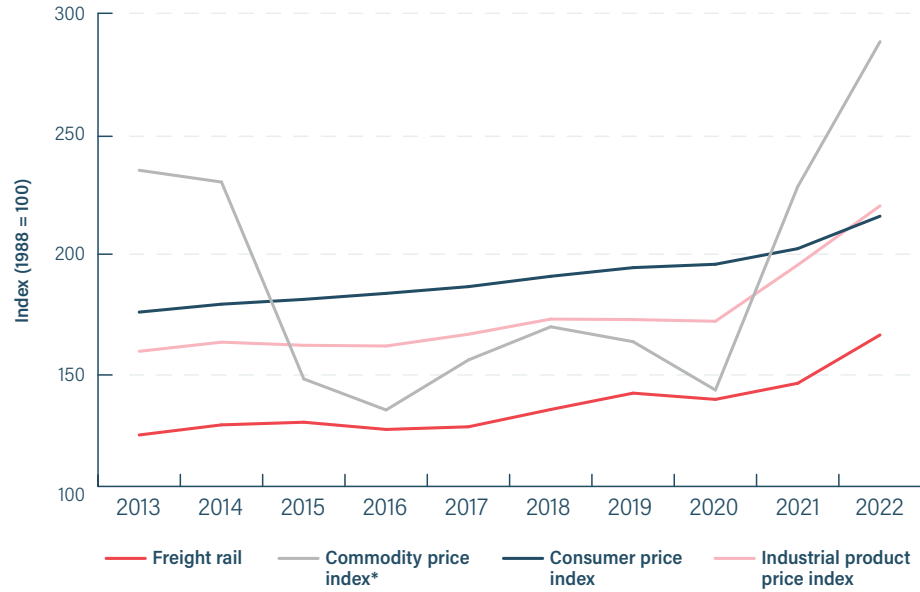
\*The Bank of Canada regularly revises its commodity price data.

<sup>13</sup> Freight revenue per ton-mile is calculated by dividing freight operating revenue by revenue ton-miles (revenue tonne-kilometres).

<sup>14</sup> Statistics Canada, *For-hire Motor Carrier Freight Services Price Index*.

<sup>15</sup> The trucking price index begins in 2007, and therefore, comparisons to a 1988 baseline are not possible.

## FREIGHT RATES AND OTHER PRICE INDICES



\*The Bank of Canada regularly revises its commodity price data.

## PRODUCTIVITY

Freight railway labour productivity can be measured using RTMs per freight employee.<sup>16</sup> Using this measure, employee productivity decreased by 0.3% in 2022 but was 15.1% higher than in 2013. The number of freight road miles per freight employee<sup>17</sup> remained flat.

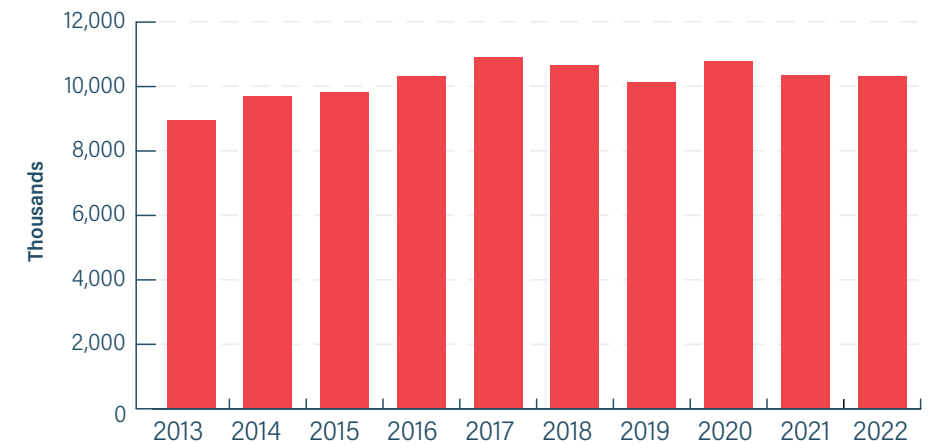
<sup>16</sup> Freight rail labour productivity is calculated by dividing the total revenue ton-miles by the average number of freight railway employees, each year. Data from railways that don't report both metrics are excluded from the calculation.

<sup>17</sup> Road miles per employee is calculated by dividing freight road miles operated by freight employment. Data from railways that don't report both metrics are excluded from the calculation.

## PRODUCTIVITY MEASURES

	RTM per freight employee (thousands)	RTK per freight employee (thousands)	Road miles per freight employee	Road kilometres per freight employee
2013	8,966	13,090	0.90	1.45
2014	9,683	14,136	0.90	1.45
2015	9,834	14,356	0.93	1.50
2016	10,329	15,079	1.00	1.61
2017	10,917	15,938	0.96	1.55
2018	10,666	15,571	0.87	1.40
2019	10,137	14,799	0.85	1.37
2020	10,795	15,759	0.90	1.45
2021	10,355	15,117	0.88	1.42
2022	10,319	15,065	0.88	1.42

## RTM PER FREIGHT EMPLOYEE

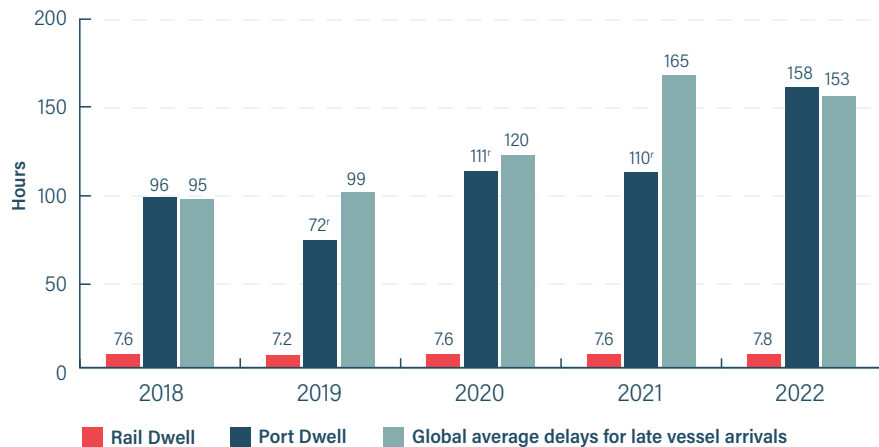


## SUPPLY CHAINS

Canadian and global supply chains were disrupted throughout 2022 by global supply chain challenges, including a chip shortage and global shipping CONTAINER issues, the COVID-19 Omicron variant and evolving restrictions, and other factors. As a result, supply chain bottlenecks, dwell times, and delays either remained high or increased. Complex global supply chains are only as strong as their weakest link.

Canadian rail remained a healthy and strong link in these supply chains. In 2022, and every year throughout the pandemic, Canadian CLASS 1 RAILWAYS' average terminal dwell time<sup>18</sup> remained below eight hours. Yet Canadian ports' average terminal dwell time<sup>19</sup> increased by 120.3%, from 72 hours in 2019 to 158 hours in 2022. At the global level, the ON-TIME PERFORMANCE of marine vessels decreased from 78% in 2019 to 42% in 2022 (not shown).<sup>20</sup> For vessels that were not on-time, the average delay increased by 54.7%, from 99 hours in 2019 to 153 hours in 2022.<sup>21</sup>

## SUPPLY CHAIN PERFORMANCE



r: Port Dwell was revised from 73 to 72 in 2019, from 100 to 111 in 2020, and from 104 to 110 in 2021. *Rail Trends 2022* used the average monthly port dwell to obtain an annual figure (which gives the same weight to each month). *Rail Trends 2023* uses a December YTD dwell figure from the Port of Montreal (which applies a weighting to the different months).

<sup>18</sup> The Canadian Class 1 railways' average dwell time is calculated as a simple average of CN and CPKC.

<sup>19</sup> The Canadian ports' average dwell time is calculated as a simple average of the Port of Vancouver and the Port of Montreal.

<sup>20</sup> Sea-Intelligence, *Global Liner Performance (GLP) report*.

<sup>21</sup> Ibid.

## FUEL

In 2022, RAC member railways consumed 445 million gallons (2.0 billion litres) of fuel, a reduction of 0.7% compared to 2021, and 6.4% below the 2017–2021 average. Passenger rail fuel consumption increased by 34.0% compared to 2021, as ridership and the number of trains increased, but remained well-below pre-pandemic levels, when ridership was much higher. Freight rail fuel consumption (including yard and work trains) decreased by 2.0%.

Following a 30.5% increase in 2021, the cost of diesel fuel increased by a further 64.1% in 2022, from \$4.20 per gallon (\$0.92 per litre) to \$6.89 per gallon (\$1.52 per litre).



## FUEL CONSUMPTION AND COST

	Total fuel consumption		Freight fuel consumption (incl. yard and work train fuel)		Freight fuel consumption (excl. yard and work train fuel)		Passenger fuel consumption		Cost of diesel fuel	
	Gallons (thousands)	Litres (thousands)	Gallons (thousands)	Litres (thousands)	Gallons (thousands)	Litres (thousands)	Gallons (thousands)	Litres (thousands)	Per gallon (\$)	Per litre (cents)
2013	462,907	2,104,410	441,563	2,007,379	429,922	1,954,458	21,344	97,031	4.45	97.93
2014	484,211	2,201,260	462,838	2,104,096	446,587	2,030,216	21,373	97,164	4.72	103.91
2015	470,084	2,137,037	445,859	2,026,907	431,476	1,961,524	24,225	110,130	3.45	75.99
2016	441,145	2,005,479	416,916	1,895,331	403,995	1,836,593	24,229	110,148	3.02	66.33
2017	475,619	2,162,199	449,509	2,043,500	435,981	1,982,001	26,110	118,699	3.43	75.54
2018	494,194	2,246,644	467,418	2,124,919	454,246	2,065,037	26,776	121,725	4.24	93.20
2019	498,062	2,264,237	468,153	2,128,266	454,315	2,065,359	29,910	135,972	4.03	88.70
2020	460,670	2,094,250	445,252	2,024,159	432,907	1,968,037	15,418	70,092	3.22	70.80
2021	447,900	2,036,194	431,647	1,962,309	419,103	1,905,283	16,253	73,886	4.20	92.39 <sup>r</sup>
2022	444,862	2,022,386	423,080	1,923,361	410,439	1,865,894	21,782	99,025	6.89	151.60

Note: See Appendix D for an explanation on revised data (r).

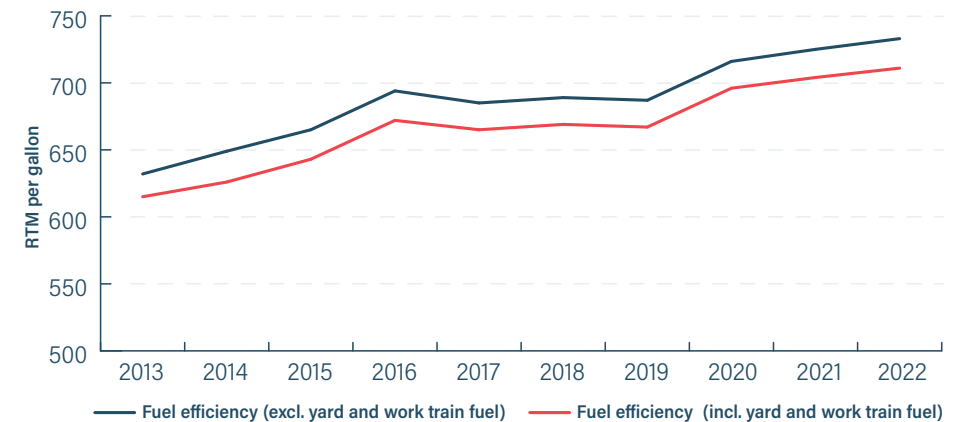
## FREIGHT FUEL EFFICIENCY

In 2022, Canadian railways continued to build upon their status as the most fuel-efficient means of transporting goods over land. Since the reduction in freight fuel consumption (-2.0%)<sup>22</sup> was greater than the reduction in RTMs (-1.0%), freight fuel efficiency improved by 1.1% to 711 RTMs per gallon (or 228 RTKs per litre), another consecutive record. Various railway initiatives are contributing to these improvements, including investments in locomotive fleet modernization, fuel saving technologies, and low carbon fuels; as well as improved operational practices and training employees to optimize fuel efficiency. Pilot projects in alternative fuels and zero-emissions propulsion technologies will support further emissions reductions in the coming years.

## FREIGHT FUEL EFFICIENCY

	Fuel efficiency (incl. yard and work train fuel)		Fuel efficiency (excl. yard and work train fuel)	
	RTM per gallon	RTK per litre	RTM per gallon	RTK per litre
2013	615	198	632	203
2014	626	201	649	208
2015	643	207	665	214
2016	672	216	694	223
2017	665	213	685	220
2018	669	215	689	221
2019	667	214	687	221
2020	696	223	716	230
2021	704	226	725	233
2022	711	228	733	235

## FREIGHT FUEL EFFICIENCY



<sup>22</sup> Freight fuel consumption, including yard and work train fuel, decreased by 2.0%. Freight fuel consumption, excluding yard and work train fuel, decreased by 2.1%.



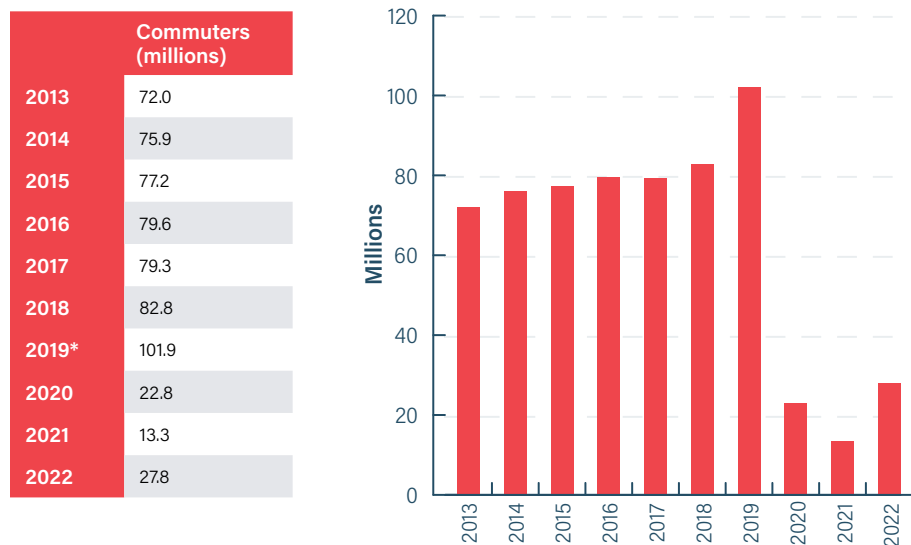
## PASSENGER TRANSPORTATION

In 2022, ridership climbed from the pandemic-induced lows experienced in 2020 and 2021, improving across all segments of passenger railways—commuter, intercity and tourist. However, despite significant year-over-year improvements, ridership remained well-below pre-pandemic (2019) levels.

### COMMUTER RAIL

From 2021 to 2022, commuter rail ridership more than doubled (+108.9%), from 13.3 million to 27.8 million commuters. Despite this significant growth, commuter ridership remained 72.7% below 2019 levels.

#### COMMUTER RIDERSHIP COMMUTER RIDERSHIP



\* The significant increase in commuters from 2018 to 2019 was due to a combination of increasing ridership on commuter rail services as well as the inclusion of one additional rail service beginning in 2019.

## INTERCITY PASSENGER RAIL

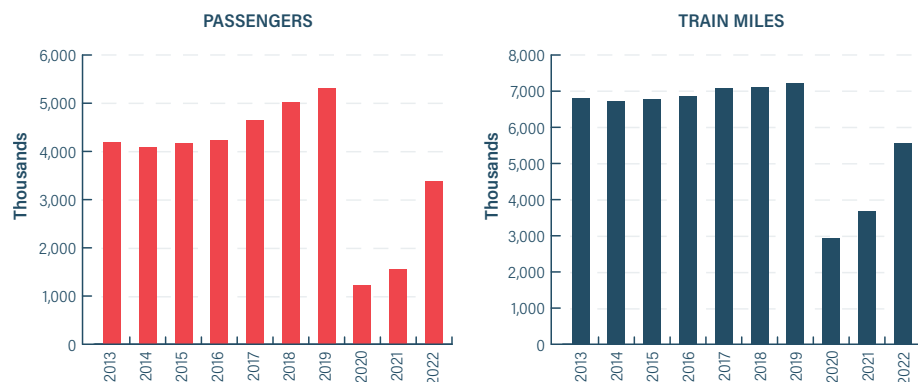
From 2021 to 2022, the number of intercity railway passengers more than doubled (+117.7%), from 1.6 million to 3.4 million. Ridership climbed as VIA Rail increased frequencies and restored services across its network. Ridership in the corridor increased by 116.2% and ridership on non-corridor routes increased by 176.2%.<sup>23</sup> Intercity passenger TRAIN MILES increased by 51.2%, and passenger CAR MILES increased by 86.8%. With higher ridership levels, intercity passenger railways were able to run longer trains (more passenger cars per train).

### INTERCITY PASSENGER RAIL STATISTICS

	Passenger cars in service	Number of passengers (thousands)	Passenger		Passenger train		Passenger car	
			Miles (millions)	Kilometres (millions)	Miles (thousands)	Kilometres (thousands)	Miles (thousands)	Kilometres (thousands)
2013	552	4,186	861	1,386	6,809	10,958	43,673	70,285
2014	552	4,094	834	1,343	6,720	10,814	41,587	66,928
2015	551	4,171	857	1,380	6,781	10,913	43,843	70,559
2016	527	4,241	876	1,409	6,850	11,024	44,884	72,234
2017	512	4,645	971	1,562	7,094	11,416	46,758	75,249
2018	495	5,028	1,011	1,626	7,107	11,438	47,030	75,688
2019	488	5,305	1,074	1,729	7,216	11,612	46,000	74,030
2020	480	1,227	229	369	2,929	4,714	14,941	24,044
2021	407	1,555	333	535	3,668	5,904	18,534	29,827
2022	397	3,385	760	1,223	5,548	8,928	34,624	55,722

<sup>23</sup> VIA Rail, *Annual Report 2022*. Corridor routes include *Corridor East* and *Southwestern Ontario*; non-corridor routes include *Ocean, Canadian, and Regional services*.

## INTERCITY PASSENGERS AND TRAIN MILES



Efficiency metrics improved significantly in 2022. The average passenger load factor increased from 49% to 61% and the average number of passengers per train increased from 91 to 137. These two efficiency metrics, as well as fuel consumption per passenger-kilometre (not shown), were similar to levels experienced before the pandemic. Ridership on non-corridor routes (which are longer than the corridor routes) increased more significantly than on corridor routes, contributing to an increase in the average length of journey.

## INTERCITY PASSENGER RAIL PERFORMANCE METRICS

	Average intercity passengers per train	Average length of journey		Average passenger load factor (%)	On-time performance (%)
		Miles	Kilometres		
2013	126	214	344	56	82
2014	124	213	343	60	76
2015	126	213	343	56	71
2016	128	216	348	54	73
2017	137	217	349	57	73
2018	142	209	336	57	71
2019	149	211	339	60	68
2020	78	198	318	45	71
2021	91	216	348	49	72
2022	137	227	365	61	57

## SAFETY

### SAFETY OVERVIEW

The safety data presented in *Rail Trends* reflect the performance of federally and provincially regulated freight and passenger railways in Canada. The Transportation Safety Board (TSB) maintains a live database of the safety performance of all federally regulated railways. Since the data are constantly being updated and revised in the live database, the statistics will change over time. The safety data found in *Rail Trends* are an aggregate of TSB statistics and information provided to the RAC by provincially regulated member railways that are not required to report to the TSB. Each organization uses the same safety definitions, and the data reflect railway operations in Canada only.

The rail industry's safety performance in 2022 was an improvement over the 2017–2021 average. In 2022, the total number of accidents was 4.5% below the 2017–2021 average.

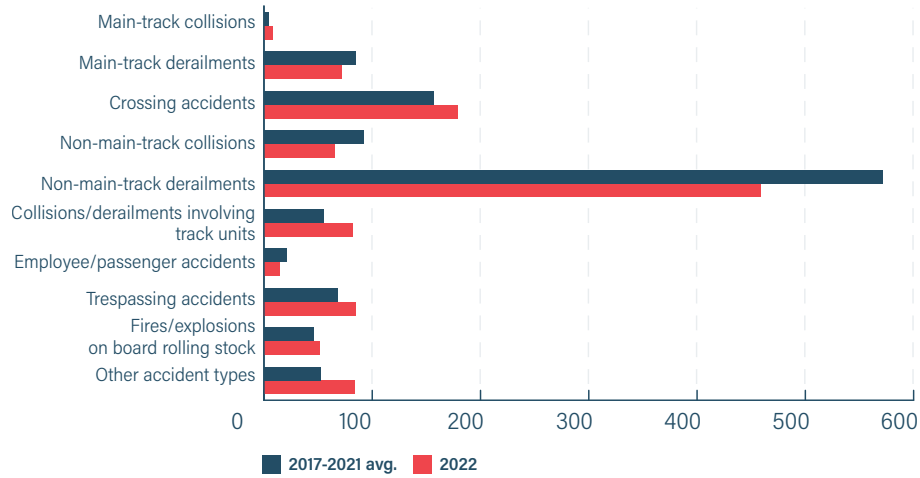
The total number of collisions and derailments was down 19.7% from the 2017–2021 average.<sup>24</sup> Beginning in the TSB's *Rail transportation occurrences in 2022* report and RAC's *Rail Trends 2023* report, there has been a change to the classification of fire-related occurrences. Historically, all fires were categorized as accidents. Moving forward, fires are either categorized as accidents (fires/explosions on board rolling stock) or as incidents (fires on railway right-of-way). This change has a significant impact on the number of accidents and on accident rate trends (for example, for 2021, 143 fire occurrences have been re-classified from the accident to incident category). Historical data has been updated to reflect this change in methodology.

### SAFETY SUMMARY

	2013	2017–2021 avg.	2021	2022
Main-track collisions	6	4	3	8
Main-track derailments	93	85	76	72
Crossing accidents	196	157	145	179
Non-main-track collisions	94	92	65	65
Non-main-track derailments	577	571	430	459
Collisions/derailments involving track units	57	55	64	82
Employee/passenger accidents	8	21	21	14
Trespasser accidents	59	68	72	85
Fires/explosions on board rolling stock	14	46	58	51
Other accident types	68	52	65	84
<b>TOTAL ACCIDENTS</b>	<b>1,172</b>	<b>1,151</b>	<b>999</b>	<b>1,099</b>

<sup>24</sup> Includes main-track and non-main-track collisions and derailments, does not include collisions/derailments involving track units.

## SAFETY OVERVIEW: 2022 VS 2017-2021 AVERAGE



## CROSSING AND TRESPASSING

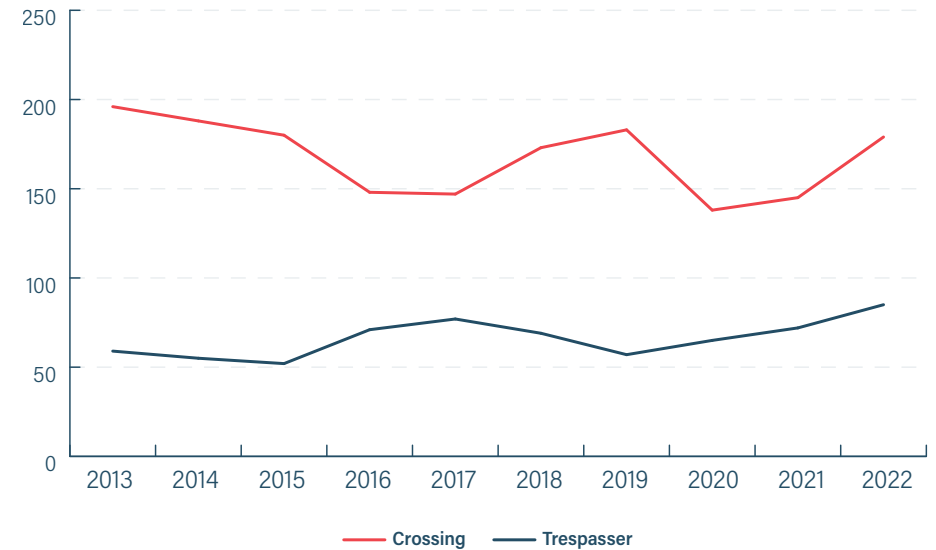
Each year, crossing and trespasser accidents account for roughly one fifth of total rail accidents in Canada. In 2022, there were 179 accidents at railway crossings, a 13.9% increase from the 2017–2021 average. In addition, there were 85 accidents related to trespassing on railway property in 2022, up 25.0% compared to the 2017–2021 average.

Rail safety is a shared responsibility. Accident rates are improving in areas where railways have greater control over the outcomes, while accidents at crossings and trespassing remain an issue. These statistics reinforce the need for continued support of Operation Lifesaver’s rail safety education and awareness activities, as well as continued advocacy for the adoption of the RAC/FCM Proximity Guidelines to enhance safety and livability near railway infrastructure.

## CROSSING AND TRESPASSER ACCIDENTS

	Crossing	Trespasser	Crossing & Trespasser
2013	196	59	255
2014	188	55	243
2015	180	52	232
2016	148	71	219
2017	147	77	224
2018	173	69	242
2019	183	57	240
2020	138	65	203
2021	145	72	217
2022	179	85	264

## CROSSING AND TRESPASSER ACCIDENTS



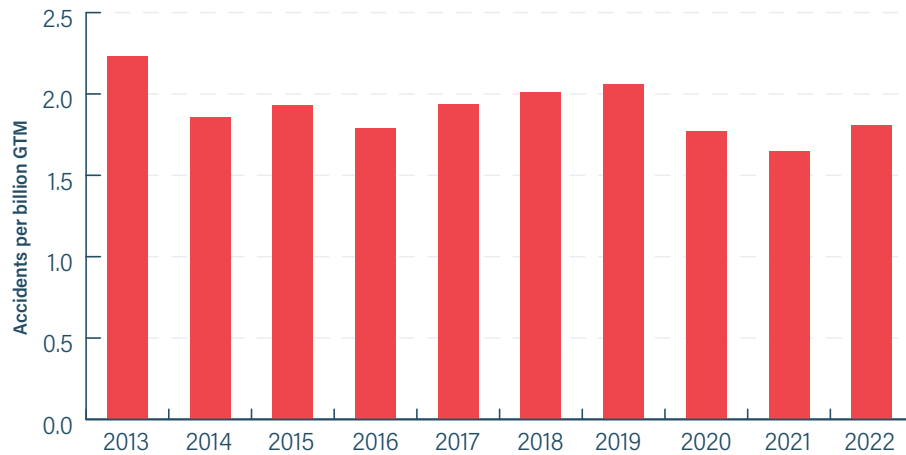
## FREIGHT

In 2022, at 1.81 accidents per billion GTMs, the freight accident rate was 4.1% below the 2017–2021 average. Approximately half of these accidents were collisions/derailments that occurred on non-main-track.

## FREIGHT ACCIDENTS

	Freight accidents	GTM (billions)	Accident rate
2013	1,126	504.6	2.23
2014	1,012	544.4	1.86
2015	1,051	545.1	1.93
2016	943	525.8	1.79
2017	1,094	565.1	1.94
2018	1,195	593.5	2.01
2019	1,223	592.9	2.06
2020	1,027	581.0	1.77
2021	946	571.7	1.65
2022	1,021	564.5	1.81

## FREIGHT ACCIDENT RATE



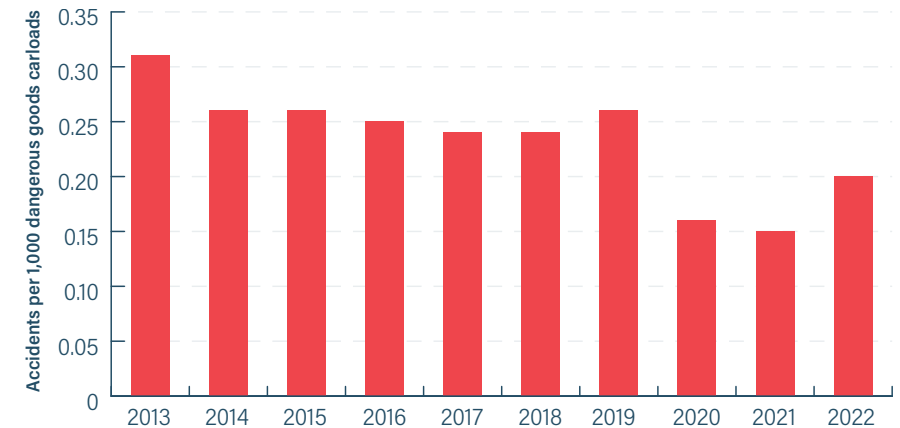
## DANGEROUS GOODS

Railways continue to transport large volumes of freight classified as DANGEROUS GOODS—fulfilling their obligations as common carriers. The freight rail sector’s DANGEROUS GOODS accident rate decreased by 2.4% compared to the 2017–2021 average. In 2022, Canadian railways transported 547,123 carloads containing dangerous goods, in which all but two of these carloads reached their destination without a release.

## ACCIDENTS INVOLVING DANGEROUS GOODS

	Accidents involving dangerous goods	Originated dangerous goods carloads (thousands)	Dangerous goods accident rate (accidents per 1,000 dangerous goods carloads)	Accidents with a dangerous goods release
2013	152	493	0.31	7
2014	148	576	0.26	5
2015	130	492	0.26	6
2016	111	438	0.25	2
2017	122	505	0.24	5
2018	129	547	0.24	4
2019	174	676	0.26	8
2020	87	536	0.16	3
2021	87	576	0.15	2
2022	112	547	0.20	2

## DANGEROUS GOODS ACCIDENT RATE



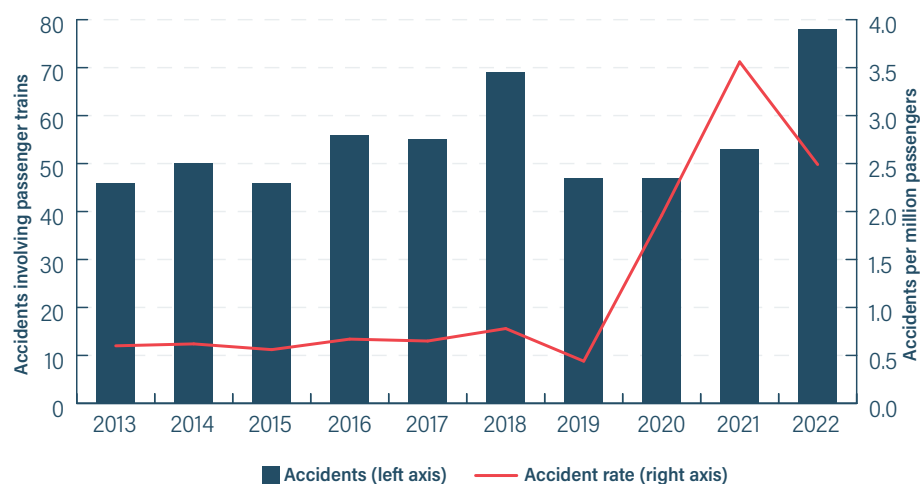


## PASSENGER

In 2022, there were 78 accidents involving passenger trains. The accident rate is based on the number of passengers and is therefore sensitive to the dramatic changes in ridership since the COVID-19 pandemic began.<sup>25</sup> In 2022, the passenger train accident rate improved by 30.1% compared to 2021, but remained elevated compared to the pre-pandemic period, when ridership levels were much higher.

	Passenger accidents	Passengers (millions)	Accident rate
2013	46	76	0.60
2014	50	80	0.62
2015	46	82	0.56
2016	56	84	0.67
2017	55	84	0.65
2018	69	88	0.78
2019	47	108	0.44
2020	47	24	1.96
2021	53	15	3.56
2022	78	31	2.49

## PASSENGER TRAIN ACCIDENTS AND ACCIDENT RATE



<sup>25</sup> The passenger rail sector's accident rate is calculated by dividing the number of accidents involving passenger trains by the total number of intercity, commuter and tourist rail passengers (in millions).

## OPERATING FINANCES, INVESTMENTS AND TAXES

### OPERATING FINANCES

From 2021 to 2022, increases in fuel costs contributed to significant increases in both revenues and expenses.

In 2022, Canadian railways' total operating revenues increased by \$3,229 million (or 18.7%), from \$17.2 billion to \$20.5 billion. Passenger-related revenues increased by \$747 million (or 316.3%); freight-related revenues increased by \$2,058 million (or 13.0%); and other revenues increased by \$424 million (or 36.4%).

Total operating expenses increased in 2022 by \$1,910 million (or 16.3%). Fuel expenses increased by \$1,185 million (63.0%), followed by increases in expenses related to transportation (\$401 million or 13.2%) and maintenance-of-way and structures (\$305 million or 12.1%).

Total revenues and total expenses increased at a similar rate (18.7% vs 16.3%), but since revenues are greater than expenses, the increases led to a strong 23.7% increase in total operating income—from \$5.6 billion to \$6.9 billion.<sup>26</sup> Higher profitability contributed to an increase in both investments and taxes paid to Canadian governments, which are presented in the next several pages.

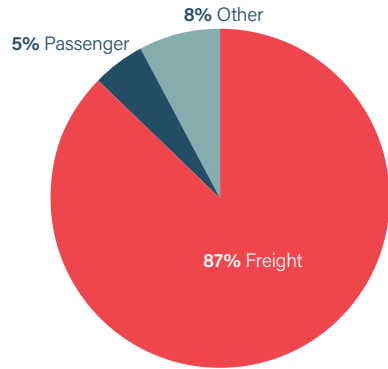
### OPERATING REVENUES (\$ MILLIONS)

	Freight	Passenger	Other	Total operating revenues
2013	12,039	668	623	13,331
2014	13,287	690	664	14,641
2015	13,270	727	682	14,679
2016	12,649	784	681	14,114
2017	13,610	915	704	15,228
2018	15,064	970	694	16,728
2019	15,820	996	1,088	17,904
2020	15,404	160	1,201 <sup>r</sup>	16,765 <sup>r</sup>
2021	15,845 <sup>r</sup>	236	1,165	17,246 <sup>r</sup>
2022	17,903	983	1,589	20,475

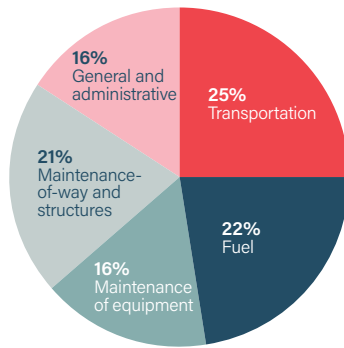
Note: See *Appendix D* for an explanation on revised data (r).

<sup>26</sup> Operating income reflects earnings before interest and taxes.

## OPERATING REVENUES, 2022



## OPERATING EXPENSES, 2022



## OPERATING EXPENSES (\$ MILLIONS)

	Transportation	Fuel	Maintenance of equipment	Maintenance-of-way and structures	General and administrative	Total operating expenses
2013	2,523	2,061	1,698	1,968	2,133	10,383
2014	2,759	2,287	1,785	2,108	2,632	11,571
2015	2,508	1,624	1,870	2,315	2,153	10,471
2016	2,592	1,330	1,958	2,013	1,749	9,642
2017	2,895	1,633	2,071	1,998	1,679	10,277
2018	3,172	2,094	1,973	2,270	2,318	11,828
2019	3,719	2,008	2,136	2,280	2,483	12,626
2020	3,029	1,483	2,272	2,446	2,534	11,765 <sup>r</sup>
2021	3,029 <sup>r</sup>	1,881	2,069	2,515 <sup>r</sup>	2,193 <sup>r</sup>	11,687 <sup>r</sup>
2022	3,429	3,066	2,158	2,820	2,124	13,597

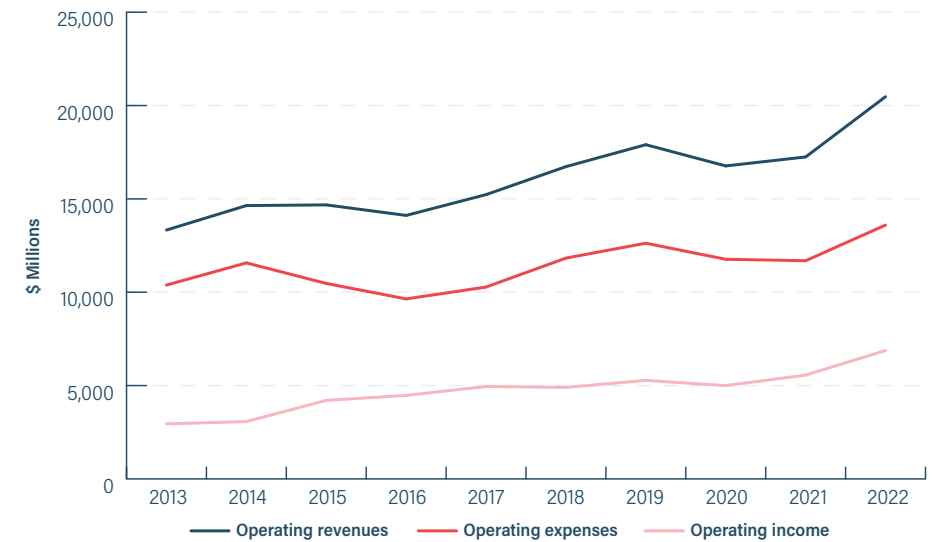
Note: See Appendix D for an explanation on revised data (r).

## OPERATING INCOME (\$ MILLIONS)

	Total operating revenues	Total operating expenses	Total operating income
2013	13,331	10,383	2,948
2014	14,641	11,571	3,071
2015	14,679	10,471	4,208
2016	14,114	9,642	4,472
2017	15,228	10,277	4,951
2018	16,728	11,828	4,901
2019	17,904	12,626	5,277
2020	16,765 <sup>r</sup>	11,765 <sup>r</sup>	4,999 <sup>r</sup>
2021	17,246 <sup>r</sup>	11,687 <sup>r</sup>	5,560
2022	20,475	13,597	6,878

Note: See Appendix D for an explanation on revised data (r).

## OPERATING REVENUES, EXPENSES AND INCOME

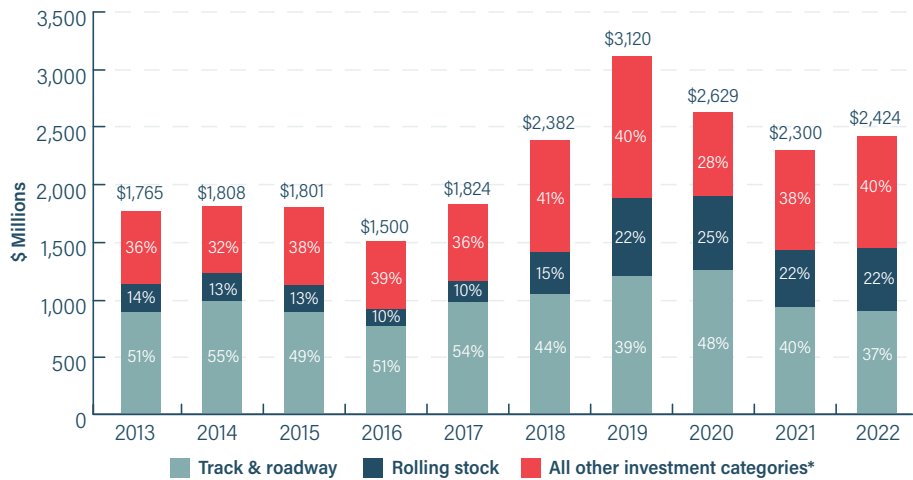


## INVESTMENTS

Canadian railways have invested record amounts of capital into their networks and equipment, averaging \$2.6 billion per year across the past five years. Investments in track, rolling stock, technology, and other equipment have improved the safety, efficiency, and capacity of the Canadian rail network, as well as the fluidity of Canada's supply chains.

In 2022, railways invested \$2.4 billion into their Canadian assets—a 37.3% increase compared to levels invested a decade ago. From 2021 to 2022, the category that experienced the most significant increase in investment, in absolute terms, was building & related machinery & equipment (\$109 million or 25.4%).

### INVESTMENTS IN CANADIAN RAIL ASSETS



\* Other investment categories include building & related machinery & equipment; signals, communications & power; terminals & fuel stations; intermodal equipment; work equipment & roadway machines; and other equipment.

### INVESTMENTS BY CATEGORY (\$ MILLIONS)

	Track & roadway	Building & related machinery & equipment	Signals, communications & power	Terminals & fuel stations	Rolling stock	Intermodal equipment	Work equipment & roadway machines	Other equipment	Total
2013	892	357	100	32	239	17	50	77	1,765
2014	988	292	93	10	240	53	49	83	1,808
2015	888	309	130	26	233	61	92	62	1,801
2016	771	298	102	8	145	53	55	70	1,500
2017	980	275	104	15	182	102	57	109	1,824
2018	1,044	442	146	55	366	166	62	101	2,382
2019	1,206	601	165	89	674	152	99	136	3,120
2020	1,255	427	132	50	645	15	12	95	2,629
2021	929	431	227	33	504	30	55	91	2,300
2022	899	540	177	38	544	52	56	119	2,424

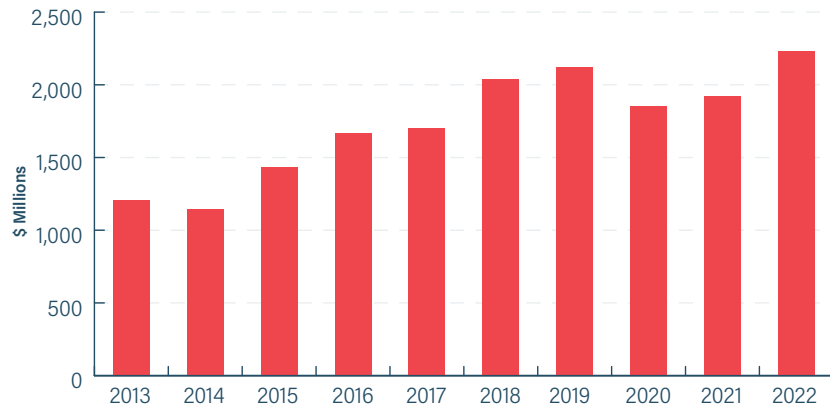
Note: See Appendix D for an explanation on revised data (r).

## TAXES

In 2022, Canadian railways set an all-time record for taxes paid. Railways paid more than \$2.2 billion in taxes to federal and provincial governments, up 16.2% from 2021, up 15.7% from the 2017–2021 average, and nearly double (up 84.4%) the amount paid in 2013.

Higher operating income in 2022 contributed to a \$236 million (23.1%) increase in income taxes paid. Carbon levies continued to escalate rapidly, with railways paying \$247 million in 2022 compared to \$202 million a year prior, and just \$21 million a decade ago (in 2013). Total payroll taxes, including CPP/QPP, employment insurance, and health taxes, increased 15.3% year-over-year.

### TOTAL TAXES PAID



### TAXES BY CATEGORY (\$ MILLIONS)

Year	Payroll taxes							Carbon-related levies	Income tax	Capital tax & custom duties	Other sales tax	Property tax	Locomotive fuel & excise tax	Total
	CPP/QPP	EI	Health taxes	Carbon-related levies	Income tax	Capital tax & custom duties	Other sales tax							
2013	75	32	43	21	629	1	43	169	198				1,210	
2014	84	37	46	44	462 <sup>r</sup>	1	106	179	189				1,148 <sup>r</sup>	
2015	82	36	53	45	775	3	115	168	159				1,435	
2016	79	37	50	43	976	1	114	180	187				1,667	
2017	93	36	52	78	940	0	122	185	196				1,702	
2018	95	37	58	100	1,211 <sup>r</sup>	4	128	192	217				2,042 <sup>r</sup>	
2019	102	37	60	124	1,246	3	140	193	215				2,120	
2020	103	33	56	168	939	2	153	199	199				1,852	
2021	113	34	59	202	1,021	2	97	203	190				1,919	
2022	135	40	62	247	1,256	2	88	207	194				2,231	

Note: See Appendix D for an explanation on revised data (r).



## TAXES BY CATEGORY AND JURISDICTION (\$ THOUSANDS) 1/2

	Locomotive fuel & excise tax		2022 ¢/L tax	Property tax		Other sales tax		Capital tax & custom duties	
	2021	2022		2021	2022	2021	2022	2021	2022
Alberta	16,918	17,354	5.5	24,296	25,973	12	12	1	1
British Columbia	19,565	19,631	3.0	57,834	57,147	55,141	48,067	0	0
Manitoba	9,584	9,216	6.3	15,355	16,083	21,099	18,124	99	83
Nfld. & Labrador	0	0	9.5	0	0	0	0	0	0
New Brunswick	1,223	1,119	4.3	2,149	2,154	0	0	1	0
Nova Scotia	0	0	15.4	2,704	2,826	0	0	0	0
Ontario	19,845	23,154	4.5	34,727	34,862	121	242	38	0
Quebec	6,011	6,501	3.0	40,329	41,198	728	376	0	0
Saskatchewan	38,528	38,001	15.0	25,335	26,184	19,041	21,165	26	31
Northwest Territories	12	12	11.4	143	146	0	0	0	0
Federal	78,723	79,009	4.0	0	0	510	348	1,636	1,761
<b>Total</b>	<b>190,409</b>	<b>193,997</b>	<b>-</b>	<b>202,871</b>	<b>206,573</b>	<b>96,652</b>	<b>88,334</b>	<b>1,801</b>	<b>1,876</b>

## TAXES BY CATEGORY AND JURISDICTION (\$ THOUSANDS) 2/2

	Income tax		Carbon Levies		Payroll taxes		Total taxes	
	2021	2022	2021	2022	2021	2022	2021	2022
Alberta	77,658	72,891	4	8	0	0	118,889	116,239
British Columbia	93,874	131,582	73,641	83,030	1,211	858	301,266	340,316
Manitoba	40,966	54,091	0	0	7,374	7,827	94,477	105,424
Nfld. & Labrador	0	0	0	0	0	0	0	0
New Brunswick	8,952	13,440	2,897	3,360	0	0	15,222	20,073
Nova Scotia	3,888	3,624	208	217	0	0	6,800	6,667
Ontario	97,889	132,714	152	6,555	14,860	16,325	167,631	213,851
Quebec	56,388	43,324	5,980	5,875	63,909	71,992	173,345	169,266
Saskatchewan	70,698	90,163	70	53	0	0	153,698	175,597
Northwest Territories	652	956	11	13	0	0	818	1,127
Federal	569,554	713,520	118,564	147,460	<b>118,060</b>	139,867	887,046	1,081,965
<b>Total</b>	<b>1,020,520</b>	<b>1,256,304</b>	<b>201,527</b>	<b>246,571</b>	<b>205,414</b>	<b>236,869</b>	<b>1,919,194</b>	<b>2,230,525</b>

Note: See Appendix D for an explanation on revised data (r).

## EMPLOYMENT

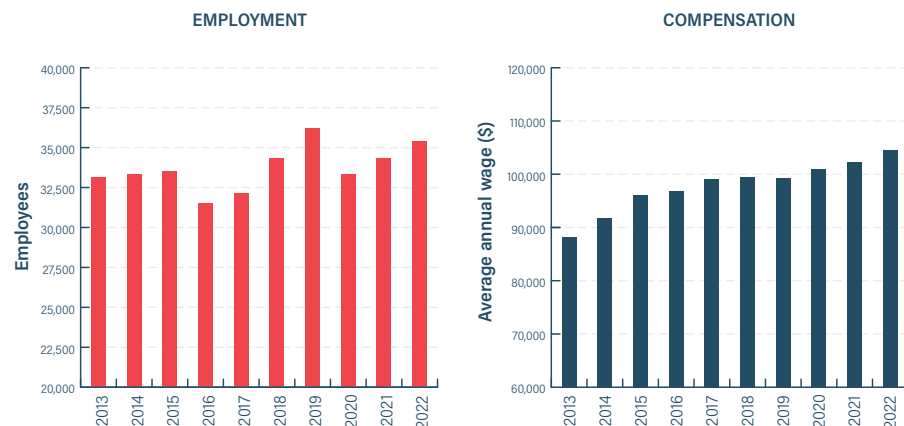
In 2022, Canadian railways directly employed 35,404 people from coast to coast to coast, an increase of 1,086 (3.2%) from 2021. The average annual wage per employee climbed by \$2,280 (2.2%) to \$104,443,<sup>27</sup> which is approximately 50% higher than the average full-time Canadian salary.<sup>28</sup>

## EMPLOYMENT AND COMPENSATION

	Total compensation (\$ millions)	Average number of employees	Average annual wage per employee (\$)
2013	2,924	33,167	88,153
2014	3,059	33,323	91,798
2015	3,136	33,511	96,110
2016	2,956	31,526	96,727
2017	3,077	32,152	99,134
2018	3,296	34,315	99,361
2019	3,477	36,196	99,332
2020	3,237	33,321	100,891 <sup>r</sup>
2021	3,359	34,318	102,163 <sup>r</sup>
2022	3,690	35,404	104,443

Note: See Appendix D for an explanation on revised data (r).

## EMPLOYMENT AND COMPENSATION



<sup>27</sup> Average annual wage per employee is calculated by dividing total compensation by the average number of employees. Data from railways that do not report both metrics are excluded from the calculation.

<sup>28</sup> Statistics Canada, *Labour Force Survey*.

## DIVERSITY REPRESENTATION

The RAC began collecting information from its members on diversity representation in 2020. In 2022, RAC enhanced data collection to include information on diversity representation on leadership teams and boards of directors. Information is collected on the number of employees in the following categories: women; persons with disabilities; visible minorities; and Indigenous peoples.

From 2021 to 2022, diversity representation improved as the number of employees and the employment shares in all four categories increased.

## DIVERSITY REPRESENTATION

	Number of employees and share of total industry employment							
	Women		Persons with disabilities		Visible minorities		Indigenous peoples	
2020	3,926	11.8%	620	1.9%	3,691	11.1%	1,294	3.9%
2021	4,051	11.8%	1,119	3.3%	4,049	11.8%	1,403	4.1%
2022	5,306	15.0%	1,228	3.5%	4,886	13.8%	1,642	4.6%

Please note: Some members are unable to provide this information, and as such, the figures in the table above understate the true level of diversity representation in the Canadian rail industry.

In 2022, there was a higher representation of women in leadership (24.4%) and on boards of directors (41.3%), compared to their share of industry employment (15.0%). Indigenous peoples represented 13.8% of positions on boards of directors, which is greater than their share of industry employment (4.6%) but were underrepresented in leadership positions (3.1%). Persons with disabilities and visible minorities were underrepresented in leadership and on boards of directors compared to their share of industry employment.

## DIVERSITY REPRESENTATION IN LEADERSHIP TEAMS AND ON BOARDS OF DIRECTORS, 2022

	Share represented by diverse groups			
	Women	Persons with disabilities	Visible minorities	Indigenous peoples
Leadership Team	24.4%	3.1%	5.2%	3.1%
Board of Directors	41.3%	1.3%	3.8%	13.8%

Please note: Some members are unable to provide this information, and as such, the figures in the table above understate the true level of diversity representation in the Canadian rail industry.

## TRACK AND EQUIPMENT

In 2022, freight railways operated 26,439 miles (42,550 kilometres) of track in Canada—a network that is 12% longer than Canada's National Highway System.<sup>29</sup> The industry's freight car fleet decreased by 7.0% to 55,789 cars. The number of active freight and passenger locomotives in service increased by 6.2% to 3,828.

### TRACK AND EQUIPMENT

	Freight railway operated track		Locomotives in service	Freight cars in service
	Miles	Kilometres		
2013	27,276	43,897	3,043	59,393
2014	27,304	43,942	2,700	58,577
2015	27,428	44,141	2,400	59,509
2016	27,070	43,564	2,318	55,230
2017	26,406	42,497	3,177	55,258
2018	25,900	41,682	3,782	59,309
2019	26,499	42,645	3,840	61,030
2020	26,551	42,730	3,756	61,755
2021	26,490	42,631	3,606 <sup>r</sup>	60,007
2022	26,439	42,550	3,828	55,789

Note: See *Appendix D* for an explanation on revised data (r).

Note: Freight railway operated track does not include segments terminating in the U.S.

The table on the next page provides a breakdown of TRACK OPERATED by jurisdiction and railway service. There are instances where passenger railways have operating rights on freight railway-owned tracks, and where freight railways have operating rights on passenger railway-owned track. As a result, the length of grand total track operated includes instances of double counting.

## TRACK OPERATED\*, BY JURISDICTION AND RAILWAY SERVICE

	2013		2021		2022	
	Miles	Kilometres	Miles	Kilometres	Miles	Kilometres
Alberta	4,150	6,679	3,942	6,345	3,941	6,343
British Columbia	4,174	6,717	4,100	6,598	3,977	6,400
Manitoba	2,662	4,284	2,829	4,553	2,829	4,553
Nfld. & Labrador	162	261	164	264	170	274
New Brunswick	720	1,159	681	1,096	681	1,097
Nova Scotia	419	674	292	470	292	470
Ontario	6,270	10,091	6,073	9,774	6,127	9,860
Quebec	3,554	5,719	3,591	5,779	3,605	5,802
Saskatchewan	5,089	8,190	4,741	7,630	4,741	7,630
Northwest Territories	75	121	76	122	76	122
<b>Freight total</b>	<b>27,276</b>	<b>43,897</b>	<b>26,490</b>	<b>42,631</b>	<b>26,439</b>	<b>42,550</b>
Intercity passenger	7,820	12,585	7,453	11,995	7,608	12,244
Commuter and tourist	2,365	3,806	3,213	5,171	2,451	3,945
<b>Passenger total</b>	<b>10,185</b>	<b>16,392</b>	<b>10,667</b>	<b>17,166</b>	<b>10,059</b>	<b>16,189</b>
Segments terminating in the U.S.**	152	244	47	75	47	75
<b>GRAND TOTAL TRACK OPERATED</b>	<b>37,613</b>	<b>60,533</b>	<b>37,203</b>	<b>59,872</b>	<b>36,546</b>	<b>58,814</b>

\* Miles (kilometres) of track operated includes rail over which a railway has operating rights.

\*\* Reflects railways' subdivisions that begin in Canada and terminate in the U.S.

<sup>29</sup> Transport Canada, *Transportation in Canada 2022*.

## APPENDIX A—GLOSSARY

### CAR MILE:

The movement of a freight car or passenger car the distance of one mile.

### CLASS 1 RAILWAY:

A railway with annual operating revenues exceeding \$250 million for two consecutive years.

### CONTAINER:

A large, weatherproof box designed for shipping and/or transferring freight between rail, truck or marine modes. Specialized containers are equipped with heating and cooling capabilities for perishable products.

### DANGEROUS GOODS:

Explosives; gases: compressed, deeply refrigerated, liquified or dissolved under pressure; flammable and combustible liquids; flammable solids; substances liable to spontaneous combustion; substances that on contact with water emit flammable gases; oxidizing substances; organic peroxides; poisonous (toxic) and infectious substances; nuclear substances; corrosives; or miscellaneous products, substances or organisms considered by the Governor in Council to be dangerous to life, health, property or the environment when handled, offered for transport or transported.<sup>30</sup>

### GROSS TONNE-KILOMETRE (GTK):

The movement of total train weight over a distance of one kilometre. Total train weight is comprised of the freight cars, their contents and any inactive locomotives. It excludes the weight of the locomotives pulling the trains.

### GROSS TON-MILE (GTM):

The movement of total train weight over a distance of one mile. Total train weight is comprised of the freight cars, their contents and any inactive locomotives. It excludes the weight of the locomotives pulling the trains.

### INTERMODAL SERVICE:

The movement of trailers or containers by rail and at least one other mode of transportation. Import and export containers generally are shipped via marine and rail. Domestic intermodal service usually involves truck and rail.

### ON-TIME PERFORMANCE:

The ability to meet customer requirements as to pick-up and delivery schedules.

### PASSENGER-MILE:

The movement of a passenger the distance of one mile. Passenger miles are used to measure the volume of passenger traffic.

### REVENUE TONNE-KILOMETRE (RTK):

The movement of one revenue-producing tonne of freight over a distance of one kilometre.

### REVENUE TON-MILE (RTM):

The movement of one revenue-producing ton of freight over a distance of one mile.

### SHORTLINE RAILWAY:

A railway with annual operating revenues of less than \$250 million for two consecutive years.

### TRACK OPERATED:

The first main-track over which a railway operates. This excludes second and other main-track, passing tracks and crossovers, industrial tracks, spurs and yard tracks.

### TRAIN-MILE:

The movement of a train the distance of one mile.

## APPENDIX B—CONVERSION FACTORS

Miles to kilometres	1.6093
Kilometres to miles	0.6214
Tons (short) to metric tonnes	0.9072
Metric tonnes to tons (short)	1.1023
Gallons to litres	4.5461
Litres to gallons	0.2200
Revenue ton-miles to revenue tonne-kilometres	1.4599
Revenue tonne-kilometres to revenue ton-miles	0.6850
CAD to USD (2022)*	0.7685
USD to CAD (2022)*	1.3013

\* Source: Bank of Canada, *Average Annual Exchange Rates*

<sup>30</sup> Source: *Canadian Transportation of Dangerous Goods Act*



## APPENDIX C—SAFETY DEFINITIONS

The safety definitions are sourced from the Transportation Safety Board of Canada's [Rail transportation occurrences in 2022](#) report. The following definitions apply to rail transportation occurrences that are required to be reported pursuant to the *Canadian Transportation Accident Investigation and Safety Board Act* and the associated regulations.

### OCCURRENCE

- Any accident or incident associated with the operation of rolling stock on a railway
- Any situation or condition that the Board has reasonable grounds to believe could, if left unattended, induce an accident or incident described below

### REPORTABLE ACCIDENT

- A person is killed or sustains a serious injury as a result of
  - getting on or off or being on board the rolling stock, or
  - coming into direct contact with any part of the rolling stock or its contents
- The rolling stock or its contents
  - are involved in a collision and/or a derailment resulting in damages to rolling stock and/or track infrastructure,
  - sustain damage that affects the safe operation of the rolling stock,
  - sustain a fire or explosion, or
  - cause damage to the railway that poses a threat to the safe passage of rolling stock or to the safety of any person, property or the environment
- There is an accidental release on board or from rolling stock that results in any of the events listed in subsection 8.4(2) of the *Transportation of Dangerous Goods Regulations*.

### REPORTABLE INCIDENT

- A risk of collision occurs between rolling stock
- An unprotected main-track switch or subdivision track switch is left in an abnormal position
- A railway signal displays a less restrictive indication than that required for the intended movement of rolling stock
- Rolling stock occupies a main track or subdivision track, or track work takes place, in contravention of the rules or any regulations made under the *Railway Safety Act*

- Rolling stock passes a signal indicating stop in contravention of the rules or any regulations made under the *Railway Safety Act*
- There is an unplanned and uncontrolled movement of rolling stock
- A crew member whose duties are directly related to the safe operation of the rolling stock is unable to perform their duties as a result of a physical incapacitation which poses a threat to the safety of persons, property or the environment,
- The rolling stock is involved in a minor collision and/or minor derailment (1 or 2 cars) resulting in no damages; or
- Rolling stock or its contents cause a fire along, or adjacent to, a railway right-of-way.

### SERIOUS INJURY

- A fracture of any bone, except simple fractures of fingers, toes or the nose
- Lacerations that cause severe hemorrhage or nerve, muscle or tendon damage
- An injury to an internal organ
- Second or third degree burns, or any burns affecting more than 5% of the body surface
- A verified exposure to infectious substances or injurious radiation, or
- An injury that is likely to require hospitalization.

### DANGEROUS GOODS INVOLVEMENT

"Dangerous goods" has the same meaning as in section 2 of the *Transportation of Dangerous Goods Act*. An accident is considered to have dangerous goods involvement if any car in the consist carrying (or having last contained) a dangerous good derails, strikes or is struck by any other rolling stock or object. It does not mean that there was any release of any product. Also included are crossing accidents in which the motor vehicle involved (e.g., tanker truck) is carrying a dangerous good.

### DERAILMENT

Any instance where one or more wheels of rolling stock have come off the normal running surface of the rail.

## APPENDIX D—STATISTICAL REVISIONS

### REVISIONS TO THE RAILWAY ASSOCIATION OF CANADA'S RAIL TRENDS DATABASE

The RAC makes every effort to maintain an accurate statistical database. Revisions are periodically carried out in order to incorporate the most accurate and up-to-date information. As new data become available, historical figures (and estimates) may be revised. A revised figure for even a single railway affects the aggregated industry figures presented in *Rail Trends*.

The *Rail Trends 2023* report incorporates a few minor statistical revisions. Revised figures are indicated with an “r”.

- There were a few instances in the database where a financial indicator that was originally provided in USD was not properly converted to CAD. These errors have been corrected, and do not materially impact the statistics presented throughout the report.
- The number of locomotives in 2021 was revised from 3,600 to 3,606. RAC received revised fleet information from two members after *Rail Trends 2022* was published.

### REVISIONS TO SAFETY DATA

The Transportation Safety Board (TSB) maintains a live database of the safety performance of all federally regulated railways. Since the data are constantly being updated and revised in the live database, the statistics may change over time. For example, the creation of an incident category for fires and historical revisions to reflect this change, affect the safety data over the past decade.